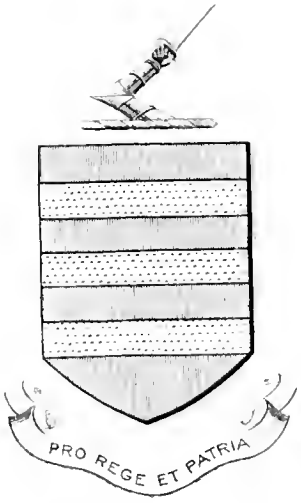

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Original Articles.

COMPENSATION BY DISPLACEMENT OF THE THORACIC VISCERA IN PULMONARY TUBERCULOSIS*

BY CHARLES LESTER LEONARD, A.M., M.D.,

PHILADELPHIA.

THE laws of physics render it essential that the lungs shall follow the thoracic walls and the diaphragm in their movements. This is because the lungs are distensible flaccid organs, open to the inrush of air, placed within a closed and semi-rigid bony and muscular case, which is capable of increase and decrease in its volume of muscular movements. Any alteration in the capacity of the lungs must be compensated for, or the excursion of the walls surrounding them must be decreased.

Compensation for the loss of expansion in the lungs takes place through an increase in the capacity of their normal area, or through the interposition between the visceral and parietal pleura of an area filled with air or fluid or both. These changes must take place in proportion to the volume of the lungs involved in a pathological process. They are in a measure appreciable by the ordinary methods of physical diagnosis. The changes which can be noted by inspection and mensuration are, however, less marked in ratio with the extent of the disease than those within the thorax, which produce displacements or alterations in the position of the viscera.

Tuberculous disease must be far advanced or an acute pneumo-, hydro-, or pyothorax of large volume must be present before the limitation of the thoracic movements can be noted by inspection. Marked alterations in the position of the intrathoracic viscera occur in the earlier stages of tuberculous disease, without visibly changing the excursion of the thoracic walls. These displacements occurring early in the disease have been generally overlooked. Until recently it was held that the heart and greater blood-vessels were so firmly attached by ligaments to the skeleton and diaphragm that they could not be displaced except under extreme conditions. These views were apparently upheld by the post-mortem findings.

Since they have been recognized by the roentgenologist in the living subject, it has become evident that the post-mortem changes hid the true condition. The correctness of this conclusion was shown as the result of a discussion which I had in 1909 with an internist connected with one of the largest institutions for the special study of tuberculosis. He did not believe that displacements of the viscera could occur so frequently in the earlier stages of the disease. He said that in some hundreds of post-mortems conducted at the institute they had failed to find such displacements. Some months later he told me that in the subsequent one hundred post-mortems they had found twenty-five or thirty dispacements in the less advanced cases.

These pathological variations in the position of the thoracic viscera can be clearly shown only by the rapid roentgenogram that eliminates the heart's motion. Their exact position and intrathoracic relations can only be fully appreciated by the rapid stereoroentgenogram.

The twelve cases used in illustrating the subject of this paper are taken from a series of one hundred cases studied by the rapid roentgenogram. These cases were for the most part referred for examination from the State Dispensary for Tuberculosis through the kindness of Dr. A. P. Francine, and a part of them formed the basis of a paper read by me before the British Medical Association in 1908 (*British Medical Journal*, September 12, 1908). Many, however, including some of the more interesting pathological cases, were from private practice.

In the entire series of one hundred cases 26 displacements of the heart and aorta were found with 3 cases of pneumothorax. In 17 cases the heart was displaced to the right; in 4 to the left; and in 5 a rotation took place with an upward displacement of the heart and aorta, so that the heart assumed an antero-posterior position. In 2 cases a superficial pneumothorax was found overlying the lower left lung and in one case an acute hydropneumothorax of tuberculous origin was shown.

It is practically impossible to reproduce the roentgenogram in ordinary printing with sufficient clearness to make its interpretation valuable. The 12 cases cited as illustrations of the subject of this paper have therefore been reproduced in tracings made directly from the individual Roentgen negatives. Varying types of line drawing have been used to diagrammatically represent the different stages of the pathological process.

An increased number of lines in one direction represents the line of contractile force. The tracings are accurate in detail and can be more readily appreciated by the reader. The accompanying stereoroentgenograms, if viewed through the ordinary parlor stereoscope, will show in a measure the wealth of detail which can only be fully appreciated by the study of the original negatives on the large stereoscope.

The sharp outline of the heart, seen in these plates, shows that the exposure must have been sufficiently rapid to eliminate its motion. That is, they must have been taken in a fraction of a heart's beat. The time between the stereoscopic pairs, required to shift the plates and tube, was one-half second. The total time for both exposures was, therefore, less than one second.

*Read before the College of Physicians of Philadelphia, October 4, 1911.

A review of the cases, in the entire series, shows that those cases in which no displacement of the viscera was present were early lesions, in which no fibroid change had taken place, or that the lesions were not extensive and symmetrical, or that the heart was bound down by adhesions between the pericardium and the diaphragm. The unequal elevation of the two halves of the diaphragm, Williams' sign, was present in less than one-half of all the cases, and was not present where displacements of the intrathoracic viscera had occurred. The irregularities of the diaphragm seen in the cases illustrating this paper are due to adhesions between the pulmonary and diaphragmatic pleura.

The pathological displacements of the thoracic viscera in pulmonary tuberculosis are the result of compensation for the destruction of expansive normal lung tissue by the disease.

The displacing force is the result of one or two changes or the combination of both, or as in the case of acute pneumothorax from the rupture of the lung. The consolidated lung area may undergo fibroid change and contraction, the contracting tissues drawing the heart and aorta with them, while the emphysematous lung on the opposite side assists in their displacement. That these two causes can act separately or together is shown in the illustrating cases. In some the heart and aorta are displaced in a direction entirely different from that of the pressure exerted by the emphysematous lungs or even where a marked emphysema is absent. Again a displacement is present and an extensive emphysema alone accounts for it.

In the surgical treatment of ordinary abscesses, evacuation and drainage are followed by compression, by the external dressing, to bring about coaptation of its walls and healing. Since external pressure cannot be exerted within the thorax, the same result is achieved in the natural healing abscess cavities in the lungs by the displacement of the viscera to produce compression.

In addition to the displacements which cause compression of the diseased portion of the lung, there is present in many cases an ossification of the

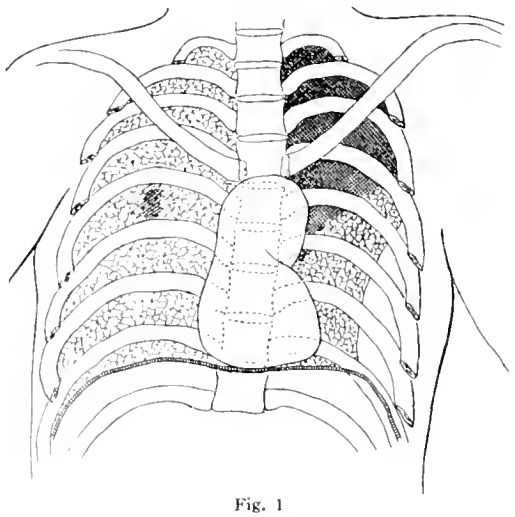


Fig. 1

costal cartilages and an approximation of the ribs over the affected area. As I have suggested in a previous paper the ossification of the cartilages may be a process of ankylosis to limit the motion of the ribs and place the parts more nearly at rest.

The compensating displacement may be divided into four groups. Displacements of the lung by superficial pneumothorax; displacements of the heart upward and into an anteroposterior position; displacements of the heart and aorta to the left; and displacements of the heart or heart and aorta to the right.

Displacements due to pneumothorax.—In both the cases of superficial pneumothorax, the physical

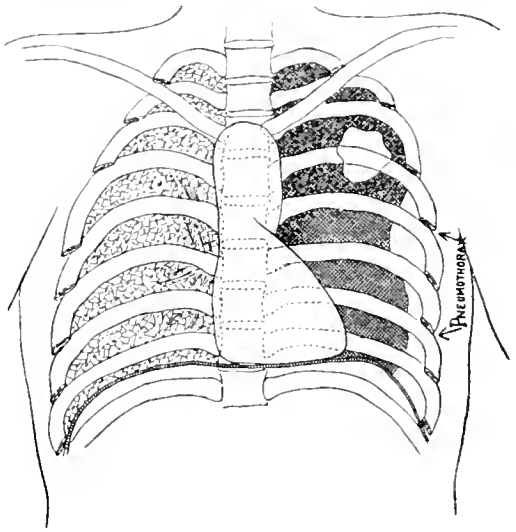


Fig. 2.

examinations which preceded the roentgen examination failed to detect them, but their presence was confirmed by subsequent physical examinations. In both cases the primary lesion was of the left upper lobe, with no involvement of the right lung. It is noteworthy that in none of the similar lesions of the entire series which involved the upper right lobe did a pneumothorax occur. The accompanying stereoroentgenogram of case I shows the lower lobe of the left lung hanging like a lace curtain within the thorax, conforming to the curve of the thoracic wall and separated from it by an area clearly devoid of all lung structure. The upper left lobe shows distinct lines of fibrosis in the infiltration, while peribronchial lymph nodes are seen in both lungs. A later stage of a similar lesion is shown in Case II, but with an entire absence of peribronchial enlarged glands. In this case the entire left lung is involved. The cavity seen in the upper lobe shows that the older lesion was there. The lower lobe is compressed, but not entirely consolidated, and is covered with a distinctly thickened pleura, which can be seen in the roentgenogram. In marked contrast to the succeeding case of acute hydropneumothorax, the heart and aorta are displaced to the left, probably entirely as the result of the compensating emphysema of the entire right lung.

The next case (III) was of particular interest, as it was an acute tuberculous hydropneumothorax. This roentgenogram was taken with the patient in the erect position, because of the fluid, which is seen as a level line just below the seventh rib. The lung is compressed upon the mediastinum and the heart and aorta are displaced to the right. This condition was readily recognized by the physical examination, but the position of the heart and aorta were not definitely determined. In this case both the lung and the heart with the aorta are displaced to the right.

Anteroposterior and upward displacements.—This displacement was found in five cases of the entire series, as illustrated in this paper by trac-

ings 4 and 5. The tuberculous lesions in all these cases were symmetrical and involved both upper lobes. The heart was not only rotated but with the aorta was drawn upward, showing that a decided force was exerted by the contracting fibrous tissue in the upper lobes. It is possible that the decreased superficial area of the heart presented

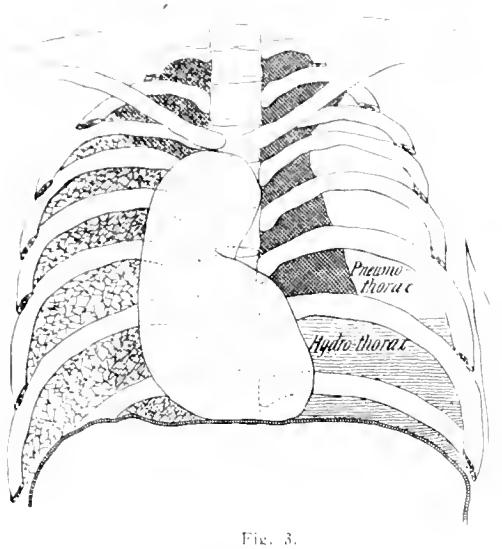


Fig. 3.

to percussion in these cases may account for an old opinion that the heart is small in tuberculous subjects. This opinion was not confirmed by the comparison between the size of the heart and the body weight of the patients in the entire series.

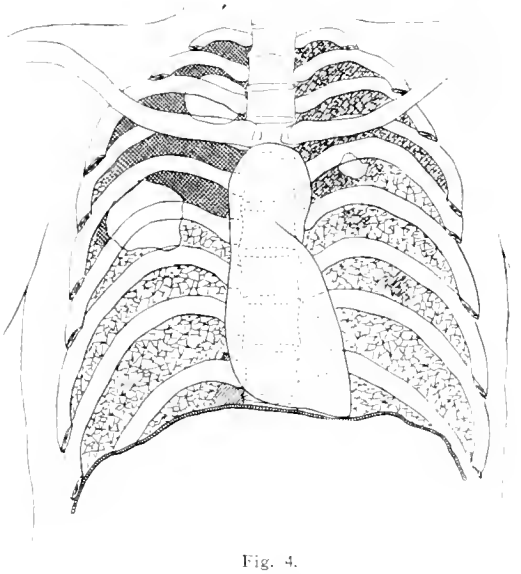


Fig. 4.

In Case IV the heart is drawn up and rotated, so that as it rests upon its apex it presents a peculiar aspect as a wide band occupying the mediastinum.

In Case V the rotation is not so complete and the band of mediastinal shadow is broader. In the stereoroentgenogram of this case it will be seen that the heart lies within a very much thickened pericardium, upon the left side particularly, which accounts for the peculiar straight line shown as its left border. The heart, however, can be distinctly seen within the pericardial shadow. The stereoscopic picture also shows very clearly a dilated bronchus forming a cavity in the right upper lobe with the surrounding infiltration and fibroid change in both upper lobes with commencing softening and cavity formation in the left upper lobe.

In the entire series of cases the displacement of the heart to the right was four times as frequent as the left in direct opposition to the opinion expressed by some authors. Of the greatest importance to the clinician is the fact, first demonstrated

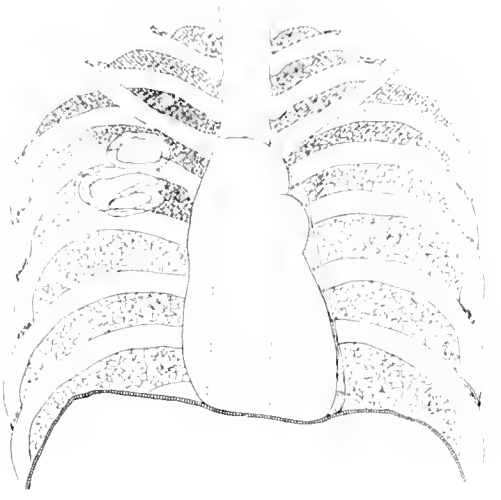


Fig. 5.

by the Roentgenologist, that the aorta is also displaced in almost every instance. It is possible in most cases to demonstrate by percussion the border of the displaced aorta that lies outside the line of the sternum, but almost impossible to show the one that lies beneath it. This fact has undoubtedly led to the diagnosis of aneurysm in many cases of displaced aorta. In only one case of the entire series was an aneurysm found. It was suspected from the symptoms presented, but could not be demonstrated by physical examination. The roentgenogram showed an aneurysm buried in a mass of tuberculous consolidation that occupied both upper lobes and a part of the lobes below them. In contrast to this is Case VIII, to be spoken of later, in which the symptoms suggesting aneurysm were found to be due to a displaced aorta.

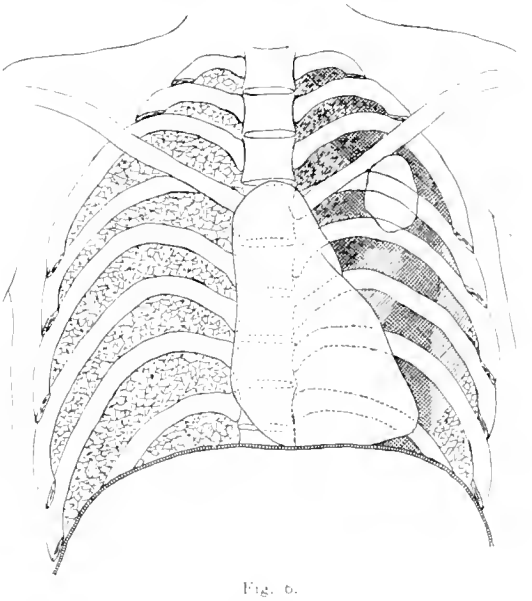


Fig. 6.

Displacements of the heart and aorta to the left.—In addition to Case II of superficial pneumothorax where the heart and aorta are displaced to the left

this group of displacements is illustrated by Case VI. Here there is an extensive involvement of the left lung. There is a cavity with surrounding consolidation and softening in the upper lobe, while consolidation and marked fibrosis have taken place in the upper portion of the lower lobe. The heart is drawn well over to the left, but the arch of the aorta is in its normal position.

Displacements of the heart and aorta to the right.—The extent to which the heart and aorta can be displaced upward and to the right, by fibrosis and contraction of a diseased area limited to the right upper lobe, is clearly illustrated in the stereoroentgenogram of Case VII. The heart and

Fig. 7

ascending aorta are drawn up so far that the arc of the arch is increased and the separation from the descending aorta is so great that one can see through the arch. The right lower lobe is evidently emphysematous and presents upon its lower surface a dome-like protrusion of the diaphragm, evidently due to a localized adhesion of the pleura. The left lung shows no compensatory emphysema, but lines of infiltration and foci of tuberculous disease can be seen scattered through it, especially on stereoscopic examination.

Fig. 8

The displacement of the heart and aorta in Case VIII gave rise to symptoms which led the laryngologist to suspect the presence of an aneurysm in an evidently tuberculous subject. In addition to a paralysis of the vocal cord the case presented other very interesting features, and has been reported in detail by Dr. E. L. Van Zandt before the Laryngological Section of the College, by whom it was referred for Roentgen examination. The Roentgen plates showed that no aneurysm was present, but that the heart and aorta had been displaced far to the right. The tuberculous lesion was confined chiefly to the right upper and middle lobes, where consolidation, fibrosis and cavity formation had taken place.

The multiple lesions of a rapid tuberculous process, as well as a moderate displacement of the heart and aorta to the right, are shown in Case IX.

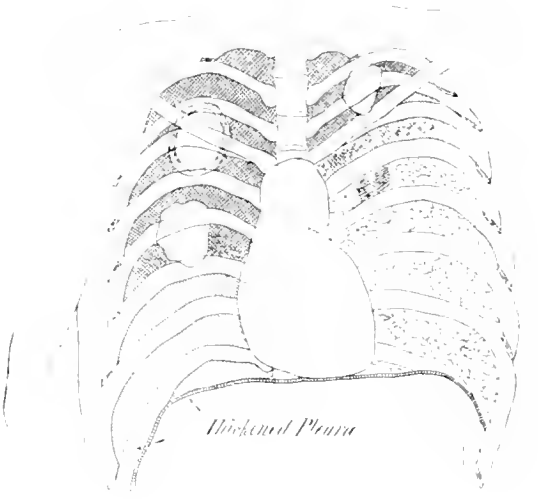


Fig. 9.

Here we have infiltration, consolidation, fibrosis, an old walled cavity, the breaking down of tissue to form a cavity, a cavity in the left upper lobe without a thickened wall, and an area of the lower right lobe covered by thickened pleura.

The remaining cases are illustrations of displacements to the right of the heart and aorta, and are the types of cases readily recognized and termed dextrocardia. Displacement of the aorta to the

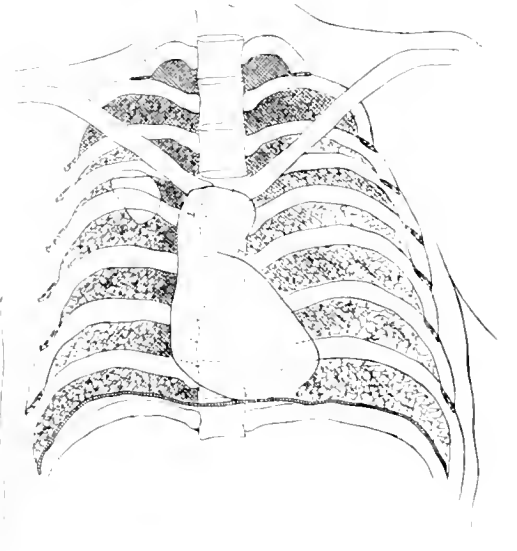


Fig. 10.

right is also present, but had not been determined by the physical examination, while Case XII is the

only case in the entire series in which displacement of the aorta did not occur with the displacement of the heart.

The moderate displacement of the heart and aorta to the right in Case X can be accounted for by the adhesion of the pericardium to the diaphragm and the general fibrosis which has accompanied the miliary tuberculosis.

The small masses of miliary tubercle are seen distinctly, especially in the original negative and the lantern slide, scattered throughout both lungs accompanied by bands of infiltration. The upper right lobe is consolidated, with fibroid change and cavity formation.

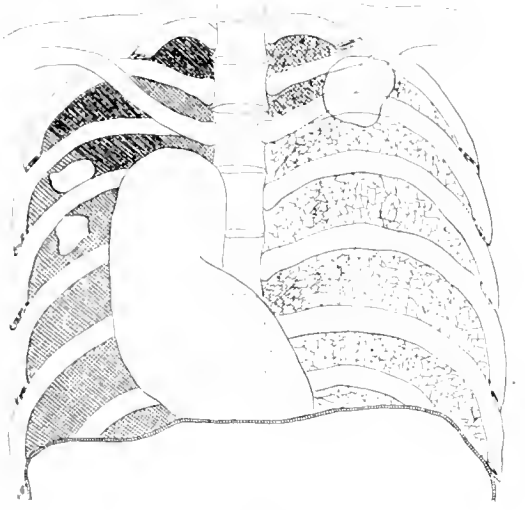


Fig. 11.

The wide displacement due to consolidation of the entire right lung with fibroid contraction and emphysema of the left lung is illustrated by Case XI. The original seat of the disease is shown by the advanced fibroid change in the right apex and the cavity formation. The heart and aorta are drawn far over to the right and slightly upward. The spread of the disease to the left lung is seen in infiltration and early cavity formation in the left upper lobe.

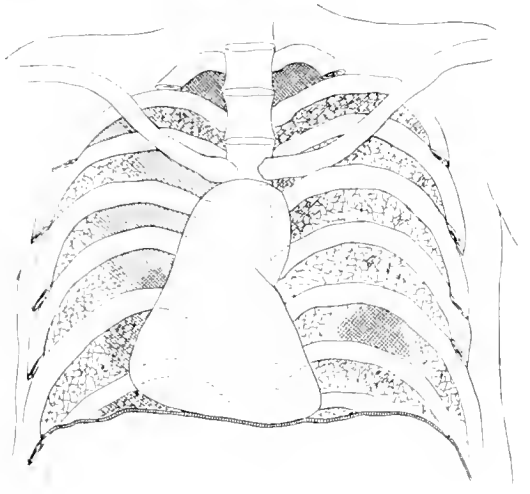


Fig. 12.

Another illustration of dextracardia with advanced fibroid change is shown in Case XII. The apex of the heart is displaced nearly to the median line. In this case, however, we find the arch of the aorta in its normal position. This absence of displacement is probably due to the general fibrosis which is evident throughout both lungs and the absence of consolidation and extensive fibrosis of the right upper lobe. This is the only case where the aorta was not displaced and also the only one of displacement to the right in which the right upper lobe was not extensively involved by the disease.

In all the cases illustrating this paper and in the entire series from which they are taken, the clinical findings have been compared with the röntgen diagnosis and the points brought out alone by the röntgen examination have been subsequently confirmed by a physical examination.

The röntgen method of examination has been shown to add to the knowledge obtained by other methods of physical diagnosis, by detecting superficial areas of pneumothorax, by showing that the aorta is generally displaced with the heart and by making evident the effect of fibroid change in displacing the viscera through its contraction. In addition it is a valuable mechanical method of observing and recording the changes and displacements produced within the thorax by tuberculous lesions of the lungs. It also assists in the understanding of the processes of repair which take place in the closing and healing of old cavities, while it forms a permanent record for comparison with that obtained in later examination, thus showing the progress of the disease or of the process of repair.

It is self-evident that röntgenoscopic examinations of the thorax and lungs, that is, the visual examination by means of the röntgen rays and the fluoroscope, cannot afford accurate permanent data such as are secured by the rapid röntgenogram and particularly the stereoscopic röntgenogram. There can be no doubt that viewing with the fluoroscope is a cheaper method and that is less accurate since it gives data that are only visible to the eye of one observer. It possibly affords an advantage in viewing the movements of the diaphragm, but it cannot eliminate the effect of motion produced by the heart's beat and does not show the minute detail essential to a careful diagnosis. An examination sufficiently long to enable the observer to gain any valuable information must necessarily expose the patient to the rays for a far greater period then the second or two required for the rapid stereoröntgenogram.

The series of cases illustrating this paper in tracings, stereoröntgenograms and lantern slides show the contribution which röntgenology has made to the knowledge of the pathological displacements of the thoracic viscera produced by the lesions of pulmonary tuberculosis.

112 South Twentieth Street.

PEDIATRIC MEMORANDA.

MYELOCYSTOCELE. SPINA BIFIDA OCCULTA.

By HERMAN B. SHEFFIELD, M.D.,

NEW YORK.

Myelocystocele.—The child was only three weeks old when the illustrations (See Figs. 1 and 2) were obtained. It weighed nine pounds, was quite comely and unusually bright and active for its age. It was the first child of strong Irish parents, who apparently were free from syphilis, tuberculosis, or other constitutional taint. They brought the baby to Dr. J. Lipman for treatment and he kindly referred it to my hospital service. On examination I found a protrusion, about 2 inches in diameter, with a broad base situated at the lower lumbar region of the vertebral column (see Fig. 1). The

covering skin was greatly distended but normal in color. The tumor was not translucent and on palpation proved to consist of a semisolid mass. On firm compression it could be considerably reduced in size, but its manipulation gave rise to great

Fig. 1.—Myelocystocele.

annoyance to the patient, apparently by upward pressure upon the brain. On further inspection I noted pronounced, funnel-shaped eversion of the rectum, owing to paralysis of the levator and sphincter ani; rectangular curving of the femurs at the hips; right talipes varus, and cohesion of the fingers and toes (see Fig. 2). The motor and sensory functions of the lower extremities seemed but slightly disturbed. This last observation as well as the absence of bluish discoloration of the skin aided in the exclusion of myelocele, and it differed from meningocele by being neither ped-

Fig. 2.—Same case as in Fig. 1, showing the clubfoot and syndactylism.

unculated nor translucent. The case was transferred to Dr. E. W. Peterson for operation, but the doctor suggested waiting a few months longer—presumably to give the infant the choice of a natural death.

Spina Bifida Occulta.—The seven year-old boy was admitted to the hospital for protracted cystitis. According to the parents the child has always suffered from *Enuresis diurna et nocturna* and irritable bladder. He was seen by several physicians and underwent different methods of treatment without noticeable improvement. While in the hospital he complained of strangury and rectal tenesmus, and the urine contained pus and blood corpuscles, bladder epithelium, and numerous bacteria. On a milk diet, bladder irrigation (nitrate of silver 1 to 2000), and the administration of extract of hyoscyamus (1/12 grain), and hexamethylenamine (4 grains) every four hours, the painful symptoms abated after a few days, but the enuresis improved but little. Careful rectal digital examination failed to reveal a vesical cal-

Fig. 3.—Spina bifida occulta.

culus or tumefaction. The case remained a diagnostic enigma for several weeks when one day I happened to see the boy bending over a bed chamber trying hard to expel a few drops of urine. To my great surprise I noted a small prominence at the sacrolumbar region (see Fig. 3). When he stood erect the swelling, as it were, flattened and was barely noticeable, hence the reason why it had escaped our observation. On further examination I found that a small spinal cleft was hidden under a mass of fat. We also observed that his walk was somewhat dragging and awkward. With these manifestations in view, it was quite clear that we were dealing with a case of spina bifida occulta. Hypertrichosis, which is usually associated with this form of spina bifida, was absent. This experience has taught me ever to examine a patient with recalcitrant enuresis or cystitis for spina bifida. In doubtful cases the diagnosis can often be settled by means of the *x*-ray. Judging by the gradual appearance of graver symptoms, this seemed to me an ideal case for operative interference, *i.e.* separation of the adhering strands of the cord from the covering skin. If left alone the symptoms gradually grow worse, since owing to the normal ascent of the cord with increasing age of the patient there is a corresponding increase in the spinal tension. The parents, however, did not consent to an operation.

127 West Eighty-seventh Street.

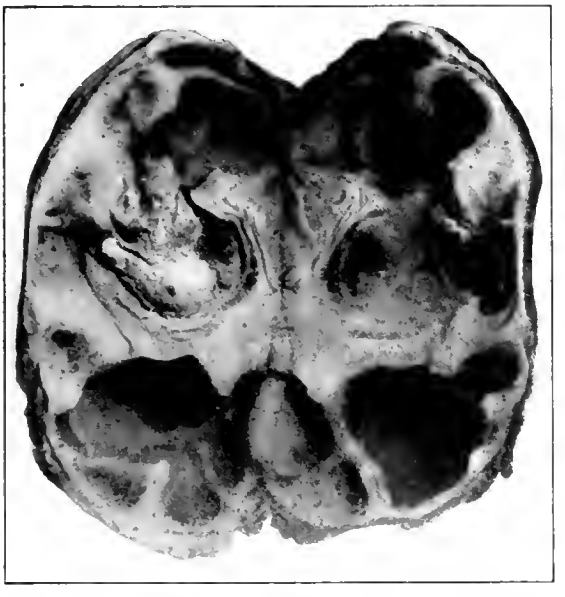
ACIDOSIS FOLLOWING NEPHRECTOMY.

By J. BENTLEY SQUIER, M.D.,

NEW YORK,

PROFESSOR OF GENITOURINARY SURGERY, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

Lewis Beesley (*British Medical Journal*, 1909, p. 1142) calls attention to the fact that the clinical similarity of symptoms described as occurring in so-called acid intoxication and delayed chloroform poisoning points to similar metabolic disturbance in the organism, one of the ultimate products of which is acetone. A grave form of delayed acetone excretion may occur after operation, and is shown by a sudden fall in the acetone curve, instead of the gradual ascent. That less is passed than is expected, breath smelling of acetone, points to the fact that a condition has arisen which hinders the excretion of acetone. The frequency of this condition after chloroform as compared with ether suggests the possibility that there is some additional factor present in chloroform, which, besides producing acetonuria, acts upon other organs, rendering them incapable of reacting to the strain of acetone excretion.



Our knowledge of the true cause of acidosis following operation is not complete and various hypotheses have been offered. Guthrie, discussing cases that died from acidosis following anesthesia, laid stress on the fact that autopsy showed the liver to be markedly fatty, and argued that this fatty condition could hardly have resulted from the comparatively short chloroformization. He advanced the view that a fatty liver was probably present beforehand and acted as a predisposing factor. Bracker, Stone, and Low of Boston state that "one of the conditions under which an increase in acetone excretion occurs is phosphorus poisoning, the acetone excretion taking place as the result of the destruction of fat tissue. They believe the toxic symptoms are due to the fatty antecedents of acetone rather than to acetone itself." Waldvogel attempted to prove that acidosis was chiefly referable to the withdrawal of food in preparation for the anesthetic and to the subsequent vomiting. In several cases he was able to show that the acetonuria did not appear if the patient was etherized on a full stomach and did not vomit after recovery. Yet, since children of from six to nine years whom he allowed to fast for seven hours failed to show increased acetonuria, and since the influence of carbohydrate in relieving the acidosis was much slower than in simple starvation, Waldvogel was forced to conclude that a direct toxic action of the anesthetic was an important factor in producing the acidosis. Experimental confirmation of the last cited opinion has recently been published by Cragin and Hull. It was shown by them that relatively short anesthesia with chloroform might lead to very extensive lesions of the liver with serious or even fatal outcome.

At all events, acetone is present in the urine in many different conditions, and is much more common than is generally supposed. There is so little in the healthy urine that it cannot be detected by color tests, but by a quantitative analysis a trace is usually found. The condition is more marked in women than in men, and most marked in children. Some writers claim that the length or character of the narcosis does not influence its appearance.

A patient, who succumbed with symptoms of delayed acetone excretion following nephrectomy, presented the following history: A woman, sixty years of age, consulted me on October 11, 1910; twelve years before a large abdominal tumor had been removed, of the nature of which she was uncertain, but probably it was a fibroid of the uterus. After recovery from the operation, she was in good health until a year ago, when she developed backache and began to lose weight. At the same time pus was discovered in the urine. She was advised to go to Wildungen for a course of treatment, which she did. During the year she lost thirty pounds in weight. Cystoscopy showed a hyperemic bladder except for a mild degree of cystitis. Both ureteral orifices appeared normal. Urine drawn from the left kidney was loaded with pus, with a low specific gravity. Urine from the right kidney showed absence of pus, a trace of albumin, and a few hyalin casts. The left kidney was easily palpated and seemed about twice the normal size. Radiographic examination showed the presence of large and small calculi in the left kidney. The heart was dilated with a blowing systolic murmur heard over the apex. The lungs were emphysematous and the liver percussed small.

Operation was decided upon, and on October 15 left nephrectomy was performed. The anesthesia was started with ether, but as considerable pulmonary irritation was produced chloroform was substituted. The kidney was found to be composed of a number of pus sacs containing large and small calculi (See cut). The patient was under anesthesia twenty-five minutes and recovered from the operation, with the exception of some watery emesis, without incident. In the first twenty-four hours twelve ounces of urine were voided. She continued in good condition for four days. The average amount of urine excreted in twenty-four hours was twenty-five ounces. The urine analysis at this time showed an acid reaction, a specific gravity of 1010, a trace of albumin, hyalin casts and some pus cells. The temperature ran at 100° F., and fell to normal by the fourth day. On the fifth day a heavy sweet odor of the breath was noticeable and she developed great excitement. The blood pressure rose from 160 to 220, and the pulse beat from 80 to 100. The temperature remained normal. On the seventh day traces of acetone were first found in the urine. The patient became progressively worse and went from excitement to delirium. She died on the twelfth day after opera-

tion. The temperature had been normal for eight days. The pulse ranged from 90 to 100. The daily excretion of urine averaged 30 ounces. Examination of urine the day before death showed the following: Reaction, acid; sediment, moderate; albumin, trace; bile pigment, negative; urea, 1.058 per cent.; indican, excess; color, amber; odor, not offensive; specific gravity, 1,012 at 150° C.; sugar, negative; acetone, traces; chlorides, 0.5 per cent. Microscopic examination: Blood, none; pus, some cells; mucus, small amount; casts, some hyalin; bacteria, slight bacteriuria; epithelium, some bladder cells; crystals, none. The treatment besides symptomatic was the administration of large doses of sodium bicarbonate by mouth and rectum.

It was surprising that the evidence in the urine of an acidosis was not more marked, in view of the clinical symptoms. Nevertheless, it is a fact that the evidences in the urine are not necessarily in proportion to the symptons. It works both ways; severe symptoms, little in the urine (always some); slight symptoms, much in the urine. These are, however, exceptions. After the patient's death, her family informed me that following the operation for removal of the uterine tumor, which the patient had undergone twelve years before, she had developed a condition of coma. This condition lasted for a week before the patient began to improve. Whether, in this case, the termination was due to the acidosis as an exhibition of delayed chloroform poisoning, a bacterial autoinfection, or a manifestation of the so-called status lymphaticus is a matter of conjecture. The patient before operation had somewhat the appearance of one suffering from myxedema. The presence of the acetone bodies in the blood or urine as actually being the cause of the symptoms of delayed chloroform poisoning or merely as an evidence of grave changes either in the function or structure of the cells of the liver or other organs is by no means finally settled. Prolonged acidosis without symptoms is not unknown in diabetes and neutralization of the acids by infusion of massive doses of alkalies does not always produce amelioration of the symptoms designated for convenience as acidosis.

MARTINUS VAN HILLE

AND

HIS TREATMENT OF GONORRHEA AND SYPHILIS IN THE SEVENTEENTH CENTURY.

By JOHN BETHUNE STEIN, M.D.,

NEW YORK.

Martinus Van Hille was born at Antwerp in 1633. He lived when Belgium, without a national dynasty, was poorly or badly governed by Spain and became the object of controversy by her ambitious neighbors and the field of battle for almost all the wars of Europe during the seventeenth and eighteenth centuries. Study of all kinds, commerce, industry, letters, science, and art felt the baneful influence of the political conditions of this period.

We cannot procure any information of the early life of Van Hille. He studied surgery in Antwerp and later went to Holland to perfect his knowledge in this branch of medicine, and in 1665 we find him among the military surgeons in the service of the United Netherlands.

On June 17, 1665, in the memorable sea battle between Holland and England, when the Dutch "swept the seas," Van Hille was surgeon on board the ship commanded by Admiral Tromp, where he treated the wounded.

Van Hille, in speaking of a case of gangrene which demanded the amputation of a limb, expresses himself as follows (page 145 in his Manual of Surgery, "Tooneel der Chirurgie"): "It is better that the limb be amputated at once before the patient loses his strength and is subjected to an incurable gangrene. This I have witnessed with great success on the ship of my master, Tromp, on June 13, 1665, in the battle against the English when I saved my patient, a sailor, who had the bones of the carpus and metacarpus on the left hand so badly injured by the flying splinters from the ship, that there was no hope of restoring it, and that in a short time in spite of all the necessary cares which were given him would have become gangrenous." After obtaining sufficient experience Van Hille resigned his position of surgeon in Holland and returned to his own country. There

MARTINUS VAN HILLE—1633-1706.

Licentiate in Medicine from the University of Louvain, Professor of Surgery in the School of Surgery at Antwerp, Military Surgeon in the Service of the United Netherlands, and Surgeon on Board Admiral Tromp's Flag-Ship During the Holland-English War.

were few good operators at this time, and the fame of the surgeon of Admiral Tromp, which preceded him to Antwerp, combined with the proofs of the knowledge which he had acquired in Holland soon obtained for him the confidence of the people.

In the dedication of Van Hille's work on surgery he states there existed at Antwerp a college of medicine and a college of surgery; that the latter was founded about the middle of the sixteenth century and was under the direction of a dean (opperdeken) a vice-dean (onderdeken) and two of the elders (oudermans) of the corporation of surgeons.

Among other privileges accorded the surgeons at Antwerp was the right to name, directly, the professor who should instruct the students.*

As the talents of Van Hille were generally appreciated, the corporation of surgeons at Antwerp

*See "Notice sur David von Mauden, docteur en Médecine," by C. Broeckx, Anvers, 1850, p. 23.

offered him the chair of surgery in the Collegium Chirurgicum, which he accepted and filled for ten years. He always held the attention of his auditors by his devotion to his work, his lucid method of imparting the anatomical and surgical knowledge of his time, and the fact that he forced himself to keep his teachings on a level with the discovered facts in the different parts of the world.

Although Van Hille was considered the best operator in his city and had acquired the high esteem of all classes, the title of surgeon did not suffice him and he resolved to become a graduate in medicine. To that end he began the study of medicine and presented himself to the examiners of the University of Louvain. This was not so easy, especially for one who had never studied the humanities; nevertheless, by virtue of his zeal for study and his fund of knowledge, he graduated in 1678 and was made, the same year, a member of the College of Medicine at Antwerp. In the book of receipts of the College of Medicine at Antwerp in 1678 we read that he paid 36 florins (Brabant) for his admission and 4 florins for the privilege of a seat. (Broeckx.)

Twice in 1682 and again in 1694 Van Hille was elected syndic of the medical corporation at Antwerp, and in this position defended with much zeal the dignities and rights of his profession against charlatanism.

The records of the Collegicum Medicum show that persons without diplomas were practising the art of healing. These were brought before the magistrates and convicted under the law promulgated by Charles V and the county authorities. The placard of Charles V (October 8, 1540) and the ordinances of the county authorities prohibited under severe penalties the practice of medicine by persons who had not received a diploma.

After having filled with distinction the several position to which his colleagues had elected him, Van Hille sought to settle "the debt which every physician seems to contract on entering the career of medicine; to leave behind him a useful and known result of his experiences and his efforts for the progress of the science." That he did in his later years. In 1700, after forty years of practice, he presented the results of his extensive clinical experience in a work entitled Tooneel de Chirurgie* (Manual of Surgery) which consisted of questions and answers for the use of his pupils.

His manual of surgery is divided into two parts. The first part treats of the divisions of surgery, the surgical antaomy of his time, the organs and their functions (digestion, circulation, respiration, nutrition), and general pathology. The second part is devoted to practical surgery; to tumors in general and particular, with their diagnosis, prognosis, symptoms, and treatment; to suppuration; to an extensive consideration of the different kinds of gangrene, gangrene through freezing, lack of nutrition, and that which is due to the absorption of a "malignant humor." After indicating the curative measures for a gangrenous limb, and the manner of applying them, he tells under what conditions and how such a limb should be amputated.

Erysipelas, edemas, scirrhous tumors, and cancer are considered in detail. All that the author taught on hernia, its causes and treatment, conformed to the knowledge of the epoch. His work shows that he made a close study of wounds in general, and of the head, chest, abdomen, and nerves in particular. The sequelæ of wounds of the head are clearly described by him.

The nature and treatment of gunshot wounds, naturally, find a place in his work. He next takes up the study of burns and "poisoned" wounds, ulcers (phagedenic and those with indurated borders), fistulæ (lacrymal, pectoral, and anal), and closes with a description of fractures and dislocations.

As syphilis was making great ravages at this time Van Hille "thought he would render a service to science by adding a short treatise on syphilis to his manual of surgery."

He reviewed the symptoms and treatment of gonorrhea and its complications, recommended the use of emollients internally as well as emollient injections during the early stages of the disease, and advised using oil of turpentine and astringent injections only when the acute symptoms had disappeared. He altogether disapproved of the use of astringent injections at the commencement of the disease, and prescribed a suspensory bandage to prevent testicular complications. His treatment of epidydimitis and orchitis is very rational. For stricture of the urethra he used bougies, alum, and zinc sulphate.

For chancres he employed mercury both internally and externally as well as decoctions of sarsaparilla; decoctions which strongly resembled "le rob" which was widely used in the early part of the last century by charlatans in Paris as "the only antidote for syphilis and many other ills." After the consideration of buboes, phimosis, and paraphimosis he took up the treatment of syphilis.

He divided syphilis into two periods, recent and confirmed, which correspond to our divisions of primary, secondary, and tertiary periods. He discussed the different methods of treatment as proposed by A. Paré, C. Battus, Fernel, and those who were his contemporaries.

As syphilographers to-day are not in accord as to what is the best form of treatment of syphilis, it may be of interest to know what Van Hille employed about the middle of the seventeenth century. The patient was first bled and purged, ordered to stay in a "hot atmosphere" and given sudorifics. This was followed by inunctions of mercury and hydrargyrum oxidum rubrum was given internally up to the point of salivation. He took care to have an interval of time elapse between both the rubbings and the administration of the internal medication "in order to master this phenomenon (salivation) at times so troublesome." At this time, as well as later, there were those who opposed the use of mercury in syphilis and attributed all kinds of lesions to the administration of it. "It is that they do not know how to employ it," says Van Hille. "Mercury is the true antidote for syphilis and salivation is necessary in order to expel the venereal virus from the body."* Van Hille also found that the salivation was accompanied at times by severe lesions which he describes at length and for which he recommends treatment.

Van Hille's Manual of Surgery shows him to have been a practitioner, well instructed, with good judgment, abreast of the knowledge of his time and possessing the talent to demonstrate his doctrines with great clearness. If he did not make any great discoveries, he nevertheless gave his contemporaries much which was of profit to them in

*See "Considerations sur le péritonite," par Van den Zande, Anvers, 1821, p. 8.

*P. 215, "Tooneel der Chirurgie."

their practice; and his treatise on syphilis is the fruit of many years of practice as a military surgeon, during which time, he had the opportunity to observe a large number of syphilitic affections. His work was not only well received by his pupils and colleagues at Antwerp, but many of the latter addressed pieces of verse to his honor, one of which, written by Casimer Vilella, his successor to the chair of surgery in the Collegium Chirurgicum, is printed on the first page of the "Tooneel der Chirurgie." The second edition of Van Hille's work appeared in 1726, twenty years after his death.

BIBLIOGRAPHY

1. C. Broeck: "Notice sur Martinus Van Hille, Anvers, 1851.
2. Martinus Van Hille: "Tooneel der Chirurgie," Antwerp, 1700, in 8°.
3. Martinus Van Hille: "Tooneel der Chirurgie," Edited by Martinus Verdussen, 1726, in—8°, de 225 pages.
4 "Placard de Charles Quint," du 8 Octobre, 1540.

126 West Seventieth Street.

POST-OPERATIVE TREATMENT OF GENERAL SUPPURATIVE PERITONITIS.*

By ASPINWALL JUDD, M.D.,

NEW YORK,

ADJUNCT PROFESSOR OF SURGERY, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

In probably no class of cases with which we come in contact as surgeons is after-treatment so important a factor as in general suppurative peritonitis. Various methods of treatment of this condition at the time of operation have been exploited, the exponents of each being emphatic in their advocacy of their own particular method and each condemning with great severity all methods but their own. In only one point of technique are they all agreed—the necessity of the most rapid operation possible compatible with any sort of thoroughness. Personally I am firmly of the opinion that the flushing of the peritoneal cavity with various solutions, the making of multiple incisions except in rare instances, and the handling of the intestines is to be avoided wherever possible. As is well known, the lymphatic supply of the upper portion of the abdomen, and especially in the diaphragmatic region, is particularly abundant, and it seems to me that every effort should be made to prevent driving bacteria into this locality, where the absorption of toxins is so rapid as to produce an overwhelming effect upon the system. The wiping off of the peritoneal surfaces is also contraindicated, as, in denuding the membrane of its outer covering, we promote the rapid formation of adhesions with the locking in of pockets of septic material, as well as promoting its more rapid absorption. According to Murphy and others, it is extremely questionable whether we ever secure thorough drainage from the peritoneal cavity, possibly excluding its pelvic portion, for more than twelve hours.

In the list of thirty-eight patients, extending over a considerable period of time mostly in my own service, most of the case histories of which are appended, I have followed out the general method of fairly wide single incision, if by this incision I was able to reach the seat of infection, evacuation of the septic contents by gentle sponging, and the repair of the viscus as rapidly as possible. In the case of the appendix where by prolonging my search I felt I was endangering the life of my patient I have terminated my efforts in this direction, merely placing a large drain at the site of the lesion, as has been so long recommended by Morris, Tate and others, and have returned my patient to bed at the earliest possible moment. In my hands the large, loose cigarette drain made of gauze covered by gutta percha tissue, frequently fenestrated, or in some cases the use of a large rubber or glass tube, has given me most satisfaction. Twenty minutes is a long time to keep one of these patients upon the table, and the more this can be shortened the better is our chance of a speedy recovery. Many of these patients were practically in extremis at the time of operation. In many of these cases I have administered an infusion of from 1,000 to 1,400 c.c. of normal saline solution, in which from 1 to 2 drachms of adrenalin solution has been added at the time of operation or immediately succeeding it. By this means alone I feel that a considerable proportion have been tided over the first twenty-four hours succeeding operation. Cultures taken from three of my patients showed pneumococcus bacilli. In over 50 per cent. the cultures were either streptococcus or streptococcus plus colon bacillus. In the remainder the colon bacillus was predominant.

After-Treatment.—Immediately upon being returned to bed the patients are placed in an exaggerated Fowler's position, that is, with the head of the bed very much raised upon high shock blocks. If the patient's condition is desperate intravenous infusion is administered, as stated above. The intravenous infusion has proved very much more effectual in my hands than any other method, is no more painful, is more rapidly and thoroughly efficient, and no more difficult to administer. As light a dressing as possible is applied, three or four layers of sterile gauze being all that is required. This dressing is kept moist with saline solution and changed as often as may be required, sometimes every three hours. An ice coil of large size is applied and kept going continuously. Ice bags do not answer our purpose. They are weighty, require frequent renewal, fail to keep an even temperature and are at times much too cold and at others ineffectual. Murphy's drip, a continuous rectal irrigation, is at once started. In some cases my patients have absorbed as much as 140 ounces of normal saline in twenty-four hours by this method. A minority of patients are unable to retain the fluid, but will absorb 4 ounces of saline to which may be added 1 ounce of whiskey every three hours. We often find that an enema of this size, given every three hours, will be completely taken up without effort, where a larger enema of 8 ounces, administered every four or five hours, will be rejected. My earlier cases were all treated by this bethod. Absolutely nothing is given by mouth. The lips and tongue are frequently moistened with water applied by a swab, but not one drop is allowed to be swallowed. This treatment is persevered with for a variable length of time, from forty-eight hours in the milder cases to thirteen days in one case reported. To prevent desiccation or in case of shock, a second or even a third intravenous infusion of 1,000 c.c. normal saline solution is administered. I have given three infusions within four days with no evil results. By this method, plus the Murphy irrigation or Fowler enemata, the craving for water is very greatly reduced. The tongue does not become dry nor the tissues desiccated. No opium or sedatives of any

*Read before the Academy of Medicine, October, 1911.

kind are administered as they tend to diminish excretion and prevent secretion. Strychnine and other heart stimulants are given as required strychnine, as a routine, 1-30 of a grain four times a day, increased as may be necessary. In very few cases have I found it necessary to resort to any of the more difusable heart stimulants, such as camphor and oil, ether, musk, etc. By this means of treatment, *i.e.* the ice coil and nothing by mouth, peristalsis is absolutely inhibited, and, as a result, pain is completely absent and distension rarely occurs. Only a very few of my patients have complained of the slightest discomfort outside a mild craving for water. Hunger is completely abolished.

A blood count is made upon the second day as well as before operation. It is known that a high leucocyte count is a very favorable prognostic sign. Each twenty-four hours my drains are started, pulled out from ½ to 1 inch and cut off. This, in conjunction with the moist, wet dressing, insures good capillary action and copious drainage. At the end of forty-eight hours, if my patient is doing well, I replace the large by short shock blocks, reduce the Murphy irrigation to twelve hours in twenty-four, or, in the case of Fowler's enemata, cut them out during the night and administer tentatively a medicine dropper full (containing 15 to 20 minims of water), alternating with peptonoids or panopeptone every fifteen minutes. This is done as much for the psychic effect upon the patient in making him think that he is getting something by mouth as for the effect of the fluid itself. This fluid is absorbed in the esophagus and the stomach and produces no peristalsis. In twenty-four hours more in the very favorable cases the ice coil is used each alternate four hours. The quantity of fluid given by mouth is doubled or trebled, the quantity used depending upon its failure to produce peristalsis. If our symptoms still remain favorable the fluids given the patient thereafter are rapidly increased in quantity until a normal amount is allowed. As soon as a normal quantity of fluid is given the Fowler's enemas are discontinued. The bowels in all cases are moved by enemata only up to the sixth day and in severe cases nothing is done beyond cleaning the rectum for the better administration of saline enemata. In one of my fatal cases the failure to follow out this procedure resulted in rapid toxemia and death on the seventh day, after my patient had made an uninterrupted convalescence for five days.

In those cases in which the appendix was not found or in which the hole in the intestine was not repaired a fecal fistula usually made its appearance from the third to the sixth day. This I have found to be a matter of no consequence. Ninety per cent. of these fistulæ close of their own accord under appropriate treatment without further operative interference, thorough irrigation with permanganate of potassium solution, with a high irrigator containing from 2 to 4 quarts, twice a day, the insertion merely of a soft rubber tube down to the bottom of the fistula, this tube being reduced in caliber and in length as the fistula closes, being quite sufficient as a means of cure in most of the cases.

It has been the common experience of most surgeons that our cases of peritonitis under almost any method of treatment go on fairly well for from forty-eight hours to three days, and then suddenly shoot a temperature of 106 to 107, get an increasingly rapid and finally imperceptible pulse, and finally die of extreme toxemia. Where, in spite of all precaution, my patients have suddenly started upon this course, I have found that an intravenous infusion would almost invariably bring the temperature down to somewhere near normal within from six to twelve hours with a corresponding improvement of pulse. In a few cases I have found it necessary to repeat this procedure on the fourth or fifth day. As will be seen from the case histories, in few of these cases has the post-operative temperature been very high at any time with the exception already mentioned, rarely going above 103. My endeavor in the treatment of this condition has been to absolutely limit peristalsis, with a consequent absence of pain, and to prevent not only the absorption of septic material, but to produce, according to Murphy, an exosmosis into the peritoneal cavity with a subsequent washing out of this septic material. The inhibition of pain and peristalsis by means of opium and other sedatives, while it unquestionably adds to the comfort of the patient, also produces inhibition of secretions and excretions and is to be avoided accordingly. The former bete noire to the use of prolonged cold upon the abdomen was the fear of a paralysis of our vasomotors with a consequent dilatation of our blood vessels. In the use of the ice coil I have never found this to be true, having used it continuously for as long as eight days and at intervals thereafter in the same patient for seven days more. The peritoneal cavity is never frozen, but an even cool temperature is maintained sufficient to prevent peristalsis and absorption.

Where it is necessary to deprive the patient of food by mouth for longer than four days in a well nourished individual, or longer than forty-eight hours in a fragile person, I have alternated nutrient enemata with my Fowler's enemata or rather have administered from two to four nutrient enemata each day. Where this is done it is essential that we wash out the rectum once a day fairly thoroughly. As I have already stated, cathartics by mouth are absolutely contraindicated in all cases during the first week and even longer unless we are perfectly positive that we have seen the end of our infection. In two or three cases where post-operative ileus has developed with great distension as a last resort I have administered through a stomach tube from 3 to 4 minims of oleum tighli suspended in 1 ounce of castor oil, this after washing the stomach clean. In one case this procedure was repeated three times within thirty-six hours, with an aggregate dose of oleum tighli of 8 minims. The result in each case has been a thorough evacuation of the bowels. I realize that in adopting this measure I have stultified myself, in that I have promoted extreme peristalsis with consequent considerable absorption of toxic material, but this measure has been resorted to only in those cases in which death was inevitable without some radical procedure, and after this measure has proved effectual I have immediately gone back to my routine treatment. I have omitted to mention that where the stomach became distended it has been my custom to wash it out as often as might be required. This can be done without starting up peristalsis.

In two of my cases I attribute the final favorable result to a spontaneous opening up of the intestine on the third to the sixth day following operation. This has led me to attempt an enterostomy or colostomy for the relief of desperate symptoms in some other cases, but so far I have been less successful in preventing a fatal issue than have others

who have reported similar cases. The most unfavorable class of cases with which I have had to deal have been those the result of septic infection following childbirth. This, of course, is in accord with the observation of others. A tube through Douglas' culdesac has offered the best means of drainage in these cases. As will be seen by reference to case histories, however, those of my cases treated by the ice coil without operation have resulted favorably. In a number of my later cases I have resorted to the use of mixed vaccines, and wherever possible to the use of autogenous vaccines, routine method being the administration of from 7½ to 15 c.c. of vaccine immediately following the operation, a second dose being used upon the second or third day, and thereafter doses at intervals of from two to four days, depending upon the extent and character of the reaction produced. Where satisfactory autogenous vaccines could be produced these have been utilized as soon as they were manufactured to the exclusion of the stock vaccines. My data is, as yet, altogether too limited to express an opinion pro or con as to the effect of this treatment upon the disease. In the thirty-nine cases I have had eleven deaths in this condition to date.

Case I.—This case was shown to the surgical section. S. S., man, aged 17 years. Duration of illness: 7 days. Physical examination: Rigidity and distension of entire abdomen. Symptoms of general peritonitis, with nausea, vomiting, constipation, extreme prostration. Temperature on admission, 105°, pulse 130, very thready, respirations 28. Blood examination: Leucocytes 28,000, polynuclears 94 per cent. Culture, streptococcus, and colon bacillus. Surgical findings: Gangrenous appendicitis, retrocecal appendix, general suppurative peritonitis. Operation: Patient was in such extreme shock that no effort was made to remove the appendix. Incision five inches in length in right rectus muscle. Profuse, greenish pus, very offensive, evacuated. Adhesive inflammation between coils of intestine forming pockets of pus throughout abdomen. Pus evacuated as far as possible; two large, fenestrated cigarette drains inserted. Condition of patient required infusion of 1,500 c.c. of normal saline to which two drams of adrenalin were added. Usual after-treatment applied, *i. e.*, ice soil, enemata of saline and whiskey, nothing by mouth, etc. Temperature for first five days following operation ranged from 101° to 106°, pulse from 110 to imperceptible. Second infusion on the evening of the third day, when temperature reached 106° and pulse became imperceptible. Twelve hours later, temperature 101°, pulse 120. Third infusion for same symptoms on the fifth day. Temperature for second five days ranged from 103° to 105°, pulse 120, respirations 28. On eighth day a fecal fistula became fully developed. This kept clean by high irrigation of 1:10000 permanganate of potassium solution three times daily. Rubber tube inserted to bottom of wound. At no time did patient complain of pain. Bowels moved cautiously by low enemata of rectal irrigation every other day. In this case absolutely nothing was given by mouth for thirteen days, thereafter small quantities of peptonoids, panopeptone and water, gradually increasing to peptonized milk and general fluids. Patient gradually improved. Was discharged with a small fecal fistula on the thirty-sixth day. The fistula closed of its own accord within two weeks.

Case II.—M. B., male, 38 years. Duration of illness: Three days. Physical examination: Pain, tenderness, rigidity, right abdomen. Condition on admission: Temperature 102.6°, pulse 120, full, bounding, respirations 30. Surgical findings: Gangrenous appendix, right-sided, diffuse, suppurative peritonitis extending from liver to pelvis. Operation: Excision, evacuation of pus, large, fenestrated cigarette dram. Blood culture, colon bacillus. First five days after operation, temperature 102°, pulse from 100 to 120. Usual after-treatment. Ten days after operation temperature, pulse and respiration normal. Uninterrupted recovery. Nothing by mouth for four days.

Case III.—M. H., woman, aged 28. Duration of illness: Two weeks. Sepsis after childbirth. Physical examination: Great distension, pain, involving abdomen nearly to umbilicus. Condition on admission: Temperature 103°, pulse 136, respirations 30. Blood examination: Leucocytes 7,200, polynuclears 74 per cent. I refused to operate on this case, but placed her on after-treatment already described, with the addition of vaginal douches, 116°, 1:10000 bichloride, every four hours, rectal irrigation each day and Fowler's enemata, as already described. I omitted to say patient was unable to keep anything on her stomach, and pain from the peritonitis was so intense that she had been kept under morphine before coming under my care for almost two weeks, with the usual effect upon secretions and excretions. Within six hours after beginning the ice coil and administering nothing by mouth pain completely disappeared and thereafter remained absent. Nutrient enemata were given alternately with Fowler's enemata in this case. Five days after temperature from 100° to 102°, pulse 100 to 120. Began the use of peptonoids and water in small quantities five days after admission, at this time removing the ice coil for twelve hours in each day. The effect of this was a slight rise of temperature and slight increase of pain. Fluids, beginning gradually, were now allowed. On the tenth day I endeavored to remove the ice coil, with a recurrence of temperature to 103°, return of pain. Both promptly disappeared within 24 hours upon the application of the coil. In this case the treatment, including ice coil, was continued for 21 days. The patient made a gradual, but uninterupted recovery. This case is practically identical with two other cases treated in the same way, except that the ice coil was used only for ten days in one case and two weeks in the other. I have omitted to mention that strychnine and whiskey were used liberally in all these cases as indicated.

Case IV.—F. M., man, aged 36. Duration of illness: Eight days. Physical examination: Pain, tenderness, distension and rigidity entire abdomen. Condition on admission: Temperature 104°, pulse 126, respirations 40. Surgical findings: General septic peritonitis, streptococcus and colon bacillus. Operation: Incision and drainage. This man was alcoholic and weighed more than 225 pounds. First five days after operation temperature ranging from 101° to 105°, pulse from 120 to imperceptible. Infused on the fourth day 1,200 c.c. normal saline solution, 2 drams of adrenalin. Temperature twelve hours after 101°, pulse 110, soft, good force. Patient died on the sixth day from general suppurative peritonitis, with a flaccid abdomen without pain and with a moist tongue, having had no pain since the time of the operation. This I attribute to the use of the ice coil and the inhibition of everything by mouth.

Case V.—M. S., girl, aged 14. Duration of illness: Six days, with complete remission of symptoms, subnormal temperature and rapid pulse on the fourth day and sudden onset on the fifth. Diagnosis ruptured appendix and diffuse peritonitis. Physical examination: Pain, rigidity, distension, including entire abdomen. Condition on admission: Temperature 101.0°, pulse 120, respirations 40. Nausea, vomiting, considerable cough, slight expectoration. Blood examination: Leucocytes 12,000, polynuclears 94 per cent. Blood culture showed pneumococcus infection. Surgical findings: Diffuse suppurative peritonitis, with thin, greenish pus, appendix congested, but not gangrenous. Operation: Excision, free drainage. Usual after-treatment. Infusion 800 c.c. normal saline with 1 dram of adrenalin on the second day, given for shock and imperceptible pulse. The temperature never exceeded 101° in this case. Patient died on the sixth day with a subnormal temperature, pulse of 100, with a flaccid abdomen and without pain. Physical examination of the lungs showed no evidence of consolidation, but numerous rales and harsh breathing.

Case VI.—M. S., woman, aged 18. Duration of illness: Four days. Physical examination: Pain, tenderness, rigidity, right lower abdomen. Condition on admission: Temperature 103.6°, pulse 140, respirations 30. Surgical findings: Gangrenous appendix, g. s. p. (general suppurative peritonitis). Blood culture streptococcus and colon bacillus. Operation: Excision, drainage. First five days after operation, temperature 102.2°, pulse 112. Ten days after operation, temperature 100.6°, pulse 94. Usual after-treatment. Discharged cured.

Case VII.—O. B., male, aged 40. Condition on admission: Temperature 101.2°, pulse 84, respirations 20. Blood examination: Leucocytes 8,400, polynuclears 80 per cent. Surgical findings: Gangrenous appendix, g. d. p. Operation: Excision and drainage. Five days after operation, temperature 101°, pulse 120, respirations 32. This man developed a slight surgical pneumonia. Ten days after operation, condition normal. Patient was treated in the usual manner.

Case VIII.—J. S., male, aged 16. Duration of illness: Two days. Physical examination: Pain, tenderness, rigidity. Condition on admission: Nausea, vomiting, prostration. Temperature 102.4°, pulse 120, respirations 24. Surgical findings: Gangrenous appendix, beginning g. d. p. Operation: Excision, drainage. Condition five days after operation, temperature 102.2°, pulse 128, respirations 26. Usual treatment. Discharged cured.

Case IX.—J. A., girl, aged 13. Duration of illness: Eighteen days. Physical examination: General rigidity and pain, vomiting, extremely septic. Condition on admission: Temperature 103.4°, pulse 102, respirations 28. Blood examination: Leucocytes 18,600, polynuclears 92 per cent. Blood culture colon bacillus and streptococcus. Operation: Owing to the condition of the patient, only wide incision, evacuation and drainage was attempted. A secondary operation was done on the fourth day to admit better drainage. Temperature 106.4°, pulse 120, respirations 28. Intravenous infusion of 800 c.c. normal salt solution with one dram adrenalin with usual effect on pulse and respiration. Blood examination now showed 9,600 leucocytes, polynuclears 88 per cent., showing a failure in resistance on the part of the patient to the infection. Patient died on the eighth day without pain, with a moist tongue and flaccid abdomen.

Case X.—P. V., male aged 24. Duration of illness: Three days. Physical examination: General abdominal pain, worse on the right side, with extreme rigidity. Condition on admission. Temperature 103°, pulse 96, respirations 24. Blood examination: Leucocytes 23,000, polynuclears 92 per cent. Surgical findings. Ruptured appendix, general peritoneal involvement, not much pus. Operation: Excision, drainage. First five days after operation, highest temperature 100°, pulse 72, respirations 24. Usual after-treatment. Discharged cured.

Case XI.—B. B., woman, aged 22. Physical examination: Abdominal tenderness and rigidity, right side, low. Condition on admission: Temperature 101.4°, pulse 80, respirations 20. Surgical findings. Ruptured appendix, abscess involving right abdomen liver to pelvis, walled off. Operation. Excision of appendix and right ovary. Usual after-treatment. Discharged cured.

Case XII.—T. S., male, aged 27. Duration of illness: Three weeks. Physical examination. Marked general tenderness, no rigidity. Condition on admission: Temperature 96.4°, pulse 72, respirations 18. Surgical findings: Ruptured, gangrenous appendix, g. s. p. Blood examination in this case showed 11,000 leucocytes, 71 per cent. of polynuclears. Operation: Excision and drainage. First five days after operation, temperature 101°, pulse 80, respirations 20. Usual after-treatment. Discharged cured. In this curious case I am inclined to think the patient would have gotten well by any rational method of treatment.

Case XIII.—J. M., male, aged 58. Duration of illness: Six days. Physical examination: Pain, tenderness, right-sided rigidity. Condition on admission: Temperature 101°, pulse 120. Blood examination. Leucocytes 27,200, polynuclears 82 per cent. Surgical findings: Appendicitis, g. d. p. Operation: Incision. Appendix not removed. Free drainage. Five days after operation, temperature 104.3°, pulse 180, respirations 36. Infusion 1,400 c.c. normal saline solution, with 2 drams of adrenalin, was administered, with the usual result in pulse, temperature and respiration. On the eleventh day temperature was 103°, pulse 128, respirations 32. Second infusion was administered with the usual result. In this case the ice coil was retained for two weeks. After-treatment as usual. Patient discharged cured.

Case XIV.—J. M., male, aged 38. Duration of illness: Emergency. Condition on admission: Shock. No blood count. Temperature 98.6°, pulse 100, respirations 20. Surgical findings: Blood culture showed streptococcus. Mixed vaccines were used in this case. Operation: Ruptured appendix, intestinal obstruction, general peritonitis. Little pus. Adhesions separated. Appendix removed. Five days after operation, temperature 102.2°, pulse 108, respirations 34. Ninth day, temperature 105°, pulse 128, respirations 24. Infusion of normal saline 1,000 c.c., 2 drams of adrenalin administered, with usual result in temperature and pulse. The partial intestinal obstruction was our chief foe in this dase. Oleum tigli was resorted to, as already described in my article, on the ninth day, with satisfactory result as to the bowels, but with the effect shown on temperature. Patient died on the thirteenth day with intestinal obstruction and very septic.

Case XV.—D. G., male, aged 23. Duration of illness: Four weeks. Physical examination: Rigid-

ity on the right side, general pain over the abdomen. Condition: Temperature 101°, pulse 84, respirations 26. Operation disclosed tubercular appendicitis and general tubercular involvement of the peritoneum, considerable free fluid. Appendix removed. Intestines and abdomen washed out with 50 per cent. peroxide of hydrogen, afterward flushed with saline solution. Patient sewed up without drain. Discharged on the twelfth day cured. This case really should not be included in my list.

Case XVI.—C. T., male, aged 18. Duration of illness: Repeated attacks extending over five months. Condition on admission: General abdominal pain, worse on the right side, tenderness, slight rigidity. Temperature on admission 103.4°, pulse 76, respirations 18. Blood examination: Leucocytes 16,000, 84 per cent. of polynuclears. Operation: Large retrocecal abscess extending to liver, right-sided, g. d. p. Operation: Excision and drainage. Five days after operation, temperature 103.2°, pulse 100, respirations 30. Autogenous vaccines used in this case. This patient was in the hospital sixty days. His temperature on the thirty-second day was 102 2/5°, pulse 108, respirations 24. He established a fecal fistula, which reopened twice. I am under the impression that the establishment of this fecal fistula added greatly to his chances of recovery.

Case XVII.—M. S., male, aged 16. Duration of illness: Two days. Condition on admission: Tenderness and rigidity, nausea, vomiting, extreme prostration, pain over entire abdomen and distension. Surgical findings: Temperature 104°, pulse 100, respirations 32. Blood examination: Leucocytes 12,000, 90 per cent. of polynuclears. Operation: Excision and drainage. First five days after operation, temperature 100 2/5°, pulse 80, respirations 28. Usual after-treatment. Discharged cured.

Case XVIII.—N. G., male, 51 years. Duration of illness: Eleven days. Condition on admission: Pain, tenderness, right-sided rigidity. Surgical findings: Temperature 99.6°, pulse 70, respirations 28. Blood examination: Leucocytes 30,000, polynuclears 86 per cent. Operation: Excision and drainage. Gangrenous appendix, g. s. p. Five days after operation, temperature 102.6°, pulse 140, respirations 32. Intravenous saline infusion, 1,400 c.c., 2 drams adrenalin. Usual after-treatment. Patient discharged cured.

Case XIX.—C. V., male, aged 36. Duration of illness: Four days. Condition on admission: Pain, tenderness, rigidity. Surgical findings: Temperature 101.8°, pulse 96, respirations 24. Blood examination: Leucocytes 22,000, polynuclears 94 per cent. Operation: Excision, drainage. Peritonitis with a little pus, adhesive inflammation, streptococcus infection. Patient progressed normally after usual after-treatment. Discharged cured.

Case XX.—J. T., male, aged 53. Duration of illness: Two or three weeks. Speaks no English. Difficult to get history. Condition on admission: Pain and tenderness, right side. Surgical findings: Temperature 101.2°, pulse 90, respiration 24. Blood examination: Leucocyte count normal. Operation: Excision, drainage. Beginning general peritonitis. First five days after operation, temperature 100°, pulse 92, respirations 20. This patient was reopened and drained on the thirteenth day. Temperature of 102.2°, pulse 120, respirations 24. Leucocytosis 18,000, polynuclears 70 per cent. Thereafter his convalescence was uneventful.

Case XXI.—A. C., male, aged 55. Duration of illness: Four weeks with remissions. Condition on admission: Pain, tenderness, rigidity, nausea, vomiting, constipation. Temperature 102.2°, pulse 88, respirations 30. Blood examination: Leucocytes 18,000, polynuclears 75 per cent. Operation: Ruptured appendix, g. s. p. First five days after operation, temperature 102°, pulse 108, respirations 28. Ice coil was applied for ten days in this case. Other treatment as usual. Patient discharged cured.

Case XXII.—F. C., woman, aged 23. Duration of illness: Twenty-four hours. Condition at time of operation: Extreme shock, abdominal tenderness and intense pain radiating from the umbilicus. Temperature 90.4°, pulse 140, respirations 36. No leucocyte count was made. (I have shown this case at the academy.) Operation showed a perforated gastric ulcer with general diffuse peritonitis, considerable amount of pus in gastric contents. Patient made an uninterrupted recovery, practically without temperature. Infusion of 1,400 c.c. of normal saline intravenously administered, with 2 drams of adrenalin, given on operating table. Ice coil applied for three days. Patient discharged cured.

PRACTICAL POINTS IN THE DIAGNOSIS AND TREATMENT OF DIPHTHERIA.*

BASED ON OBSERVATIONS OF FOUR HUNDRED CASES.

By ABRAHAM LEVINSON, M.D.,

CHICAGO, ILL.

RESIDENT PHYSICIAN, CHICAGO CONTAGIOUS DISEASE HOSPITAL.

Diphtheria is beyond doubt the best known among the infectious diseases, yet it is surprising how much uncertainty there exists in the diagnosis and treatment of this disease. Every physician knows the cardinal points in the diagnosis of diphtheria, yet cases of diphtheria are only too often diagnosed as tonsillitis, scarlet fever, pneumonia, and even typhoid. Every physician knows the fundamental factors in the treatment of the disease, yet many a case does not recover because of lack of antitoxin or failure to intubate. There seems to be a good deal of haziness on the practical points in the diagnosis and treatment of diphtheria, due to a great extent to the fact that the textbooks on the subject are not sufficiently clear on the matter. I shall here attempt to discuss some of the most important practical elements that enter into the diagnosis and treatment of diphtheria, basing my statements on 400 cases of the disease that came under my observation at the Chicago Contagious Disease Hospital. I shall refer to some of the cases as I go along. A detailed account of others will follow at the end.

Diagnosis: Not enough care is exercised by physicians in taking cultures from sore throats. The diagnosis of tonsillitis is so often made in the absence of membrane, that it justifies the statement made by a medical authority that 40 per cent. of diphtheria cases are diagnosed as tonsillitis generally because of neglect in taking a culture. A culture should be taken from every sore throat, no matter whether a membrane is present or not, because, after all, the finding of Klebs-Loeffler bacillus is the only positive diagnostic point of diphtheria. An expert bacteriologist can tell the presence of Klebs-Loeffler bacilli from a smear taken from the

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throat. The bacilli can be distinctly seen in many cases upon staining the smear with Loeffler's methylene blue (Fig. 1). This method of diag-

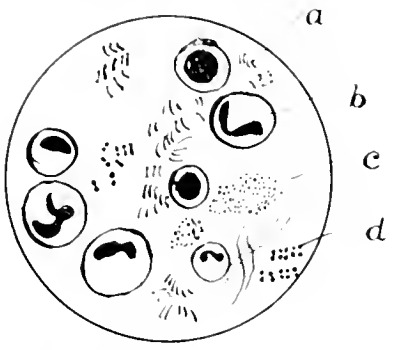

Fig. 1.—Smear from diphtheritic throat; *a*, Bacillus diphtheriæ; *b*, leucocytes; *c*, staphylococci; *d*, pneumococci.

nosis helps a good deal in the treatment, since antitoxin can be given immediately without waiting twelve hours for the incubation of the culture medium. Not all physicians are expert bacteriologists, however, and sometimes it is hard to differentiate *Bacillus diphtheriæ* from pneumococci, *Micrococcus catarrhalis*, or long bacilli found in the mouths of normal individuals. In general it may be said that no positive diagnosis should be made from a smear, and if the smear shows *Bacillus diphtheriæ* antitoxin should be given as a preventive measure anyway, but actual diagnosis should be withheld until the culture is examined. There are several important factors that should be considered in taking a culture from the throat: (1) The swab and the tongue depressors should be perfectly sterile. (2) The swab should be rubbed over the membrane, no matter where it is situated, in the nose, the tonsils, the fauces, or the uvula. If no membrane is present it is best to rub the swab over the tonsils, or between the tonsils and the anterior pillars; or if nasal diphtheria is suspected the swab should be carried backward to the nasopharynx. More than once have I seen physicians swab the inner surface of the cheek or the anterior surface of the tongue, and of course the result was a negative culture. (3) Precaution should be taken that no antiseptic or caustic has been applied to the tonsil at least an hour before the culture is taken. If such an application is made, whether it be iodine, silver nitrate, or listerine, it will cover up the bacilli and the result will be a negative culture, whereas in reality the patient has diphtheria, and toxin is disseminated all through the system as illustrated in Cases I and II. (4) The culture medium should be inspected before using, to see whether it is in good condition. If it is dry no growth will take place, and if its surface is rough or drawn over with a film (as happens when a growth of another bacterium has already taken place) the culture will be contaminated.

The culture requires at least eight hours of incubation, but wherever possible it is best to wait about twelve hours. If a regular laboratory incubator is not to be had, the vest pocket may be employed as such. Upon examining the culture the following day a good deal of information can be gathered from the appearance of the growth macroscopically. A diphtheria growth is usually 1 to 2 mm. thick, whitish in color, and evenly distributed, somewhat resembling the appearance of a diphtheritic membrane. A streptococcus growth, on the contrary, appears in the form of spots or dots unevenly distributed. Of course, no very positive diagnosis can be made on the appearance of the growth, but it helps in a good many cases. The appearance of the Klebs-Loeffler bacillus under the microscope is too well known to call for a detailed description. I shall, therefore, just note its most important characteristics. The Klebs-Loeffler is a curved bacillus about 3 mm. long, with strongly refractile material at either end, which stains more deeply than the rest. This material is known as the granule, and it is called so by laboratory men. There is nothing typical in the arrangement of the bacilli, but very rarely are they placed at obtuse angles to each other as the textbooks so commonly state. In a typical case of diphtheria it is usually easy to identify the Klebs-Loeffler, but in a non-typical case great difficulty is sometimes encountered in differentiating *Bacillus diphtheriæ* from other bacteria similar to it. Pseudo-diphtheria bacilli are sometimes mistaken for diphtheria bacilli, but the two can be distinguished from each other by the fact that the former is shorter and plumper and more uniform than the latter, and is free from granules. The Hay bacillus also has to be differentiated from the diphtheria bacillus quite often. In our hospital we had seventy-five culture media contaminated with Hay bacillus. The first few cultures were taken for diphtheria bacilli, but the size and manner of staining aroused suspicion, and upon closer examination they were all found to be Hay bacilli. Differentiation between the two becomes an easy matter, however, when one keeps in mind the fact that the Hay bacillus is much longer and thicker than the diphtheria bacillus, and that it contains spores which are quadrilateral in shape (Fig. 2). Sometimes it is difficult to differentiate

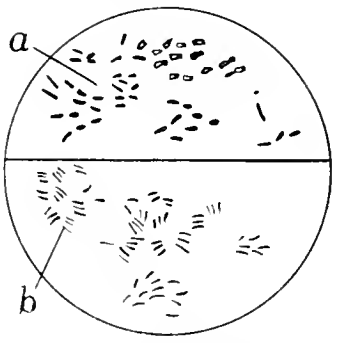

Fig. 2.—The Hay bacillus (*a*) an organism frequently confused with the diphtheria bacillus (*b*).

between the diphtheria bacillus and two pneumococci, the *Micrococcus catarrhalis*, or even streptococci (Fig. 3). It is therefore advisable to keep all these facts in mind when examining a culture.

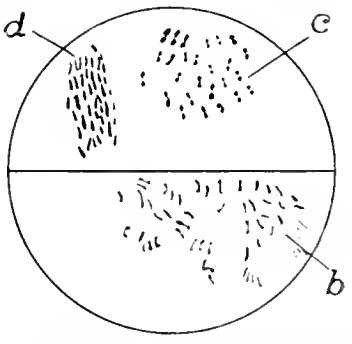

Fig. 3.—Pneumococci (*c*) and streptococci (*d*) sometimes confused with the diphtheria bacillus (*b*).

In a large city all these difficulties can be avoided, as the culture can be sent directly to the laboratory of the health department. Yet it is a very good

plan for the physician to examine the culture himself and thus lessen the chances of a mistake that can so easily be made in a large laboratory. To insure certainty several cultures should be taken before a diagnosis is made. Even if the first two cultures give a negative result, a third should be made, for it very often happens that the last result is the very opposite of the first two, as shown in Cases I and II. At our hospital we discharge diphtheria patients after two successive negative results, but if they are patients that have never had a positive culture we test them for three negatives before we allow them to leave.

Besides the laboratory diagnosis of diphtheria there are several clinical points that hold good in most cases and that help in establishing the diagnosis of the disease. (1) Diphtheria smell: A diphtheria case gives a very characteristic odor like that of feces. When one once becomes accustomed to the odor, one can easily detect a diptheria case at a distance of 2 feet. It is really surprising that clinicians who have written on diphtheria have never made any mention of this diagnostic point. The odor is most pronounced in nasal cases and less so in tonsillar, but is present in all cases. A clinical diagnosis can be made in all cases from the odor. (2) Temperature: Any case of sore throat with a temperature higher than 101.5 can safely be put down as a case of tonsillitis. No case of diphtheria runs up a temperature above 101.5°. A very severe case, especially if it is a nasal one, shows hardly any rise in temperature, most nasal cases having but 99°. It frequently happens that the administration of antitoxin raises the temperature to about 102° or more, but this disappears in a few hours. On the average the temperature in diphtheria is as follows: tonsillar, 101°; pharyngeal, 101.5°; nasal and laryngeal, 99°. (3) Membrane: Though no positive diagnosis can be made on the presence of a membrane, it can be taken as one of the best clinical diagnostic points in diphtheria. When a membrane appears on the tonsils, uvula, or posterior nares, one can safely diagnose the case as one of diphtheria. The absence of a membrane does not exclude diphtheria but its presence speaks for it. As stated before, however, if caustics have been applied to the tonsils they present an appearance of a diphtheritic membrane (Case III). Care should also be exercised to see that the tonsils have not been removed two or three days previous to the examination. Many a case of posttonsillectomies has been mistaken for diphtheritic membrane. Cases sometimes show what looks very much like a pharyngeal or laryngeal membrane, but on close examination it proves to be an ulcer of some kind, tuberculous, cancerous, or syphilitic, as illustrated in Case IV. Mistakes of this nature can be avoided, however, by a careful history and examination. (4) Retraction of epigastrium: In children laryngeal diphtheria is a very common type of the disease. It is always wise, therefore, to observe the manner of breathing to see whether there is any retraction of the epigastric region. If retraction is present the case may safely be diagnosed as one of laryngeal diphtheria, and antitoxin should be administered immediately. Very often a laryngeal diphtheria is mistaken for pneumonia, and the patient dies as a result of failure to intubate. Case V illustrates this point. (5) Nasal discharge: All nasal discharges in children should be suspected as due to diphtheria. Many a case of nasal diphtheria has been taken for a "cold" till it was too late to do anything. It is therefore advisable to take a culture from every nasal discharge to be sure that it is not diphtheritic in character.

Treatment: The whole medical world, with the exception of a few cranks, recognizes antitoxin as the life-saving measure in diphtheria. The amount of antitoxin to be administered is a point on which medical authorities differ, however, and in fact there seems to be a great deal of uncertainty in the matter. For instance, a physician gives 5,000 units in a nasal or laryngeal case, and then he wonders why the patient does not recover. The reason is not far to seek—it is plain that the child did not receive enough antitoxin. Our work at the Contagious Disease Hospital has taught us several things that can almost be laid down as rules: (1) A prophylatic dose should not be less than 5,000 units. (2) Curative doses in tonsillar diphtheria should be not less than 10,000 units. (3) Curative doses in nasal or laryngeal cases should be not less than 25,000 units. This has been borne out by clinical experience and I am confident of the truth of this statement. Never be afraid of giving too much antitoxin. If the heart does not degenerate as a result of the diphtheria toxin the antitoxin will not do it any harm. We have cases on record that have received as high as 85,000 units and have recovered without any bad effects on the heart. Cases VI and VII will illustrate this point. It is well to wait about eight hours between each injection, but in cases where the antitoxin is needed badly six hours will do. As for the place of injection, that is pretty much a matter of personal opinion. My experience has taught me that the gluteal region is the best for injection, as in this region absorption takes place most rapidly and the pain is less severe than in the scapular region. Always rub the spot of injection with bichloride solution or with alcohol to prevent the formation of abscesses. The tips of the hypodermic needles should not be touched by the fingers for the same reason.

Drugs: Like every other infectious disease diphtheria produces some pathological changes in the mucous membrane of the stomach and the intestine, and the physician should see that the residue of undigested food is removed in some way or other. The best drug for the production of catharsis is calomel, especially in children who can stand as high as one grain of calomel in one dose. In adults the drug should be followed by one ounce magnesium sulphate the next day. In the later stages of the disease, when catharsis is indicated, castor oil is better than calomel because of its soothing effect on the bowels, particularly if a hemorrhage of the bowel seems to be threatening. Nearly all cases need stimulation in one form or another in the course of the disease. Whiskey in twenty-drop doses every four hours seems to have a very salutary effect on children two or three years old, and it can safely be administered throughout the course of the disease. It is hard to give a real explanation of the mode of action of this drug, but it seems to help in loosening the membrane, and it also has a stimulating effect on the nervous and circulatory systems. Later in the disease, or if the pulse gets weak, one should give strychnine sulphate in 1/200 to 1/100 grain doses to a child of three or four years of age, increasing the dose according to the age of the patient. It is not a good idea, however, to administer strychnine too

early in the course of the disease. Outside of calomel, whiskey, and strychnine there are no other drugs, to my knowledge, that influence diphtheria favorably.

The routine treatment of a case of diphtheria can then be summed up as follows:

Tonsillar:—(1) antitoxin, 5,000 to 10,000 units; (2) calomel, 1 grain in divided doses; (3) magnesium sulphate, 1 ounce for an adult; (4) whiskey, 20 drops to 1 dram, according to age; (5) strychnine sulphate, if the pulse is weak.

Nasal case:—(1) antitoxin, 25,000 units; (2) calomel, magnesium sulphate, whiskey; (3) nasal irrigation twice a day.

Laryngeal:—(1) antitoxin, 25,000 units; (2) calomel, magnesium sulphate, whiskey; (3) intubation when indicated.

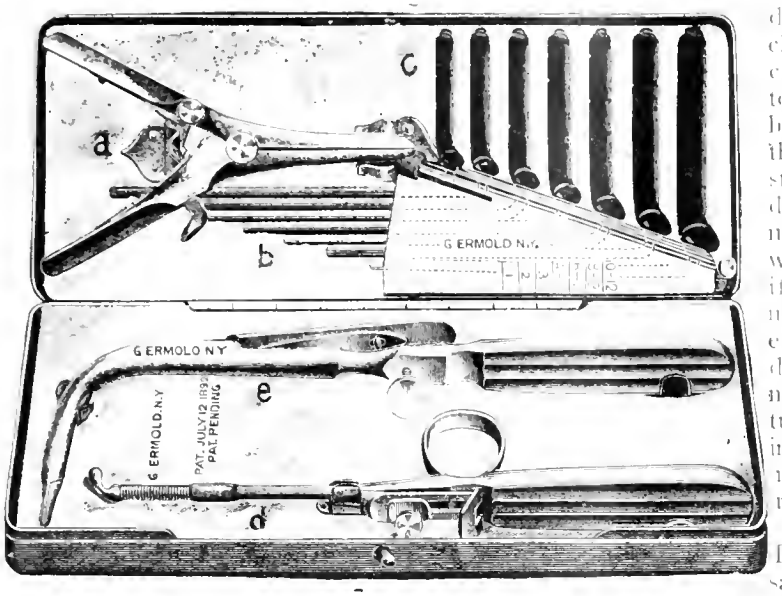

Fig. 4.—Ermold O'Dwyer intubation set; *a*, mouth-gag; *b*, obturators; *c*, hard rubber tubes; *d*, introducer; *e*, extubator.

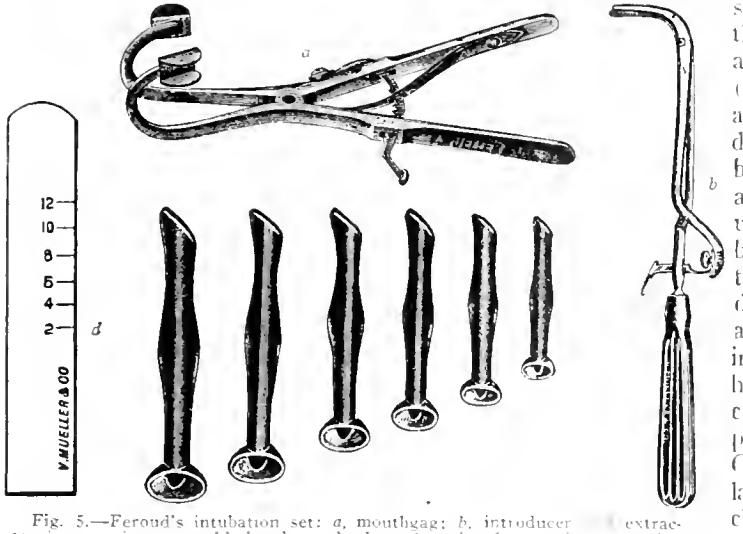

Fig. 5.—Feroud's intubation set: *a*, mouthgag; *b*, introducer and extractor in one piece; *c*, gold-plated metal tubes; *d*, scale of years for measuring the sizes of the tubes.

The laryngeal cases seem to be the bugbear of the general practitioner. Indeed these constitute the hardest type of diphtheria to treat. I shall, therefore, attempt to outline this type of the disease more fully. When the disease is seen early in its course and a slight croupy cough manifests itself, together with a marked hoarseness, 10,000 units of antitoxin should be administered immediately and the same dose should be repeated within eight hours. This will in most cases do away with the need of intubation. When seen later, when the child is gasping for breath and retraction of the epigastrium is evident, no time should be lost in applying hot poultices to the neck. Then the child should be intubated immediately. Intubation is indicated whenever the child does not get enough air to breathe as the result of obstruction of the larynx. This is evidenced by the retraction of the supraclavicular and epigastric region; the child brings all his accessory respiratory muscles into play, yet he cannot breathe well. Hospital attendants use the slang phrases, "he is going like a steam engine," or "he is sawing," to designate this condition in all its vividness. Intubation should be employed without delay in such a strait, no matter if it will be necessary to extubate immediately afterward. Intubation, if even for a minute, serves the purpose of dilating the larynx and loosening the membrane. Many a time did we intubate cases that had to be extubated immediately afterward, but upon removal of the tube the whole laryngeal membrane followed with it and the child got along very well after the operation. To fully convince oneself of the life-saving power of intubation, all one needs to do is to go into one of the wards of a diphtheria hospital and see the scores of patients that come in at the very point of death; in fact, some have even ceased to breathe, but the minute a tube is introduced into their larynx they begin to breathe very easily, and before long they recover completely. (See Cases VIII and IX.) As for the kind of instrument to be used, this is pretty much a matter of personal opinion. An expert intubator should be able to use the Feroud or the O'Dwyer set equally well. It is hard to say which is the better, as both have their advantages and disadvantages. The O'Dwyer tubes (Fig. 4) have the advantage of being light, as they are made of hard rubber, which does away with pressure on the vocal cords, but it has been found that this is not always a good thing as the child can cough the tube up too easily, especially when the disease becomes chronic (Case X). The Feroud tube (Fig. 5), on the other hand, can be depended upon to stay in place much longer, as it is wider in circumference and heavier in weight, but it has its drawbacks, as it has a tendency to produce pressure necrosis. A compromise between the two will probably give the best results. The O'Dwyer set can be used in all acute laryngeal cases and the Feroud in all chronic tube cases.

Technique of Intubation: The patient is placed on an ordinary table, in the recumbent position. A sheet is wrapped around him and pinned tight to prevent his struggling. The head is moved to the edge of the table where an assistant stands to keep it fixed. A mouth gag is then put into the mouth and held firm at the end to prevent slipping and biting of the operator's fingers. The index finger of the left hand is then introduced into the mouth

and pharynx till the tip of the epiglottis is reached. This can be ascertained either by the feel of a hard cartilage, the cricoid, or by the appearance of a cavity which is the esophagus, the epiglottis covering the larynx. The epiglottis should now be pulled up toward the operator so as to uncover the larynx. The introducer, held in the right hand between the thumb and ring finger, ready for use, is now introduced into the larynx, while the index finger pushes forward the spring of the O'Dwyer intubator or loosens the spring of the Feroud introducer which inserts the tube. The index finger of the left hand feels the tube in position and the introducer is then taken out. The mouth gag should be held in position until the thread of the tube is cut and pulled out. The mucus is then wiped out and the mouth gag is removed. The whole operation can be done in less than a minute by an expert operator, but that is no reason why the amateur should be discouraged if he fails to get the tube in the first time he attempts it. The only precaution to be taken, however, is to see that there is a thread in the tube and that the end of it is wrapped around the index finger. If this is done the tube can easily be pulled out immediately in case it is inserted into the esophagus by mistake. This applies to the expert intubator as well as to the novice. As soon as the physician is sure the tube is in place he should cut the string. It is unwise to leave the thread on, as in most cases it is found that the child has a tendency to chew the string and in doing so he often pulls out the tube and thus necessitates immediate reintubation. It is easy to ascertain whether the tube is in the larynx by the characteristic cough that is heard right after the tube finds its way into the larynx. The cough has a metallic ring and once it is heard it is easy of recognition. A further sign of corroboration that the tube is in the right place is the fact that the child cannot talk any louder than a whisper. Another manifestation of the same fact is the ease with which the child begins to breathe and the added color he takes on in a minute or two. An intubated patient should be watched closely all the time to see that he does not cough up the tube and that the tube does not become clogged up. If the tube does clog up the child should be extubated immediately. This is one of the reasons why it is unwise to treat an intubated case at home, and why it is best to have it taken to a hospital where it can receive the proper attention; where an expert intubator can be on hand in case of an emergency; where trained nurses are present to give the patient the required amount of care and feed him as he should be fed under the circumstances. Liquids only should be administered to all intubated cases, but even they are not taken well by the patient as they seem to bring on a fit of coughing. The best method of administering nourishment is the Casselberry, which insists that the patient's head be lower than his body while he drinks. Another point to bear in mind is the amount of stimulation an intubated case demands. Whiskey in 15 to 20-drop doses, every four hours, is probably the best drug to administer. In addition, the patient should be kept in a warm and, at the same time, well ventilated room, and if steam can be generated so much the better for him. All the time that the tube is in, antitoxin should be administered until an amount at least 25,000 units has been administered. Just how long the tube should be allowed to stay in the larynx is a point of great controversy. Still it can be said that the tube should be allowed to remain for about three or four days, and if the patient does not cough it up during that time he should be extubated. Extubation is indicated in all cases where the tube clogs up so that the child does not get enough air. In such a case extubation should be followed by reintubation. Atmospheric conditions also play a rôle in extubation. It is found that cases extubated on dismal days need reintubation.

Technique of Extubation: The patient is put on the table, wrapped in a sheet which is pinned tightly around him. The mouth gag is put into the mouth the same as for intubation. The operator, who stands on the right of the patient, introduces the index finger of his left hand into the mouth of the patient and pulls the epiglottis backward. The extubator, which is held in the right hand, is then introduced into the opening of the tube, and the handle is pressed upon, which causes the tips of the extubator to be pulled apart. The extubator is then lifted upward and at the same time drawn backward until it comes out together with the tube. To facilitate the introduction of the extubator, it is a good idea to use the index finger of the left hand to steady the tube in the larynx. Precaution should be taken, however, not to put the hand over the tube, as this will shut off the entrance of air into the larynx and the patient may be asphyxiated. The tube of a patient that has been extubated should not be discarded, but should be at hand with the string attached and obturator ready for use at any instant for a reintubation, if such should be necessary. Lejars, in his "Urgent Surgery," describes the Bayeux method of extracting the tube from the larynx. "The nurse charged with the enucleation is seated opposite the child, whose head she holds with one hand, in such a manner that the fingers are on the occiput and the thumb is in front of the forehead. The other hand encircles the patient's neck, the ball of the thumb being applied to the lower border of the cricoid cartilage, behind which the lower end of the tube lies. The operator draws the child's trunk toward himself so that it makes approximately an angle of 45 degrees with the horizontal plane; the head being fixed, it is naturally strongly extended by this movement. The nurse then, with the thumb, which is applied to the trachea, makes moderate but persistent pressure on it until the intralaryngeal tube is felt to slip away; the hand applied to the child's head immediately depresses it, so that the face is directed toward the floor. At the same moment the child is told to spit, and almost invariably the tube is expelled from the mouth." We have several times attempted this method of extubation, but only once have we been successful. It seems to me that an expert can do an extubation with the regular instruments in less time and with less trouble than is entailed in the above method. Still the plan Lejar describes is well worth trying in cases where the extubator does not work well for some reason or other.

Tracheotomy: Although the operation of tracheotomy is very much favored in Europe, it is falling into disfavor in this country and is being used less and less each year. There are several reasons for this: first, there is great loss of blood as a result of the operation, and second, the patient must bear the scar that is left for the rest of his life. The principal argument against the performance of a tracheotomy is the fatality that so frequently follows. Very few tracheotomy patients live through

the operation, and the few that do survive it live hardly more than several days after the effect. Tracheotomy should, therefore, be resorted to only after all other means of supplying air to the patient have been exhausted. I should consider the following conditions indications for a tracheotomy: (1) When the whole pharynx is blocked up by a membrane and no air can come through and enter the larynx. In such a strait intubation is of little use as the obstruction is not in the larynx, but above it. (2) When the membrane in the larynx is so thick that it clogs up the tube immediately and causes it to be coughed up as soon as it is introduced.

Preparation for the Operation: First of all the tracheotomy instruments are to be examined to see if they are perfectly sterile as for any other operation. They are also to be ready for use at any moment in all hospitals where diphtheria cases are treated, for the operation is nearly always one of emergency, and no time is therefore to be lost in boiling the instruments. The instruments needed for the operation are: (1) scalpel, (2) artery forceps, (3) two blunt hooks, and (4) a tracheotomy tube with tape attached to end. No needles or catgut are necessary as the wound heals much better when it is not sewed up. Nor is a general anesthetic needed for a tracheotomy. A 4 per cent. cocaine solution applied around the place of incision will do. In fact, I have frequently done a tracheotomy without the use of any anesthetic.

Technique: The patient, wrapped in a sheet, is put on a plain table and his head is brought to its edge where it is steadied by an assistant. It is well to put a roll of sand bag under the patient's neck so as to extend the head to the greatest degree. This helps to make the trachea tense and to steady it. The surgeon, who stands at the right of the patient, feels the tracheal rings and ascertains the position of the thyroid body and the cricoid cartilage. A vertical incision is made in the median line from the upper border of the cricoid cartilage to three-quarters of an inch beneath it. The skin, the subcutaneous fascia, and the anterior layer of the cervical fascia are separated at the first cut. The sternohyoid and the sternothyroid muscles are next separated by forceps or the blunt side of the scalpel. A blunt hook is put on each side of the wound and one above it to keep the isthmus of the thyroid body downward. The fascia covering the trachea is then cut, exposing the tracheal rings. Now the surgeon, holding the trachea with the fingers of his left hand, stabs two tracheal rings with the scalpel, which he holds in his right hand. A rush of air into the wound and an expulsion of mucus indicate that the trachea has been cut. The wound is now dilated by a pair of forceps and the tracheal tube is slipped in and pushed downward. The tape at the side is now brought around the neck and tied so that it holds the tube in position. No sutures are necessary for the coaptation of the wound. The wound heals better when left to itself, for the introduction of the suture very often causes suppuration.

All tracheotomy cases should be watched carefully: the inner tube should be cleaned every morning, and the outer tube should be taken out and cleaned at least once a week. The wound should be kept aseptic as any other surgical wound. The room in which the patient lies should be kept perfectly free from dust to prevent the getting of aspiration pneumonia. The tube should be allowed to remain in its place for two or three weeks until the cause that necessitated its insertion is removed. At the end of that time the tube may be removed, but if the child cannot breathe as well as he should, he should be reintubated. The sooner the tube is taken out the better, however, for the patient, for it has been found that the larynx undergoes atrophy when not in use (see Case X).

Treatment of Complications: Diphtheria has many complications. It is surprising to note how many cases recover from the original disease, but die from some consequent complication. The most unpardonable thing about such cases, however, is the fact that they could easily be prevented if they were watched carefully enough and if the complications were looked out for. I shall limit myself to a discussion of the prophylaxis and treatment of these complications, leaving their pathology out of consideration.

Acute dilatation of the heart: A goodly number of cases of postdiphtheritic myocarditis can be prevented if the patient is kept in bed at least two weeks after the temperature returns to normal. It is necessary to remember that the diphtheria toxin produces a degeneration of the heart muscle, and that it takes a long time for the heart to return to its normal condition, and consequently any strain put on it will produce an acute dilatation of the heart. Case XI illustrates this very well. When acute dilatation of the heart occurs the patient should be put to bed immediately and digitalis in some form or other should be administered. If this treatment does not cause the heart to return to its normal condition the physician may start the use of strychnine.

Bronchopneumonia: Bronchopneumonia is another complication that can be prevented in a great majority of cases. The air of the room should be kept warm, but at the same time it should be well ventilated. If the room is also kept perfectly free from dust there is small risk of bronchopneumonia. If, however, the complication has taken hold, strychnine in doses of 1/200 of a grain every four hours should be administered to a child two to three years of age. If the child is not intubated syrup of ipecac in 10-minim doses can be given with beneficial results. If the child is intubated, the action of the ipecac may possibly make it cough out the tube.

Glands: In the winter many diphtheria patients develop suppurating glands. I know of no method of prevention, but when such a condition develops the glands should be lanced to prevent a general septicemia by absorption of the organisms in the blood. (See Case XII.) Discharge from the Ear: The ears of all diphtheria patients should be kept perfectly clean, otherwise a discharge, either diphtheritic or a mixed infection, is likely to develop. In such a case the ear should be cleaned with boric solution and carbolglycerine should be applied. If treated in this manner early in the stages of the infection, the discharge will clear up. Postdiphtheritic Paralysis: If sufficient antitoxin is given early in the disease no paralysis will develop. When not given early enough paralysis of the recurrent laryngeal or even of the pneumogastric nerve is very likely to develop. We tried electricity and massage in a case of paralysis, but nothing seems to be able to cure the case once paralysis has set in. The better plan is to prevent the onset by giving sufficient antitoxin at the proper time.

Following is a report of twelve cases:

Case I.—Miss M. R. Was taken with sore throat and pains in the limbs. Temperature 101°. Called in a physician, who painted the tonsils with silver nitrate. Two hours later the patient came to the hospital and a culture was taken from her throat. Upon examination the following day the culture was found to be a negative one. The same result followed the next examination the day after. On the third day, however, the culture was found to be pure diphtheria growth. The only reason the resident physician could give for the phenomena was that the application of the silver nitrate had given the negative culture. In fact it was soon discovered that such an application gives negative results when used on patients in whom the diagnosis of diphtheria has been established beyond doubt.

Case II.—Miss H. N. came into the hospital complaining of slight headache and sore throat. Culture was found negative the first day and also the second. On the third the culture was positive and it remained so for the next three months. The explanation for the first two negative cultures was given by the patient herself. She had been using a gargle of listerine recommended by her family physician.

Case III.—W. M., age 22, came into the hospital on October 13 with the following symptoms: headache, backache, chill, fever (101°), vomiting, and diarrhea. A membrane was seen over the whole pharynx. Patient gave a history of heavy drinking. A culture was taken and found to be highly positive. Thirty thousand units of antitoxin were injected and the temperature gradually subsided. The patient was dismissed from the hospital on October 24, after two negative cultures. On October 27 the patient was sent back to the hospital from one of the large hospitals in the city. His case was diagnosed as diphtheria on the appearance of a membrane. The right tonsil also looked as if it were covered with a membrane. We questioned the patient and he told us that a doctor had applied 50 per cent. carbolic acid to his tonsil, which revealed the secret of the membrane. We then took a culture from the patient's throat with negative results. We continued taking cultures for six successive days and each time the result was a negative one. The patient was discharged as nondiphtheritic.

Case IV.—J. F., age 37. Previous history. Drank heavily. Had been tramping around the country for the last eighteen years. Patient gave a history of gonorrhea six years ago and chancre four years ago. Had diphtheria three years previous for which he was treated at our hospital. Symptoms: Felt pain upon swallowing. Pain radiated upward and downward. Complained of backache but no fever. His physician diagnosed the case as diphtheria. Upon examination the tonsils were found to be atrophied; the pharynx showed nothing abnormal. We made a laryngoscopic examination and found a large ulcer in the mucous membrane of the larynx, which we diagnosed by its appearance as syphilitic. Cultures taken from the throat were negative. The patient remained in the hospital for seven days and was given some antitoxin, but showed no improvement. He was then sent home on the basis of negative cultures.

Case V.—S. F., 3 years old. Was taken sick on October 2 with fever. Rapid breathing. Physician diagnosed case as pneumonia and assured parents that there was no danger. On October 3 there was great retraction of the epigastrium, which aroused the physician's suspicion that the case might be one of diphtheria. The ambulance was called and patient was hurried to hospital, but he died on the way because of lack of intubation. This is only one of many laryngeal diphtheritic cases that have been mistaken for pneumonia.

Case VI.—A. R., 42 years of age. Was brought into hospital on a stretcher. Pharynx blocked up by mebrane. Adenitis. Temperature 101°. Pulse 68. Respiration 28. A systolic murmur was heard at the apex, second pulmonic accentuated. Culture strongly positive. Antitoxin administered in 10,000-unit doses, until 85,000 units reached. Temperature dropped. Adenitis subsided and patient gradually recovered. Was kept in bed for three weeks because of her heart trouble. Discharged in very good condition.

Case VII.—H. N. Entered hospital August 28 with a severe adenitis resembling Vincent's angina and a pharyngeal membrane. Case was diagnosed by one attending physician as Vincent's angina, but the microscope did not reveal the vibrio, while it did show the Klebs-Loeffler bacilli. Steam inhalations were given in addition to big doses of antitoxin, until the maximum of 90,000 units was reached. Patient recovered without any bad effects on the heart. Was released September 20.

Case VIII.—N. W., 3 years old. When carried into hospital he looked as if he were dead. Still we decided to give him the benefit of the doubt and we intubated him. As soon as tube was introduced into larynx patient started to breathe and color mounted into his cheeks. After a three weeks' stay the patient was dismissed.

Case IX.—O. O., male 3 years old. Entered hospital July 21, 1911, with laryngeal diphtheria. Was intubated the night after admission and was extubated August 1, but had to be reintubated. Coughed up tube August 5 and got along without it for three days, when suddenly it was noticed that he began to breathe very heavily, and when physician reached his bedside he was cyanotic and had stopped breathing. A tube was put into his larynx with great difficulty on account of the collpase of the larynx. As soon as tube was in position, however, the child started to breathe and in a minute or two he was breathing easily. Since then he several times coughed up the tube and "went on the bad," as the nurses termed it, but as soon as the tube was introduced he recovered immediately. On November 7 after a trial of two weeks without the tube we discharged patient. This is but one of many cases where intubation was a life-saving measure.

Case X.—W. K. Male 10 months old. Entered hospital June 28, 1911, with laryngeal diphtheria. Pharynx was blocked up by membrane, but intubation did not relieve the retraction very much. A tracheotomy was performed. Child got along very well for two weeks. We removed the tracheal tube and introduced a plain tube into the larynx. The child coughed up the tube and had to be reintubated immediately. Had to be reintubated six times that day. We finally decided to try a metal tube, which we did, with good results. On October 19, when we extubated patient, we found that the larynx had atrophied. On November 1 bronchopneumonia set in and the child died from the effects of it on November 3.

Case XI.—J. B. Male 35 years of age. Entered hospital June 28, 1911, with a severe case of pharyngeal diphtheria. Examination of heart and lungs was negative. After an injection of 30,000 units of antitoxin the temperature went down and throat cleared up. On September 11 patient got out of bed and was suddenly seized with severe pain in the precordial region. His heart was percussed and found to be enormously dilated. He was put to bed and an infusion of digitalis was administered. Patient was not allowed out of bed until November 9, when he was discharged feeling fairly well and strong.

Case XII.—T. F., 3 years old. Male. Entered hospital October 1, 1911. Sick three days. Had no antitoxin. Diagnosis: laryngeal diphtheria. Was intubated immediately upon arrival. Received a dose of 10,000 units antitoxin, dose repeated in twenty-four hours. On October 3 an enlarged gland was noticed on the right side of the neck. Temperature rose from 100° to 103°. Gland was not opened, and in twenty-four hours the temperature was 104°. An application of tepid packs every six hours did no good. Infection of the index finger of right hand set in and went on until it developed into osteomyolitis. The finger was opened on October 5 and drained. On October 6 the entire hand was infected and suppurative foci developed all over the body. The patient gave forth a very septic odor and died October 21 from general septicemia.

RETROBULBAR OPTIC NEURITIS.

By SAMUEL HORTON BROWN, M.D.,

PHILADELPHIA.

Among the several vague conditions that ophthalmologists are called upon to diagnose and treat, none seems to offer any greater interest than retrobulbar optic neuritis. It is of special importance because it enables the opthalmologist to demonstrate that his branch of medicine is not merely a spectacle-prescribing trade, but is supplementary to general medicine. In the common form of the affection (chronic retrobulbar neuritis) the specialist is enabled to show to the patient and his physician that the several foreign substances that his economy is taking up are having deleterious effects upon the individual long before the physician is able to detect these effects by changes in other structures.

The condition is of great importance from another standpoint. The transportation companies throughout the civilized world give considerable attention to the examination of the eyes of their employees engaged in active service, with a view of determining the onset of those defects that interfere with vision and color perception. The most insidious of the conditions causing such defects is retrobulbar optic neuritis, and none shows earlier interference with color perception. Further, no class of employees is more frequently exposed to the causes that produce the affection than this class. It is unfortunate, but none the less true, that by the time an engineer of a train, for instance, becomes so highly proficient in his calling as to be of great value to his road, he has reached the age when his system is no longer able to dispose of the several poisons he is likely to encounter.

It is with great difficulty that the railroad men and their unions can be made to accept this fact, but this is not surprising when we consider how difficult it is for the medical profession at large to understand that it is the age of the patient plus the several poisons that produce the condition. Almost any one can be made to appreciate that a man 38 or 40 or 45, all other things being equal, is not so good a boxer, baseball player or football player as a man in the early twenties. The cause is largely the same. The various structures concerned in elimination are not so good as they once were. Fatigue may occur in varying grades, absolute exhaustion is not always necessary to demonstrate it.

While it is the province of the ophthalmologist to detect the condition, it does not imply that the acquiring of the technique of the ophthalmoscope will serve to enable the attendant to diagnose it. Many physicians have acquired a valuable working knowledge of that instrument, but would find it useless in this condition as the diagnosis is positively made by means of the perimeter, the correlation of the several ocular symptoms, and the exclusion of other conditions. Many of these cases are regarded as refraction cases. The fundus is examined and found negative. The patient fails to procure benefit or relief of the exasperating blind spot, and the attending physician puts it down to that overworked condition known as "mental astigmatism," and with a kind word or two dismisses the patient. The lesson to be derived from someone's else experience of this kind is that no case should be considered of so trivial a character as to deny it a complete investigation. It is very difficult to assume with accuracy negative conditions, and considerable embarrassment frequently results from so doing.

This is more especially true if the patient has been sent to the physician or ophthalmologist, as the case may be, since in such instances the frank symptoms have already been observed and recorded. Such cases call for detailed examination and only such physicians as have an elaborate and comprehensive examination technique at their finger tips can express an opinion of any value. This seems perfectly obvious, yet the medical departments of the larger railway companies of America restrict themselves to a most miserable equipment in this regard. The examiners engaged in this routine work, as a rule, are poorly paid and those that are attracted to the work consequently have but a meager knowledge of this phase of the examination, and are forced to content themselves with detecting gross defects. A clear knowledge of the condition is therefore of great value.

Orbital optic neuritis or retrobulbar neuritis is also known as central amblyopia, which as its name implies is central blindness. Hence any person complaining of a fixed black spot in the visual field is a subject for suspicion. The condition presents itself in an acute and a chronic form.

The acute is the less common of the two and is rapid in its progress, seldom requiring more than a week to complete its course. The black spot in the visual field appears suddenly and rapidly enlarges until the visual field is entirely or partially obliterated. This means complete or partial blindness, which may be temporary or permanent, depending upon a host of circumstances. Even a skilled ophthalmoscopist will, in most instances, be unable to detect for several days any abnormalities in the eyegrounds. As the blind spot increases the margins of the optic disk will be seen to be blurred and the surface will be hyperemic. The retinal arteries will appear contracted while the veins will be distended. The macula may show some changes, but nothing characteristic. The diagnosis will be made upon the

visual field and the subjective symptoms, which latter consist, in addition to the blind spot and increasing blindness, of tenderness of the globe on pressure and pain.

The pathology of the affection is a matter of speculation. It is assumed that the condition is an interstitial neuritis within the optic canal which restrains itself from extending either back into the optic tract or forward into the globe of the eye, and involves almost exclusively the papillomacular bundle of fibers, but may extend peripherally and affect the entire nerve. As in all inflammation of nerves, degeneration of the affected fibers is a most likely sequel. The ganglion cells of the macula share the degeneration. This affection appears to be almost selective in character if this view of the pathology is to be accepted. As there is no mortality connected with the disease, and it is consequently not amenable to post-mortem observation, there is at hand no scientific means of disproving this theory of the affection.

The causes of acute retrobulbar neuritis are toxic conditions in which the particular poison is present in the circulation in an overwhelmingly large amount. The system at large has had little chance to adapt itself to its influence and the results of its presence are correspondingly sudden and abrupt. The acute infectious fevers, especially influenza, are common causes of the condition. Inflammation of the several sinuses adjacent to the orbit is attended by the condition, and it is a question whether the affection in such instances depends upon contiguity of structure or upon the attendant toxemia from the pus and the diseased bone.

The affection has been observed in the course of acute menstrual disturbances, but just how this relationship is brought about is a matter of considerable speculation. Prolonged eyestrain produces exhaustion of the nerves of the eye and this will produce at times symptoms identical with acute retrobulbar neuritis. Certain nervous disturbances such as insular sclerosis and myelitis are at times likewise attended with this condition, and again, there is a certain proportion of cases in which no cause can be assigned.

Fortunately the condition is uncommon. Unfortunately it is likely to be confused with a definite acute optic neuritis, which is nearly always followed by optic atrophy and total blindness. The prognosis in acute retrobulbar neuritis will depend upon whether the affection tends to run towards this atrophic condition. Many cases are followed by only partial blindness, but total loss of vision is always to be feared.

Chronic retrobulbar neuritis is the variety of the affection that is often described under the names "tobacco-alcohol amblyopia" and "toxic amblyopia." This form of the disease usually makes its appearance about the age of forty or later, and its most prominent symptoms consist of marked reduction in vision which cannot be improved by the use of glasses. Central vision especially is affected, and although the peripheral vision may be almost normal, acute vision is deficient. The ophthalmoscope offers but little aid in arriving at a diagnosis. The temporal side of the disk may show some pallor, but there is nothing especially distinctive.

The use of the perimeter will render the diagnosis comparatively easy. The field of vision may be normal in extent, but central blind spots symmetrical in distribution and oval in shape, especially for red and green, will be the prominent features of the fields. The alteration of the fields is also attended with deficiency of the color sense. This disturbance of the color sense with its attendant relative scotomata render the disease important from a commercial standpoint. Skilled employees approaching middle life frequently make blunders that can be accounted for in no ordinary way, which might have been prevented by examination of their eyes by an ophthalmologist at the beginning of their presbyopia instead of by the "eyes examined free" and "no drops" kind of optician. Floating spots, clouds before the eyes and similar subjective phenomena in persons over forty should not be hastily dismissed with the explanation that they are due to disordered liver or eyestrain, but demand careful investigation.

The cause of this affection is to be found in the continued absorption of some toxic substance or substances, which should have been eliminated, but are retained on account of the diminished functional activity of the excretory organs incident to age. In practice it is found that alcohol and tobacco, either or both, usually both, used continuously in large quantities over a long period are the most common causes. Almost any other poison under the same conditions and circumstances will give rise to it. Quinine, lead, iodoform, chloral, bisulphide of carbon, etc., may be mentioned as examples. The toxins of the infectious fevers and constitutional disorders may produce the condition. As already mentioned, both eyes are usually involved. Bartenders, firemen, engineers and commercial travelers are especially liable to the condition.

As in the acute form the pathological change is believed to be an interstitial neuritis showing a special predilection for the fibers that go to the macula, the so-called papillomacular bundle. As with nerve inflammation elsewhere it is likely to follow a most prolonged course and the function of the nerve, at best, returns but very slowly.

Many of the cases present themselves in the course of chronic alcoholism and the symptoms urge the family and attending physician to greater vigilance. It seems scarcely worth while in the face of such an obvious course to pursue, to insist upon total abstinence from all forms of alcohol and tobacco. Oftentimes the discipline of a sanitarium is necessary to enforce this part of the treatment. Without such abstinence there is little hope of arresting the progress of the disease. The feeding should be given close attention and elimination of waste products should be encouraged. The iodides should be administered for their absorbent effect. Strychnine is especially useful and should be given to the limit of tolerance. In the early stages these simple measures persisted in will be followed by most gratifying results within six months or a year. When the blind spots are large and positive and the duration very long, the outlook is proportionately less encouraging. Dark glasses should be worn to protect the eyes, as the light may be very annoying.

The importance of the affection lies in its very insidious onset and absence of ophthalmoscopic signs. Hence in all persons over thirty-five in whom correction of ametropia has failed to relieve symptoms, the field of vision should be measured. A careful examiner will examine the fields in all cases, giving a history of failing vision and "spots" before the eyes. The extra work involved will be advantageous in that it may spare the attendant the possible embarrassment of having another surgeon detect the condition.

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PSYCHOGENOUS AFFECTIONS IN SUBJECTS OF SOUND STOCK.

NEUROLOGISTS are especially interested in the study of exhaustion syndromes and affect syndromes in individuals entirely free from neuropathy. The tendency of the psychoneuroses to occur in so-called nervous degenerates is so pronounced that it seems difficult or impossible to conceive of their attacking the sound save under some most fortuitous combination of circumstances. Subjects thus afflicted are believed to undergo spontaneous recovery after rest and banishment of the causal factors; moreover, it is thought to be easy for them to avoid exposure to future attacks.

As a matter of fact, however, we often see epilepsy, hysteria, and traumatic psychoneuroses develop in the sound, but so far as we know no one has as yet devoted his full attention to the study of these affections in the healthy. One very satisfactory reason for this defect is bound up with the fact that patients of this type are seldom found in public institutions. Furthermore, it is rare to find full accounts of the traumatic psychoneuroses which follow some great catastrophe.

For this reason Stierlin's article in the *Deutsche medizinische Wochenschrift*, November 2, 1911, on the nervous and psychical disturbances actually known to have followed certain catastrophes, becomes of unusual interest. Survivors of six great recent events of this sort have been extensively studied. Italian medical men had abundant material after the Messini earthquake, and in like manner the survivors were studied on the spot at Valparaiso. The mining horrors at Courrières, France, and Radbod, Germany, destroyed nearly 1500 lives, and the after effects on the survivors received due and prompt consideration. The author has had personal experience with those who escaped death at the Müllheim railway accident and the fall of the partially constructed bridge at Brail.

It appears to be shown beyond all doubt that catastrophes produce upon quite sound individuals reactions otherwise encountered only in psychopaths. The author lays stress on this fact as possessing much significance. Beyond this statement he does not go, as it was hardly practicable to segregate those without predisposition. The inference is that the type of disorder did not differ radically in the normal and neuropathic subject. The entire article is highly instructive and the author's brief conclusions hardly do it justice. These are as follows: (1) Acute fright psychoses lasting several days were common, and these partook of the character of epileptic and hysterical twilight states; chronic forms of the same nature resembling exhaustion psychoses and Korsakoff's psychosis. (2) An acute vasomotor syndrome, stated by the author to be new among traumatic neuroses, made up of sleep disorders, a peculiar pulse (rapid and labile), and increased patellar reflexes, was studied; more infrequently were noted the ordinary phenomena of vasomotor disturbance (hot flushing, cold extremities, headache, vertigo, profuse sweats, dermographism). 3. Neuroses proper of more gradual development, hysteria and neurasthenia and some of the phenomena classed usually under psychasthenia were common. One writer is quoted as believing that periodic depression and cyclothymia are more prone to develop in the sound that are the acute phobias.

EUTHANASIA AGAIN.

MAETERLINCK, in his new book "Death," declares that all our knowledge but helps us to die in greater pain than the animal that knows nothing. As science progresses it but makes for a prolongation of the agony of death—the most dreadful and the sharpest peak of human pain and horror, at least for the witnesses. "All the doctors consider it their first duty to protract as long as possible even the most excruciating convulsions. Who has not, at a bedside, twenty times wished to throw himself at their feet and implore them to show mercy." The prejudice against the arbitrary induction of a painless and premature death will one day, believes the Belgian Shakespeare, be regarded as barbarian, as a "relic of the times when humanity was convinced that any known torture was preferable to those awaiting us in the unknown"; and he predicts that a day will come when science will no longer hesitate to shorten our misfortunes, "When life, grown wiser, will depart silently to its hour, knowing that it has reached its term, even as it withdraws every evening while we sleep, knowing that its day's task is done."

One hesitates to reopen this question whether physicians should purposely hasten the deaths of sufferers from painful diseases, or of those patients who would seem beyond recovery, and had therefore best be dead—a question which physicians must ever answer by a decided negative. But the views of a man of Maeterlinck's caliber cannot be slighted. And the wonderful skill and literary charm he evinces fascinate the reader, and give weight to opinions which might be ignored were they less beautifully and touchingly expressed. Yet, the author of "Pelléas et Mélisande" is a mystic, a poet and a dreamer of exquisite dreams—such a one the like of whom the world is ever in need of, and perhaps never more so than to-day. On the other hand it is essential for science—certainly for medical science—to deal ever with the hard facts of life; should science seek to evade its responsibilities in these premises, she would swiftly be brought to book—in the criminal courts, for

example. For it is not given to science to appoint herself, upon her own initiative, an executioner of human beings. Among the hard facts which science has to face are the following (which have to be reiterated in every opening of the euthanasia discussion): Physicians can never be sure that their prognoses of a fatal issue are absolutely infallible. People that have suffered from seemingly irremediable cancer, or from chronic tuberculosis, have attended the funerals of the doctors who have ministered to them in their "fatal" illnesses. To err in medical prognosis is human; only divinity can appoint unerringly the hour of death. Nor has the physician (nor any other mortal) any right to hasten a death upon his human assumption of its inevitableness. Again, what a weed-choked field of possibilities, criminal or otherwise, would be sown were such advocacy as this of Maeterlinck to prevail; were, for example, the physician overpersuaded by the specious pleas of heirs, or by the simulated pity of other individuals anxious to sever ties such as most of mankind find precious, to provide for the sufferer, before his appointed time, "a gentle and easy death."

The above quotations from the writing of him who this year most deservedly won the Nobel prize for literature make "copy" interesting indeed; yet it is to be feared they do not accurately express the situation. Physicians are not hardened men; there are none more sympathetic. The span of doctors lives averages shorter than in most other callings, and this probably because the sufferings of their fellow mortals take so much out of them. It is not essential in medical practice to prolong any convulsions, and there would never be the slightest occasion for any one on bended knee to implore the physician to alleviate sufferings. To relieve pain is a first principle in practice, and the physician is always justified in this course, in so far at least as the life of the patient will not be jeopardized by his ministrations. And the physician is ever eager to do this, if for no other reason than that there is hardly anything so killing as pain. As to the horror of death—this the spectators may have. But it is the rarest phenomenon for him who is about to die to "suffer" death. Immediately death impends, the end is almost invariably benignant and peaceful. What, indeed, is there in all the cosmos so composed and content as the face of the dead?

Osteomyelitis and Epithelioma.

Epithelioma is known to have an inflammatory precancerous stage in very many of its clinical forms, but few surgeons would connect it *a priori* with a chronic osteomyelitis, and few physicians would anticipate that cancer may be a sequel—even remote—of an acute infectious disease. A pathologist, of course, would at first sight deny that an epithelioma could possibly develop from bone marrow. It has been known for many years that typhoid fever has as a not infrequent sequence a bone lesion known as periostitis, osteoperiostitis, osteomyelitis, etc., according to the structure of the bone attacked. In more recent years it has been learned that the paratyphoid bacillus, the germ of influenza, etc., can set up the same lesion, and it is highly probable that the gonococcus, *Bacillus coli*, pneumococcus, in fact, any pyogenic germ can cause these bone lesions in the course of a bacillemia, however mild or latent the course. Moreover, we now know that such lesions may not appear until very many years after the original infection. Thus in one instance a patient evidently had a paratyphoid infection years before the germ of that disease was described. It was diagnosticated at the time as typhoid fever. The exact nature of the disease was revealed after 20 years, when a suppurating bone lesion developed, the pus of which was rich in paratyphoid-A bacilli. These lesions are naturally managed by curetting or resection, and a sinus is left to heal up from the bottom. While we do not know the exact mechanism involved, it is evident that epidermal tissues are now and then transported into the bone cavity, in which locality they may undergo cancerous proliferation after properly healing in. At a recent meeting of the Breslau Surgical Society Hadda reports such a case (*Berliner klinische Wochenschrift*, August 14). He is careful to distinguish it from epithelioma beginning in the epidermis of a bone sinus, which is by no means rare. In the cases under consideration, Hadda says, there is evidently a direct grafting of the epidermal tissues into the bone substance.

Agitation and Its Treatment.

In a paper published in the *Medical Press and Circular*, September 27, Paul Camus says that the causes of agitation are infections, exogenous intoxications, and endogenous intoxications. But all the various causes, infective or toxic, merely bring into relief the hyperexcitability of the individual, whether evident or latent. The states of agitation which occur in the course of general maladies or in that of infections or acute intoxications are nearly always transitory; they require little treatment beyond that of the causal condition; the bath is the best remedy for the agitation of a typhoid patient; as quinine is the sedative, par excellence, in case of paludism. A fever patient affected with agitation, or an alcoholic in delirium tremens, may be treated at home if a degree of relative isolation can be secured in a suitable apartment; not by means of mechanical restraint, but under competent and continuous supervision. When these essential conditions cannot be secured and the agitation continues isolation in an institution becomes necessary. In regard to the treatment of subjects of subacute alcoholism, he advises that they should be placed in rooms brilliantly lighted—during the night as well as by day; this has the effect of diminishing in notable proportion their crepuscular and nocturnal hallucinations, the habitual cause of their agitation and pantophobic seizures. Camus is a believer in the full bath in the treatment of most cases of agitation, while douches are recommended in certain cases. In few cases is he in favor of chemical sedatives for allaying agitation, as they do not attack the cause. Alcohol should be banished from the treatment of delirium tremens, and the use of alcoholic draughts in the early stages of pyrexias and of infections should be proscribed. To sum up, in a word, agitation is only a symptom, in the same sense as fever is a symptom. In each case the treatment to be effective should be aimed at the cause, not an empirical struggle against a simple reactionary manifestation.

The Treatment of Constipation.

The treatment of constipation has been debated at length and frequently in recent years without any certain curative treatment for the condition having been laid down. When it is considered that constipation is often but one symptom of disease, this is not a matter for wonder. There is, however, a form of constipation which lends itself to treatment, the form induced by careless diet or manner of living generally and aggravated by the too free use or abuse of purgatives. In the *Southern California Practitioner* for November Boardman Reed discusses the curative treatment of constipation, and after recommending for the lighter cases exercise, judicious diet, and an abundance of water between meals proceeds to deal with the more stubborn forms. For some such cases a laxative diet and much active exercise are advised, together with the employment of electricity and massage, and insistence is placed upon the great value of vibration applied as follows: vibratory massage of the muscles over the body generally every day for the first ten or fourteen days and later less frequently; stimulation two or three times a week by vibration applied in séances of one minute each over the spaces on either side of the first three lumbar vertebræ between the spinous processes, and the application of the intrarectal vibratode, at the same sitting for from one to one and a half minutes, having the vibrating end of the vibratode at its shortest limit for this part of the treatment. Enemas of olive oil are also recommended. When there is a complicating colitis the author has added to the enema with satisfactory results one-half to one teaspoonful of bismuth subcarbonate well stirred so as to make an emulsion. When spastic constipation is present less exciting measures than electricity and vibratory massage are indicated. Strong acids and the sourer fruits should be omitted from the diet in such cases. When hyperchlorhydria is a symptom it must be cured before any treatment of constipation can be successful. Such patients are usually neurasthenic and need special treatment for that disease.

Ehrlich on 606.

At the recent meeting of the Deutscher Naturforscher und Aerzte, Ehrlich gave a digest of the present status of arsenobenzol therapy (*Deutsche medizinische Wochenschrift,* October 19). From the very beginning of his efforts he investigated the possible unpleasant collateral action of the remedy, and every legitimate announcement which emanated from the experience of others touching upon the hostile activity of the drug has been debited for the time to the account of the latter. Certain curiosities of medical practice have come to light in this endeavor. One case of death supposedly attributable to salvarsan turned out to be a homicide. Some persistent after effects, such as bladder troubles, were due, Ehrlich thinks, to decomposition of the drug from contact with the air. Painful indurations at the puncture, venous thrombosis, and other local sequelæ were due, in his belief, to defective technique in preparing solutions. Much of the headache, vomiting, diarrhea, etc., reported after injections of the remedy might have been due to the bacterial content of the distilled water employed! The auditory and other disturbances of special sense seem to have occurred in subjects predisposed thereto by previous attacks. In fact, few of the untoward symptoms following the use of 606 could justly be attributed to the action of this drug, according to its discoverer. Ehrlich's remedy seems to be gradually establishing itself as a panacea, for he claims that it is essentially curative in syphilis, fowl spirillosis, recurrent fever, yaws, tertian malaria, Aleppo boil, bilharziosis, the pneumonic plague of horses, and African farcy. He failed, however, to mention the alleged curative power of the drug in typhus fever and the bubonic plague, and he went so far as to admit that it has no power over kala azar.

Dr. Doty and Gov. Dix.

An interesting revelation of character is shown in two letters published last week. One, intemperate, abusive, filled with venom, ignoring of facts, and thoroughly illogical, was written, or at least signed, by the Governor of the State of New York, demanding the immediate resignation of the Health Officer of the Port. The other, dignified, logical, temperate, and courteous, was written by the Health Officer of the Port, refusing to resign under the reiteration of these thoroughly disproved accusations. In the words of the declaration of the Academy of Medicine of North Jersey, at a meeting held on Friday evening of last week, the effusion of Governor Dix was "the most brutal and unsubstantiated letter ever written by a State Executive." The only plausible explanation of the Governor's outbreak is found in a news item from Albany, dated December 29: "Governor Dix, who has been suffering from a severe cold for the last few days, was able to be at the Executive Chamber today." The Governor's letter was sent on December 27.

A New Baronet.

The latest-made colleague of Sir William Osler among the British baronets is Sir James Beecham, who made fame and a fortune by the sale of the pills that bear his name. It is not stated whether he was made a near peer because of the therapeutic efficacy of his pills or because he had contributed a tidy fraction of his profits from their sale to the treasury of the Liberal party.

News of the Week.

Smallpox in Various Places.—During the last six weeks there have been eight cases of smallpox in Greater New York, four in Queens, two in Brooklyn, and two in Manhattan. The report made by the State Department of Health on December 23 says that there has been a steady increase in the number of cases of this disease throughout the State. Since December 15 over 10,000 persons have been vaccinated in the five boroughs of the Greater City. In Holyoke, Mass., about sixty people are held in quarantine in two blocks where there are two cases of smallpox. Both the public and parochial schools of the city have been closed and physicians of the Health Board are busy vaccinating. Smallpox has been brought to Philadelphia on an Italian steamship by immigrants, who have been living in a congested negro and Italian settlement in West Philadelphia since December 5. When the existence of the disease was discovered fifty doctors began to work rapidly and vaccinated

about 1,000 people in four hours. The existence of eight cases of smallpox in New York City has alarmed the East Orange Board of Education, which has renewed its insistence that vaccination be enforced among the pupils. This order has brought out the information that only about 8 per cent. of the pupils had been vaccinated successfully.

Typhoid Fever in Ontario.—There is a serious epidemic of typhoid fever in Sarnia, Ont., where 70 cases have been reported up to the present time. The outbreak is attributed to a polluted water supply, as the town obtains water from the St. Clair River, which receives the sewage of Port Huron.

Glanders in Pasadena.—For the past three months glanders has been epidemic in the stables of the Pasadena Ice Company and 30 horses have been shot after having become infected. An employee of the company has been attacked by the malady and is near death, while several others are under suspicion.

Diphtheria in Lenoxdale, Mass.—Because of an epidemic of diphtheria in this village, the Board of Health has ordered that all dogs and cats at large shall be killed and has also forbidden handshaking and kissing. This mandate has been issued because many of the inhabitants are Breton French, an affectionate and demonstrative people, who are given to great gaiety at this season.

Food Poisoning in Berlin.—Between 75 and 100 tramps who had sought shelter in the Municipal Lodging House in Berlin one night last week were taken acutely ill and died. It was thought at first that the deaths were due to ptomaine poisoning from the eating of spoilt smoked herring. A number of those who died and many also of those who are acutely ill are said, however, not to have eaten anything beyond the coffee and bread furnished by the lodging house. Another theory is that the illness was due to the drinking of schnapps adulterated with wood alcohol, but only a few of the dead had had any liquor to drink. An epidemic, said to be of a similar character, is reported in Milan, and Paris sees in these poisonings the beginning of an epidemic of a new plague which it has picturesquely styled the "purple death." Gaffky of the Berlin Institute for Infectious Diseases says the epidemic is one of food poisoning similar to that which was observed and studied by him several years ago in Dantzig.

Insanity on the Increase.—In 372 institutions canvassed by the Census Bureau up to January 1, 1910, there were 187,454 insane patients, or an increase of 37,303 since 1904. During this period the population of the United States increased about 11 per cent. while the number of insane people increased 25 per cent. Massachusetts led the States with 344.6 insane per 100,000 population and New York was a close second with 343.1 per 100,000 persons.

Health of the Canal Zone.—The report of Colonel Gorgas for the month of October states that the total number of deaths from all causes among employees was 46. These were divided as follows: From disease 38, and from violence 8, giving the annual average per thousand of 9.15 and 1.93, respectively. In segregating according to race, the annual average death rate per thousand from disease among employees was: For whites 4.87, and for blacks 10.56, giving a general average for disease of 9.15. For the same month during 1909 the annual average death rate per thousand from disease among whites was 3.10, and blacks 8.56, giving a general average of 7.35; and in 1910 from disease among whites 4.51, and blacks 5.98, giving a general average of 5.58. Among employees during the month the deaths from the principal diseases were as follows: Chronic nephritis, 3; dysentery, clinical, 1; hemoglobinuric fever, 1; lobar pneumonia, 13; malaria, 1; tuberculosis, 6; leaving 13 deaths from all other diseases, and 8 deaths from external violence. The number of deaths from pneumonia have occurred almost exclusively among colored laborers recently brought to the zone from the West Indies, as was the case in 1906 when an epidemic of the disease prevailed. No cases of yellow fever, smallpox, or plague originated on the Isthmus during the month. One case of bubonic plague of the septicemic variety, from Guayaquil, died at Ancon Hospital on October 17. The case was interesting in that it revealed no external lesions of the disease, and was diagnosed at autopsy from smears taken from the spleen and femoral glands.

Death Rates in the States.—A bulletin recently issued from the census office gives the death rates in the registration States for 1909 and 1910 as follows:

	1909	1910		1909	1910
California	13.4	13.5	New Jersey	14.7	15.5
Colorado	14.2	13.8	New York	15.7	16.1
Connecticut	15.0	15.6	North Carolina		18.7
Indiana	12.9	13.5	Ohio	12.9	13.7
Maine	15.6	17.1	Pennsylvania	14.7	15.6
Maryland	15.5	16.0	Rhode Island	15.6	17.1
Massachusetts	13.4	16.1	Utah		10.8
Michigan	13.1	14.1	Vermont	15.7	16.0
Minnesota		10.9	Washington	9.8	10.0
Montana		10.6	Wisconsin	11.8	12.0
New Hampshire	16.9	17.3			

Vegetable Eater Wins Endurance Test.—The Buffum brothers who started to walk from Boson to Los Angeles on July 8, after having been pronounced fit by Dr. Dudley A. Sargent, physical director of Harvard University, arrived at their destination on December 17. The one lived on a meat diet and the other on a vegetable diet during the contest and it was found at the end of the walk that the vegetarian had gained eight pounds and the meat eater three. Neither of them slept under a roof during the trip. Just before finishing their trip they decided to take a side trip into the San Bernardino Mountains and becoming lost were without food for sixty hours. The meat eater was on the point of physical exhaustion after he had gone twenty-four hours without food, while the vegetarian was still in comparatively good condition. Those interested in this experiment feel convinced that vegetables are a far healthier diet, not only for one leading a sedentary life, but for one doing hard physical work, though the results of this experiment are by no means conclusive. The brothers might now reverse their dietary habits and walk back to Boston, by way of a control experiment.

Wants an Interstate Health Train.—Dr. Oscar Dowling, president of the Louisiana State Board of Health, in an address before the Association of Life Insurance Presidents, told of the "health train" which he had sent throughout the State of Louisiana last year and of the interest that it awakened in health reforms, and thought it would be a saving of time, money, and effort to have the main features of an educational campaign such as this put on an interstate basis. One exhibit train with an advance agent would be found adequate. He believed that such a movement would be the greatest ever inaugurated and the most effective for the elimination of sanitary evils, and that an association

of life insurance presidents was eminently fitted to carry on such a work.

The William McKinley Memorial Hospital League announce the opening of a campaign to raise $7,000,000 to equip a hospital in New York City and open air camps at the seaside and in country districts for the treatment of incipient tuberculosis. This campaign was really opened in Connecticut three months ago and the response received was so gratifying that was believed that the fund would be the greatest ever received for the purpose of a memorial. McKinley one cent seals will be put on sale after January 1. Private contributions will also be solicited. The money will be disbursed by a committee of seven persons who have contributed $10,000 or over. The names of twenty-nine governors of states and territories appear on the list of the council of one hundred. George E. Merry is secretary of the league, which has its headquarters at 1 Madison avenue, New York City.

Charitable Bequests.—The will of the late William Pitt Preble, who died recently at New Brighton, N. Y., leaves $5,000 to the Maine General Hospital at Portland. The will of Thomas M. Miller of Pittsburgh gives his home, occupying two city blocks and valued at $1,500,000, to be converted into a hospital to be known as the Woman's Hospital of Pittsburgh. Among the bequests contained in the will of Evelyn S. Ridgeway were the following: Home of St. Giles the Cripple, $2,000; Brooklyn Hospital, $2,000; St. John's Guild, $2,500, the Brooklyn Home for Consumptives and the Brooklyn Nursery and Infants' Hospital, each $1,000. By the will of the late Patrick Gibbons of Philadelphia St. Agnes Hospital and Wills Eye Hospital each receive $500.

Texas State Medical Society Plans Building.—At a meeting of the trustees of the Texas State Medical Society in Forth Worth on December 12 it was decided to inaugurate a movement for the erection of a permanent home for the organization. They are planning for a building to cost $150,000, but leave the question as to the site until the meeting of the society, which will take place in Waco on May 7, 8, and 9, 1912.

Many Abnormal Children in Boston.—Dr. William J. Gallivan, chief of the division of child hygiene of the Boston Board of Health, has announced the results of his first three months' work. Of 42,752 children examined by the school physicians, only 14,957, or 35 per cent., were found to be physically normal, healthy children. The defective children and those below par physically numbered 27,795, or 65 per cent. The defects among this number were as follows: Mental deficiency, 223; defective nasal breathing, 3,562; hypertrophied tonsils, 9,738; defective teeth, 19,518; defective palate, 86; cervical glands, 4,425; pulmonary disease, 456; cardiac disease, 1,129; nervous disease, 213; orthopedic defects, 521; skin disease, 3,509; rickets, 375, and malnutrition, 1,611.

Petition Legislature to Conserve Human Life.—A petition bearing the signatures of more than 75,000 persons will be presented to the Louisiana Legislature at its coming session. This petition urges that the measures endorsed by the Mississippi Medical Association be given favorable consideration and passed. The association asks that a bureau of vital statistics be created, a larger appropriation made for education of the people on sanitation and hygiene, and that a higher educational standard be required of applicants for license to practise medicine in the State. The latter measure contemplates an amendment that will require every applicant for a medical license to first take a standard course of literary study in some reputable college.

Government Condemns Many Tuberculous Cattle.—The United States Bureau of Animal Industry inspected more than 50,000,000 animals during the past year and more than 1,000,000 carcasses or parts thereof were condemned as unfit for food. In most instances tuberculosis was the cause of the condemnation, nearly 47 per cent. of adult cattle condemnations and more than 96 per cent. of those of hogs being due to this disease.

Unlicensed Medical Students Must Not Practise Medicine.—The Louisiana State Board of Medical Examiners has taken a stand against the custom of some medical students of practising during their vacations and even after graduation of beginning practice before obtaining licenses. The board has refused to examine any applicant who has practised without the necessary qualifications after having been notified by the secretary of the board to desist. The board has also passed a resolution making it compulsory for midwives to pass a written examination before being licensed; heretofore only an oral examination has been required.

New York's Foreign Born.—A preliminary statement showing the returns of the thirteenth decennial census taken on April 15, 1910, issued by the Bureau of Census of the Department of Commerce and Labor on December 29, shows that at the census of 1900 the foreign-born white population of New York City was 1,260,918, while in 1910 it had reached a total of 1,926,900, representing an increase during the ten years of 52.7 per cent. Natives of Germany decreased 13.9 per cent. and those of Ireland 8.2 per cent. For the United States as a whole natives of these two countries decreased 11.2 and 16.3 per cent. respectively. Natives of Great Britain, Canada, and Newfoundland have increased 23.2 per cent. during this period, while natives of Sweden, Norway, and Denmark have increased 43.5 per cent. The largest increases were shown for natives of Austria-Hungary, Italy, Russia, and Finland. During the last ten years there has been an increase of 163.7 per cent. in the number of natives of Russia (chiefly Hebrews) and Finland, while there has been an increase of 134.1 per cent. in the number of natives of Italy and an increase of 117.6 per cent. of natives of Austria-Hungary. Natives of Italy and Austria-Hungary now constitute more than one-half the foreign-born population of New York City, as compared with a little more than one-third in 1900. In the United States as a whole the respective percentages are 35.3 for 1910 and 17.2 for 1900.

A Record for Fecundity.—A report comes from Boynton, Okla., that the station master of that town and his wife are the parents of eleven children born in three years. Their eldest child is fourteen years of age and twins are now five years of age. A year after the birth of the twins triplets were born and the following year another set of triplets made their appearance; a year after this five children arrived on the same day, making a record of eleven in three years.

A New Jersey Society Endorses the Quarantine Administration.—The Academy of Medicine of North Jersey at a meeting held in Newark on December 28 protested against the request of Governor Dix for Dr. Alvah H. Doty's resignation as

Health Officer of the Port of New York. At a previous meeting it had been voted to draw up resolutions to send to Governor Dix and to ask that Governor Wilson should use his influence in behalf of Dr. Doty. While these resolutions were pending Governor Dix's letter was made public. The Academy declares this the most brutal and unsubstantiated letter ever written by a State Executive, and urges Dr. Doty not to resign.

Health Inspectors Dropped.—Thirty-four medical inspectors of the New York Health Department have been dropped from the service. The reason given for their dimissal is that the appropriation has been cut down.

The Herter Lectures.—Six lectures on "Immunity" will be given under the Herter Foundation of the University and Bellevue Hospital Medical College, by Prof. L. Hektoen of the University of Chicago. The course will begin on Monday, January 8, at 4 o'clock and continue daily throughout the week, at the same hour, at the Carnegie Laboratory, 338 East 26th street.

Dr. R. G. Broderick, who was formerly Health Officer of San Francisco, has again been appointed to that office in place of Dr. W. F. McNutt, Jr., who has recently retired.

Dr. C. J. Smith of Pendleton, Ore., has been chosen president of the State Board of Health at its annual meeting at Salem.

Dr. Philip F. O'Hanlon of New York City, a coroner's physician, was operated on for an abdominal abscess December 28; his condition is reported as favorable.

Dr. James V. May, Superintendent of the Matteawan State Hospital, has been appointed by Governor Dix president of the State Commission in Lunacy, *vice* Dr. Ferris, who recently resigned. It was at first reported that Max Schlapp of this city had been appointed, but he was unwilling to accept the offer.

Miss Clara Barton, the founder of the American Red Cross Society, celebrated her ninetieth birthday on Christmas at her home, Red Cross, in Glen Echo, Md. She has recently been severely ill, but is now happily restored to health.

Possible Consolidation of Philadelphia Medical Schools.—It is stated unofficially that the Medico-Chirurgical College of Philadelphia is to be consolidated with the University of Pennsylvania. The hospital and college buildings of the former have been condemned to make way for the Parkway. It is suggested that the Medico-Chirurgical College shall become a post-graduate school and that its present faculty and staff of instructors shall be retained.

New York Guardsmen Inoculated Against Typhoid Fever.—Four hundred officers and men of the Seventy-first Regiment, N. G. N. Y., were vaccinated against typhoid fever with serum received from the Surgeon-General's office at Washington, at the Armory, on December 28. All of those who were vaccinated voluntarily submitted to the operation.

Typhoid Inoculation Compulsory in the Navy.—Vaccination against typhoid fever has received the unqualified endorsement of the Navy Department and will be administered at once to all officers and enlisted men under forty-five years of age who have not previously been inoculated. Hereafter all recruits enlisting will be compelled to submit to vaccination against typhoid fever as they now do against smallpox.

Christian Scientists May Practise in the Canal Zone.—President Taft has modified his order relating to the practice of medicine in the Canal Zone, which was interpreted as prohibiting Christian Scientists from attempting cures, by specifically granting this privilege to those whose religion teaches them to treat the sick without the use of drugs, to those who render gratuitous services in cases of emergency, and to those administering the ordinary household remedies.

The McKennan Hospital, a fine brick building costing $10,000, and well equipped in every department, has just been dedicated at Sioux Falls, S. D.

A New Tuberculosis Hospital.—In accordance with the State law Brockton, Mass., is to have a tuberculosis hospital, which will cost about $30,000.

Hospital Collections in London.—While the Saturday and Sunday Association of New York City is striving to raise $200,000 to be divided among 46 institutions, it is interesting to learn that the need of a large hospital fund is better recognized in London than here. In that city the three public collections for hospitals amounted to $1,560,000, the church collections alone aggregating more than $200,000. Here $115,595 was raised last year, of which $30,898 was from church collections.

The Hempstead Hospital Building at Hempstead, L. I., was sold on December 22 for $10,000. The hospital had been given to the town by Mrs. O. H. P. Belmont with the understanding that the people of the town would support it, and was sold because of their failure to meet this requirement.

Work of the Hospital for the Ruptured and Crippled.—This institution has just issued a statement which shows that during the past fifty years 379,999 cripples have been treated. During the year ending September 30 12,604 new patients were treated, and a total number of 43,772 separate treatments were given. There is a school connected with the hospital so that children on their discharge can re-enter their classes in the city schools. The report states that there is a deficit of $4,277 for the year and that the hospital will have to rely upon the generosity of the public to meet this. A plea for funds also comes from the Hospital for Deformities and Joint Diseases, which treated 2,400 cases during the past year as compared with 1,200 during the year 1907 when it was founded, and now has a deficit of $6,000 for the year.

Charitable Bequests.—Alice Stone Blackwell, suffragist and socialist, has given her large old home in Dorchester, Mass., to the New England Women's and Children's Hospital to be used as a convalescent home. The house was formerly the home of Lucy Stone and Henry Blackwell. Under the terms of the will of Emily H. Moir, the Presbyterian Hospital and the New York Eye and Ear Infirmary each receive $20,000. The will of Nathan F. Strauss gives $5,000 to Mount Sinai Hospital and $2,000 to the United Hebrew Charities. The will of Katherine I. D. Harnett bequeaths $10,000 to St. Vincent's Hospital and $5,000 to the New York Society for the Relief of the Ruptured and Crippled. Under the will of Abraham Abrahams the Jewish Hospital of Brooklyn receives $50,000 and the Brooklyn Federation of Jewish Charities $25,000.

The Canadian Public Health Association, which met in Montreal on December 13, 14, and 15, elected the following officers: *President,* Dr. C. A. Hodgetts of Ottawa; *Vice-Presidents,* Dr.

M. M. Seymour of Regina, Dr. J. W. S. McCollough of Toronto, and Dr. E. B. Fisher of Fredericton; *General Secretary*, Major Lorne Drum, M.D. of the Permanent Army Corps of Ottawa; *Treasurer*, G. D. Porter of Toronto. The association will hold its next meeting in Toronto.

A Cure for Mouse Cancer.—Wassermann of Berlin read a paper on December 20 before the Berlin Medical Society in which he related some successful experiments in the treatment of mouse carcinoma by intravenous injections of eosin, selenium, and telluride. In some cases the injections killed the mice, in others the tumor rapidly disappeared after three or four injections. The remedy has not yet been tried on man.

Obituary Notes.—Dr. Arthur Vincent Meigs of Philadelphia, a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1871, died at his home January 1 at the age of 61 years. He was one of the physicians to the Pennsylvania Hospital, a member of the Association of American Physicians, of the American Philosophical Society, formerly president of the College of Physicians, Philadelphia, and a member of many other medical societies.

Dr. Michael J. O'Toole, formerly of Worcester, Mass., died at his home in Clinton, Mass., December 21, at the age of 35 years. He graduated from the Maryland Medical School in 1902.

Dr. Offa L. Shivers, Jr., of Linden, Ala., a graduate of the Vanderbilt University, Medical Department, Nashville, Tenn., in 1901, died December 13 at the age of 35 years.

Dr. Benjamin Perkins of Montgomery, Mo., died at his home December 15 at the age of 82 years.

Dr. Peter D. Leys of Rosyl, Long Island, N. Y., died at his home and was buried December 26. He was 80 years old. When 16 years old he came from Scotland, was shipwrecked and was the only survivor. For some time prior to the shooting of President Lincoln he lived with Wilkes Booth.

Dr. Charlotte Coles Jenkins of New Rochelle died of apoplexy at her home December 25. She was a graduate of the New York Homeopathic College and was 82 years old.

Dr. A. Judson Palmer, a homeopathic physician in Brooklyn, a member of the Brooklyn and New York State Homeopathic Medical Societies, died at his home December 25 at the age of 78 years.

Dr. Augustus V. Hill of Woodcliff-on-Hudson, N. Y., died of apoplexy at his home December 24 at the age of 66 years. He was graduated from the College of Physicians and Surgeons, Columbia University, in 1869.

Dr. Summerfield B. Bond of Baltimore, a graduate of the University of Maryland, School of Medicine, Baltimore, in 1883, chief medical examiner of the relief department, Baltimore & Ohio Railroad, died at his home December 21 at the age of 50 years.

Dr. William H. Ravenscroft of Denver, Col., died of paralysis December 18. He graduated from the Physicians' Medical College, Philadelphia, in 1857. He was 78 years old.

Dr. Isaac J. Lane of North Williamsburgh, Ontario, Canada, a graduate of the Medical Faculty of Queen's University, Kingston, Ont., in 1888, died December 20. He was 55 years old.

Dr. Herman Lewin, a graduate of the New York Eclectic Medical College in 1896, died of heart disease at his home in New York City on December 28. He was official physician to the Letter Carriers' Association of New York City.

Dr. Thomas Cloman Pugh died at his home in Baltimore on December 28, at the age of 74 years. He was graduated from the Medical Department of the University of Pennsylvania in 1859, and served for four years with General Longstreet as a surgeon in the Confederate army.

Dr. Joseph Alberic Genereux of Southbridge, Mass., a graduate of the Medical School of Maine, Portland, in 1886, died December 22. He was 50 years old.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent)

A CRISIS IN THE PROFESSION ON THE INSURANCE BILL—THREATENED DISRUPTION OF THE B. M. A.—MEETINGS IN VARIOUS PLACES TO PROTEST—BRADSHAW LECTURE ON HEREDITY IN DISEASE—UNRECOGNIZED DIPHTHERIA—KING EDWARD'S HOSPITAL FUND—SURGICAL AID—OBITUARY.

London, December 15, 1911.

Yesterday about 2,000 medical men met at Manchester—the North mostly led the way—to protest against the Insurance Bill and the conduct of the B. M. A. They decided to form a National Medical Union, to be an emergency organization to voice the attitude of the profession and to facilitate a unanimous refusal of service under the bill. It is said this union will continue in existence as long as any question remains in dispute, and it was asserted that it would work in concert with members of the B. M. A. But the action of the Council of that body was condemned by every speaker, though several regretted the disorganization of the Association, which they said was the result of its Council, in which their confidence had been shaken. They were determined to wreck the obnoxious piece of legislation, and this they would do by refusing to form a panel. One speaker, who had been one of the deputation to the Chancellor, came forward to defend the "much-maligned body," but was hooted and assailed with the cry of "traitor." Even Sir James Barr, who proposed a vote of thanks to the chairman, when he attempted to offer some excuse for the Council, was told to sit down, but he said if they could wreck the bill he would be pleased. The resolutions, (a) to refuse to form a panel, and (b) to form the Union named above, were carried with only five and six dissentients, respectively, and amid great enthusiasm.

Of course, this meeting is only the culminating point so far of the indignation that has been aroused. The branches of the B. M. A. have been holding meetings in all directions during the week. The Council has sent another circular to show that, though they have not secured their six points, they have done something and mean to do more. Following this they are trying a canvass to get signatures to their declaration and subscribers to the journal. This they manage by getting a member of a branch to call on the men in his district who have not succumbed to the atrocious threat I reported to you last week.

London is to have a mass meeting of the profession on Tuesday next to consider the position. The Manchester resolutions will of course be prominently brought forward. Sir Watson Cheyne will preside and all qualified men are invited to attend.

There seems little doubt that this will be a successful meeting and will act on the Manchester lines, for it is generally said there is no desire to split the B. M. A., but only to condemn the Council and, if possible, to provoke its resignation. One member has already resigned, but what is wanted is its resignation in a body. If they had the courage to do so it would not be surprising for the majority to be reelected, and only the little clique that dominates to be unseated. That would certainly be a reform, but the obnoxious few understand electioneering.

The *Practitioner* is now taking a referendum, asking a plain yes or no to the question, "Are you satisfied that the arrangements made for the profession with regard to the medical service now embodied in the bill would justify you in giving honest and adequate service to the insured?" As an immediate reply is urgently asked, perhaps some result may be announced at the mass meeting in London next Tuesday.

The House of Lords yesterday discussed the medical aspects of the bill; every member had been supplied with amendments desired by the B. M. A. Only amendments proposed by Government were accepted. There was, however, some useful conversation, but its effect was marred by Lord Tenterden, who said the sanatorium benefit was the endowment of research and that was another name for vivisection, and "no good had been obtained from this so-called research; the results had been inaccurate, inconclusive, and contradictory." Viscount Haldane replied that the sanatorium provision had nothing whatever to do with vivisection.

Mr. Clement Lucas, in his Bradshaw lecture at the College of Surgeons on the 6th inst., directed attention to the doctrine of heredity in connection with disease. He mentioned that tuberculosis was universally held to be hereditary until Koch discovered the bacillus, and the lecturer, like most investigators, now rejected the notion of its hereditary nature. The bacillus, he pointed out, is in fact both infectious and inoculable, it has been known for thirty years, and during that period, owing to better sanitation and hygiene, especially better housing and better food, the mortality from tuberculosis has fallen more than half—to ten instead of twenty-five per thousand. He believed that complete segregation would suffice to stamp it out as certainly as muzzling stamped out hydrophobia. Another example of a disease reported as far back as biblical times to be hereditary as well as contagious was leprosy. Hansen discovered the bacillus in 1871 and now it is regarded as an ordinary contagious disease. Thus the belief in its hereditary transmission, which held sway for tens of centuries, has, said the lecturer, been scattered to the winds. He passed on to consider the case of cancer. There had not been the same confidence about this, but the profession had been divided as to whether it was hereditary or not. Paget taught that it was a blood disease which produced local manifestations, but he could not trace a family history in more than one in three of private patients and one in five or six of hospital patients. Dr. Bashford calculates that the chance of death from cancer is one in eleven for men over thirty-five, and one in eight for women of the same age. So great is the frequency of cancer above that age in the general population that on the average a parent or a grandparent would have died from it out of every two families. The lecturer went on to say that he thought we were half way to the discovery of the cause when it was shown that cancer could be inoculated in animals of the same species. If it were admitted that we were dealing with a mildly contagious disease many observations would fall into line. Thus Mr. Lucas could not accept Sir H. Butlin's view as stated in his Bradshaw lecture, and reported in my letter of the 1st inst. To produce a cell which was against its parent and brings about self-destruction was, according to Mr. Lucas, contrary to the laws of Nature, which are directed to safeguarding against danger.

Turning to the nervous system, the lecturer said those who studied mental diseases consider the hereditary tendency indisputable, and remarked on the disastrous results of in-breeding of tainted stocks and suggested that when criminals repeat their kind and recurrent forms of lunacy occur with lucid intervals, during which children are conceived who are sure to be a burden on the State, it may in future be asked whether restriction of liberty in this direction might not be justifiable. He mentioned a case of a father with recurrent lunacy having eight children, of whom five were lunatics. Also a suicidal family, suicide occurring in four generations and all the offspring being lunatics. He would press on the State the adoption of some measure to arrest the increase of lunacy, especially of criminal lunacy.

Unrecognized diphtheria was the subject of a paper at the West London Medico-Chirurgical Society by Dr. Seymour Taylor. He remarked on the difficulty of diagnosis in doubtful cases, especially when no rash or exanthem appeared and the false membrane was absent or else so located as to be invisible. Such cases might at first seem to be only simple sore throat without confirmatory signs of anything more serious, *e.g.* false membrane, enlarged glands, or albuminuria. Illustrative cases were related in which the history of a previous sore throat was obtained only by close inquiry in consequence of paralysis or peripheral neuritis which appeared otherwise inexplicable. Some cases, too, were given showing the great danger of overlooked diphtheria being followed by cardiac paralysis. Dr. Taylor would have a State bacteriologist appointed, one of whose duties would be to examine swabs sent by practitioners. These would settle doubtful cases, but should be taken from the inferior nasal meatus as well as from the fauces. A doubtful case should not be pronounced free from diphtheria until two swabs taken at a week's interval showed complete absence of the bacillus.

Dr. Bernstein said the greatest difficulty was caused by carriers of the organism—often nurses and children, or even doctors. The president, Mr. McAdam Eccles, put some important questions, *viz.*, How soon after possible infection can the bacillus be found? Which is the best area to take a swab from? Are there such organisms as "pseudo-diphtheritic" bacilli? What is the longest time the true *Bacillus diphtheriæ* can remain in the throat of a carrier? Dr. Crookshank said the doctor's first duty, if he suspected diphtheria, was to give antitoxin; then he could go for a swab. He who does this safeguards his patient; he who takes a swab and waits for results only safeguards himself. Several speakers followed, but it cannot be said that the president's significant questions have received satisfactory answers.

On Monday a meeting of King Edward's Hos-

pital Fund was held. The Speaker, who presided, read a message of congratulation from King George in India on the satisfactory result of the year's work. The year's distribution can be increased by £2,500. The report of the committee on the grants recommended to hospitals, convalescent homes, and sanatoria was adopted. The total collection for the year was £157,500. A further sum of £5,000 was voted toward the removal of King's College Hospital, making £42,000 contributed to this object. St. George's Hospital does not apply for a grant, as its managers cannot accept the restriction placed on the amounts which could properly be paid to medical schools for work done for hospitals. The amalgamation of special hospitals is encouraged by an addition to the fund set aside for that purpose.

The Surgical Aid Society's annual meeting was on Monday, when the Lord Mayor presided and announced a substantial reduction in the cost of administration and an increase in the amount given in relief. The number of appliances supplied totaled 30,743. The treasurer, Mr. Watson, in returning thanks, remarked that in 1869, when he first took the office, the income was £1,050; now it had reached £28,000. When he joined appliances were distributed to the cost of £587, but now £24,000 was spent on them.

Sir Joseph Hooker died on Sunday, the 10th inst. His twenty years' directorship of Kew Gardens, to which he succeeded his father, whom he had for the previous ten years assisted in that office, may seem to the general public to obscure his other claims to honor. Not so with those who appreciate science and medicine. For he was a graduate in medicine at the age of 25 at the University of Glasgow. He became surgeon and naturalist to the Antarctic expedition led by Sir James Ross in the *Erebus*. This occupied from 1839 to 1843, and its results were of the highest interest to botanists. They appeared in "Flora Antarctica," "Flora Novæ Zelandiæ," and "Flora Tasmania." In 1847 he went to the Himalayas, and the account of his tropical studies of the geographical distribution of plants secured the enthusiastic approbation of Humboldt, Lyell, Darwin, and in fact all naturalists. Travels in Syria, Palestine, Morocco, and North America gave him results which made Asa Gray say: "No botanist of the present century, perhaps of any time, has seen more of the earth's vegetation under natural conditions." Probably his greatest achievement will be considered his establishment on a rational basis of the science of geographical botany. Of course, academical distinctions were showered upon him. He became president of the Royal Society in 1872. He had been awarded the Royal Medal in 1854, and others were afterwards assigned to him in 1887 and 1892. The Government, always slow to recognize science, made him C. B. in 1869 and K. C. S. I. eight years later, in 1877; but took another twenty years to advance him to the next step of Grand Commander.

Staff Surgeon Norman Ireland Smith, R. N. (retired), died on the 10th inst., after a long illness, aged 44.

Dr. K. M. O'Callaghan, who died yesterday, was formerly a captain in the R. A. M. C. He served with great credit in the Zulu and Burmese wars and had the medal and clasp for each. When serving in India he qualified as military interpreter in Hindustani.

CANADIAN PUBLIC HEALTH ASSOCIATION.

(From Our Special Correspondent.)

THE first meeting of the Canadian Public Health Association was ushered in at Montreal with a great flourish of trumpets. Those responsible for the foundation of the association were determined to leave no stone unturned to render the opening congress a success, doubtless deeming that the first step, after all, does count for a good deal. It may be said emphatically that these efforts achieved their object, for seldom has a meeting of this nature commenced under more favorable auspices. His Royal Highness the Duke of Connaught, Governor-General of Canada, accompanied by the Duchess and Princess Patricia, performed the opening ceremony, with the able assistance of the Hon. R. L. Borden, Premier of the Dominion, and of the Hon. Martin Burrell, Minister of Agriculture. The function, for it may be so termed, as it partook of a social as well as of a national and sanitary character, was held in the Convocation Hall of the Royal Victoria College on the evening of the 13th. The audience was large and representative. Public health officers mingled with personages of note in all branches of science and commerce from every part of the Dominion, and there were perhaps as many women as men present. The chair was taken by the president of the association for the year, Dr. T. W. Starkey, Professor of Hygiene at McGill University. Dr. Starkey gave a brief but fitting address of welcome to the Governor-General and to the Duchess of Connaught and Princess Patricia. In the course of the address he drew attention to a point of singular moment, that the object of the association was not only to interest professional men, but to induce the general public to join the association as well. Dr. Starkey also read the postscript of a letter received from Lord Strathcona in which that veteran philanthropist stated that he had sent a check for $2,500 for the association to use in the way thought best.

The Governor-General delivered a really well-thought-out address dealing with public health matters in which he made some extremely apt allusions. Among other things he emphasized the point made by Dr. Starkey that the association was not founded for medical men alone. His words treating of this phase of the question were so pertinent and apply so well to all countries that they are worthy of being quoted in full. He said that it was an erroneous idea that deep knowledge is necessary for a proper comprehension of preventive medicine. While profound knowledge and tedious research are required by scientists to acquire logical and exact results, the results are comparatively simple of application to our daily life, and in this connection he wished to pay a hearty tribute to the professional men for their willingness at all times to give to the public the benefit of their valuable experience. In the course of his address the speaker made another decided hit and this was in his reference to smallpox, on which subject he is qualified to speak from experience. His Royal Highness referred to some vaccination statistics from India with regard to an epidemic of smallpox which occurred in the district in which he held command and further said that he did not wish to enter into any controversy on vaccination as he knew there was a strong and organized opposition to it, but he would make the simple statement of the fact that in the cemetery

of Gloucester, England, lie the bodies of 270 unvaccinated children who died during the smallpox epidemic sixteen years ago. Only one vaccinated child lost its life in the same epidemic. Mr. Borden said that in the past the matter of public health had been neglected by the Federal Government, but declared that in the future this mistake was to be remedied. To Mr. Burrell, Minister of Agriculture, was left the duty of making the announcement of the evening, one of far-reaching significance. The Minister said, in part: "Health is a very vital matter to our people, far more important than many things we make a fuss about. And, speaking quite unofficially, I would say I believe the time has come when, even if does not demand a portfolio, it should at least have a full-fledged department in the Federal Government." He concluded his address with these wise and weighty words, which might be taken to heart with advantage by peoples and governments of all the civilized world: "Just as soon as sufficient common-sense administrative methods can be arranged, which will cut the overlapping between municipal, provincial, and federal authorities in health matters, you may look for a closer and more cordial cooperation between the various governing bodies." Sir Lomer Gouin, Premier of the Province of Quebec, likewise made an announcement of some importance with relation to the management of public health affairs. He said that the Government of Quebec was anxious to do all possible to aid the work of the association. It had already prepared plans for the division of the province into ten districts, which were to be under the supervision of as many expert hygienists. These were to be chosen by competitive examination from the great English and French universities. Brief addresses were also given by Dr. Guerin, Mayor of Montreal, and by Dr. Montizambert. The latter, as the oldest sanitarian in Canada, having been appointed to an official position by Sir John Macdonald in 1866, gave the history of sanitation in Canada, while moving a vote of thanks to the Duke and Duchess of Connaught.

The serious work of the meeting began on the afternoon of the 13th, and the work was really serious, there having been more than fifty papers contributed. The general sessions and meeting of the sections were held in the Medical Building of McGill University, the use of which was granted to the association by the faculty of the university. It is needless to say that no more suitable place for such a gathering could have been found. At the first general session several good papers were read. Col. G. C. Jones, M.D., M.R.C.C., Ottawa, Director General Medical Services, Department Militia and Defence, read a paper on "Military Aspects of Sanitation." It was pointed out in the paper that, although Canada was regarded as the reverse of a military nation, yet it must be borne in mind that a form of conscription was in force and therefore military sanitation was a question of considerable importance. Dr. P. H. Bryce read a paper on "Conservation of Food by Cold." The paper read by Dr. J. D. Pagé, Quebec, was of quite as much interest to sanatarians of the United States as of the Dominion. The question of ship surgeons on immigrant ships was discussed by a medical inspector at the Port of Quebec. The paper dealt with the necessity for a stricter and more efficient examination by ship surgeons of immigrants to Canada than is at present the case. During the months of the year when navigation to Canada via the St. Lawrence route is open between 2,000 and 3,000 persons are examined at the Port of Quebec every day, and the entire responsibility of deciding upon the fitness of immigrants to enter Canada rests on the shoulders of the medical inspectors of the port. This is a heavy responsibility and a state of affairs which, in the opinion of Dr. Pagé, should not exist. He draws attention to the somewhat notorious fact that medical examination on shipboard is more or less perfunctory. The regulations impose on ship surgeons the duty of careful examination of immigrants, but these regulations are more honored in the breach than in the observance, and thus, as said before, the duties of the port inspectors are rendered more onerous than they should be. It is obvious that no one has more favorable opportunities for judging as to whether an immigrant is mentally and physically fit than is the ship surgeon, and it would manifestly be to the best interests of all concerned if he fulfilled his obligations. According to Dr. Pagé, and his reasoning seems sound, the chief cause of ship surgeons evading their duties is that they do not take them seriously. They are for the most part young men who take these positions merely for a change and a cheap trip. Of course, however, the fault lies in the system. The steamship companies are really to blame for the situation in that they do not pay sufficient remuneration to make it worth the while of skilled, trained men to become ship surgeons. The pay is paltry and the result is that the work, as is always the case in such instances, is not properly performed. Dr. Pagé said that he had spoken to several shipowners on the subject, and their answers had invariably been that so long as they could obtain an almost unlimited supply of ship surgeons at a small salary, they saw no reason why they should change their methods, thus once again seeming to prove the truth of the adage that "corporations have no consciences." The speaker said he thought that means should be devised to impel shipowners to pay their medical men a fair wage so that they might attract to the immigrant ship service skilled and trained men in place of men who merely look upon such employment as *faute de mieux*. Dr. Pagé suggests that $1,000 a year would be a fair initial salary for a ship surgeon.

STEVENSON AT SARANAC.

To the Editor of the Medical Record:

Sir:—Your issue of December 16, page 1231, contains a note about Robert Louis Stevenson at Saranac Lake. The writer speaks of the morbid touches and ghastly fancies peculiar to many of Stevenson's stories, saying that "the reason may lie in those tuberculous toxins which were coursing in his blood." The writer of the article does not refer to the well-authenticated fact that Stevenson got many of his ideas for stories from his dreams, and, in fact, systematically recorded in note-books the fantastic images that his nightly slumbers provided. This fact, if mentioned, would have carried the writer's suggestion far toward probability.

Reader.

Hypophysis Extract in the Treatment of Graves' Disease.—A. Salmon reports two cases in which this treatment was followed by favorable results, which he explains on the basis of the experimental finding that the hypophysis inhibits the secretion of the thyroid.—*Il Policlinico.*

Progress of Medical Science.

Boston Medical and Surgical Journal.

December 21, 1911.

Contagious Affections of the Skin in Preparatory Schools and Colleges. J. T. Bowen.
The Diagnostic Importance of Hemoptysis. W. B. Bartlett.
The Comparative Toxicity of Various Alcoholic Beverages. J. Friedenwald.
Tissue Necrosis Following Injections of Salvarsan. R. L. Sutton.
A Report of Nine Cases of Ocular Syphilis Treated by Salvarsan. F. E. Cheney.

Contagious Affections of the Skin in Preparatory Schools and Colleges.—J. T. Bowen describes the following as of common occurrence in preparatory schools and among younger members of colleges: Impetigo contagiosa, scabies, ringworm, marginated dermatitis of the thighs and axillæ, alopecia areata, and verrucæ. The author notes that there is much evidence in support of the theory of these who believe that at least some of the cases of alopecia areata are communicable. In an asylum containing sixty-nine girls sixty-three cases of this disease broke out during a period of four months. In verrucæ the author believes that there is an infective agent present, as well as in most other varieties of papilloma.

Diagnostic Importance of Hemoptysis.—W. B. Bartlett concludes from his study of the subject that bleeding from the upper air passages must be ruled out by careful inspection and history. Hemoptysis may occur in certain constitutional or blood diseases as merely another manifestation of the general tendency to bleed. Hemoptysis frequently occurs in broken compensation in heart disease and may occur in mitral stenosis as the only symptom of failing compensation. In such cases tuberculosis is frequently suspected; it is, however, rarely found. Ninety per cent. of all hemoptyses are due to pulmonary tuberculosis. As a rule definite signs and symptoms are present. Not uncommonly, however, signs and symptoms do not develop for months or even years. Hemoptysis may occur in any ulcerating or eroding pulmonary disease. It should, therefore, be expected in abscess, gangrene, bronchiectasis, or pulmonary cirrhosis. In such cases careful study of the signs and symptoms and frequent examinations of the sputum will usually suffice to rule out tuberculosis. Hemoptysis in pneumonia, bronchitis, asthma, or following trauma should lead to the suspicion of an underlying tuberculous process. It is very doubtful if vicarious menstruation or hysteria can produce hemoptysis in normal lungs. Hemoptysis occurring without warning in young and healthy adults and passing off without the development of further signs or symptoms of tuberculosis is probably of tuberculous origin and should be so treated. Bronchopulmonary hemorrhage without definite symptoms or signs of cardiac or ulcerative pulmonary disease is due in nearly every instance to tuberculous infection, which is merely another way of saying that hemoptysis should be considered as due to pulmonary tuberculosis unless proved to be due to some other cause.

Comparative Toxicity of Alcoholic Beverages.—By J. Friedenwald. (See MEDICAL RECORD, Vol. 79, page 1073.)

Tissue Necrosis Following Injections of Salvarsan.—R. L. Sutton believes that the intramuscular injection, although slightly painful, is the safest and best method of administering this drug. Abscesses result from one of three causes: improper preparation of the solution or suspension employed, insufficiently deep injection of the drug, and bacterial contamination. Examination by the author of the walls of one of the cavities showed an increase of fibrous tissue, with complete blocking of the smaller vessels and lymphatics by minute particles of salvarsan. Numerous small masses of the substance were also found in pocket-like cavities distributed through the section. There were degenerative changes, with decrease in amount, of both connective and elastic tissue. In the immediate vicinity of the lesion evidence of inflammation was almost entirely lacking, and round cell infiltration was conspicuous by its absence. In this instance it is probable that the drug, which had been employed in supposedly alkaline solution, had not been completely dissolved. In treating these lesions the author has found it best to dissect or curette out the lining of mummified tissue and allow the cavities to fill up by granulation. Balsam of Peru, with an occasional application of copper sulphate or powdered alum, is of value. When the healing process is well established recourse may be had to an 8 per cent. scarlet R ointment.

Salvarsan in Ocular Syphilis.—F. E. Cheney reports two cases of acute iritis with condyloma, in which there were a rapid subsidence of the inflammatory symptoms and a disappearance of the condyloma following the injection of salvarsan. This treatment caused the entire disappearance of the inflammatory symptoms in eleven days in a case of chronic general uveitis. In a fourth case, one of a low form of long-continued general uveitis, there was no immediate result following the injection of salvarsan. In four out of five cases of interstitial keratitis treated by means of salvarsan there was a rapid disappearance of circumcorneal injection, of photophobia, and of lacrymation. In three cases there was no exceptional rapidity in the clearing of the corneal infiltration.

New York Medical Journal.

December 23, 1911.

Sterility in Women. E. McDonald.
Tetanus, Seven Cases with Recoveries. P. Kintzing.
The Present State of the Origin of Life Question. H. C. Bastian.
The Operative Treatment of Fractures. E. P. Magruder.
Concerning the Evolution of the Operating Table. F. Hartley and F. W. Murray.
A Report of Three Interesting Obstetrical Cases. S. J. Seadron.
Hepatoptosis. A. F. R. Andresen.
The Treatment of Diphtheria Carriers by Overriding the Infected Area with a Culture of *Staphylococcus pyogenes aureus*. H. Page.
Diagnosis. A. M. Corwin.

Sterility in Women.—E. McDonald notes that 10 per cent. of married women are sterile. Rich diet, indolence, and lack of exercise have a distinct effect in increasing sterility. The husband is responsible for the sterility in a quarter or more of all cases. Among the causes of sterility in women are imperforate hymen and vaginismus, infantilism of the genitalia; gonococcus infection; ovarian disease; misplacements of the uterus; perineal laceration; operations, chiefly curettage; fibroids; systemic diseases such as anemia, diabetes, syphilis, and obesity; certain drugs, such as opium, and certain occupations, such as working in tobacco.

Phenol Treatment of Tetanus.—P. Kintzing reports seven cases of tetanus successfully treated by means of the method introduced in 1892 by Baccelli, namely, the hypodermic injection of phenol. The author used a solution of pure phenol of 10 per cent. strength, made by dissolving the deliquesced crystals in sterile water. This solution was then diluted to suit the case, generally to thirty or forty minims and administered by hypodermic injections deep into the muscles; the dose being repeated at intervals of three hours in the beginning, increasing the interval as improvement manifested itself. The full adult dose employed was ten drops of this 10 per cent. solution equaling practically one grain of pure crystalline phenol. As a precaution against soreness or suppuration the author has sometimes diluted with sterile water half the stated amount, five drops, to the capacity of a twenty-five or thirty-minim syringe, injected this into one buttock, following immediately with the remainder of the dose into the opposite buttock; the succeeding injection may be made into the deltoids or the pectoral muscles, if deemed advisable. The author regards the antitoxin treatment of tetanus as far from ideal and in his own experience disappointing.

The Origin of Life.—H. C. Bastian refers to his experiments, by means of which he believes he has created living microorganisms from sterile solutions of inorganic salts, chiefly sodium silicate.

Operative Treatment of Fractures.—L. P. Magruder states that operation is indicated in the closed fracture of wide displacement and when correct apposition is otherwise impossible, provided hospital facilities can be obtained. Operation is indicated in articular fractures when ankylosis threatens, and the best results are obtained after exact coaptation and suturing of the fragments. Massage, followed by early passive motion, gradually made active, should be the practice. When operation is indicated at all, the earliest operation is the best. The operative treatment of open fractures is that which most nearly reduces them to the type of the closed fracture, except as to drainage. Gunshot fractures should be treated like fractures of the open type in contact with street dust. That is to say, in addition to the usual treatment one should administer, as a wise precautionary measure, antitetanic serum. In all cases the most exact coaptation and retention of the fragments give the most gratifying results. The ideal suture is one strong enough to hold until union begins and then admits of its own absorption. The nearest approach to this is the sixty-day chromic catgut, which is unsafe and unsatisfactory in the presence of tension. The most trustworthy metal suture is the tinned steeled annealed wire. Wiring is the best operative method of treatment.

Evolution of the Operative Table.—F. Hartley and F. W. Murray state that, with the exception of Brown's goiter attachment, they are unable to find among the modifications, adaptations, and additions of the table devised by Bainbridge a single one which was not a part of their table in 1908.

Interesting Obstetrical Cases.—S. J. Seadron presents the histories of the following cases: accidental concealed hemorrhage; large hematoma vulvæ complicating labor, and a second cesarean section for threatened rupture of the uterus.

Hepatoptosis.—A. F. R. Andresen states that this condition, which is frequently associated with ptosis of the other viscera, is more common than is generally supposed. It is a congenital anomaly, and is a potent cause of neurasthenia. Treatment consists of improving the general condition of the patient and the strength of the abdominal musculature.

Treatment of Diphtheria Carriers.—H. Page reports the case of a child in which, following an attack of diphtheria, the persistence of Klebs-Löffler bacilli in the throat was treated successfully by swabbing the latter with pure cultures of *Staphylococcus pyogenes aureus*.

A Symbol of Diagnosis.—V. M. Corwin states that the human hand may be made to symbolize the art of diagnosis. The entire hand, guided by enthusiasm, industry, trained senses, experience, judgment, and reasoning, grasps the entire clinical situation with the aid of the five fingers, family history, personal history, laboratory findings, subjective examination, and objective examination.

Journal of the American Medical Association.

December 23, 1911.

Drugs and the Nervous Mechanism of the Heart.—R. L. Wilbur states that the rôle of the serous surfaces of the heart in drug effects needs more consideration. Strophanthin acts largely on the nervous mechanism of the heart, perhaps partly through its stimulation of the sensory nerve-endings of the endocardium. The effect of strophanthin on conduction within the terrapin heart can at times be overcome by strychnine. This conduction is probably along nervous paths. The preliminary administration of strychnine enhances the early stimulating effects of strophanthin. The author concludes that the relation of these drugs should be further studied clinically, as should the use of strychnine alone or in conjunction with atropine in partial heart-block.

Two Rubber Drainage Tubes in Abdominal Surgery.—By P. A. Harris. (See MEDICAL RECORD, July 8, 1911, page 105.)

Parturition in a Patient with Imperforate Anus.—O. Smiley reports the case of a primipara aged 27 in whom the anal orifice was on the posterior wall of the vagina two inches above the introitus. The patient was delivered of a nine-and-one-half pound infant with the aid of forceps.

Thigh Support for Kidney Operations.—D. N. Eisendrath has devised an apparatus for keeping both thighs flexed during a kidney operation by supporting the upper thigh on a wide, well-padded metal band.

Vaginal Speculum.—D. H. Palmer describes a self-retaining vaginal speculum which he has found of value as an aid in immediate repair of the perineum. The vaginal walls are held apart by two lateral blades which are controlled by threaded screws.

Uterine Fibroids.—By W. B. Dorset. See MEDICAL RECORD, July 8, 1911, page 104.)

Febrile Reactions After Salvarsan.—H. F. Swift and A. W. M. Ellis state that whatever may be the true explanation of the febrile reaction, the fact remains that the preparation of salvarsan with freshly distilled and sterilized water eliminates practically all unfavorable toxic symptoms. With the toxic action of salvarsan eliminated, repeated doses can be safely given and, no doubt, more effectual results will follow its more thorough application.

Arthritic Muscular Atrophy.—C. L. Allen finds that the evidence does not favor the idea of a unique cause as effective in all cases of arthritic muscular atrophy, but would indicate that the atrophy is the product of a number of different factors which may be responsible to different degrees in different cases.

Sanitation of the Great Lakes.—G. E. Fell calls attention to the dangers associated with pollution of the water of the great lakes, which dangers call for immediate consideration at the hands of an authoritatively constituted central medical body in respect to the control and the betterment of conditions.

Immuno-Diagnostics in Internal Medicine.—By W. J. Butler. (See MEDICAL RECORD, July 1, 1911, page 48.)

Treatment of Gastric Neurosis.—By C. L. Greene. (See MEDICAL RECORD, July 8, 1911, page 93.)

Complement in Human Serum.—C. H. Bailey concludes from his investigations that human complement capable of acting with human amboceptor to produce hemolysis is not destroyed by a temperature of 41° C. for thirty

minutes. Freshly drawn human blood contains a considerable amount of complement capable of acting with human hemolytic amboceptor, and such complement is not destroyed by heating at 41° C. for thirty minutes. The blood of a patient with a temperature of 40° C. contains complement capable of acting with human hemolytic amboceptor. Complement does not necessarily disappear from human sera in seventy-two hours after withdrawal from the body.

Human Rabies.—H. Hanson reports a case of this condition with autopsy findings and reviews the various features of the disease.

Artificial Infant Feeding.—By F. C. Neff. (See MEDICAL RECORD, July 8, 1911, page 107.)

Verruca Peruana.—S. T. Darling states that this disease is interesting from several points of view: to the parasitologist on account of the peculiar bodies in the erythrocytes, and on account of its probable transmission by ticks or other suctorial invertebrates having a peculiar geographical and altitudinal distribution; to the hematologist, on account of the remarkable blood picture in the malignant form of the disease, there being a profound anemia; to the physician and quarantine officer, from the fact that the disease is rife in certain districts in Peru, where Americans have commercial interests and where American physicians and engineers, bridge builders, and other mechanics have occasion to pass through or work within infected zones. Convalescents occasionally return to the United States with some evidences of the disease still present on their persons. Verruca peruana is an infectious disease in which a fever of irregular type, associated with more or less severe anemia, is followed by a wart-like eruption of the skin, and sometimes of the mucous or serous membrane.

Verruca Peruana.—By H. A. Giltner. (See MEDICAL RECORD, July 1, 1911, page 46.)

Pelvic Disease and Exophthalmic Goiter.—By V. E. Hertzler. (See MEDICAL RECORD, July 1, 1911, page 51.)

Pre-Neurasthenic and Pre-Insane Condition in the Young.—R. Moore notes that the neurasthenic adult is the result of a neurasthenic child plus exhausting illness. Natural juvenile neurasthenia is clear cut. Its symptoms are as follows: On the physical side a general droopiness, poor standing balance, diminished expression in face, fullness under eyes indicating fatigue, other fatigue signs, as when arms are extended one is lower than the other and thumbs droop, twitching fingers, abdomen thrown forward when trying to stand erect; on the nerve side, marked inability to accomplish, due to mental, not physical, fatigue, a mental apathy more apparent than real, abnormal sensibility to external impressions, such as sudden noises, etc. The pre-emotional type shades into and is often combined with the neurasthenic type. Children of the latter type are usually well formed physically, while those of the pre-emotional type may show various physical stigmata of degeneracy. The key to the pre-neurasthenic type is fatigue. The key to the pre-emotional type is instability. The key to the pre-dement type is internal strife.

Acute Ascending Paralysis.—C. W. Hitchcock reports a case of this condition occurring in a soldier 24 years old. There were no true atrophy and but slight sensory phenomena and the case resembled in many respects the fatal case described by Landry in 1850. The author suggests that many of the cases which have served to confuse the pathology of Landry's paralysis are only cases of acute poliomyelitis, in which the spinal cords, could they be examined, would reveal lesions of a distinctly inflammatory character, presenting quite a different pathological picture from that in which Landry was unable to demonstrate any definite changes.

Multiple Prostatic Calculi.—W. D. Webb reports a case in which a mass composed of thirteen hard, faceted stones consisting of phosphates was found in the site of an old prostate which had been removed years before.

The Lancet.

December 16, 1911.

Intraabdomino-Pelvic Pressure in Man. R. H. Paramore.
A Year's Work in Abdominal and Pelvic Surgery in the Royal Victoria Infirmary, Newcastle-upon-Tyne, and in a Private Hospital during 1910. R. Morison.
Venereal Disease: Its Present and Future. D. White and C. H. Melville.
Case of Rapid Involution of a Uterine Fibromyoma after Parturition. R. L. E. Downer.
The Use of Calcium Salts as a Prophylactic Against Serum Rashes. M. A. Cassidy.
A Diplococcus from the Urino-Genital Tract. L. S. Dudgeon.
Splenomegalic Polycythemia with Cyanosis (Osler's Disease or *Maladie de Vaquez*). E. Clark-Jones.
Ovarian Cystoma of Unusual Size Complicated with Ventral Hernia and Ascites. H. Macnaughton-Jones.

Intraabdomino-Pelvic Pressure.—R. H. Paramore states that the combined effect of the abdominal wall and thoracic diaphragm is to cause a general compression of the abdominal viscera. These have definite shapes; even the hollow intestinal tract, as sections of the frozen body show, and the facets on the surfaces of the more solid organs are clear evidence of how they all are compressed against each other and the enclosing walls during life, demonstrating, too, how by opposing each other and these walls they are maintained in place and are not suspended in the normal by any ligament. The pressure so caused in the large and extensive abdomen is propagated to the pelvis, which in its phylogeny, and indeed ontogeny, has reacted by an adaptation of its structure to successfully withstand it. The intraabdomino-pelvic pressure, even that maintained during posture and rest, subserves most important circulatory functions. It not only quickens the whole circulation, but renders the blood richer and purer in a shorter time; and this is the reason of its far-reaching effects on general metabolism. By maintaining a high aortic pressure it lays the foundation for an efficient cerebral circulation so important to man; it is, indeed, by its means that man has been able to evolve and is able to maintain a vigorous and strenuous life, both physical and mental, in spite of his erect carriage and the elevated position of his brain.

A Year's Work in Abdominal and Pelvic Surgery.—R. Morison finds that surgical results are not influenced by the costly and elaborate arrangements of the modern hospital, but that they depend upon strenuous personal endeavor on the part of everyone concerned to carry out the simple essential requirements of present-day surgery.

Venereal Disease.—D. White and C. H. Melville state that the present time is favorable for the commencement of a campaign against venereal disorders. Gonorrhea can be cured in its early stages, and its present incidence might be enormously diminished; against syphilis there is a specific, by means of which, rightly used, this disease might in a short time be eliminated. If full advantage were taken of these facts the economic and the moral gain to the community, resulting from the diminution of disease, would quickly, amply, and repeatedly repay the cost of such an effort, for which the means are at hand and the time is ripe.

Rapid Involution of Uterine Fibroid.—R. L. E. Downer reports the case of a fibroid tumor of the uterus, of the size of a cricket ball, which entirely disappeared in the course of two months during the process of involution of the uterus after parturition.

Use of Calcium Salts Against Serum Sickness.—M. A. Cassidy finds that, in cases treated with diphtheria antitoxin, the administration of calcium salts for the purpose of preventing or mitigating antitoxin rashes has been found by actual trial to favor the occurrence and duration of these rashes.

Diplococcus from the Genitourinary Tract.—L. S. Dudgeon and P. N. Panton describe a diplococcus which

they have isolated from different parts of the genitourinary tract. In its staining properties, and its morphological appearances, and in the nature of its colonies on agar, this organism closely resembles the pneumococcus, yet in every other respect the two bacteria are widely different. The diagnosis of a pneumococcal infection can only be made after full cultural and other investigations, yet the frequency with which the pneumococcus has been reported from the urine and from vaginal discharges depends upon the mistaken identity of that organism with the one which the authors describe; in fact, there is evidence that this mistake does occur. The organism is one not infrequently met with, and may be unaccompanied by any evidence of disease. In a certain proportion of cases, however, it is associated with the ordinary phenomena of inflammation and may be the sole organism detected. The cocci appears to have little or no pathogenic action on mice or rabbits.

Splenomegalic Polycythemia with Cyanosis.—L. Clark-Jones reports a case of this condition which is also known as Osler's disease or *maladie de Vaquez*.

Ovarian Cystoma.—H. Macnaughton-Jones reports a case of ovarian cyst of unusual size complicated with ventral hernia and ascites in a patient aged 67 years.

British Medical Journal.

January 16, 1911.

Bier's Hyperemic Treatment. H. E. Waterhouse.
Leprosy: A New View of Its Bacteriology and Treatment. Capt. T. S. B. Williams.
A Remarkable Daily Variation in Leucocytes in Several Diseases. Malarial Fever, Hodgkin's Disease, Cancer. D. Thomson.
The Dangers of Saline Injections. E. C. Hort and W. J. Penfold.
A Report of Six Cases of Arsenical Poisoning Caused by Fumes from a Coke Stove. J. G. Taylor and K. V. Trubshaw.
A Note on Paroxysmal Attacks of Dyspnea, Occurring at Night in Heart Disease. H. Barber.

Bier's Hyperemic Treatment.—H. E. Waterhouse lays down the following axioms which must underlie the successful carrying out of this treatment. One should be careful that throughout the whole course of the treatment the blood continues to circulate freely throughout the part subject to treatment. One should be assured that the treatment be painless, or at least that it mitigate any already existing pain. The chief aims of Bier's treatment are the arrest of an infective process, or at least its mitigation, the prevention of suppuration in many cases in which this is threatened; the relief from, or at least the mitigation of, pain; the avoidance of operative treatment in many cases, or, where this is not possible, the employment of a less severe and less mutilating operation than would otherwise be necessary—thus the required incisions may be few and small instead of many and extensive; the saving of time owing to hastening the eliminating processes in cases in which suppuration and necrosis are unavoidable, as in carbuncle; the increase in the antimicrobic power of the circulating blood, due in large degree to the greater quantity of blood circulating in the diseased part, and the stimulation of the process of repair, as in cases of delayed union of fractures. Elastic constriction gives rise to a purely venous, that is a passive, hyperemia. Suction by means of cupping glasses produces a hyperemia which is at first arterial or active, but soon become venous or passive. Hot air occasions a hyperemia which is purely arterial, that is, an active hyperemia. In every case in which pus is present it is absolutely necessary that, prior to the commencement of Bier's treatment, the pus be evacuated.

Leprosy.—T. S. B. Williams advances the view that the lepra parasite is not an acid-fast bacillus belonging to the fission fungi, but that it is a very pleomorphic streptothrix, which, in addition to changes in form, exhibits marked changes in its staining reactions in regard to the quality known as "acid-fastness." The author's prolonged investigation has shown that it is possible, with a vaccine made from the acid-fast phase of the organism, to influence the disease materially, and to cause, in many cases, marked retrogression, and even complete disappearance of the outward signs of the disease.

Daily Variation in Leucocytes in Disease.—D. Thompson has observed in malaria that the leucocytes change very markedly in numbers and in variety, according to the stage of development of the malarial parasites and also according to the number of parasites present in the blood. During the sporulation of the parasites the percentage of mononucleated leucocytes falls markedly, and when many leucocytes are present the total leucocyte count is also low. When the parasites are very numerous there tends to be a constant leucopenia, but as the numbers of parasites become reduced the leucocytes increase, and finally the marked periodic leucocytoses occur when the parasites are too few to be detected. The author advances the view that this latter phenomenon is due to the sporulation of small numbers of parasites. It has been suggested that these leucocytic variations might be of great value as a diagnostic sign of latent malaria. In septic diseases with suppuration it was found that the number of leucocytes remained more or less constantly high, with a tendency to be more numerous during the intervals between the swinging temperatures. In Hodgkin's disease the leucocytic phenomena are very similar to those found in malarial fever, with the difference that in the latter the mononuclear percentage does not remain as uniformly high as in the former. This suggests that Hodgkin's disease may be due to some protozoal parasite having a definite periodic development. In a case of cancer studied by the author there was a marked daily rise and fall in the number of leucocytes very similar to that of Hodgkin's disease, which similarly suggested the possibility of the presence of a protozoal parasite.

Dangers of Saline Injections.—E. C. Hort and W. J. Penfold conclude that saline injections as at present administered are by no means free from risk, especially when they are large. The cause of the toxicity of distilled water that is allowed to stand in sealed sterile vessels is not yet explained. Neither centrifuging, filtration through cotton-wool or bacterial filters, nor boiling is sufficient to prevent the fever that follows saline injections. Distillation in a sterile Jena retort of all water used in the preparation of saline solutions, followed by immediate injection, is at present the only reliable method of ensuring that no fever follows the injections.

Arsenical Poisoning by Fumes from Coke Stove.—J. G. Taylor and K. V. Trubshaw report several cases of poisoning from coke fumes escaping into the air of a room. The poisoning was proved to be arsenical by the detection of arsenic in the urine of the two worst cases.

Paroxysmal Cardiac Dyspnea.—H. Barber has met with four cases in which very definite paroxysmal attacks of dyspnea came on suddenly in the middle of the night as one of the earliest symptoms of a diseased heart.

Hyperglobulia in Congenital Heart Disease.—W. Bie and W. Moor report a case of pulmonary stenosis and patent foramen ovale in which hyperglobulia was present. This is attributed to the increased formation of erythrocytes resulting from the stimulus of oxygen-deficiency on the erythroblastic organs.—*Deutsches Archiv für klinische Medizin.*

Opsonic Power of the Blood in Diabetes.—P. Sisto states that this is diminished with reference to a variety of microorganisms, chiefly staphylococci, streptococci, and tubercle bacilli, and that this diminution is present irrespective of the presence or absence of complications caused by these bacteria. The opsonic index has no quantitative relationship to the degree of glycosuria or of acidosis.—*Clinica Medica Italiana.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

Rheumatism.—When there is a history of acute articular rheumatism, it is most important, on account of the well-known tendency of this disease to recur under ordinary exciting conditions and to affect the heart, for the examiner to be careful in giving the number of attacks, the date, duration, and severity of each attack, the name of the joints involved, and a full account of any cardiac complications. The consideration of these facts fairly well establishes the individual tendency to recurrence and liability to future trouble, and as applicants who have had acute inflammatory rheumatism are classified into those to whom insurance may be issued at the ordinary rates or on some form of endowment, or who should be postponed or declined, no conclusion can be reached at the home office until these data are supplied.

It should always be kept in mind that the heart may have been involved during an attack without leaving much or any evidence, and a special effort should be made to find out if any cardiac complication did occur, as the applicant in such cases is not acceptable until at least five years have elapsed since the attack.

The sequelae of acute articular rheumatism which tend to shorten life usually show the signs of their sinister work when the subject has passed the age of fifty, and an endowment policy may be written therefore in some cases when it would not be advisable to issue one at ordinary rates and the case is not bad enough for postponement. The most general practice, perhaps, in rating these cases is to give a policy at ordinary rates where there has been one atack not too recently and an endowment policy when there have been two attacks, the last one at least a year before the date of the application. Three attacks indicate so strong a predisposition to recurrence that it is advisable to reject unless a long period of time has elapsed since the last one.

The endowment policy will be referred to several times in these lines when discussing rheumatism, gout, syphilis and overweights, and it will not be out of the way to give a brief explanation of the value of this contract under certain circumstances. The evil effects of the conditions just named usually begin when the subjects have passed the age of fifty or sixty, as the case may be—in other words, as a class these applicants do not live up to the regular expectancy. If, then, a policy can be written which will completely mature at about a certain age and not call for any further obligations on the part of the company, applicants may be accepted on this plan who would otherwise have to be rejected. The endowment policy fulfills this requirement, for by the terms of this contract the transaction is absolutely completed at the end of a stated number of years on terms fully understood by and satisfactory to both the policy-holder and the company. It is the termination of the contract at a given age rather than the increased premium which makes this form of policy so appropriate for certain cases.

Chronic rheumatism develops more commonly in adult life and a reliable history is therefore more easily obtained, and in addition to this there is apt to be some indication of the disorder at the time of examination. Patients do have respites from the effects of this disease, however, or they may have only some remaining pain or stiffness which has not affected the general health. In any event a complete history should be furnished, as applicants who are or have been afflicted with this trouble, if insurable at all, are only entitled to some form of endowment policy.

An occasional twinge in a joint without any previous swelling, inflammation or actual severe pain in the part is not worth mentioning.

Muscular rheumatism or lumbago is of no importance unless it has become chronic, in which case declination or an endowment policy is in order. A history of muscular rheumatism or lumbago should always be reported and it should be specifically stated whether or not any joints were affected in order to avoid confusion at the home office.

Gout.—Rejection is called for in a high percentage of the cases in which there is a history of gout. Before intelligent action can be taken at the home office, full details will be required, especially as to the number of attacks, the date, duration and severity of each attack and the names of the joints affected. Furthermore, the medical officers will want to be informed whether there have been any gouty symptoms between the acute attacks and, if so, their nature. Still further, they should know whether the applicant has been the subject of renal colic, albuminuria or glycosuria, as any one of these conditions as a complication denotes that there is some disease of the kidneys or metabolism.

Whenever a history of gout is acknowledged the urine and blood vessels should be examined with unusual care, and the hands and ears inspected for the presence of tophi. It is advisable to take the same precautions when an inherited diathesis is evident, though there has not been a typical attack of gout, as the inheritance sometimes manifests itself in such individuals by degeneration of the heart, blood vessels, and kidneys and may provoke changes in the nervous system.

In order that the examiner may fully understand the importance of all these requirements, it may be added that the presumption is against the acceptance of an applicant who has had gout. Exceptions may be made when the family inclination to gout is not too marked, when the disease did not assert itself until after the applicant was thirty years of age, when there has not been more than two attacks, both of which were mild in character, and when the attack, or the last one if there were two, occurred at least five years previously, when there is an absence of renal colic, albuminuria, and glycosuria in the personal history, and when the habits of the applicant are abstemious both as to drinking and eating.

It should never be forgotten when considering the question of gout, and this will explain the reluctance of life insurance companies to insure those subject to this disease, that there is a strong liability in these cases to the diseases of the blood vessels and kidneys which have become so prominent during the last 10 or 15 years as agents for shortening life. The bad results from the changes in these organs as well as in the nervous system are not apt to appear until after fifty years of age when the gouty attacks have been few in number and mild in character, and in these cases an endowment

policy may be granted occasionally for the reason fully described in the explanation of the advantage gained in issuing endowment policies in the section on rheumatism.

Pleurisy and Tuberculosis.—H. Koster writes an extremely instructive paper on the incidence of tuberculosis after pleurisy with effusion and after dry pleurisy. He mentions first that Allard has recently examined the records of 200 patients who have gone through a dry or a wet pleurisy, without an evident etiological factor, fifteen or more years before Allard's study. Of these 200 persons 180 had an effusion and 20 dry pleurisy. Of the 180, 81 were found living and in good health, 24 were surely tuberculous, 57 had died of tuberculosis in the meantime, and 18 died of other affections. Of the 20 persons with dry pleurisy 6 were found living and well, 4 were tuberculous, 1 had died of tuberculosis, and 6 had died of other diseases.

Koster's material, which he compares with Allard's, was still more abundant. His cases date from the period 1894-1908 and the following table gives a *résumé* of the total findings:

	In Good Health	Tuberculous	Died of Tuberculosis	Died of Other Diseases	Total
Idiopathic pleurisy with effusion	228	130	115	41	514
Idiopathic dry pleurisy	23	16	8	10	57
Rheumatic pleurisy	28	3		10	46
Pleurisy accompanying nephritis	6			6	12
Pleurisy accompanying typhoid fever	3			1	4

Koster first considers in detail the 514 cases of idiopathic pleurisy with effusion. Of these 47.7 per cent. became manifestly tuberculous or died of tuberculosis! Still more significant is the incidence of tuberculosis in these cases when the various ages are considered. Children proved to have a fairly good prognosis in reference to this point, while the incidence of the disease rose at about the fifteenth year and remained high until the sixtieth year, over a half of persons with a history of antecedent pleurisy at any of these ages having developed tuberculosis or died of the disease. This conclusion coincided with Allard's findings.

The next point considered by Koster is the interval of time which interposes between a pleurisy with effusion and the development of manifest tuberculosis. As is well known, many writers, and especially Landouzy, claim that every idiopathic pleurisy with effusion is a symptom of existing, though perhaps latent, tuberculosis, and Koster's findings lend much statistical support to this view. He has found, namely, that in those who died of tuberculosis in his series over 85 per cent. died in the course of the first *five* years after the incidence of pleurisy. This finding is likewise in agreement with Allard's.

Koster next considers dry pleurisy and shows that of the persons who had suffered from this affection not less than 42 per cent. later developed manifest tuberculosis or died of it, the disease developing or fatal outcome occurring within the first five years after the pleurisy in two-thirds of the cases. On the other hand, persons who had suffered from a pleurisy with a distinct etiology, that is, of rheumatic nature, or one occurring during nephritis or typhoid fever, only occasionally later developed tuberculosis or died of it.

Koster's conclusions deserve to be given *in extenso*.

1. In persons over fifteen years of age tuberculosis develops in at least one half of the cases after the occurrence of idiopathic pleurisy with effusion.

2. In children under five years this occurs in one-third of the cases only.

3. Statistics show that tuberculosis developing after wet pleurisy in older persons runs an acute course and has a bad prognosis.

4. After idiopathic dry pleurisy, too, about 40 per cent. of the cases develop manifest tuberculosis. This form of pleurisy is rare in children.

5. In the great majority of cases tuberculosis becomes manifest within five years after dry pleurisy or pleurisy with effusion.

6. Tuberculosis develops only exceptionally after pleurisies with definite etiology.

The author expresses surprise at the varying standards of judging the degree of risk in insuring persons with a history of idiopathic pleurisy. He thinks that no such person should be insured at all until five years have elapsed since the occurrence of the disease. After this period the risk is diminished, but is still present, diminishing with each additional year. On the other hand, history of a pleurisy with a definite etiology should not debar an applicant from insurance, if he is otherwise acceptable. [Koster's paper contains many other valuable data and tables which cannot be summarized here and for which the medical director or examiner would do well to consult the original article.]—*Zeitschrift für klinische Medizin*, Volume 73, Nos. 5 and 6.

Syphilis and Life Insurance.—Mild, well-treated cases should be charged 10 per cent. extra until the expiration of six years. When tertiary symptoms have developed the proposal should be absolutely declined, because, while treatment may temporarily remove these, it cannot eradicate the tendency to recurrence. These cases rarely live beyond ten years, and often much less, as treatment is usually insufficiently continued. Greene advises that "under no circumstances should a straight life-policy be issued to anyone who has a syphilitic history. The Actuarial Society of America has shown that an excessive mortality is experienced, despite careful selection—a much heavier death rate than in the case of past hip-joint disease." Actuaries find that in those in comfortable circumstances who have been insured most deaths from syphilis occur after the age of fifty. Actuaries dislike to grant insurance to applicants beyond this age, except at a high premium, but sanction endowment policies payable at the age of fifty.—"Syphilis, Its Diagnosis, Prognosis, Prevention and Treatment," by Thomas Hugh Beddoes, 1910.

Clinical Interpretation of Urinary Analysis.—Marcel Labbe agrees with M. Leven that there is much danger in having patients compare the urinary findings furnished for them by analytical chemists with the "normal" findings usually printed on the same sheet. Such persons frequently imagine themselves ill of various diseases because of discrepancy between their urine and the normal values; occasionally they treat themselves for various symptoms which they refer to the kidneys. Labbe thinks that such "normal" findings are misleading even for the physician, for they tempt him to forget that to interpret urinary findings one must take into consideration the food of the patient, his physical condition, his age, etc. etc. Many physicians, for instance, prescribe various phosphates or phosphoric acid preparations, because a single examination of the urine shows a deficiency in these elements. Frequently an excess of nitrogen and occasional glycosuria is interpreted as meaning a disease of the pancreas. Uric acid determinations, if they give high values, are interpreted as signs of gout or other forms of arthritis. It is, therefore, best to take none of the urinary findings as standard for comparison, but to compare the results of analysis with the theoretical values which may be considered normal only for the individual under examination.—*Journal de Médecine de Paris*, December 2, 1911.

Book Reviews.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D.; Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College; Physician to the Medico-Chirurgical Hospital, Consulting Physician to the Jewish Hospital and to the Widener Home for Crippled Children; formerly Physician to the Philadelphia and to the Protestant Episcopal Hospitals, Philadelphia; Officier de l'Instruction Publique. Illustrated. Tenth edition, thoroughly revised. Price $5.50. Philadelphia and London: W. B. Saunders Company, 1911.

This work has apparently earned a wide popularity, as evidenced by the fact that it has already passed through nine editions. It follows the traditional lines laid down for the one-volume textbook on practice, but particular emphasis is laid on etiology, diagnosis, and treatment. The matter has been brought right up to date in the inclusion of the following new topics in this edition: the abortive type of plague, masked chlorosis, polycythemia hypertonica (erythrocytosis), blocked pleurisy, angina major, angina minor, angina abdominis, hour-glass stomach, appendix dyspepsia, fatty liver, heat cramps, serous meningitis, tic, and psychasthenia. New and rewritten matter includes the following: Coleman on milk-sugar in typhoid fever, Chantemesse's serum in typhoid fever, Brudzinski's signs in cerebrospinal meningitis, tonsillectomy in acute articular rheumatism, Falk's and Tedesko's test in chronic tuberculosis, artificial pneumothorax in pulmonary tuberculosis, Nastin treatment of leprosy, appendicostomy in chronic amebic dysentery, Ehrlich's remedy in sleeping sickness, salvarsan in syphilis and in malaria, Bass' method of examining feces in uncinariasis, the Wassermann reaction in syphilis, Grawitz's treatment of pernicious anemia, transfusion of blood in pernicious anemia, autoserotherapy in serofibrinous pleurisy, Holmgren's treatment of serofibrinous pleurisy, Broadbent's sign in aortic regurgitation, Oertel cure in chronic myocarditis, Gordon's method of determining myocardia, Klotz's experiments on arteriosclerosis, salt-free diet in arteriosclerosis, colon bacillus producing ulcer of stomach and duodenum, glycyltryptophan test in cancer of stomach, Goodman's modification of Solomon's test in cancer of stomach, Boas' method of diagnosis in intestinal catarrh, hemohepatogenous jaundice, chronic family jaundice, chronic cholecystitis, autoserotherapy in ascites, Boston's test for albuminuria, Martinet's method of estimating acidity of urine as a basis for treatment, Schapira's test for permeability of kidney, McBride's treatment of alcoholism, neuritis, neuralgia, anterior poliomyelitis, tumors of spinal cord, aphasia, cerebral palsies of children, Breuer's and Freud's theories of hysteria, and the analytical method of treating hysteria. The work is well written, and exceptionally free from error, and may be recommended to the student and general practitioner as a modern textbook on the practice of medicine.

Operative Obstetrics, Including the Surgery of the Newborn. By Edward P. Davis, M.D., Professor of Obstetrics, Jefferson Medical College, Philadelphia. With 264 Illustrations. Price $5.50 net. Philadelphia and London: W. B. Saunders Company, 1911.

This excellent volume is the most complete presentation of the subject of operative obstetrics which has thus far appeared in this country. A book of this kind is very timely and Dr. Davis is to be congratulated upon the complete and yet very concise manner in which he has succeeded in presenting this subject. The book is divided into four parts, the first of which deals with the surgery of pregnancy, the second with that of labor, the third with the surgery of the puerperal period, and the fourth with that of the newborn infant. The author's recommendations as regards operative interference, although generally conservative, are in thorough accord with the accepted teachings of the day, and his own standing as an obstetrical operator gives to his book the stamp of truth and authority. The chapter on forceps, particularly, is well worth the attention not only of the general practitioner, but also of those who desire to practise obstetrics as a specialty, for, notwithstanding the almost universal application of this obstetrical aid, its mechanical opportunities and clinical applications are by no means as well understood as they ought to be. Dr. Davis emphasizes the necessity of careful application and the use of the most appropriate form of instrument in each particular case. There is one recommendation, however, in using the axis traction instrument which might be questioned, and that is the use of the foot (as described on page 166) in applying traction to a loop of tape applied to the forceps. This appears to be a very unsafe recommendation for general application. We are glad to note that the author insists on limiting the use of forceps to a head that is fully engaged and molded and pointing out the danger of the instrument in those cases in which the head is not engaged or just beginning to enter the brim.

The section devoted to the cesarean operation, both vaginal and abdominal, is in accord with the teachings of the day, although one might question the advisability of delivering the uterus in the abdominal type of operation before extracting the child. The author is inclined to favor the Porro operation for infected cases if vaginal delivery is impossible and in twelve patients operated upon by the author, by this means, recovery took place in all. This operation has been more or less discredited in recent years and unjustly so. The writer does not, apparently, favor to any great extent the operations advocated for dividing the pelvic bones, and this stand will probably prove to be in accordance with American practice in the future.

The book is quite satisfactorily illustrated by a selection of reproductions from the works of other authors, very few original illustrations being introduced. In view of the general adoption of rubber gloves during delivery, their absence in many of the illustrations is noteworthy. As a whole Dr. Davis's book is very worthy of praise because, as already stated, it represents the first effort by an American obstetrician to produce an extended work on this subject as such.

Aphorismen für die Hals-, Nasen-, und Ohren Ärztliche Praxis, von Dr. Franz Bruck. Berlin-Charlottenburg: Verlag von August Hirschwald, 1911.

In this monograph of thirty-nine pages are numerous pertinent sayings based upon an apparently extensive clinical experience.

A Practical Handbook of the Diseases of the Ear. For Senior Students and Practitioners. By William Milligan, M.D., Aurist and Laryngologist to the Royal Infirmary, Manchester; Surgeon to the Manchester Ear Hospital; Lecturer upon Diseases of the Ear, the Victoria University of Manchester; President of the Otological Section of the Royal Society of Medicine; and Wyatt Wingrave, M.D., Pathologist (lately Physician) to the Central Throat and Ear Hospital, London, and to the Polyclinic, London. With 293 illustrations and 6 colored plates. Price $5.00. London: Macmillan & Co., Ltd., 1911.

The needs of the student, the general practitioner, and the aurist are all admirably served in the pages of this volume, which represents one of the best manuals on diseases of the ear that have appeared in recent years. Within the compass of 596 pages the authors have succeeded in covering the entire field of this subject, nothing of value being omitted. Considerable emphasis is placed upon the importance of applying pathological data, and the results of clinical pathology, in attaining accurate diagnosis and treatment. There are included a chapter upon those diseases of the nasal cavities which have a special bearing upon diseases of the ear; and one upon disease of the ear in relation to modern medicine. Among the other topics fully discussed are the relation of aural disease to life insurance, simulated deafness, facial paralysis, and the intracranial complications of middle-ear disease. The book is well written and profusely illustrated, while the printing and binding leave nothing to be desired.

Nursing in the Acute Infectious Fevers. By George P. Paul, M.D., Town Health Officer, Round Lake, N. Y.; sometime Visiting Physician to the Samaritan Hospital at Troy, N. Y. Illustrated. Second Edition, Thoroughly Revised. Price $1.00. Philadelphia and London: W. B. Saunders Company, 1911.

This new edition contains chapters on acute anterior poliomyelitis and paratyphoid fever; also additions and revisions in the chapters on reduction of fever, alleviation of symptoms, detection of complications, examination of urine, and poisons and their antidotes. The book is well balanced, and the author has shown much skill in what he has omitted; so that there is very little in it that the nurse will not be able to utilize, and it contains practically all that is necessary.

Verhandlungen des Vereins Deutscher Laryngologen, 1911, herausgegeben in Auftrage vom Schriftfuhrer, Dr. Richard Hoffman. Dresden.

This contains the business sessions and records of the present year, followed by thirty-one excellent clinical papers.

Conduct and Its Disorders Biologically Considered. By Charles Arthur Mercier, M.D., F.R.C.P., F.R.C.S., Physician for Mental Diseases to Charing Cross Hospital; Examiner in Mental Diseases and Psychology in the University of London; Visitor of the State Inebriate Reformatory, etc., Author of "Psychology, Normal and Morbid", "A Textbook of Insanity," "Sanity and Insanity," "Criminal Responsibility," etc. Price $3.45. London: Macmillan and Co., Limited, 1911.

It is pointed out by the author that although many works have been written on different departments of conduct there has been none that takes up the study of conduct as a whole. This he has attempted to do in the present volume. Human conduct is investigated from the biological viewpoint: the positive or negative value of every kind of conduct is appraised in proportion as it tends to further or diminish the chances in the struggle for existence. The first book is devoted to the various phases of action: action as spontaneous or elicited; abundant or scanty; instinctive or reasoned; self indulgent or self-restrained; impulsive or deliberate; voluntary or involuntary; novel, habitual, or automatic; original or imitative; crude or elaborate; work or play; and skilful or unskilful. There is also a chapter on instinct and reason, the fossilization of reason into instinct, and the liquidation of instinct into reason. The second book deals with the purposes or ends of conduct and the means by which these ends are compassed. Among the many aspects of conduct that are described may be mentioned social conduct; the social instinct; social inhibition; self consciousness; ambition, pride, vanity, conceit; elicited morality; custom and fashion; patriotic and philanthropic conduct, chastity and modesty; courtship; jealous conduct; marital conduct; parental and filial conduct; recreative and esthetic conduct; investigation, and religious conduct. This enumeration gives but an incomplete and vague outline of the comprehensive scope of this work, dealing as it does with a subject that vitally concerns not only the alienist, but also the general practitioner, whose daily work brings him close to the heart of humanity, and who as the family adviser is frequently called upon for light and guidance. The successful physician is, consciously or unconsciously, a psychologist. The author's mastery of the science of mind and his knowledge of human nature, both normal and pathological, are stamped on every page. His style exhibits a wonderful precision in the choice of words, a quality demanded by the delicate shades of meaning that are associated with this subject. To illustrate: in discussing filial conduct the author notes that "as age advances, the respective parts of parent and child are first modified, and at length reversed. Command on the part of the parent is softened into exhortation; and exhortation is modified into advice. Prohibition is replaced by warning, and warning by friendly caution." As an example of elegance of diction may be cited the following passage in which the author describes the rôle of sexual modesty in the male, in whom, although excessive modesty rarely or never leads to suppression of the sexual instinct, nevertheless frequently embarrasses him in the pursuit of courtship. "Love impels him to court the woman of his choice, modesty inhibits him from open admiration. Even when time, place, and circumstance are favorable, even when he has gained a private interview, and longs to declare his passion, modesty intervenes, and imposes an unconquerable obstacle. He is bold enough, and glib enough, when the object of his affections is not by; but in her presence modesty ties his tongue, confuses his mind, and makes his knees to shake; and, without very positive encouragement, he may go away without effecting his purpose." The author employs the touchstone of racial advantage in explaining almost every phase of conduct. Morality has a utilitarian value: it is "that conduct which is found by experience to be socially or racially advantageous." This is not the usual doctrine of morality which is built on the inherent nature of right and wrong. The various manifestations of abnormal conduct are contrasted with those of normal conduct. Thus, in the sane, suicide is most frequently prompted by the loss of what is, at the time, the chief aim of life; in the insane, suicide is prompted by the conviction of unworthiness, sin, and self-abasement. These examples will suffice to indicate the character of this work, which will undoubtedly become a classic in psychological literature.

Die Peroral Intubation. Ein Leitfaden zur Entlernung und Ausführung der Methode mit reicher Casuistik, von Dr. Franz Kuhn in Cassel. Mit 22 Abbildungen. Berlin: Verlag von S. Karger, 1911.

This volume describes the peroral method of giving anesthesia by means of tubes passed directly to the larynx in cases involving nasopharyngeal tumors, sinus, and tongue operations, palatal operations, extensive injuries of the face, and similar conditions. It describes the proper tube to be selected, its proper introduction, the anesthetic to be used, the position of the patient, in short, gives full particulars of the method.

Diseases of Infants and Children. By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital; Supervising Physician of the Children's Department, New York Post-Graduate Hospital; Attending Physician at the Willard Parker and Riverside Hospitals; Consulting Physician to the Randall's Island Hospital; to St. Agnes' Hospital, White Plains, to the Convalescent Home for Children, Sea Cliff, and to the Hackensack Hospital; President of the American Pediatric Society (1910-1911); and Godfrey Roger Pisek, M.D., Professor of Diseases of Children, University of Vermont; Adjunct Professor of Diseases of Children and Attending Physician to the New York Post-Graduate Medical School and Hospital; Adjunct Attending Physician to the Willard Parker and Riverside Hospitals; Attending Physician to the Darrach Home for Children. Second Edition, Revised, with 181 illustrations and 11 colored plates. Price $4.50. New York: William Wood & Company, 1911.

It is a pleasure to review a work such as this, which does not follow in the beaten path of the usual textbook on pediatrics. It bears the impress of originality and shows that the authors' experience in the teaching of graduate students has revealed to them the needs of the general practitioner. In the two years that have elapsed since the publication of the first edition important contributions have been made to pediatrics, and these are incorporated in the present volume. Among these additions may be mentioned an account of vaccine therapy, including a table of dosage, as applied in the treatment of diseases of children. The newer facts in relation to the serum diagnosis of syphilis and its treatment by means of salvarsan are clearly presented. The authors point out the dangers of this drug when administered to children, and state that their results with salvarsan have not been brilliant. Among the admirable features of this book are its compactness as well as its thoroughness. Its pages are, however, not weighted with descriptions of the rarer conditions, with pathological data, or with controversial details. The science of pediatrics as it can best serve the needs of the practitioner is the goal toward which this work is aimed. The chapters on infant feeding are masterly, presenting as they do the methods of modifying milk with the use of various top milks, which methods are more generally used to-day than any other. The simplicity of these methods, which were originated by Dr. Chapin, have shorn the subject of infant feeding of those mathematical subtleties which have been the bane of the student and the busy practitioner. There is a chapter on special examinations which presents in a nutshell the methods of the laboratory which are most available for the diagnosis of diseases in childhood. In the section devoted to the exanthemata there is a series of full-page colored plates which show with wonderful accuracy to life the cutaneous and mucous membrane manifestations of these diseases. There are a large number of photographic illustrations which admirably supplement the text. Considerable attention is given to the subject of treatment, and the numerous prescriptions are particularly helpful. The authors are to be complimented on the excellent manner in which they have accomplished the task of writing a modern textbook of diseases of children.

A Manual of Pathology. By Guthrie McConnell, M.D., Professor of Pathology and Bacteriology, Medical Department, Temple University; Assistant Pathologist to the Philadelphia City Hospital; formerly Pathologist to the St. Louis Skin and Cancer Hospital, and Bacteriologist to the Missouri State Board of Health. Illustrated. Second Edition, Thoroughly Revised. Price $2.50. Philadelphia and London: W. B. Saunders Company, 1911.

This volume contains, in concise form, the essentials of pathology. It is not meant to take the place of standard textbooks on the subject, but it will serve as a guide to the student who, in a limited time, has to acquire the salient features of the subject. In this new edition the chief changes will be found in the chapter on tumors (where Adami's classification is now included) and in the sections on parasites, malaria, and the thyroid gland. The book is well printed and adequately illustrated, and should serve the purpose for which it was written.

Society Reports.

NEW YORK ACADEMY OF MEDICINE

Stated Meeting, Held December 7, 1911

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR

Election of Officers.—*Vice-President*, Dr. Walter B. James; *Treasurer*, Dr. Reginald H. Sayre; *Trustee*, Dr. Charles L. Dana; *Member of Committee on Admissions*, Dr. Floyd M. Crandall; *Member of Committee on Library*, Dr. H. S. Oppenheimer.

The Library Fund.—The President announced that 13,000 duplicate volumes had been sold and the money received for them, $3,000, had been added to the principal of the library fund.

The scientific session was under the auspices of the Section on Obstetrics and Gynecology.

The Importance of Faults of Development of the Pelvic Organs in the Practice of Gynecology.—Dr. EDWARD REYNOLDS, Professor of Gynecology, Harvard University, compared the surgery of twenty years ago with that of to-day. Twenty years ago surgery was resorted to for the purpose of saving the lives of those otherwise doomed to death or to alleviate unbearable pain. To-day most of surgical operations were undertaken for the purpose of improving the health of the individual, and surgery for the prevention of disease was already in existence. Most of this modern surgery was done upon more or less defective individuals, i. e., most of the lesions for the correction of which operations were undertaken were the result of some local imperfection.

It was a general law that developmental imperfections were seldom single, and that the individual who had one such defect usually had others. Consequently the surgeon should not concentrate his attention solely upon one individual local lesion. Dr. Reynolds said he would exclude from consideration those cases of ptosis which resulted from rapid emaciation and loss of the supporting fat as well as those in which the ptosis was merely a part of a general muscular relaxation. These ptoses were never operative. On the other hand, the surgical ptoses always affected a single organ and were usually the result of some developmental defect in the supports of that organ, but, as had been said, such a developmental defect was usually associated with other maldevelopments. The condition commonly referred to as Lane's kink was usually a developmental defect, i. e., an abnormally movable colon (defective supports) in combination with an abnormally fixed terminal loop of ileum. The ptosis of the transverse colon, known as the U-shaped colon, was one in which the stomach and the middle of the colon proptosed together while the angles of the colon were properly supported. This condition might sometimes be due to the weight of great distension in the upright position, but even then it usually occurred only in individuals with defective general development. There was apt to be the same family resemblance in appendices as in noses. Every surgeon knew families in which many or most of the members had had appendectomies. The unfavorable shape of the appendix was liable to cause distension of the appendix in the majority of instances. Constipation was often dependent upon defective development of the intestine. The sigmoid was frequently bent into a sharp angle by its normal adherence to both sides of a left broad ligament which extended too widely and too far posteriorly across the left half of the pelvic brim. This was due to a failure in retrogression from a condition normal in fetal life. In women abnormal development of the so-called preanal pouch was a common cause of constipation. This malformation showed a distinct tendency to appear throughout certain families. Prolapsed ovaries occurred, and could occur primarily, only in individuals with abnormally long ligaments, an atavism to a condition common to their remote ancestors. He had recently seen severe ovarian pain due to a similar atavism in which one ovary was contained in a distinct pocket on the posterior side of its broad ligament, a condition common in rodents and ferae. Anteflexion of the cervix was an important maldevelopment. This condition was normal in a child up to the age of puberty. Observations had shown that it was less an alteration in the shape than a flexion due to a coincident underdevelopment of the anterior vaginal wall and the structures commonly summarized under the name of utero-vesical ligaments. A contraction in the muscular fibers of the so-called uterine ligaments produced an obstruction in the lumen of the cervix such as that made by bending a thick rubber tube. There was a curiously frequent coexistence of the condition known to orthopedic surgeons as the flat-backed, round-shouldered position with these cases of anteflexion of the cervix. The relation of anteflexion of the cervix to dysmenorrhea was due to the fact that the menstrual congestion increased this flexion. This condition might cause sterility by its interference with the upward passage of the spermatozoa by retained uterine secretions. All these abnormalities, as well as many others that might be cited, occurred in otherwise ill-developed individuals, and the main point of value in a discussion of the subject was that the gynecologist should bear in mind that faulty development was seldom single and the woman should be looked over as a whole and treated as a whole. The neurasthenic was always an underdeveloped person and her underdevelopment should be looked at as a whole.

Enteroptosis.—Dr. JOHN G. CLARK, Professor of Gynecology in the University of Pennsylvania, gave a lantern slide demonstration of different varieties of enteroptoses.

Dr. EDWIN B. CRAGIN said that in listening to Dr. Clark the one point that had impressed him was that in the practical dealing with this subject they should be sure they were dealing with a surgical case before they operated. The one point that they should carry away with them was that cases of ptosis due to lack of fat in the tissues were not operative cases. In fact, any case that could be relieved by medical measures was not a surgical case, but any case that could not be relieved by medical measures and presented obstructive symptoms was a case for the surgeon. For many years he had considered anteflexion of the uterus as a fault in development and had taught that the way to treat such patients was to treat the cause of the mal-development or non-development of the uterus and also the result. He could not agree with the statement made by Dr. Reynolds that many of these anteflected cervices would go back into normal shape under the use of an anesthetic. Some would, but in his experience, not many. Mere dilatation followed by the introduction of a sterilized stem would in many instances straighten out the uterus, improve the drainage from it, improve its circulation, relieve the dysmenorrhea, and, at the same time, favor the development of pregnancy. The pregnancy would complete the development of the uterus.

Dr. Cragin said he could not well leave the subject without speaking of the relation of malformations to obstetrics, and the importance of a correct diagnosis in the different forms of duplication of the uterus and vagina. In the uterus bicornis the obstetrician occasionally found the child in one horn and the placenta in the other. He had seen two such cases in the Sloane Maternity Hospital within the last few years. Again

one occasionally found the unimpregnated half of a double uterus obstructing delivery from the pregnant half, or even causing a rupture between the two halves as seen by him not long ago. He had met with a case of double vagina, in which, during a breech delivery, one foot and a loop of cord had come down into one vagina and the other foot in the other vagina. A living child was obtained in this case by rapid division of the septum. These were a few obstetrical complications resulting from faults in development of the pelvic organs.

Dr. Herman J. Boldt said that frequently there were no symptoms at all accompanying anteflexion of the cervix. There was a class of patients, however, that required treatment in the way outlined or otherwise. The results of the treatment were often a matter of the personal equation. Many of these cases of malformation should be treated in a surgical way. Dr. Boldt had seen Dr. Clark operate on one of the cases belonging to the class he had described as requiring operation, and he had been impressed with the fact that he was very careful in the selection of his cases before resorting to surgical intervention.

Dr. Robert L. Dickinson commended the breadth of view of the two surgeons, and wished also to warn against surgery until a full history and a complete study of the individual had been made. The beginning of the examination should include stripping the patient at least to the underclothes, as there were often striking anomalies found in cases of enteroptosis or flexions. As examples Dr. Dickinson had a number of pictures thrown on the screen showing grave defects of development, some general, as in the infantile type; some of the trunk only, as an arrest of development from clothing and indoor life. Acquired defects of attitude were depicted, and also methods of office observation and record. He spoke of the use of temporary support pending general upbuilding and correction. Surgery had a limited but important field as an adjunct to these.

Dr. W. Gill Wylie referred to an article he had written on "The Influence of Imperfect Development of the Generative Organs as a Cause of Disease," which was published in the Transactions of the American Gynecological Society, September, 1891, in which he spoke of the natural tendency to attribute disease to some immediate exciting cause and to entirely overlook the more remote but often real cause, and as a result methods of treatment were based on false ideas and were often useless. For instance, catarrhal endometritis resulting from dysmenorrhea, sterility, etc., was until recently almost invariably attributed to falls causing anteflexion or to exposure to cold during menstruation. This view naturally led to the use of pessaries and other vain attempts to straighten the uterus, to rest in bed during menstruation, to excessive housing of young girls and to excessive limitation of the amount of exercise. The important point that imperfect development of the uterus made that organ an easy prey to catarrhal disease was rarely considered. Many years ago he had recognized the great importance of imperfect development in causing uterine disease. Many girls, from sickness, bad hygienic conditions, or other circumstances, used up the forces that should have gone to develop the genitals and reached maturity with imperfectly developed organs. Among these few escaped having subacute catarrhal disease of the throat, and many of them had similar disease of the mucous membrane lining the cervix uteri. Many of these reached a stage in which pregnancy would not take place; however, later, the general health might improve sufficiently to permit of impregnation, but not before serious structural changes had taken place in the cervix. In cases in which disease was present just after a free menstrual flow the secretions might for a time be nearly normal and impregnation would take place and the mucous membrane of the cervix remain diseased throughout pregnancy. Such cervices were very sure to tear during labor, and even where the laceration was comparatively slight it might be very troublesome. Dr. Wylie recalled several papers he had written in which he had expressed his views in regard to the relation of imperfect development to different pathological conditions of the uterus. When he first published these views little had been written on the subject, but he was convinced that when the profession appreciated the importance of this subject it would greatly influence their methods of preventing and treating the diseases of women. A girl to be sure of full development should have a surplus of physical and nerve force during the period of development; if this force was closely used up by special mental and emotional work or strain, the generative organs would fail to develop sufficiently to perform their functions normally. If a girl was pushed at school, and her force used up by constant contact with older intellectual people, she was almost certain to have a leucorrheal discharge, irregular and painful menstruation, etc., and when examined locally would be found to have an infantile, anteflexed uterus with such disease of the glands and follicles about the cervix as to cause a semi-raw state which they called granular erosions, and the older men treated as ulceration.

Dr. Robert T. Morris said that he was glad to note that in considering defective organs they were taking more cognizance of defective people. Most people showed some stigmata of decadence; but in cases where there was such a distinct feature as the infantile type of uterus they must assume that other stigmata of decadence were present. There were usually a number of developmental defects associated with any one that was most in evidence. He was skeptical with regard to what had been said about auto-infection from a flexed uterus, because he had made cultures often from the interior of such uteri and had so frequently found the contents sterile. Patients with relaxed perineal supports, aside from those in which the condition was due to loss of fat, were usually neurasthenics. Relaxation of the perineal supports was only an incident in a long history. Secondary symptoms, including toxemia, followed in many of these cases and required treatment; but the most important thing was to take into account the fundamental fact of the presence of stigmata of decadence. He had been one of the first to take up the surgery of ptosis and had shortened various ligaments. These patients were apt to make a prompt response, apparently having been benefited, yet within a year they were back with a new group of symptoms. At present he would not resort to surgery in these cases until all the resources of a competent internist had been employed, including abdominal supporters, massage, posture, hydrotherapy perhaps. He would, in fact, make every endeavor to avoid surgery. It was a different matter when they had ptosis of a single viscus, like the kidney, in which secondary symptoms would be relieved, if they made a proper selection of cases.

Dr. A. Jacobi said there was a time when he examined a great many sterile anteflexed uteri, and many of them were the result of insufficient development. Many were cured by operation, but there were a number of instances in which the stimulation of the uterus was effected by the introduction of a sound, with or without the use of electricity, which gradually improved, and in

which pregnancy not infrequently ensued. With regard to the colon, the general practitioner should be warned that the sigmoid flexure was in almost every case adherent; that the sigmoid was long and the ascending portion of the colon short; that the transverse colon began lower than was normal. The sigmoid was so long that it often reached to the median line. This was why a surgeon in Paris insisted in operating on the rectum from the right side and not from the left. Dr. Jacobi had performed this operation many times. Forty-five years ago he had operated upon a baby in which a movement of the bowels could not be secured after vain efforts for five days. The child died of peritonitis, and at autopsy no obstruction was found, only some hardened meconium. The child was not the subject of any mechanical obstruction. Soon after he saw another case in which there were hardened lumps of meconium, but surgery was not resorted to and the child recovered.

Dr. Edward Reynolds of Boston, in closing the discussion, said that the subject of enteroptosis was almost invariably an ill-developed person. It ought to be the universal rule that before any surgeon operated for ptosis he should look over carefully all the viscera and with the patient stripped. He ventured the opinion that if the whole body was looked over nine out of ten surgeons would send these patients to an orthopedic surgeon for instruction in certain forms of gymnastics.

SOUTHERN MEDICAL ASSOCIATION.

Fifth Annual Meeting, Held at Hattiesburg, Miss., November 14, 15, and 16, 1911.

The President, Dr. Isadore Dyer of New Orleans, La., in the Chair.

(*Concluded from page 1209.*)

Pellagra.—Dr. J. S. Turbeville of Century, Florida, discussed the symptom-complex called pellagra. He defined the disease, gave its history and geographic distribution, and discussed its prevalence in the United States.

Etiology of Pellagra.—Dr. John J. Jelks of Memphis drew the following conclusions: Pellagra was not a new disease, nor a disease in fact, but a series of symptoms-complex, the result of parasitic infection in the gut, with consequent abrasions, inroads, as it were, and either absorption of or the conveyance of toxin-developing bacteria or the toxins themselves into the blood or the central nervous system, the force of which seems mostly spent upon the cervical and dorsal portions of the cord. The amebæ seemed capable of conveying these toxins or toxin-developing bacteria, and probably were the chief immediate hosts. Some form of amebæ had been found in the author's cases, and usually many of these organisms had lost much of the hyaloplasm, were immotile, or almost so, and contained many dark particles, a condition not so frequently found as in pellagrins, therefore believed to be significant. He had never observed the degree of prevalence of this morphological alteration in other cases, as in those of advanced pellagra with skin and nervous symptoms.

Pellagra in Tennessee.—Dr. J. A. Albright of Nashville read a paper on this subject in which he presented the conclusions of a commission appointed by the State Board of Health to investigate the number of cases of the disease throughout the State. This commission was composed of Drs. William Krauss, chairman; Byrd L. Rhea and J. C. Brookes. Their conclusions were: (1) The data gathered in the field showed that first cases, as a rule, sprang up in the most remote places. While some of these had been imported from other States, quite as many gave no history of exposure to any person or place infected with pellagra. (2) The disease had appeared rather simultaneously at widely different points, not in any way related to each other, either as to avenue of infection, or as to similarity of local conditions. (3) The epidemic of pellagra in the United States had appeared in disregard of all laws of epidemiology. There had been no route of travel or sequence of development characteristic of infectious diseases. (4) While first cases might appear in disregard of any system of regularity, a large number of cases had apparently become foci for the development of secondary cases. (5) Such secondary appearance failed to sustain either view of the etiology of the disease to the exclusion of the other. Such persons might partake of the infected or poisonous food, contract the disease through the bite of an insect, or might become contaminated in some other way. (6) In some counties there was as yet no evidence of secondary cases, for in one instance the first case appeared seven years ago, and this patient was now living on the bank of a stream. (7) Approximately 97 per cent. of cases admitted the use of corn meal in some form, and, while many were tempted to mislead, there seemed to be authentic cases of abstention from corn in all its forms. No case was reported of the complete absence of corn meal from the premises for a term of years. (8) The prodromal stage, or period of incubation, seemed to vary greatly, but was apparently quite long. The development of the disease appeared in all cases to be gradual. While diagnostic symptoms might appear spontaneously, they must follow a progressive disease of the spinal cord. (9) A large proportion of cases appeared in the wake of or in the course of some other disease. (10) While this was a disease of poverty and bad hygiene, many cases had appeared in the well-to-do families with good hygienic surroundings. (11) Arsenic, especially the arylarsonates, appeared to have a specific curative effect when begun early and persisted in. (12) Failure to seek medical relief, and especially the persistence in bad hygiene and food usually resulted in death or insanity sooner or later. (13) The amelioration or disappearance of symptoms in cold weather suggested a strong influence upon the course of the disease. (14) Pellagra appeared to be a gradually developing, cumulative intoxication of the central nervous system, of indefinite prodromal stage, of seasonal periodicity, the symptoms of which might appear suddenly during the spring, summer or early autumn. (15) There was no proof of its immediate transmission from person to person, though it might be a house infection. (16) Its phenomena could be explained on grounds other than infectiousness, and they appeared to favor the hypothesis of food transmission. The theory of insect transmission did not fit the early isolated cases so frequently found. (17) It was possible that food cereals, and especially corn meal, served as vehicles of transmission, and that the infection existed in granaries and elevators, and that the obstacles to its transmission in this way were great enough to account for the relatively few cases of the disease. (18) Since this possibility had not been definitely disproved it was imperative that there be sanitary supervision of grain distribution. (19) It was imperative that the public be instructed in hygienic living with special reference to house screening, sanitary privies, properly cooked, wholesome food, eaten as soon as prepared, and that medical advice be sought on the appearance of the earliest suspicious symptoms. (20) One needed institutions for the care, treatment and study of pellagrins.

Prognosis of Pellagra.—Dr. C. C. Bass of New Orleans said that of all the cases of pellagra he saw in New Orleans in 1909, over fifty per cent. died during the year. Of 96 cases seen this year, 1911, only four had died, and with the coming of cold weather none of those now under observation would be expected to die. This changed condition, though due partially to the milder type of disease

prevailing in the section around New Orleans, was due chiefly to the fact that mild cases were now recognized; whereas formerly only the severe and frequently hopeless cases were recognized. How long must a patient be free from attacks before he was safe from a return? His observation would lead him to answer that if an attack could be avoided for twelve months or longer, there was little danger of a return of the disease, provided all corn food had been avoided during the time, and that it was never resumed. Another guide to the prognosis in a given case was the condition of the reflexes. Whenever the knee jerks were exaggerated, as they were in all moderate and early cases, indicating irritation of nerve tissue, it was always possible for the patient to recover. In Italy and Roumania, where pellagra had been recognized for a long time, and the medical profession was therefore familiar with it, the mortality was considerably less than ten per cent for all cases. The type of pellagra seen in New Orleans, and coming chiefly from Louisiana and Mississippi, had a mortality not exceeding five per cent for all cases.

Skin Manifestations of Pellagra, with Reference to Their Importance from a Diagnostic Standpoint.—Dr. H. E. Ménage of New Orleans stated (1) that the skin eruption of pellagra was not always a late or terminal manifestation, but might be a very early one. (2) One should be willing to have a diagnosis made of pellagra on the skin lesions and in the absence of the symptom-complex, because if an early diagnosis was made, therapeutic measures might be instituted and thereby save the patient the burden of proving his own diagnosis, which he surely would do if left untreated. (3) The aberrant forms of skin lesions might be and were often due to accidental and incidental causes and not inherent in the initial erythema itself.

Treatment of Pellagra.—Dr. Louis Leroy of Memphis said that in the early stages he had found more uniform benefit from the administration of soamin hypodermatically, starting with one-grain doses every other day, and increasing up to three or more grains to the dose until from seventy-five to a hundred grains had been given, when a period of rest for two weeks was given, followed by another course of the drug, if necessary. He had used atoxyl in the same manner, but he had not had a chance to compare the two drugs critically. He had also used sodium cacodylate, but soamin was preferable. His observation of salvarsan in pellagra was such as to discourage its use, but he admitted that he had not had the chance to administer it according to the method recently recommended by Martin, who reported some good results in giving fractional doses of the drug, repeated at intervals of from a day or so intravenously. For internal administration, he believed he had had more satisfactory results from Donovan's solution than from Fowler's solution, although both had, at times, been very satisfactory.

Dr. Charles W. Stiles of Washington, D. C., knew of no less than ten or twelve species of amebæ reported as parasitic in the human being. When a report was made that amebiasis was very prevalent in a given district, it did not mean anything unless there accompanied that report a definite statement as to which particular kind of ameba was present. It was not strange that investigators of pellagra had recently associated amebiasis with pellagra. It so happened that he had recently examined a large number of Southerners for infection with amebæ and he found that the statistics of infection had not been exaggerated. But an important point to remember was this: the common amebiasis which we had in the Southern States was of the nonpathogenic form. He was not able to agree with Dr. Jelks that the mass of amebic infections in the South had any particular significance to pellagra.

Dr. J. T. Searcy of Tuscaloosa, Alabama, said the cause of pellagra was still an open question, and its treatment related principally to the symptoms. The peculiarity about pellagra was that the toxins which arose affected the psychic center more than any other disease. Patients got psychic symptoms in pellagra more than they did from malaria, from hook worm disease, from typhoid fever, or from any other systemic disease; consequently pellagrins drifted into the insane hospitals.

Dr. H. E. Ménage of New Orleans said that quinine as a therapeutic agent in the treatment of pellagra had not been mentioned. We were indebted to Dr. Isadore Dyer for the suggestion to use quinine in treating cases of pellagra. Cases had been treated with this drug with gratifying results.

Dr. J. A. Hayne of Columbia, S. C., said they had 2,100 cases of pellagra under observation and treatment in that State. Of this number a large proportion were females. So far as the corn theory was concerned, they had gone so far as to forbid the exportation of corn that showed over thirty per cent. total acidity, and they did not allow that corn to be used. He had seen one case of pellagra in a nursing infant, and whether the toxins were carried through the mother's milk or not, he did not know. The infant did not eat corn meal or corn bread. He had seen patients with pellagra who had had nothing to do with corn in any form.

Dr. Charles R. Craig of Washington, D. C., stated that as far back as 1905 he published researches on the examination of the stools of over one thousand men in the city hospital of San Francisco, and fifty per cent. of them showed *Ameba coli*. These men were from all parts of the United States. Merely finding amebæ in the stools did not mean anything. We ought to find out what species we were dealing with, and whether they were of the pathogenic or nonpathogenic variety. With reference to the occurrence of pellagra in connection with amebic dysentery, at the Presidio they had over 2,000 soldiers who had come back from the Philippines, and of the number of cases of amebic dysentery admitted to the hospital, there was no evidence in any of these cases of skin lesions being particularly common in amebic dysentery. He autopsied over three hundred cases, but none of them had pellagra.

Dr. William Krauss of Memphis said in regard to nursing infants and pellagra, that in his experience in the field he saw one case in an infant. He had seen a nursing infant twelve months of age which had contracted the disease at six months, and was getting its nourishment from a healthy mother. In another case the mother had pellagra and was nursing her baby at the time he saw her. At his request nursing at the breast was discontinued, and although the mother had for five weeks suffered from a virulent form of pellagra, and during four of these five weeks she nursed her infant, the infant was in perfect health, so that with respect to the transmission of any poison or toxin through the mother's milk, we had no proof here in either case.

Dr. J. G. Donald of Hattiesburg, Miss., asked whether the profession had reached a point in knowledge of the symptomatology of this disease that they could diagnosis it before the development of the skin lesions. Early diagnosis had been insisted upon, but how early could the practitioner make the diagnosis by the condition of the alimentary organs and the nervous symptoms which accompanied the disease?

Dr. H. M. Folkes of Biloxi, Miss., had seen and treated fifteen cases of pellagra, and of this number four had died. As to the etiology, the preponderance of evidence pointed to the corn theory. The other eleven patients he had treated recovered. Pellagra was not necessarily as fatal a disease as one had been led to believe.

Dr. Louis Kohlheim of Saltillo, Miss., stated that he

had had experience with eleven cases of pellagra. The disease was characterized by the manifestation of nervous symptoms, gastrointestinal disturbances, and skin lesions, and from his limited observation any one of these manifestations might be the first to appear.

Brain Surgery.—Dr. JERE L. CROOK of Jackson, Tenn., reported four cases of brain injury on which he had operated, with gratifying results.

General Treatment of Syphilis.—Drs. A. F. TOOLE and WALTER F. SCOTT of Birmingham advocated an intense, cooperative plan of employing the strongest resolvents and antisyphilitic drugs, the iodides when needful, to afford full play for the other two, mercury by intramuscular injection for a short but reasonable time, and salvarsan intravenously in repeated doses until the serum reaction indicated a cure of the disease.

Eye Lesions and Salvarsan.—Dr. J. COLEMAN O'GWYNN of Mobile said that only the severer grades of optic diseases might be considered as contraindications to the administration of salvarsan. The marked tendency towards relapses demanded the combining of mercurial and iodide therapy with salvarsan in the treatment of ocular syphilis. The routine examination of the eyes of patients before salvarsan administration was desirable to furnish further data as to the effect of salvarsan on ocular conditions.

Salvarsan in the Treatment of Syphilis.—Drs. EDGAR G. BALLENGER and OMAR F. ELDER of Atlanta, Ga., stated that in their experience no symptoms had occurred that prevented patients from taking the full amount of salvarsan indicated, nor had the after-effects of the treatment at any time seemed serious. An effort had always been made to regulate the dose to suit the physical condition and weight of the patient. The freedom from trouble so far experienced was probably due to careful physical examinations of all patients, and a regulation of the dose to suit the condition and weight of each individual. They had also insisted that all patients drink freely of plain water and lithia water the day of the treatment and for two weeks afterwards, in order to dilute well the salvarsan as it was eliminated, and thus prevent irritation of the kidneys. They had given salvarsan 415 times.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. J. M. Jackson, Miami, Fla.; *First Vice-President*, Dr. Frank A. Jones, Memphis, Tenn.; *Second Vice-President*, Dr. D. J. Williams, Ellisville, Miss.; *Secretary-Treasurer*, Dr. Seale Harris, Mobile, Ala., reelected.

Jacksonville, Fla., was selected as the place for holding the meeting in 1912.

College of Physicians of Philadelphia

At a stated meeting held December 6, the subject of "Melena Neonatorum" was discussed, particularly its etiology and treatment by blood-serum injections. The discussion was opened by Dr. Wm. R. NICHOLSON, who expressed a preference for the name hemorrhagic disease or diathesis. A bloody discharge from the bloody bowel is not a necessary symptom. There may be spontaneous extravasation of blood from or beneath and of the mucous membranes or into the subcutaneous tissues, or incoercible hemorrhage may take place from a slight wound such as the divided umbilical cord. The symptoms may appear at birth or a short while afterward, and they usually proceed to a fatal termination. There may be no external hemorrhage and the extravasation of blood may be found only on post-mortem examination. In Dr. Nicholson's opinion the condition is due to some infective process, at times obvious, at other times obscure. Perhaps putrefactive states of the intestinal tract may be a causative factor. Of perhaps a dozen cases that had come under Dr. Nicholson's observation all had proved fatal except one, and in this hypodermic injections of human blood-serum had been made, although the little patient had appeared moribund at the time of the first injection. The result was little short of miraculous. Dr. JOHN EDGAR WELCH of New York City by invitation continued the discussion. In his opinion the disorder under consideration is due to a degenerative change in the epithelial lining of the blood vessels brought about by toxic influences probably originating in the intestinal tract. Hypodermic injection of human blood-serum has proved efficacious not only in cases of the hemorrhagic disease, but also in various forms of infection and intoxication. Dr. Welch cited a considerable number of illustrative cases. Dr. WM. H. HOWELL of Baltimore by invitation discussed the agencies concerned in blood-clotting, as well as those responsible for retardation or failure of this process. It has been shown that several factors are essential for the clotting of blood. Among these are the presence of fibrinogen, the presence of calcium in some form, the presence of thrombin or prothrombin and finally the presence of thrombokinase, contained in blood-platelets and in tissue-extracts. The process is interfered with in the absence of any one of these substances. On the other hand, there appears to be a substance, antithrombin, whose presence normally anatagonizes coagulation of the blood, and which must first be neutralized in some way before clotting can take place. Dr. DANIEL M. HOYT presented a communication entitled "The Therapeutic Application of Parahydroxyphenylethylamine (Tyramine)." He pointed out that putrid meat contained a principle capable of causing rise in blood-pressure comparable to that induced by ergot and adrenalin, and he expressed the view that the stimulating property attributed to the dark cod-liver oil formerly prepared might be due to this substance derived from decomposed cod livers. Physiologic investigation showed that this substance—tyramine—has little or no effect when administered by the mouth, but when introduced beneath the skin or directly into a vein it almost immediately causes definite elevation blood-pressure of transitory duration. Similar results also were obtained clinically.

Pathological Society of Philadelphia

At a stated meeting held December 14 Dr. MOSES BEHREND presented "An Enormous Dermoid Cyst without Symptoms, and weighing Thirty Pounds." The patient was a widow, 48 years old, who presented manifestations of neurasthenia, together with enlargement of the abdomen. She declined for a time to submit to physical examination, but finally, when this was permitted, a tumor was found occupying the abdomen from the pubes to the ensiform cartilage. On operation the growth was found to be a dermoid cyst with characteristic contents. Dr. BEHREND presented also "A Dermoid Cyst Twisted on its Pedicle Successfully Removed from a Nullipara Sixty-eight Years Old." The patient had suffered for a numbers of years from attacks of pain in the right iliac region, lasting for varying periods of time and looked upon as due to appendicitis. The final attack was of such severity that operation was resorted to, despite the patient's years. A dermoid cyst was found in the right iliac fossa with signs of localized peritonitis. The appendix was distorted as though it had been involved in the inflammatory process. Dr. GEORGE W. OUTERBRIDGE presented a specimen of "Endothelioma of the Ovary" obtained from a patient whose uterus and appendages were removed on account of multiple fibromata. Both ovaries appeared normal to the naked eye, but on section one of them contained a small new-growth that presented a histologic structure suggestive of endothelioma. There were many connective tissue trabeculæ, some of which were surmounted by a single layer of columnar epithelium. Dr. PENN GASKELL SKILLERN, JR.,

presented "An Anomalous Sigmoid Tortuosity of the Cervical Portion of the Internal Carotid Artery." He pointed out that normally the internal carotid artery exhibits a sigmoid curve close to its entrance into the temporal bone, obviously having the effect of lessening the impact of a large column of blood upon the cranial contents. The specimen shown presented a second curvature of like character at a lower level. Dr. F. E. KEENE exhibited two specimens of "Hydronephrosis due to Aberrant Renal Vessels." In both the condition was recognized by the use of the ureteral catheter and the injection of a solution of a silver salt, followed by the taking of an *x* ray picture. In one instance the condition was situated on the left side, in the other on the right side. In both an aberrant renal artery was present, and to the constriction of the ureter occasioned by this the dilatation of the pelvis of the kidney was attributed. Dr. KARL F. MEYER described the condition of "Contagious Abortion in Cattle; Isolation of the Causative Agent." Dr. WILLIAM G. SPILLER presented a communication entitled "Multiple Hemorrhagic Endothelioma of the Brain," and he exhibited an illustrative specimen. The patient was a man who developed sensory aphasia and later died in convulsions. Autopsy disclosed numerous hemorrhagic lesions in various parts of the brain, and these, upon histologic examination, were found to present the structure of endothelioma. Dr. Spiller had never seen a similar case, nor did he know of any recorded in the literature. Dr. ERWIN C. SMITH, Pathologist in the Bureau of Plant Industry of the Department of Agriculture, of Washington, D. C., by invitation presented a communication entitled "Crown Gall," with lantern demonstration. He expressed the view, based on observations covering a period of eight years, that the formations under consideration presented a number of analogies with malignant disease in men, and he undertook to sustain this view by means of pictures thrown upon the screen.

New Instruments.

AN IMPROVED NEBULIZER.

BY H. DUDLEY YOUNG, M.D. (HARV.)

PORTLAND, ORE.

THE inhalation or vapor treatment plays such an increasingly important part in our methods of treating affections of the respiratory tract that a brief description of a modified nebulizer will, I trust, not be unwelcome. During the past sixteen years I have used and familiarized myself, more or less, with the various nebulizers in general use and in looking over the whole array, there is apparently considerable room for improvement. For the past two years I have made a minute study of this apparatus, not only from the standpoint of the requirements of the specialist, but with a view that it might also prove of value to the general practitioner, as I believe its sphere of usefulness should be broader. Aside from this, I have endeavored to provide an arrangement of simplicity, convenience, and compactness, not forgetting to make it ornamental as well as useful.

Fig. 1 shows the nebulizer mounted on a beautifully finished cabinet made of Oregon fir. The cabinet measures 28 inches deep, the height and length being 30 inches respectively. It contains 8 instrument drawers, enameled inside, a slide, closet and a plate glass top around which are nickeled trimmings. The pressure tank is concealed within the back part of the cabinet. On the left of the cabinet may be seen the copper tube which connects to a pump or any other means of obtaining pressure.

The nebulizer, as seen mounted above the cabinet, has six glass flasks for medicaments and one large storage or receiving flask where the vapor from one, two, or all flasks mixes automatically, this being accomplished simply by opening the valve or valves of any one or more of the flasks desired. The pressure gauge A registers the amount of pressure in the tank. B is another pressure gauge, more delicate than the other, graduated by half pounds. This is placed directly over and communicates with the mixing flask and registers the exact pressure that the patient is receiving. I think that the present is the first nebulizer to register accurately the pressure that the patient receives. On all other apparatus, the gauge plays the part of a "middleman" and registers the pressure in the channel between the valve *from* the pressure tank and

Fig. 1.

up to the valves opening into the flasks. I used to believe, without thinking, that my patients were receiving all the way from 10 to 20 or more pounds of vapor pressure when in reality they were getting only a fraction of a pound.

I would call attention, at this point, to the fact that the hard rubber vaporizing tubes all but touch the bottoms of the six flasks and will therefore take up the last drop of fluid. E is the vapor outlet and vibrator arrangement. I have made a special study of interrupted currents of vapor in the treatment of Eustachian and middle-ear disease, and most authorities are now agreed as to their great value. I therefore studied a plan whereby these interrupted currents might not only be given slow enough to count them, but that it might be possible to increase

their speed and minuteness so that they would exercise a massaging effect on the mucous membrane of the entire respiratory tract. I feel justified in saying my efforts have met with great success. In fact, am convinced that I have added to the nebulizer a most important piece of mechanism.

The reader is referred to the upper diagram on Fig. 2. As a matter of convenience in explaining, let us term this cut "the vibrator." The flask in the drawing is the mixing flask, the large one shown by letter C on Fig. 1. The shaded ring above it is where the vapor enters this flask from the six smaller flasks. It then passes out through tube 9 straight along as shown by succeeding arrows and into the dispensing tube, as may be clearly seen on Fig. No. 1. Should it be desired to give a steady flow of vapor, all vibrator valves are closed, *i.e.* Nos. 1, 2, 4, and 5. For a direct steady flow of vapor combined with air (as a matter of dilution) open valve 1. For very slow interrupted currents or discharges of a greater degree of pressure for inflating the Eustachian tube, move lever 8. Rapid

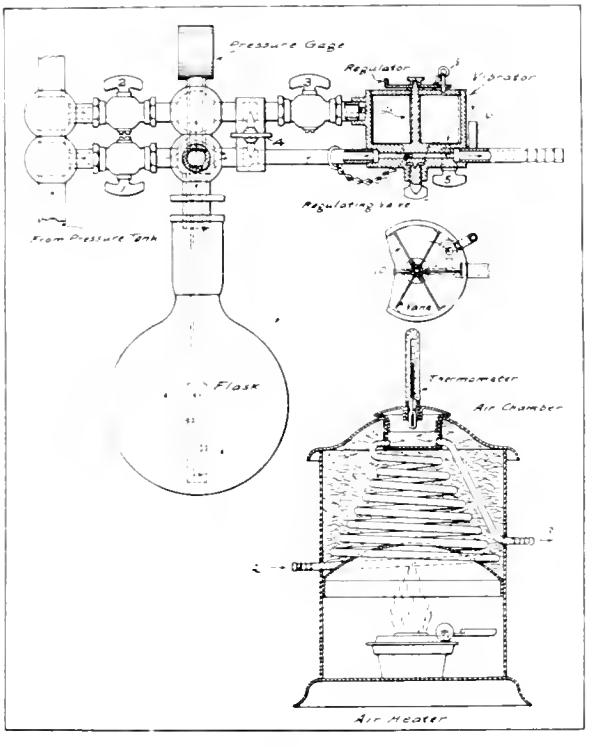

Fig. 2.

interruptions or vibrations even as high as 30,000 per minute are possible with 4 or 5 pounds pressure.

These vibrations may be given in three different ways: (1) For vibrations produced by the vapor itself, open valves 3 and 4. (2) For vibrations operated by air pressure, the air escaping at 6 and only vapor passing to patient, open valves 2 and 3. (3) Vibrations of vapor and air mixed, open valves 2, 3 and 4. Or open valves 1, 3 and 4. Should a measured quantity of vapor or air or both combined be desired for inflating the Eustachian tube and to be liberated at once, this is easily accomplished by simply moving the lever at 8. The vapor may be diluted with pure air by opening valve 1. The thumb screw 7 is used to adjust the vibrator so as to diminish or increase the number of vibrations as the case may require.

The above arrangement does away with the necessity of an aural masseur. Close valve 5 and open valves 2 and 3, the air will escape at 6, place a hard rubber ear nozzle in the dispensing rubber tube and you have a perfect aural masseur. If it is desired to use spray tubes, the automatic cut-off can be attached to the dispensing rubber tube in a second and open valve 1 for pressure.

The vibrator proper, as will be noticed from the diagram (Fig. 2, No. 10), consists of six vanes below which is a valve having two openings at right angles so that each revolution makes four vibrations. This vibrator addition, aside from the important part it plays, makes a very striking appearance on the nebulizer. It looks highly complicated while in reality it is so simple that a child can operate it.

The second diagram on Fig. 2 represents a heater that can easily be attached to any nebulizer. It consists of a series of coils starting from the edge of the dome above the chamber, which is heated by gas or alcohol flame, and continues in a conical shape at the top to a little chamber where the vapor comes in direct contact with the thermometer before the patient receives it. The dispensing tube from the nebulizer is attached at 12 and a tube at 13 is attached to conduct the heated vapor to the patient. The arrangement is so simple that the diagram is self-explanatory. The shading represents asbestos wool packed over the coil to confine the heat. The thermometer will register up to 650°. By means of this little apparatus, which is only ten inches high by five in diameter, the vapor may be given at any desired temperature.

Regarding face masks and hard rubber nozzles, I long ago discarded them as uncleanly. I use individual glass tubes which are carefully washed after each treatment and placed in a small screw-top glass vial containing alcohol. The patient's name is labeled on the vial. When the case is finished the tube and vial are thrown away.

In conclusion I desire to express my thanks to the Harvard Nebulizer Mfg. Co. of Portland, Ore., who have made this apparatus for me in a most satisfactory manner.

Radiotherapy and the Artificial Menopause in the Treatment of Fibromata and Hemorrhages at the Menopause.—P. Oudin and A. Zimmern claim that in radiotherapy we have an efficient method of control for the hemorrhages of the menopause, whether they result from sclerosis, congestion, or fibromata. The rays used after a few applications affect the Graafian follicles and cause atrophy, while leaving the internal secretion intact. A premature menopause natural in type is created, and the mucopurulent discharge and edema of the legs and feet are relieved along with the hemorrhages. In the case of young and small fibromata the size of the growth is reduced from one-third to one-half. In older and larger fibromata and in the subserous type the action is not so good. There is no tendency to obesity caused by the treatment. The effects are not so good in cases under the menopause age as in those of women having fibromata at that period.—*Journal de Médecine de Paris.*

Sporotrichosis Septicemia and Anemia with Febrile Course.—Curcio Antonio describes a form of disease localized in the bones and skin due to sporotrichosis and simulating syphilis or tuberculosis. The disease is due to the growth of the pathogenic fungus sporotrichum, a saprophyte. It causes skin lesions similar to pityriasis and trichopyton. There are three forms: cutaneo-dermic; a form with localized gummata and lymphangitis without ulcerations; and another with lesions that are mucous, muscular, osseous, synovial, etc. Some cases are slow and insidious in their beginning, others rapid and inflammatory. Generally the lesions are indolent, torpid and chronic, accompanied by little pain. In rare cases anemia and cachexia are produced. The prognosis is good except in the mucous or laryngeal forms. The patient seen by the author was a girl who presented a gummatous inflammation affecting bones, muscles, periosteum, articulations, and skin. Treatment with iodides is somewhat unsatisfactory.—*Il Policlinico.*

Medicolegal Notes.

Malpractice — Sufficiency of Evidence — Waiver of Privilege by Suing Physician.—A patient recovered a judgment in the court below against his physician for malpractice, and the physician appealed. It appeared that the plaintiff fell from the steps of his house and struck upon his shoulder, and was treated for the injury by the defendant. The plaintiff's evidence tended to show that his shoulder was dislocated, and that he was not properly treated for a dislocation. The doctor had treated the plaintiff for a considerable time before the injury for a chronic contagious disease, and his theory was that the shoulder was not dislocated, but bruised, and that infection from the contagious disease attacked the shoulder joint following the bruise, and he treated him accordingly and informed him fully as to his condition. The plaintiff did not deny taking the medicine prescribed for the chronic disease, or that the defendant informed him that his trouble was caused by such disease. The appellate court thought the judgment was not fairly sustained by the evidence.

The court below excluded evidence as to the nature of the disease for which the defendant had previously treated the plaintiff as a privileged communication between patient and physician, to which the defendant excepted. It was evident that the defendant could not by experts show to what extent the present condition of the plaintiff might be due to a chronic disease unless he was able to show what the disease was. By bringing an action against his regular physician who had been treating him for a disease, claiming that the subsequent treatment was malpractice, the plaintiff waived the professional privilege, and the defendant was permitted to show any facts he knew bearing upon the present condition of the plaintiff. The ruling excluding the evidence as to the chronic disease was held to be prejudicial to the defendant, calling for a reversal of the judgment.—Terier v. Dare, New York Appellate Division, 131 N. Y. Supp. 51.

Physicians' Defense Company Held an Insurance Company by Federal Court.—The Physicians' Defense Company sought to restrain the insurance commission for the State of California from threatened interference with its business by proceedings to require it to conform to the provisions of the State statutes regulating the business of insurance therein. The sole question presented in the case was whether the business in which the company is engaged is that of insurance, and thus subject to the supervision of the insurance commission. That question depended upon the nature of the contracts issued by the company to its patrons, that is, whether they were contracts of insurance. The purposes for which the company is organized, as stated in its articles of incorporation, are "to aid and protect the medical profession in the practice of medicine and surgery by the defense of physicians and surgeons against civil prosecution for malpractice." Its plan of business was set forth as the issuance to physicians and surgeons, upon stated and agreed compensation, of contracts to defend the holder, at its expense, against any action for malpractice, but not assuming the payment of any judgment for damages for malpractice rendered against the holder.

It was contended by the company that, as indicated by their terms, the contracts issued by it were purely contracts for personal services and embraced none of the essential features of a contract of insurance. It was held, however, that the company was engaged in the business of insurance within the meaning of California Civil Code, Section 2527, providing that insurance is a contract whereby one undertakes to indemnify another against loss, damage or liability arising from an unknown or contingent event, and Section 2531, providing that any contingency or unknown event, whether past or future, which may indemnify a person having an insurable interest or create a liability against him may be insured against.

The company argued that the element of indemnity was wholly eliminated by the provision which exempted it from obligation to pay the judgment; and that all it contracted to do was to secure competent counsel and, at its own expense, see that the suit was properly defended. The court held, however, that the obligation to pay up to a certain amount the costs and expenses, sometimes far exceeding the amount of the judgment, was clearly indemnity; and it was not essential, to make a contract of insurance, that it should indemnify against all loss. It was begging the question to argue that the costs and expense are not the liability of the contract holder, since he does not incur them, but of the company. The obligation rests upon the company, but only by reason of the contract, but for which it would have rested upon the defendant physician.

It was therefore held that the company was subject to the provisions of the statutes of the State regulating the business of insurance therein. In this the court agreed with the holding of the Minnesota supreme court and disagreed with those of the Illinois and Ohio courts, all interpreting the same contract.—Physicians' Defense Co. v. Cooper, 188 Fed. 832.

Penalty for Practising Without a License—Advertising Under Another's Name.—In an action for a penalty for practising without a license it appeared that the State board of health had revoked the defendant's license by virtue of Section 6 of the Illinois Medical Practice Act (Laws 1899, p. 275) for advertising under a name other than his own, and other unprofessional and dishonorable conduct. The defendant contended that the section was void for uncertainty; was repealed by an act of May 11, 1901; is unconstitutional because it confers judicial powers on the State board of health, and violates the State and federal constitutions.

It was held that the section of the act was not void for uncertainty, because it did not catalogue specifically every act of unprofessional or dishonorable conduct which would justify the refusal or revocation of a license. The act of May 11, 1901, is not inconsistent with the section and therefore does not repeal it by implication. The section deals with the licensing of physicians to practice and does not create or define any criminal act. The later act deals with the practice of physicians, and declares that certain acts shall constitute criminal offenses.

Neither the granting nor the revocation of a license to practice medicine is the exercise of "judicial power," as that term is understood in reference to the distribution of the powers of government. It was not contended that the State has not the power to prescribe the qualifications of physicians practising medicine and to punish unqualified persons engaging in such practice, and the existence of such power is not debatable. The possession of the required qualification must be ascertained by some authority, and the legislature has imposed this duty upon the State board of health. To the extent to which the board exercises discretion and judgment in determining whether or not an applicant possesses the required qualifications, its action is no doubt judicial in character, but it is not the action of a court or action appropriate for a court. The State board has power to revoke its own licenses on grounds declared by the statute to constitute a disqualification for the practice of medicine.

The section is not in violation either of the State or the federal constitution. A citizen may advertise his business in any legitimate manner, but it is a legitimate exercise of the police power in protecting the public against the deception and fraud practised by irresponsible pretenders and quack doctors to require every physician to have the license of the State board of health granted in his own name and to practise or advertise under no other.

It was objected that Section 6 of the act making it penal to practice medicine "without a certificate issued by" the State board of health did not apply to the case of one who has had a certificate issued to him. But the court met this objection by saying that one whose certificate has been revoked is without a certificate as much as one to whom no certificate was ever issued.—People v. Apfelbaum, Illinois Supreme Court, 95 N. E. 995.

Liability for Physician's Malpractice—Third Persons.—A person had a foot crushed by a railroad train and was treated by a physician in the employment of the railroad company. He subsequently brought an action against the company to recover damages for malpractice on the part of its physician in failing to treat his injured foot in a proper manner. There was no obligation upon the part of the company to furnish the plaintiff medical treatment. Nor was it under any duty to do so. He was not an employee of the company. The settled rule is, in cases like this, that the person or company employing a physician who by its direction renders gratuitous service is not liable for his specific acts of negligence or malpractice, if reasonable care in his selection was exercised to secure the services of a competent and skillful physician, unless, after his incompetency or unfitness becomes known, or in the exercise of reasonable care should have been known, he is retained. There was no evidence in the case tending to reflect upon the physician's competency or skill except that relating to the plaintiff.

It was held to be immaterial that the plaintiff was not an employee of the company.—Ballard v. Chesapeake & O. Ry. Co., Kentucky Court of Appeals, 130 S. W. 771.

Loss of Diploma in Transmission—Liability Therefor and Masure of Damage.—An applicant for license to practise medicine in the State of Nebraska sent his diploma to the board of health with a request that a license issue to him. The diploma was received by the secretaries of the board, examined, passed upon favorably and, as was their custom, placed in a mailing case, properly directed to the applicant and delivered to the Adams Express Company, one of the leading and responsible express transportation companies in the State, having an office at Lincoln, the point of transmission, and at Superior, the point of delivery. The applicant had given no instructions as to the method of returning the diploma to him, nor had he furnished any postage or other funds to pay for its return. The method of transmission adopted by the secretaries for the return of the diploma to the applicant was the usual and customary method adopted by them for the return of diplomas to applicants for license. The mailing case was received by the applicant at the terminal point named in the direction, indorsed thereon; but the diploma was not therein and was lost. The applicant sued the express company and the secretaries of the State board of health for damages for its loss.

The trial court directed a verdict in favor of the secretaries and the jury returned a verdict for both defendants. On appeal it was held that the selection of the carrier and the delivery of the diploma to it for return was not actionable negligence on the part of the secretaries rendering them personally liable in damages for the loss of the diploma.

The trial court instructed the jury that if they found for the plaintiff against the express company they should find merely nominal damages, and their verdict should be for five cents only. This instruction was criticised by the appeal court on the ground that there was some evidence showing that such a document in the possession of one who had earned it does have an actual intrinsic value. And it was made clearly to appear that it is an inflexible rule of the college (Harvard) never to issue a duplicate under any condition. But as the jury in effect found that the diploma was not lost by the express company the court considered that the instruction was not before it for examination, the question of its value thus becoming immaterial. No sufficient foundation having been laid for a reversal of the judgment, it was affirmed.—Whiteside v. Adams Express Co., Nebraska Supreme Court, 131 N. W. 953.

Qualification to Testify as to Mental Capacity.—In a will contest it was held that witnesses testifying to the mental capacity of the testatrix were not disqualified to give opinions for the reason that they did not hear her say anything about her property or relatives, and therefore could not say that she knew the extent or nature of her property or who were the natural objects of her bounty. Nor were witnesses disqualified to give their opinions as to her mental capacity because they had not first read the will, and did not know the contents. But questions to witness as to whether the testatrix was able to understand the business in which she was engaged when she made the will, or able understandingly to execute it, merely called for conclusions as to her testamentary capacity and were inadmissible as amounting to an attempt to put the witnesses in the place of the jury and allow them to determine the very question which the jury had been sworn to try.—Wetzel vs. Firebaugh, Illinois Supreme Court, 95 N. E. 1085.

Hospital Appropriations.—Kentucky St., § 4711a, appropriated money for the benefit of a certain sanatorium for consumptives. It required the Auditor of Public Accounts to draw warrants for $5,000, being 20 per cent. of the total sum expended in the equipment and establishment of the sanatorium. It gave to other sanatoriums a sum annually equal to 20 per cent. of the amount actually expended in equipment or enlargement, and provided that no sanatorium should receive more than $350 for each bed maintained for patients. In constructing this statute it was held that it evinced a purpose by the State to contribute to the maintenance of institutions for consumptives after their actual establishment. When such an institution enlarges its plant, it is entitled to the increased allowance, but the amount paid a sanatorium must not exceed 20 per cent. of the sum expended in establishing the plant, or in the enlargement thereof, nor exceed $350 a year for each bed maintained for patients, and no bed can be counted which is not in good faith maintained for the patients, though it is not necessary that a bed be occupied by a patient every day in the year.—Association Sanatorium vs. James, Kentucky Court of Appeals, 138 S. W. 377.

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Handbuch der inneren Medizin. By Prof. Dr. L. Mohr and Prof. Dr. R. Staehelin. 1077 pages; illustrated; paper; price 20 m. Julius Springer, Publisher, Berlin.

Studies from the Rockefeller Institute for Medical Research. Vol. XIII. 322 pages; paper. The Rockefeller Institute for Medical Research, Publishers, New York.

Traité de la Blennorrhagie et de ses Complicataons. By Dr. Georges Luys. 550 pages; illustrated; paper; price 12 francs. Octave Doin et Fils, Publishers, Paris.

Syphilis. By James McIntosh, M.D., and Paul Fildes, M.B., B.C. 227 pages; illustrated; cloth. Longmans, Green & Co., Publishers, New York.

Untersuchungen über die Strickleiter der Blutzellen. By Dr. Alfred V. Decastello and Dr. Alexander Krukoff. 110 pages; illustrated; price $4.00. Rebman Company, Publishers, New York.

Die experimentelle Bakteriologie und die Infektionskrankheiten mit besonderer Berücksichtigung der Immunitätslehre. By Dr W. Kolle and Dr. H. Hetsch. 968 pages; illustrated; paper; two volumes; price, complete, $8.50. Rebman Co., Publishers, New York.

Lehrbuch klinischer Untersuchungsmethoden. By Dr Theodor Brugsch and Dr. Alfr. Schittenhelm. Second Revised Edition. 712 pages; illustrated; paper; price $4.25. Rebman Company, Publishers, New York.

Die Methoden der Untersuchung des Magens und ihre diagnostische Verwertung. By Dr. Emil Schutz. 240 pages; illustrated; paper; price $2.75. Rebman Company, Publishers, New York.

A Manual of Physiology. By H. Willoughby Lyle. 747 pages; illustrated; cloth; price $4.00. Oxford University Press, Publishers, New York.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended December 30, 1911:

	Cases	Deaths
Tuberculosis Pulmonalis	405	149
Diphtheria	309	36
Measles	421	7
Scarlet Fever	217	8
Smallpox	1	1
Varicella	134	—
Typhoid Fever	64	9
Whooping Cough	14	—
Cerebrospinal Meningitis	2	4
Malarial Fever	—	—
Totals	1,567	214

The Effect of Paludism on Pregnancy, Labor and the Puerperal State.—Laffont finds that malarial fever has a marked effect throughout and after pregnancy. It may be transmitted from the mother to the fetus. Abortion or premature labor is very likely to result. Fetal paludism is proven by finding the parasites in the fetal blood. In some cases it produces deformities of the fetus; in most cases the child is weak and underweight. Hereditary paludism may be latent for some months, or may at once produce characteristic paroxysms. It is more likely to be transmitted during the last three months of pregnancy. If it is to recur in the mother after labor it will generally appear within ten days; it may cause hemorrhages either at or after labor. There is inertia uteri and artificial delivery is often necessary. The disease may become pernicious in the mother, though as a rule its course is benign. The secretion of milk is modified and may be suppressed; it does not transmit the parasite. Malaria following labor is not generally typical in form. Quinine is the best treatment for it.—*L'Obstetrique.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended December 29, 1911:

Places	Date	Cases	Deaths
CHOLERA			
Bulgaria: Douvlare	Nov. 14	1	..
India: Madras	Nov. 19–25	82	65
Indo-China: Saigon	Oct. 29–Nov. 5	2	2
Italy		..	..
Total Nov. 19 to 25: Cases 77, deaths 39			
Provinces: Caltanisetta	Nov. 19–25	7	1
Girgenti	Nov. 19–25	45	29
Messina	Nov. 19–25	18	6
Rome	Nov. 19–25	3	1
Syracuse	Nov. 19–25	4	2
Java: Batavia	Nov. 5–11	8	3
Malta	Nov. 12–18	5	2
Persia: Behahan	Sept. 30	..	Present
Kasre Chireen	Sept. 13	2	..
Nazhoon	Oct. 15	..	Present
Russia: Kirgis Steppe	Oct. 4–Nov. 20	73	63
Rostov on Don	Nov. 5–12	2	1
Servia: Belgrade district	Nov. 19–25	5	3
Straits Settlements: Singapore	Oct. 22–Nov. 4	12	9
Tunis: Regency		..	..
Total Nov. 1–24: Cases 940, deaths 1,268			
Bizerta district	Nov. 1–24	255	419
Tunis district	Nov. 1–21	28	15
Turkey in Asia: Mekka	Nov. 27–Dec. 3	193	198
PLAGUE			
China: Hongkong	Nov. 5–22	1	1
Egypt: Providences: Kena	Nov. 19	2	2
Minieh	Nov. 1–25	2	1
India: Karachi	Nov. 19–25	2	1
Indo-China: Saigon	Oct. 29–Nov. 5	5	..
Mauritius	Oct. 26–31	2	..
Straits Settlements: Singapore	Oct. 22–Nov. 4	4	4
SMALLPOX			
Canada: Montreal	Dec. 19–26	1	..
Toronto	Dec. 10–16	1	..
Chile: Talcahuano	Nov. 19–25	7	2
France: Paris	Nov. 19–Dec. 2	10	..
Hawaii: Honolulu	Dec. 19–25	9	3
India: Madras	Nov. 19–25	3	..
Mexico: Chihuahua	Nov. 13–19	4	2
Juarez	Dec. 10–16	2	1
Russia: Kief	Nov. 27	1140	..
Spain: Madrid	Nov. 1–30	..	1
Seville	Nov. 1–30	..	3
Valencia	Nov. 25–Dec. 2	9	1
Straits Settlements: Singapore	Oct. 29–Nov. 4	2	..
Teneriffe: Santa Cruz	Nov. 19–Dec. 2	..	13
Turkey in Europe: Constantinople	Nov. 20–Dec. 3	..	8

From the *Veroffentlichungen des Kaiserlichen Gesundheitsamtes*, December 6, 1911.

Medical Record

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Original Articles.

THE MUSICAL MEMORY AND ITS DERANGEMENTS (AMUSIA).

By J. LEONARD CORNING, M.D., LL.D.,

NEW YORK.

THE literature dealing with derangements of the musical memory is extremely limited; only within the last few years has the subject received anything like the attention it deserves. It is difficult, at first thought, to assign adequate grounds for this neglect. On reflection, however, it would seem that the fact that so few persons enjoy a thorough musical education must have a great deal to do with it, for only in individuals of this restricted class who are sufferers from cerebral lesions is it possible to study such phases of amusia as "musical agraphia" and "musical alexia." When, however, due allowance has been made for this circumstance, and even for the fortuity that few musicians are psychologists and not all psychologists are musicians, there still lingers the suspicion of unaccountable neglect. This suspicion deepens, moreover, into certainty when one enters upon the study of the normal musical memory, as it reveals itself in the achievements of great artists or accomplished amateurs. Where is a comprehensive statement of the psychology underlying these undertakings to be found? Certainly if such an account exists, the writer has not been able to track it.

In the present paper an attempt has been made to supply this last-named deficiency, as far as may be, and at the same time to give a description of those disorders of musical recollection commonly grouped under the term "amusia." If, at times, the matter introduced shall appear somewhat trite to the initiated, the writer begs to urge in extenuation his desire to make himself intelligible to those who, whether from choice or lack of opportunity, have failed greatly to concern themselves with things psychological.

General Considerations.—The musical faculty, as is well known to those who have given much attention to the psychology of childhood, is developed very early. In many children the tone-images arise before the word-images. Thus Reger (cited by Edgren and others) reports the case of a child nine months old who could accurately repeat a series of notes previously struck on a piano, while Stumpf relates the history of a precocious child of fourteen months who could sing a scale from end to end without a mistake. The case of the composer Dvôrák's son is well known. This child was able to sing the "Fatiniza" march with his nurses when but one year old. Six months later he could sing the melodies composed by his father, while the latter accompanied him on the piano. Examples of prodigious musical memory are likewise found among children of a somewhat later age. What are the psychological processes underlying such feats of musical recollection, whether displayed by the old or the young, the instrumentalist or the vocalist? Some preliminary acquaintance with the processes underlying memory in general is necessary to an adequate answer. In the first place it is necessary to remember that, despite the fact that the usages of common speech imply that memory is, as it were, an autonomous faculty, there is no ground whatever in physiological psychology for any such assumption. On the contrary, as Volkmann long since pointed out, "there are as many species of memory as there are species of representation." Thus, there is a memory for visual impressions and another for auditory impressions. There is likewise—and this is of especial importance in connection with the subject of this paper—a memory of our various motor experiences, including those concerned in voice production and the manual arts. Again, within the scope of a single sense there are differences of memory: memory for articulate sounds differs from the memory for musical sounds; the memory for form from that for colors. Nor are the memories of all the senses equally good: those senses possessing the greatest discriminative refinement disclose the best memories. Hence what one has seen or heard—sight and hearing being endowed with great discriminative power—is best remembered (memory of reproduction); while next come the memories of touch, taste, and smell, which indeed are sharply awakened only when the stimulus which gave rise to them is re-presented (memory of recognition). Speaking generally, it is obvious then, from what has been said, that there are as many kinds of memory as there are mental activities concerned in knowing. Further, it is a matter of common experience that individuals differ greatly in their capacity of remembering; so that one hears this person spoken of as possessing a good memory for "poetry or music," that one for "abstract thought," and so on. What is not so commonly appreciated is that persons differ not a little in their ability to recall tactile impressions and coordinated movements, whether coincident or sequential, and that this fact is largely responsible for the varying degrees of dexterity or clumsiness disclosed by manual workers of all kinds.

The Rôle of Association in Memory.—The important part played by the "association of ideas" in the process of remembering is familiar to most persons. The recollection of the face of a bride we once saw at a wedding recalls the color of the flowers she wore; an odor recalls the flower of which it is an attribute, or it may be the personality of a lady who wore it at a ball years ago. The examples are legion; every one can recall them.

For purposes of convenience most authors classify associations into those of contiguity and those of similarity. Association by contrast, convergent association, and "obstructive association" are discussed by some writers. By contiguous association the parts of our more or less complex experiences occurring at a particular time or place tend to suggest each other, and this irrespective of any qualitative unifying principle between the parts. In association by similarity, on the contrary, the likeness or similarity of the parts determines the cohesion. Both kinds of association may take place spontaneously, and they may likewise be arbitrarily initiated by the will and intensified by interested attention and repetition.

Three stages of memory are commonly spoken of by writers on psychology; these are retention, reproduction, and recognition. By "retention" it is not to be understood that images, perceptions, and thoughts are hoarded—"stored away" in the convenient but misleading language of every day; but rather that these processes leave such cerebral traces as, under proper conditions (notably suggestion), make reproduction possible. And, further, the well-known tendency of the mind to act again and again in the same manner, a tendency enhanced by habit, repetition, and interest, affords an additional clue to the *modus operandi* involved.

Two kinds of recognition have been differentiated—immediate and mediate. If one meet a friend and from the familiar appearance of his face recognize him to be Jones, the mental process involved is one of "immediate" recognition. If, on the contrary, one select from a number of watches closely resembling each other the one bearing the initials "C. E. R.," perceiving from these markings that the watch is one's own, the process is one of mediate recognition. Clearly, then, recognition as a whole is an instance of association by contiguity. "But why," it may be asked, "is C. E. R." more mediate than face? In reply it may be remarked that "face" is part of Jones, a natural associate, indeed, in the fullest meaning of the word; while "C. E. R." is a fortuitous label, a signal agreed upon, having nothing whatever to do with the inherent nature of watch.

Neither the purpose nor the limits of the present writing permit a discussion of the purely controversial questions of memory, notably those that have been raised in connection with the principle of "similarity." For the benefit, however, of those who may be interested the writer would refer to the publications of William James, and notably to the chapter on "Memory," contained in the first volume of his "Principles of Psychology."

The Musical Memory.—From the foregoing sketch, brief though it be and unavoidably summary in many particulars, the writer is fain to hope that the reader uninformed in matters psychological is in some sort prepared for the discussion of acquisition, retention, and reproduction—memory, in short, as we find it disclosed in connection with the art of music, instrumental and vocal alike.

Three kinds of images, auditory, motor, and visual, are largely concerned in the musical memory. True, their importance is unequal, the auditory representations ranking first, while the motor and visual ones come after. Again the motor and visual representations are by no means of the same importance in all persons; nor, it may be observed, does the acquisition of the motor representations present the same difficulties in the vocalist as in the instrumentalist.

Besides the auditory, motor, and visual representations there are other elements that signify much to the musical memory. Of the very first importance in this respect are the sense of time, rhythm, melody, and harmony. Time, as exemplified in the musical bar, and rhythm are often confused. "The bar is the division of a musical work into parts which all have the same duration; rhythm is constituted by a division of quite another kind, superposed upon the preceding and giving to the parts of the composition durations *which are not necessarily equal.*"[1].

Time is a mechanical formula; rhythm a product of the esthetic.

When one listens to a series of monotonous sounds they presently seem to arrange themselves into groups of twos or threes or fours and sixes. On attempting to discover (without counting) how many clicks of a metronome may be apprehended as an unitary idea, it will be found that as many as forty-eight are capable of this fusion, provided that the individual clicks follow each other with sufficient rapidity to insure that the whole series shall occupy less than twelve seconds.

Stoddart[2] has elucidated this fact in the following perspicuous language: "Now if at any time we endeavor to think of the present moment in contradistinction to the past or future, we find that it is gone before we have had time to think. The present is always immeasurably short; it is indeed nothing but a moving boundary line separating the past from the future. Now, as a matter of experience, we include in our practical cognition of the present a short period of the immediate past. The existing unit of time, as thus conceived, has received the name of the "specious present," and the metronome has taught us that such an unit may be as long as twelve or even fourteen seconds. These units are not separate from one another, but perpetually and constantly overlapping. . . . .

"Inasmuch as we are unable to give a name to each such 'perceptual unit,' any given unit is identified with some incident (psychologically speaking, with some percept). . . . . And when a mother tells us that a certain event took place 'the year that Willie was born,' she is making an abstraction from the Willie's-birth idea.

"The point I wish to emphasize is that the temporal relations of a percept are an essential part of the percept itself; and similarly the temporal relations of an idea are an essential part of the idea. In the case of a percept, there is always a feeling of 'now-ness'; and in the case of an idea, the revival of a specific percept, there is a feeling of 'then-ness.'"

In musical memory the temporal relations are identified with auditory and motor representations, particularly the latter; and this, while especially true of the instrumentalist, is also true of the singer.

The specific objects of the present writing do not permit the discussion of the various speculations as to the evolution of the sense of time and rhythm that have appeared from time to time in periodical literature. For the benefit of those who are interested the writer refers to the previously quoted work of Combarieu[3], wherein the whole question is briefly but suggestively treated, and to Bücher's[4] interesting monograph on the relation of work to rhythm (time).

As may readily be imagined, both melody and harmony, particularly the former, are of great as-

sistance to both acquisition and reproduction. Melody, generally speaking, is the significant, agreeable succession of a number of notes; harmony the agreeable correspondence of two or more notes sounded together.

Quite irrespective of the theoretical elements entering into its structure, which cannot be dealt with here, melody has that musical meaning "which it bears within itself." The composer "has given it a significance which we should seek in vain to express by words, and which, although only to be reached through the musical sense, has for it perfect clearness." This is no mere metaphysical figure of speech. Listening to a song one distinguishes it from an unmeaning formula; and this may be done by a person unacquainted with the theory of music, as well as by the most sophisticated student of the art. Melody, then, "says" something, yet to venture a verbal translation is scarcely less than an impertinence.

Another peculiarity of melody is that it is remembered, that it obtains a lodgment in memory that time and vicissitude are often powerless to efface; while mere academic sequences or even highly colored, but incoherent effects leave no souvenir. Polyphonic ingenuity of a high order, coupled, however, with amazing melodic sterility, is a characteristic of certain modern compositions; and hence, while the immediate sensuous appeal of such music is often undeniable, it is as refractory to recall as the disconnected verbiage of a band of inebriates.

Melody, then, is the vehicle *par excellence* of musical sense, if one may so phrase it; and its presence, by virtue of this attribute, is an aid to recollection of the first magnitude.

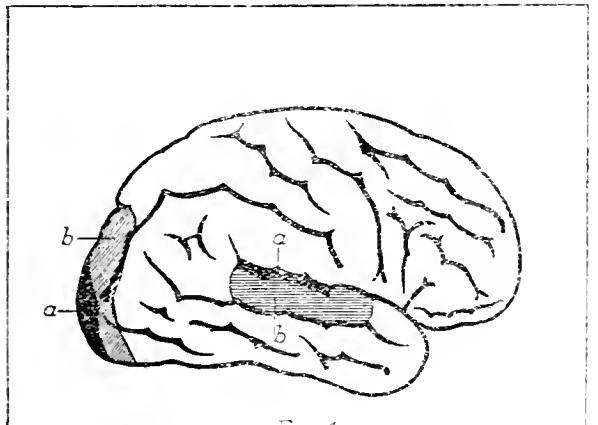

Fig. 1.

Fig. 1.—Visual and auditory centers (Campbell). Occipital lobe: *a*, Primary visual center; *b*, visuo-psychical area. Temporal lobe: *a*, primary auditory center; *b*, audito-psychical area.

Cortical Auditory and Visual Centres.—While it has long been believed that the cortical auditory center lies in the superior temporal convolution, recent researches, more especially those of Campbell[5], seem to point to the posterior end of the superior surface of the first temporal gyrus *within* the Sylvian fissure as the primary auditory center, or center for the reception of simple auditory impressions. It is, moreover, assumed that this auditosensory center is, to an extent, surrounded by an auditopsychical center, located, as Campbell believes, in the cortex of the convexity of the posterior end of the first temporal convolution. Lesion of this auditopsychical area (speech center) is followed by word-deafness: the subject loses the power of recalling names and words and of interpreting spoken language; yet simple auditory sensation remains—the subject hears what is said to him, but cannot comprehend. In right-handed persons this center is situated on the left side of the brain and is provided with a number of subcortical connections. The most significant of these are the fasciulus longitudinalis superior by which it is brought in relation with the inferior frontal gyrus, and the fasciculus longitudinalis inferior, which connects it with the primary visual center.

The cortical half-visual or visuosensory center occupies, according to several investigators, the cuneus, the lingual lobe, and a portion of the external aspect of the occipital pole. A psychovisual center, occupying the external surface of the occipital lobe and a portion of the cuneus, has been recognized by a number of writers, Campbell among others. Fig. 1 shows the primary visual center, the visuopsychical area, the primary auditory center, and the auditopsychical area. The occipital lobe is in intimate relation with various other portions of the brain. One such relation possesses peculiar interest—that with the temporoangular region by means of the inferior longitudinal fasciculus; for it is the angular gyrus with its subcortical longitudinal fasciculus and the second occipital gyrus that are concerned in the recognition of printed or written language. Destruction of this region—the angular gyrus more especially—gives rise to "word-blindness"—alexia. For an explanation of the coexistence of "subcortical" alexia with hemianopsia the writer would refer to the textbooks.

Cortical Motor Areas.—As all are aware, the cortical motor areas are situated in front of the fissure of Rolando and comprise the precentral or ascending frontal convolution and the anterior wall of the fissure as well. Immediately anterior to this region is the "intermediate precentral area" of Campbell or psychomotor area, which is held to preside over the more highly specialized movements, notably writing and articulatory speech (and probably also over the movements involved in playing upon musical instruments). The precentral area, on the contrary, presides, according to current notions, over the coarser movements only.

Cortical Sensory Areas.—The sensory areas of the cortex occupy the ascending and superior parietal convolutions. The postcentral convolution, situated immediately behind the fissure of Rolando, has been separated into a primary sensory and a psychosensory portion, the former lying in and immediately behind the fissure; the latter in close connection with the superior parietal lobule.

There is evidence—largely clinical—to show that the postcentral convolution is the cortical area for tactile localization and discrimination, and the same may perhaps be said, to some extent at least, of temperature and pain sensations. The primary recognition of sensations of passive and active movements has also been imputed to this gyrus. A further, and perhaps higher, representation of sensations of touch (localization) and of those of active and passive movements has been ascribed to the region posterior to the corresponding motor areas and structurally associated with them. The motor and sensory areas of the brain, according to Campbell, are shown in Fig. 2.

Plausible as it seems in some of its factors, the above résumé of cortical sensory functions cannot as yet be regarded as adequately established. Impartiality indeed compels the admision that, despite

the excellent work already accomplished, many data are still required to render it immune from logical assault. For the time being, however, and for the purposes of the present writing more particularly, it serves an excellent purpose in giving, as it were, pictorial definitness to psychological discussion, a matter of some moment to those who have little vocation for abstract thinking.

The importance of motor representations to the instrumentalist has already been indicated. The sense, and hence the memory, of position and movement is, however, derived not from a single source, but from a number of sensations. Chief among these are muscular, tendinous, and articular sensations; and, insofar as delicacy of adjustment is concerned, those of touch must also be considered. Just now there is a tendency to discern predominant significance in articular sensations, due largely to the experiments of Goldscheider, who has been able to show that, when a joint is rendered anesthetic, movements, whether active or passive, are rendered much less perceptible. Wishing to determine for himself the relative importance of tactile impressions to the psychological mechanism concerned in playing on an instrument, the writer of this paper covered the tips of his fingers with a thick coating

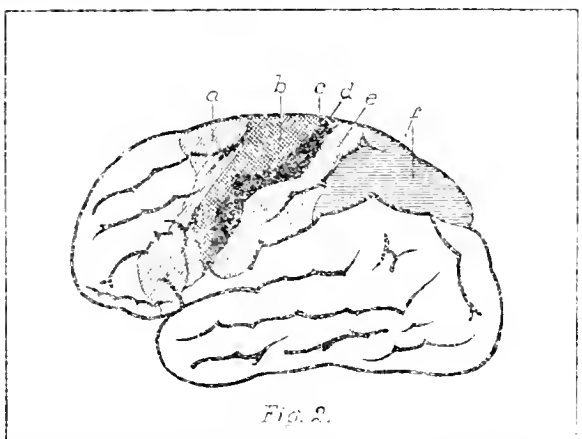

Fig. 2.

Fig. 2.—Motor and sensory area of the brain (Campbell). *a*, Intermediate precentral area; *b*, precentral area; *c*, fissure of Rolando; *d*, postcentral area; *e*, intermediate postcentral area; *f*, parietal area.

of collodion. When thus deprived of the orientation usually derivable from the sense of touch he observed the following: (1) that he could still play, after a fashion, from note, and (2) from memory, as well, but that (3) his playing had lost all delicacy, the fingers hobbling clumsily, as it were, over the keys, with which all sensory intimacy had been broken. This is a simple experiment which any one can repeat.

Resuming the psychological phase of the discussion, let us consider memory as manifested in the instrumentalist first. A question which will naturally occur to one on the threshold of an investigation of this kind is, "How do instrumentalists who are in the habit of playing without the aid of notation commit to memory the most elaborate compositions? What is their method? How do they proceed? While there is a general resemblance in methods, certain deviations are discernible as between the musicians themselves and, indeed, to some extent, in the same musician at different times and under varying circumstances.

The following are the principal varieties of association which the writer has been able to make out in musicians who are in the habit of committing to memory more or less of what they play:

A. Predominant association of the auditory and motor memories.

1. The auditory memory is better than the motor (finger) memory.

2. The motor memory is better than the auditory memory.

B. Predominant association of the visual and motor memories.

1. The visual memories are somewhat better than the motor ones.

C. Association of the auditory, motor, and visual memories.

1. The auditory-motor association is the stronger, the visual memories being less vivid, more loosely associated, and consequently playing but a supplementary or intermittent rôle in the process of reproduction.

2. The cohesion of the auditory and motor memories is less firm, as disclosed by inability to execute certain passages without the supplementary aid of visual memory.

It will be well to consider these various phases of the musical memory somewhat more in detail; and, in so doing, we shall be helped not a little by studying the methods of acquisition ("committing to memory") followed by persons who afford typical illustration of the varieties of musical memory as distinguished and tabulated by the writer. Let us take, then, the individual in whom the auditory and motor memories are predominantly associated and whom we have classified under A, 1.

The writer once had the pleasure of knowing a violinist, in his younger days a celebrity of international repute, who affords a good illustration of this type of musical memory. When committing to memory a piece which he purposed playing in public, this artist proceeded about as follows. He would place the notes on the music stand, and having played the piece through several times put his violin aside and endeavor thereupon, or later while walking or driving, to recall, if not all at least the chief features of the composition in the order in which they were set down. When questioned as to whether he was aided in this by remembering the notes, he answered in the negative, declaring that very few of them loomed in his mind, and that the process up to this point was purely one of auditory memory. His next step consisted in playing from the beginning each phrase again and again until he could play the entire piece through without a fault. This method, with slight modifications, is the one frequently followed by musicians, the finger (motor) memory being acquired in association with the auditory memories.

A still more striking illustration of the auditory motor memory is frequently met with among certain amateurs to whom musical notation conveys little or nothing, and who play everything "by ear." Such persons on returning from a concert or the opera are able not only to remember much of the music they have heard, but, what seems still more remarkable, immediately to play it with astonishing accuracy.

Truly the auditory memory here displayed is remarkable, yet not more so than the natural cohesiveness between the motor and auditory memories implied by such achievements; for it is a noteworthy fact that the individual himself does little or nothing in the way of practice to promote and maintain such association. Of those cases of auditory-motor memory, in which the motor memory exceeds in efficiency that for sound (A, 2), it

may be said that the most striking examples are usually found among children, who, disclosing neither pronounced love nor any considerable aptitude for music, are nevertheless spurred on by their parents or teachers to study some instrument, usually the piano. Though such pupils are often strikingly lacking in ability to recall melodic sequences even the most obvious, they attain ultimately, by dint of much exercise of the fingers (motor memory), to the execution of pieces impossible to those inherently much more musical, but in whom the motor memory is naturally deficient or imperfectly developed. The writer has often seen children of this kind clap down before the "clavier" (dumb piano) and, disdainful of the notes, play long and difficult pieces from beginning to end without a shadow of hesitancy. Thus there could be little or no assistance from auditory association, the instrument being voiceless and the subject's recollection for musical sequence of the slightest. Needless to say that the effects obtained by persons of such one-sided endowment are highly mechanical and innocent, quite, of musical expression.

Very interesting is the type of musical memory in which the visual and motor memories are predominantly associated (B). Musicians in whom this kind of memory is in the ascendant declare that they are able to "see the notes" as vividly almost as though the printed page were spread out before them. Their method of "committing" to memory differs from that described under A, inasmuch as their attention is largely though not wholly given over to remembering the appearance of the printed notes rather than the sounds proceeding from the instrument. In this phase of musical recollection the visual and motor memories are sometimes of about equal efficiency. More often, however, the visual memory is decidedly the better, a fact of which the musician himself may be fully aware.

Finally we have the third type of musical recollection—that in which the auditory, motor, and visual memories are more or less prominently concerned (C). A striking instance of this type of musical memory was exemplified by a certain musician of note, who informed me that when playing as a soloist he was able simultaneously to recall, visually and acoustically, every note of even the longest composition, while at the same time he was acutely aware of the variations in sensation accompanying the myriads of muscular movements—"had the feeling of the fingers," as he graphically expressed it.

As may readily be supposed, the three kinds of memory here associated are not equally well developed in most musicians. Sometimes the auditory motor association is the strongest, only a few of the more important notes being visualized (C, 1). Again, but more rarely in really good musicians, the cohesion of the auditory and motor memories seems lacking in firmness, and this despite prolonged and earnest practice. Under these circumstances recourse is had to the visual memory to piece out, as it were, what is lacking in the others (C, 2).

Critical Observations on the Various Methods of Committing to Memory Commonly Employed by Musicians.—From what has already been said, it will be evident to most persons of intelligence—and more especially to those who, having some knowledge of psychology, possess at the same time a practical acquaintance with instrumental music—it will be evident to those possessed of this dual equipment that these various types of memory and the different methods of committing to memory associated therewith cannot be of equal value in so far as reliability, smoothness, brilliancy, and expressiveness of execution are concerned. Various questions will at once occur to one. Take the matter of association: is a predominant auditory-motor, or an auditory-visual, or an auditory-visual-motor association to be given the preference? Speaking from the standpoint of theory as well as from a somewhat extensive personal experience, the writer would unhesitatingly award the primacy to the auditory-motor type of memory. Here the translation of the auditory representations into action and sound is immediate, whereas, when the printed notes are remembered, the translation is more indirect, viz., from a visual representation to action and so to sound. Nor is this all. The visual representations of the printed notes, even when coexisting with fairly developed auditory-motor memories, tend to act as disjunctive associates, more or less, and they do this by causing a division or shifting of attention (obstructive association) both in committing to memory and in reproduction, so that sometimes the auditory-motor representations are firmly knit; at others, the visual-motor ones. Attention, indeed, when properly managed makes possible feats of musical recollection that to the uninitiated seem little short of the miraculous. But attention itself—a fact but too often disregarded—is an exceedingly complex affair. Interest, direct or indirect, natural or artificial, is the price exacted for its keenness and its duration. This implies that the genesis of attention is to be sought in emotion, and such analysis will show to be the case.

Two phases of attention are commonly recognized. These, "spontaneous or natural" and "artificial or volitional," have already been mentioned. Spontaneous or natural attention is aroused by the interest inherent in the subject. Artificial or volitional attention, on the other hand, is maintained by interest, indirect, remote, as when an otherwise disagreeable task is performed for the sake of ambition, good to others, and so forth. The number of such incentives is legion, and many will occur to everyone. As frequently pointed out by those who, like Ribot, have made special studies of attention, the spontaneous or natural variety is essentially that of the primitive races, while the artificial or volitional type has been evolved through the process of civilization. That physiological conditions have much to do with the efficiency of both memory and attention has long been known. Without particularizing, it may be stated as a general truth that any pathological condition giving rise directly or indirectly to impairment of cerebral nutrition as a whole and cortical nutrition in particular may be followed, and usually is followed, by derangement of memory and attention, more or less. The same may be said of the abuse of alcohol, tobacco, and indeed of the whole group of narcotics, whose effects on both retention and reproduction are of the worst. On the other hand, it is a noteworthy fact that certain narcotics, when taken in small, stimulating doses by those not given to their abuse, facilitate the whole process of musical reproduction though not that of acquisition ("committing to memory"). This applies with special force to cases of cerebral debility from whatever cause arising. The practical utilization of this fact in the management of certain derangements of the musical mem-

ory is, of course, entirely admissible, but for obvious reasons is not otherwise to be recommended.

Attention, then, is of the very first importance to the musician who would have at command a répertoire, even a restricted one.

When committing to memory lengthy and difficult compositions, one should endeavor to relieve the tedium and monotony of the process by suggesting constantly to oneself the pleasure and benefit ultimately to be derived—the freedom of interpretation; the exhilaration of playing so long a piece without the aid of the printed notes; the sensuous charm of the music itself; the scientific interest of the process of memorizing, etc., etc. In this way interest, and hence attention, may best be maintained. A further and extremely important point is the avoidance of anything approaching excessive fatigue. To this end one should pause frequently for rest. Due allowance being made for differences of aptitude, the writer would hazard the suggestion that from fifteen to twenty minutes is about the average length of time during which the process of memorizing may be uninterruptedly carried on to good effect. Thereafter a pause of ten minutes; then to the task again, and so forward. As committing to memory is exhausting work even at the best, probably most persons will have had all of this

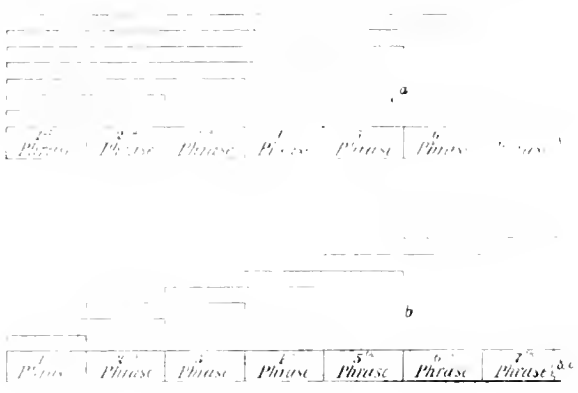

Fig. 3.

kind of exercise they care for at the end of an hour or two. In young persons, when interested and properly directed, the process is a shorter and an easier one than in those of middle age; and the like may be said of those exceptionally endowed. The mode of progression in musical memorizing is not a matter of indifference. In the first place the musical phrase should be taken as the unit and not the measure, as is frequently and ignorantly done. The tempo should, in the beginning, be a slow one, but not so slow as to interfere with the rhythm, the correct observance of which assists the process of retention. Beginning with the opening phrase, the musician will repeat the same a number of times, paying, meanwhile, the closest attention to the melodic sequence and the *sensations* accompanying the different movements of the fingers. This done, he will close his eyes, or turn from the notes, and endeavor to play the phrase by memory only. Having succeeded in this, he may take up the next phrase and so forward, always repeating, however, before taking up a new phrase, much or all of what has gone before. (Fig. 3, *a*.) In compositions of great length, however, this will hardly be possible, and some such modification as that indicated in Fig. 3, *b*, may be adopted.

The effect of this will be to establish a continuous and durable association, both in a melodic and motor sense, from beginning to end. True, the phrases occurring first will have received more attention, will have been more frequently repeated than those that follow; but this can later be compensated for by practice. Meanwhile, as already intimated, a fairly cohesive bond has been established as well between the phrases themselves as between the motor and auditory images. Association is, in fact, well initiated, but to make it durable will necessitate much additional effort. What is the state of consciousness during reproduction at this time? Retrospection, according to the experience of the writer, will help to an answer better than introspection, the affective elements involved being too illusive for the latter mode of inquisition. The most prominent element of consciousness while "playing from memory" at this stage of acquisition is undoubtedly the intense awareness, the keen attention, the latter being directed, in part to the melodic sequences, in part to the motor memories ("the feeling in the fingers"), and finally, but in less degree, to the visual memories of some of the printed notes. Despite this exaggerated condition of attention, mistakes occur, especially while rendering passages involving unusual or awkward fingering; and, as an inevitable consequence, elegance of execution and expressiveness are conspicuously wanting. Not until much subsequent practice has wrought a change in the character of the reproductive process does the playing of the musician take on a really artistic quality. This change is brought about by the conversion of a process till now largely voluntary into one essentially automatic.

The Automatic Element as Disclosed in the Musical Memory.—The more frequently a mental operation is consciously and attentively performed, the more does it tend to repeat itself, and the less are attention, volition, or consciousness necessary to such repetition. Thus it comes to pass that while actions involving delicate motor coordinations like sewing, swimming, and various other feats of skill were during the time of their acquisition volitional in character, consciousness and attention being of the keenest, these same actions, by dint of much repetition, have ultimately become independent of voluntary control, and are performed unconsciously—"automatically," as the books phrase it.

This is the phenomenon that is predominantly in evidence in what may justly be regarded as the second stage of the acquisitive process, as any one accustomed to play from memory may readily convince himself.

While this transformation of the volitional stage, of the stage of vivid consciousness of the motor and auditory memories, of the period of tense attention—while this transformation of a volitional into an essentially automatic process may be thus made out, it would be a gross error to imagine that there is anything of a sudden nature in such transition. On the contrary, the process is a gradual one, consciousness of the movements more especially declining progressively in vividness as these (the movements), impelled by constant repetition, assume an ever increasing automatic character. The accompanying diagram (Fig. 4) should help to an appreciation of the transformation wrought in the character of the motor element. The movable hand represents the musical memory. The + and — signs are used to indicate the increase or decline of the conscious, or automatic, element. By causing the hand to revolve about its axis the decrease of consciousness and the increase of automatism may be shown. Turning it

in the opposite direction causes the reverse to become apparent.

Supplementary Observations.— There are several features of the musical memory which it has seemed best to consider at the end of the discussion rather than earlier, as what has gone before cannot fail to

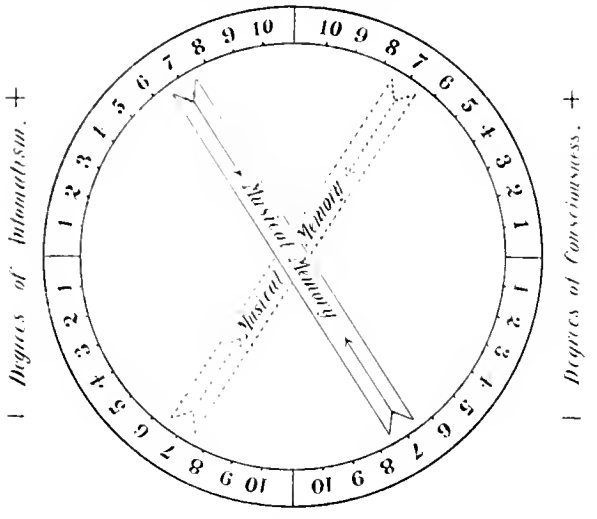

Fig. 4.

help to their fuller appreciation. Of practical interest, in this connection, is the fact that the tendency to pause is almost, if not quite, as strong as the tendency to act. This is shown in various ways, but in no wise more strikingly than in the first playing of difficult passages. These when suddenly encountered are apt to give rise to an involuntary relaxation in tempo, amounting sometimes to an actual pause. But a few repetitions are sufficient to confirm the habit, which is not only an artistic blemish but a difficulty not easily overcome. The formation of such a habit may be entirely avoided by beginning practice not at the beginning of the difficult passage, but a phrase or two before it, the whole being played in a scrupulously regular but considerably slower tempo. Even more disconcerting is the "question." Let an instrumentalist ask himself while playing, "Is it 'flat' or 'sharp'?" and in a twinkling his discomfiture is complete. Even in the slower movements there is no time for the balance of this and that; and, moreover, as may readily be conceived, the sudden introduction of a process so elaborate as that involved in judging is of itself sufficiently disjunctive to disrupt the whole mechanism of association. For the rest, the name of the note is not the thing to be regarded either in acquisition or reproduction. What the attention should fasten on during acquisition and continue to hold to until automatism completely asserts itself, is *sensation*, sensation of movements and of sounds—coincident, as in accords; sequential, as in melody, florid passages, etc. From this it is to be understood that the strain of attention is *inward*, as in ordinary remembering, not outward, as when, for example, one observes an ordinary after-image. Failure to appreciate these facts is undoubtedly responsible for much bad teaching.

The playing of scales and cadenzas and, indeed, all instrumental performances involving sureness, rapidity, and the technical accomplishments which these imply have always evoked the admiration and astonishment of the uninitiated. Yet the difficulties, assuming the artist to be a master of the auditory-motor method of memorizing, are by no means what they seem. The explanation of this almost infallible fluency resides in the fact that, automatism being fully established, not only does each note "suggest" its successor, but, as it were, *compels* it. How strongly knit, how refractory to intrusion, is musical association when fully established is easily demonstrated. Let an attempt be made while playing rapidly to eliminate a note or introduce a new one, and in a twinkling the selfpossession of the player is gone and he fumbles helplessly. Nor is this all. Let the player place the printed notes before him, and writing in the notes which it is sought to introduce, or striking out those which it is desired to eliminate, proceed to play the florid passage at a much reduced tempo. To his astonishment, perhaps, he will find that when thus substantially assisted, as it would seem, by the printed notes and a reduction of speed, he still tends to hesitate and fumble, being aware at the same time of certain disagreeable sensations, none the less real because hard to describe.

In playing rapid passages, one is aware, moreover, of a feeling of being, as it were, swept forward, compelled, pushed, in short, to a kind of sequential gymnastic (avalanche affect), the individual steps of which are no longer clearly appreciable, since they are amalgamated or fused into what seems a new and inclusive sensation. "Suggestion" is a weak word to explain a happening so obviously dynamical; but if, when employing it, it be understood to imply that in the original process of acquisition certain changes were wrought in the central nervous system, changes which alike made possible predetermined, orderly association, retention, and reproduction—if the word be used in this sense, it may be accepted, *faute de mieux*, in deference to the vogue long enjoyed by it. The appended diagram (Fig. 5) will help to an appreciation of what the writer would imply by this dynamical experience (avalanche affect) as conspicuously manifested in rapid playing, the intervals being short, and the music consisting largely of scale-like passages or runs.

Fig. 5.—Graphic aid to the appreciation of the dynamic element disclosed in rapid playing. The diagram assumes that a rapid passage has just been played, and suggests the compelling force successively exerted by each note upon the one immediately following. Thus the initial impulse (first note) to 2, 2 to 3, 3 to 4 and so forward.

The phenomenon of automatism as it concerns the musical memory having been discussed in considerable detail, we are now in a position to propound a question which, so far as the writer is aware, has nowhere been either put or answered. We have already seen how by dint of attention and much repetition the more voluntary phase of memory assumes an increasingly automatic character. Now, assuming that the playing of a certain musical composition has become automatic, so automatic, in fact, that, as sometimes happens among pianists, the musician is able to play it while carrying on a desultory conversation—assuming this, what happens if an attempt be made to reverse the process, to play in a voluntary manner, as during the process of acquisition, attention being alert to the individual sensation, motor and auditory alike? In the first place, the musical pace will be much retarded; secondly, those collective sensations consequent upon the fusing or grouping together of individual motor and auditory experiences will be broken up, so that the observance of rhythm in the more rapid passages will be difficult or impossible; and, thirdly, there will be uncertainty, characterized by the appearance of what has previously been referred to as the "question," *i.e.* the tendency to ask, "Is it this; or

is it that note," etc. Only when the automatic character of the memories has disappeared, only when the piece, in part or in whole, has been "forgotten," in the language of every day, is it advisable to relearn it by again invoking the method employed originally in its acquisition. It is worthy of note, however, that the forgetfulness is usually by no means as complete as might be inferred from the musician's inability to play. Soon—much sooner, in fact, than if the piece had never been committed to memory—automatism again asserts its sway; all of which goes to show that the impressions originally made upon the nervous system, though dulled, are by no means obliterated.

The Memory of the Singer.—In the previous discussion it has been abundantly shown that in those who play upon instruments the character of the memory is by dint of attention and repetition gradually transformed from a process essentially voluntary into one largely automatic. No such long and onerous exercises are demanded by the singer in order that he shall be put in the way of giving vocal expression to the musical ideas that he may have acquired or conceived. With him there is no need to establish the auditory-motor bond; it already exists, thanks to his possession of an exquisite and highly automatic instrument, which, unlike that of the musician whom we have before considered, is part of himself. Thus exempt, as it were, from the need of establishing new physiological relationships, he can give himself largely to the purely musical (auditory) side of memory the development of the voice itself following, under competent guidance, an essentially natural course.

With singers who are given to memorizing auditory association is the principal thing, though the words uttered possess, no doubt, ancillary importance, assisting, according to the testimony of lyric artists, in acquisition and reproduction alike. As for the recollection of the words, euphony, alliteration, and assonance play a considerable part, and this quite irrespective of the sense conveyed, though this, too, is an assistance.

The history of the gradual development of the voice in the child forms an exceedingly attractive chapter of psychology: how the vowels appear, then the consonants, and so to monosyllables, short phrases, and a larger coherency. So, too, with the musical use of the voice, which appears, however, much earlier in some children than in others.

Of still greater interest, were adequate data forthcoming, would be a description of the physiological mechanism underlying the wonderful *liaison* between the musical memory or idea and the motor mechanism immediately concerned in voice production. As information so explicit is not yet to be had, it will be well to abstain from theorizing.

Exceptional Manifestations of the Musical Memory.—It may be said without risk of contradiction that the majority of the great musical virtuosi disclose more or less remarkable powers of memory. But even among this class there are some who loom so large as to dwarf even the exceptionally endowed among their confrères. A typical example is that of the late Hans von Bülow, who, as the tradition goes, played "everything by heart." He could play for hours at a time without consulting his notes; knew all the works of Wagner "by heart," and thought it a hardship that the musicians of the orchestra were unable to play their individual parts in the same way. When a composer brought him a new score he would excuse himself and, passing into an adjoining apartment, take a hasty look at the manuscript. Returning thence in a few moments, he would seat himself at the piano, and, without a glance at the notes, play the entire composition to the great bewilderment, it may well be imagined, of the listening author.

Liszt, too, who is said to have played, among much else, most of the works of Beethoven from memory, is another instance of prodigious memory.

More extraordinary than the feats of musical memory of either Liszt or von Bülow are those told of Rubinstein, of whom it is said that, in a protracted series of concerts, he played upon the piano more than a thousand compositions, embracing about everything of value in the répertoire of that instrument.

The violinists, too, afford numerous examples of preternatural memory. The writer recalls an instance in point—a huge abdominal specimen, whose pulpy digits, moving with a kind of flabby waddle among the strings, seemed about as fit for playing as a jelly fish for dancing. And yet, as an offset to his physical disabilities, this man was dowered with an astonishing musical memory. Not only could he play "by ear" most of what he heard, but he could also recall nearly everything he had ever played. His répertoire was, indeed, enormous; technical shortcomings alone set a term to his acquisition.

Most of the great violinists—Kreutzer, Viotti, Rode, Corelli, Tortini, Baillot, Spohr, Paganini, De Bériot, Vieuxtemps, Sivori, Ernst, Kreisler, and many others—have given evidence on countless occasions of the posession of unusual powers of memory.

Nor have players on instruments other than the piano and violin failed to afford illustrations of remarkable musical memory. Here in New York may be heard one of the great flute virtuosi of the world, George Barrère, whose répertoire, already large, increases continually without manifest effort.

Opera singers have often been cited as examples of unusual musical memory; but, in the first place, as already pointed out, the association between the motor mechanism of the voice and the auditory representations is already established, and does not require the arduous labor expended by the instrumentalist in bringing about the association of the motor memories (of the fingers) with the auditory representations. Again, as already mentioned, the musical memory of the singer is greatly assisted by verbal associations derived from the libretto, no corresponding aid being found in the case of the instrumental virtuoso.

Most wonderful are the illustrations of musical memory afforded by certain conductors of the orchestra. One of these, Chevillard, conducted from memory nearly all the symphonies of Beethoven. The same thing had previously been done by Wagner. Here in New York we have been witnesses during the last few winters of a still more astounding performance. Sitting in the conductor's chair at the Metropolitan Opera may be seen Toscanini directing night after night almost every style of opera—Italian, French, German, and what not—without the aid of a single note. What is implied by an achievement of this sort can only be adequately appreciated by one who has studied the huge score of one of the modern lyric dramas. In concluding these brief remarks on musical hyperamnesia it is worth noting that the productive artists—the composers—do not always disclose the remarkable powers of memory possessed by the more gifted among

their reproductive colleagues. Of some it is said, that having composed them, they were obliged to commit their own works to memory, precisely as though they had come from a foreign pen. On the other hand, Mozart was able to write out the whole of the Miserere after hearing it at the Sistine Chapel twice.

Impairment, Loss, or Congenital Absence of the Musical Faculty, Amusia.—It was long ago pointed out by Falret that in those suffering from aphasia the musical faculty may or may not be lost. This statement has since been abundantly confirmed by numerous observers, notably by Grasset, Brown-Séquard, Gowers, and Knoblauch. From them we have the histories of certain aphasics who, incapable of uttering a single word, were able, none the less, to sing entire songs, rendering text and music from beginning to end without apparent difficulty. Scarcely less remarkable is the history of an aphasic musician recorded by Laségue. This individual, a sufferer from agraphia and alexia, could jot down melodies as they were sung to him quite naturally, as it seemed, and without effort. Equally extraordinary is the case of an aphasic lady observed by Proust, and quoted by von Frankl-Hochwart. This lady, whose musical gifts were of a high order, could write notes and even compose, and this despite the fact that although she recognized a melody when she heard it she was quite unable to sing it.

Neither space nor the objects of this paper admit of an elaborate discussion of aphasia, whose literature, already enormous, has of late taken on a controversial aspect. An introductory word or two recalling a few elementary facts which, it is hoped, will serve to make the present writing intelligible must suffice.

As all are aware, the general classification of aphasia involves the recognition of two varieties of the affection: (1) motor aphasia or aphasia of expression, and (2) sensory aphasia or aphasia of comprehension[6].

Under the head of motor aphasia we have aphemia, or the loss of the ability to utter words, and agraphia, loss of the ability to write them; and this despite the fact that the subject is able to comprehend what is said to him, to move his lips and tongue, and emit sounds.

Sensory aphasia, on the other hand, includes in the first place "word-blindness" or the inability to read what is either written or printed, vision and general intelligence remaining, meanwhile, unaffected, so that the subject is able to see the letters, but without being able to gather from them what they are intended to convey; and secondly "word-deafness," or the loss of ability to understand spoken words. The subject hears the voice, audition being unaffected, but the words fail to impart to him the meaning which under normal conditions they would convey.

According to present-day interpretation the centers for speech are situated in the left hemisphere for right-handed and in the right hemisphere for left-handed persons. Four speech centers are recognized: two of these are motor, two sensory in character. The motor expressional centers are concerned in the articulation of words and in writing; the sensory centers have to do with the comprehension of words spoken, written, or printed.

These centers lie along the Sylvian fissure; the motor center for the articulation of words (Broca) in the foot of the third (left) frontal convolution; that for writing in the foot of the second frontal convolution. The centers for the comprehension of spoken words, (left) and for printed or written words have already been indicated. Destruction of one or another or several of these centers gives rise to the various forms of aphasia, some of which are relatively simple, others exceedingly complex.

Now, under the head of sensory aphasia one finds included in many of the textbooks "amusia," by which is usually understood a form of psychical deafness characterized by the loss of the ability to recognize familiar melodies, or, in some instances, to discern the difference between harmony and dissonance. Amusia has likewise been made to include those cases in which all sense of time and rhythm is either lost or congenitally absent.

Not all writers on amusia, however, have been willing to use the word in this relatively restricted sense. Thus Wollaschek, writing as early as 1891, employs it in a far more generic manner than his predecessors, not excepting Knoblauch, himself responsible for the introduction into literature of the term "amusia." Wallaschek holds that amusia should be given a broad meaning, a meaning analogous to aphasia itself. Accordingly, he differentiates the following varieties: (1) motor amusia, in which the subject is able to comprehend music, but cannot sing; (2) sensory amusia or tone-deafness, (3) paramusia, in which, while he is able to sing, he uses wrong tones and intervals; (4) musical amusia, corresponding to verbal amusia (?) and finally (5) musical alexia and paralexia and musical amusia (instrumental), the latter characterized by inability to play an instrument. This classification, whatever else may be said of it, is scarcely justified by the clinical material now available.

Better far, because more simple and at the same time in closer accord with the facts observed, is the classification proposed by Dr. Brazier in 1892 (*Revue Philosophique*, Vol. XXXIV, pp. 337-368). Amusia, according to Brazier, may be simple or total or at any rate complex. Simple amusia may be subdivided into amusia of reception (centripetal amusia), and into amusia of transmission or expression (centrifugal) amusia. Under the head of centripetal or receptive amusia are included the auditory form or tone-deafness and the visual form or note-blindness (musical alexia); while under centrifugal or transmissive (expressive) amusia are included loss of the ability to sing, vocal (motor) amusia—or to play on instruments—instrumental (motor) amusia—the phenomenon being due to loss of the motor images relating to the exercise of the voice or to the playing of instruments.

Bearing in mind what has already been said regarding the importance of tone and motor recollection, sequential and simultaneous, and of the sense of rhythm and time, of harmony and dissonance, to the processes concerned in musical memory, whether acquisitive or reproductive, it is evident that defects involving one or more of these factors must result in impairment, greater or less, not only of musical recollection in particular, but likewise of the integrity of the musical faculty as a whole.

Amusia Associated with Aphasia.—The following synopsis of cases will serve to illustrate the association so frequently encountered of the various forms of aphasia with amusia in one or several of its phases. It must not be forgotten, however, that amusia may sometimes exist alone and unaccompanied by aphasia.

Aphasia and Agraphia with Musical Alexia and Musical Apraxia.—In the twenty-fourth volume of

the *Deutsche Zeitschrift für Nervenheilkunde* Dr. C. H. Würtzen gives with much detail the history of a case of this kind, of which the following is a synopsis: N. N., an unmarried woman, suffered an apoplectic attack in 1885, followed by aphasia, agraphia, and slight paralysis of the right arm and leg. These symptoms, save only the motor aphasia, which never entirely disappeared, were soon recovered from. Later, however, about a year and a half after the attack, she developed a psychosis and remained under treatment in an institution for nine years. Thereafter she lived with her sister, her mind lucid, her memory more especially being particularly good. When somewhat recovered from her apoplexy it was discovered that she had entirely lost her musical faculty. Still later, at a time when she was able to pronounce simple words only, she began to regain it. Sitting at the piano one day, it was quickly evident that while the tone and key (motor) memories of the left hand were intact, those of the right had entirely disappeared. Hence while the bass notes were correctly struck those higher up gave no sound, her right hand wandering in an uncertain questing kind of way over the treble end of the keyboard, but without touching it. Yet, despite this ineptitude of the right hand, her melodic memory is said to have remained unimpaired; for she could easily call up the recollection of both parts—the bass and the treble quite as well. When she made these attempts to play, it now and then appeared that the fingers of her right hand struck the keys, but always the wrong ones. While this state of things existed her right hand and arm had already regained much of their old-time vigor, and coordination was sufficiently good to enable her to write. Gradually she regained the ability to play with her right hand, and ultimately she was able to play by ear and memory in much the same way as before the attack. She was also able to compose minor music. The ability to play by note was, however, permanently lost.

This case is interesting for a variety of reasons, but more especially because it is a unique instance of what Würtzsen calls a malady of the "key-memory." As for the location of the lesion which is responsible for the occurrence of the phenomenon, he holds that we must look for it in the left hemisphere, more especially in Knoblauch's "Tone-movement image" center.

Aphemia, Word-Deafness, Word-Blindness, Agraphia, Reported by Von Frankel-Hochwart[7].—A man, 50 years old, had a cerebral hemorrhage, followed by hemiplegia of the right side, with loss of the power to speak or understand what was said to him, or to read or write. One day he began to sing a few bars from a melody, but without words. Since this first attempt he has frequently done the same thing, always singing the same fragment and always in the same way.

Aphemia, Partial Vocal (Motor) Amusia; Recognizes Melodies When They Are Sung, and Is Able to Repeat Them.[8]—Patient, a woman 55 years old. Attacks of vertigo, followed by partial paralysis of the right arm with loss of power to speak or understand what was said to her. Recovered somewhat from the paralysis and regained the ability to understand what was said to her. Was never able to read or write. Formerly was able to sing many melodies; at present can sing but part of a melody when the name of the song is mentioned. Can repeat a song when it is sung to her and recognizes popular melodies.

Word-Deafness, Tone-Deafness. — Bernhardt[9] gives the history of a man who was seized with vertigo, followed by right hemiparesis. A few days later he was restless and spoke very indistinctly. Still later, examination showed that he could write and read (aloud) and was able to hear tones and voices, but was unable to understand what was said to him. When he spoke he frequently mixed his words. Tests showed that he was unable to comprehend melody, which seemed to him like noise—now "high," now "low."

The foregoing illustrations are but a few of the many instances of the association of aphasia with amusia to be found in literature.

Amusia Without Aphasia.—Of especial significance to those who are interested in the study of disorders of the musical memory are those cases of amusia occurring independently, with slight, transitory or no aphasic complications whatever.

The following case of Würtzen's is an illustration in point. The subject, a man of 48, had acquired syphilis in his eighteenth year. Four months before coming under medical observation he suffered a stroke of apoplexy, with relatively slight loss of motion but complete hemianesthesia of the left side. Motion was largely regained in the left limbs and a slight thickness of speech soon disappeared. Despite this improvement, he was soon aware that he was unable to finger the strings of his violin properly and that he had entirely lost his sense of rhythm. A report of his condition, obtained from his family ten years later, showed that he had lost the power of tone-discrimination—could not tell whether a tone was false or true; could not sing; could not beat time, and had entirely lost his ability to play, being quite unable to find the proper notes with the left hand.

Peculiar interest attaches to this case by reason of the predominantly sensory character of the hemiplegic disturbance, the loss of motion from the beginning being insignificant.

In concluding his extremely interesting paper, Würtzen gives in much detail the histories of two cases of congenital amusia—"musical idiocy," as he calls it—the one observed in a student of medicine, the other in a single woman 32 years of age. Following are the principal phenomena observed. Inability to tell whether a piece of music is gay or sad; lack of the sense of melody; absence of the sense of time and rhythm and inability to dance; inability to discriminate between harmony and dissonance; no musical comprehension—the auditory impressions fail to evoke musical emotion, and are sensed as noise only; lack of the capacity to remember even the simplest melodies, or to sing or hum them; inability to recognize the difference in tone-color of the various instruments—flute, violin, piano, or what not. Such cases, though extreme and not very frequent, are nevertheless a broad hint of the conditions prevailing among the unmusical.

Brazier[10] gives the following histories of two cases of complex (mixed) or total amusia, occurring suddenly, the one in a singer, the other in a pianist: "In 1873, Barré, a tenor who was singing the important part of "Petite Fadette" at the Opéra-Comique, was suddenly seized one evening in the midst of the performance by total musical amusia. Neither the orchestra nor his associates, who sought to prompt him, succeeded in reviving his memory. He no longer understood what they were singing, nor could he emit a single note. On reaching home he was perfectly able to understand what was said to him in ordinary language and to reply intelligently, but

everything—words and music—which bore any relation whatever to the work which he had been singing, or, indeed, to any part of his entire repertoire,, was completely forgotten. He recovered in a few months and was able to resume his lyric activities."

Brazier's next case is that of the eminent pianist, Prudent, who, it seems, was endowed with a prodigious memory: "One day, about 1852, while playing in public with orchestral accompaniment one of his own concertos, he suddenly lost all memory of things musical. At that moment his work was for him nothing more than incoherent noise; not a phrase of the orchestra, not a melody did he comprehend. Coincidently there was absolute inability to play even from notes. He went abroad the following day, having largely recovered, but thenceforth played only with the notes before him."

In addition to the cases a synopsis of which has just been given, Brazier has placed on record several others, notably one of note-blindness (musical alexia) and one of tone-deafness, the first occurring in a music teacher, the second in a man 51 years of age.

Of the music teacher it is said that she had read music as easily as ordinary printing, and far more frequently, and that her musical education had been unusually thorough. One evening, after a prolonged attack of migraine, she seated herself at the piano and attempted, as was her habit, to play from memory. To her surprise, she experienced such a sense of uncertainty and the difficulties loomed so large that she felt compelled to have recourse to her notes. It was then that she made the discovery that she was utterly unable to read a measure or even a note, although she distinctly saw the characters. Despite this inability to comprehend musical notation she could read ordinary printing without apparent difficulty. Hardly less interesting is the fact that she heard and understood music, and could sing and play from memory perfectly. Three days after the attack she began to show signs of mending: she could comprehend the time values of the notes but not their pitch. Her recovery was complete on the fourth or fifth day.

Brazier's case of tone-deafness occurred, as has been said, in a man 51 years of age, who had suffered from repeated attacks of migraine, followed in some instances by aphasia lasting several hours. Subsequently he had an attack of migraine followed by tone-deafness, but without aphasic accompaniments. Music from a military band or piano was heard as noise only; so that, while he was able to refer it to its instrumental source, he was quite incapable of comprehending it as music. The affection was of brief duration, having completely disappeared in twenty-four hours.

Bernard[11] gives the history of a case of tone-deafness preceded by transitory aphemia and word-deafness. In this case autopsy revealed destruction of the middle and posterior portions of the (left) third frontal convolution, of the entire Island of Reil, of the first temporal convolution, of a small portion of the lower parietal lobe, and of portions of the basal ganglia as well.

Edgren[12] gives in much detail the history of a man of 34 who suffered from transitory paraphasia and word-deafness, and also from tone-deafness, the latter symptom persisting permanently. The incidence of these symptoms was due to traumatism of the head. Ultimately death ensued and an autopsy was had. This revealed destruction of the anterior two-thirds of the first temporal convolution, and of the anterior half of the second temporal convolution of the left hemisphere.

Chronic Meningitis (of Specific Origin) with Transitory Attacks of Aphasia—Musical Paralexia.—The writer has seen a case of this kind occurring in a musician of note, in whom one of the earliest phenomena observed was inability to read notes as they were written, this symptom appearing shortly *before* the occurrence of transitory attacks of aphasia, and persisting after the latter had entirely disappeared. In this instance specific treatment was of slight avail, the case advancing typically to dementia and death.

While, as clearly appears from the foregoing cases, amusia may exist without aphasia, and aphasia without amusia, the more frequent association of the two conditions is highly significant. So, too, is the apparent analogy existing between the various manifestations of amusia and the different forms of aphasia. In view of all this, and bearing in mind the paucity of decisive revelations from the dead house, what conception of the anatomical basis of amusia are we justified in entertaining? Edgren, who has carefully collected and analyzed all the material available at the time of publication of his excellent paper, holds that at least some forms of amusia may have an independent anatomical basis, and that this latter may be sought for in the neighborhood of these localities in which the various forms of aphasia are conventionally located. Respecting the anatomical seat of one form of amusia—tone-deafness—he is inclined to speak more definitely. To him the location of this form of the affection in the first or the first and second convolutions of the left temporal lobe, in front of the spot, injury to which gives rise to word-deafness, seems highly probable.

That children frequently sing before they talk; that idiots who are unable to talk sometimes sing; that drunken men often sing when they cannot talk, and that many birds sing, although they cannot be taught to speak, are some of the facts adduced in support of the contention that the cerebral (cortical) mechanism connected with musical representations is independent of that connected with those of speech. As an offset to this evidence, however, we are confronted by the fact, already sufficiently accentuated, that, while the musical faculty is sometimes preserved or largely preserved in aphasia, it is impaired or totally lost in a large number of well-authenticated cases.

How are these conflicting data to be reconciled? By what jugglery of inference are we to be put in the way of arriving at a theory which, even in moderate degree, shall comport with the exactions of common sense? Rather than invoke a factitious, though seductive semblance of solution, the writer confesses that in the present state of knowledge he is unable to frame an answer. Neither the pathological material nor the clinical histories associated with them are, in his opinion, either sufficiently abundant or of such a character as to afford the groundwork so necessary to a final solution of the problem. Nor is this to be wondered at when one considers the relatively small number of highly educated musicians, whose demise, conjoined with the favoring fortuities of complete clinical histories and carefully conducted autopsies, might, conceivably, yield the necessary data. In view of all this, it would seem idle to pursue the matter further; yet, because of their suggestiveness, the writer ventures, in concluding this nebulous phase of the subject, to cite certain outgivings of Brazier[13], which, though

published some years since, may still be read with profit. If we hold that the centers of musical representation and the centers of speech representation are identical, then we must admit, according to Brazier, that nervous elements which have become impotent for a certain order of representations (those of speech) remain active, nevertheless, insofar as certain others (those of music) are concerned. Or, if this hypothesis be rejected, there remains the alternative supposition that the cortical areas connected with musical representations lie near those concerned in speech.

Disorders of the Musical Memory Due to Hostile Emotions; Imperative Concepts (Psychasthenia) and Intoxication.

Besides the disorders of the musical memory due to gross lesions of circumscribed areas of the cortex, there are others, which, while obviously functional in origin, are capable of causing not only great distress to the subject, but even his complete artistic undoing. Several cases of this kind, some of them occurring in artists of the first rank, have come to the professional knowledge of the writer. The following are a few instances:

M. I. T., soprano of thirty-five, temperate, fine physique; never seriously ill, came to me with the following history: For several years—in fact, since the inception of her career as a church and concert singer—she had never been able to sing in public without the aid of copious stimulation, usually in the form of champagne, being so overcome with dread of a possible vocal mishap that her appearance in default of such assistance would, in her judgment, have been impossible. Wishing to put the matter to the proof, I prevailed upon her to attempt to sing for me without the accustomed prop, only a few other persons being present. When, however, it came to the test, she became greatly agitated and, declaring "that everything swam" before her eyes and that she "could remember nothing," sank down upon the sofa, trembling violently. A pint of champagne was given her, when presently, having gained her composure, she repeatedly sang with superb voice and in perfect style. It was the unanimous verdict of those who listened that her voice would have been an ornament to any stage. "Yes," she replied to this enthusiasm, "I have had many opportunities to sing in opera, but my infirmity, of which you have just been witness, has always stood in the way."

Later when the writer again saw her she was questioned as to her early life and education, with the hope of gaining a clue to the genesis of her trouble. Such a clue was not long in appearing. As a girl she had had, it seems, for some years as a vocal teacher an individual of violent and brutal temper, who, whenever she was guilty of a mistake, would strike her with a rod, heaping opprobrium upon her, at the same time, in the most abusive language. The effect of this ill-usage was to despoil her of both interest and confidence; to deprive her of self-possession, and, ultimately, to engender such dread of her own fallibility that she was otherwise powerless to cope with it save in the manner previously set forth. In her case stimulating medication, coupled with suggestion, was of sufficient avail to enable her after some time to sing without alcohol.

D. E. H., musician of forty-five, consulted the writer as to a peculiar disorder of the musical memory from which he had suffered for some time. As a violinist and member of a large orchestra his profession had taken him on frequent and extended tours throughout Canada and the United States. The fatigues and hardships of these journeys were great; and, to counteract exhaustion and depression, he began to take whisky, at first, at night, after the concert or rehearsal, ultimately several times during the day as well. He was rather tremulous when I saw him and complained of the usual digestive disturbances found in alcoholics, and of insomnia, as well. He was chiefly concerned, however, because of a symptom which had lately made its appearance—inability to play the notes as they were written. This infirmity had caused him much mortification. He had already been taken to task for his misplaying by the director of the orchestra, and he realized that his hold upon his position was precarious.

Such instances of musical paralexia are rather common. In a large percentage of cases the prognosis is favorable, the management differing but little from that of ordinary alcoholic cases. In this instance recovery was complete in about eight weeks.

S. K., opera singer, consulted the writer some years since with regard to an "unreasonable fear" of making her début in this country. This fear was the more surprising to her, as she had been singing for several years with success in some of the leading opera houses of Europe. As a child she had been moody and inclined to solitude; and, as she grew in years, she became a victim of various imperative concepts, developing, at the same time, a superstitious tendency entirely at variance with her rather rationalistic upbringing and the dictates of her own common sense. Appreciating, as she did, the essentially morbid character of these elements of her mental life, she was nevertheless powerless to overcome them; so that the appearance of her most recent dread, threatening, apparently, the ruin of her professional career, evoked a further and more poignant apprehension. When she sang, even at rehearsal, her heart beat violently, her memory wavered and despite the aid of the prompter she expected a break-down at any moment. The combined use of sedatives, stimulants, and suggestion proved sufficiently efficacious to enable her on the night of her début to get through the first act, and the succeeding liberal applause helped her through the rest. Cases resembling this one in their emotional phases are not unknown to the theater; but the antecedent neurotic features are fortunately rarer.

In bringing together the material embodied in this paper, the writer hazards the hope that he has not been engaged in a bootless task; and he is encouraged in this, not only by appreciation of the clinical interest attaching to it, but still more because of the ever-increasing rôle of that art which can "make passionate the sense of hearing" in the life of the modern world.

REFERENCES.

1. "Music, Its Laws and Evolution," by Jules Combarieu, London, 1910, p. 134.
2. "Mind and Its Disorders," by W. H. B. Stoddart, M.D., Philadelphia, 1909, p. 30.
3. Op. cit., p. 135, et seq.
4. "Arbeit und Rhythmus," by Karl Bücher, Leipzig and Berlin, 1909.
5. "Histological Studies on the Localization of Cerebral Function," by Alfred W. Campbell, M.D., Cambridge: at the University Press, 1905.
6. This classification has been attacked by Pierre Marie, who maintains that a single (intellectual) defect accounts for both varieties of the disorder. For purposes of con-

venient discussion, however, the usual classification has been retained.

7. *Deutsche Zeitschrift für Nervenheilkunde*, Vol. I, 1891, p. 287.
8. Reported by Von Frankl-Hochwart, loc. cit.
9. *Centralblatt für Nervenheilkunde*, Vol. V, 1882, p. 240
10. Op. cit.
11. "De l'aphasie," Paris, 1889.
12. Amusia: *Deutsche Zeitschrift für Nervenheilkunde*, Vol. VI, 1895, p. 41, et seq.
13. *Revue Philosophique*, Vol. XXXIV, p. 367, 1892

THE SURGICAL TREATMENT OF GOITER.*

By W. D. HAMILTON, M.D.,

COLUMBUS, O.

The popular conception of a medical term is sometimes of interest. The Century Dictionary defines *goiter* as "a morbid enlargement of the thyroid gland on the front part and side, or sides, of the neck." However, to be somewhat more specific, a parenchymatous goiter,—that type of the disease often observable in many young misses just entering womanhood,—is one in which the whole thyroid gland is enlarged, all its vesicles being distended with colloid secretion.

While, to avoid error, careful examination of the gland should be made in every case of goiter, those of the small parenchymatous type, not causing dyspnea, are as a rule medical cases, and will very often get well under good hygienic surroundings, even if nothing in the way of drugs be employed, though the preparations of iodine often seem to be of benefit to them.

It is, however, surprising how often in our surgical work we meet with cases in which the enlargement of the thyroid gland is found to be due apparently to a circumscribed nodule, cyst, or neoplasm in its substance. It may either be in one lobe or in the isthmus of the gland, and it may have reached in its lower encroachments below the sterno-clavicular line, and it is in the latter class that the more formidable pressure effects are observed.

The importance of giving these growths attention would not be questioned were they to occur in the female breast, where they so often terminate in malignant disease. Cancer of the thyroid gland occasionally occurs, and in the sixty-five cases that form the subject of this discussion our pathologist found it to be present in two instances, while in a third case there was much to suggest the possibility of carcinomatous change.

On account of the pressure effects upon the trachea and the vessels of the neck, and the subsequent pathological influence which a goiter may produce upon the heart and lungs, it is important to anticipate these changes by recognizing neoplasms in the substance of the gland as soon as it is practicable to do so. The writer has been impressed with the frequency of their occurrence.

An apparently prevalent medical notion on this subject is that iodine used in some way or other is generally a useful therapeutic agent in the treatment of goiter, without reference to the type of disease represented. Before the drug is employed, however, it is well to bear in mind the fact that if one be dealing with a growth in the substance of the gland, the iodine may not only be of no avail, but if it has been used by injection, aside from the immediate risk of sepsis, hemorrhage, hematocele, thrombosis, or embolism from its use, it may give rise to dense and leathery adhesions on account of which the subsequent removal of the goiter by operation will be made a very much more serious and difficult affair than if the drug has not been employed.

In the treatment of Graves' disease it is of importance that there should be a resort to surgery as soon as there is strong presumptive evidence that the disease is imminent or actually present. The operation usually contemplates the removal eventually of a part of the thyroid gland. As a preliminary measure, however, the blood-vessels of supply to the gland may require ligation, so that after the lapse of an interval, when the patient may have acquired more strength, the removal of a portion of the gland may with more safety be done. Some of these sufferers from Basedow's or Graves' disease are very much enfeebled, reduced in both flesh and strength. A great many of them, after simple ligation of the vessels of supply, increase in weight in an amount varying from a few pounds to 40 or 50 pounds within a few months.

The writer is satisfied that many medical men are skeptical about the efficiency of operation for the relief of Graves' disease. This is probably due to inexperience with its results. No doubt the notion prevails among many that operation is largely speculative and that the results are doubtful or fanciful. In the opinion of the writer, where either a fatal outcome or doubtful benefits arise from operation for Graves' disease, the general pathological damage has become so marked that even surgical interference may no longer offer its full benefits. We see the analogue of that in various surgical conditions; hopeless carcinoma of the stomach following ulcer; advanced biliary sepsis from stones in the common duct of the liver, and numerous formidable complications which become the precursors of death, following any case of gall-stones which may have originated in the gall-bladder. These late conditions in no way argue the inefficiency of surgery, but rather emphasize the importance of early operation before these unfortunate sequelæ arise. In cases of Graves' disease and in goiters of all sorts operated upon during the period in which surgery is applicable, we have had an abundance of evidence in the individuals restored to comparative health, so that the writer feels that his contention is a perfectly justifiable one as to the efficiency of surgery in all of these cases that form the subject of this discussion.

We should cultivate the habit of examination of the neck in any and all cases in which the thyroid gland is enlarged, if hitherto it has not been a routine undertaking in our diagnostic efforts. Many of the cases operated upon by us were not especially apparent to casual observation, and many of them would certainly have escaped detection if they had not been studied with care and discernment. Physical examination of the neck should include the palpation and inspection of the thyroid gland to enable one to detect, if present, any pathological peculiarity. When the thyroid gland is enlarged it should be carefully examined, the kinds of change from the normal which it has undergone, and the history thereof being noted. Pressure effects upon the trachea may in some measure be anticipated by the early recognition and removal of neoplasms from the substance of the thyroid gland, and there is usually some deleterious effect in the way of compression even though the growth be of very moderate proportions.

In this connection the question will arise as to

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whether the enlargement of the gland is diffuse or circumscribed, fluctuant or solid, fixed or movable, nodular or homogeneous; if there is associated with it a condition of larger blood-vessels than the normal; whether it is growing or not; and perhaps of greater importance still, whether the pressure of the goiter on the windpipe is such as to impede or to embarrass respiration; whether the pressure is from the growth all in the neck or partly buried in the upper part of the chest, and whether the blood-vessels of the neck, and secondarily those of the heart and lungs, are undergoing degenerative changes resulting therefrom.

Or can it be that this patient who has of late been mercurial, feeble, excitable, with rather a rapid pulse and no decided fever, can it be that she who has only a moderate enlargement of the thyroid gland is developing exophthalmic goiter? If so, the administration thrice daily, for two days—not longer—of five-grain tablets of thyroid extract of the sheep will, in all probability, cause the pulse to increase in frequency, and the toxemia to become more profound, and such a reaction may have diagnostic value; or the failure of the drug to affect the pulse may be quite as instructive as showing the probable absence of Basedow's or Graves' disease.

Early operation will minimize the risk and will offer a better chance of cure is most goiters, excepting those of the small parenchymatous variety, not causing dyspnea, which, as above stated, are not surgical cases. In examining the neck it is always well to see whether there is atrophy of the thyroid gland, which is quite liable to be found in cases of myxedema.

Most tumors met with in the surgery of the thyroid gland are benign in character. The location of the growth with reference to the thoracic inlet or to the windpipe will determine the amount of dyspnea, if there is any in a given instance. A benign neoplasm in this location may ultimately and sometimes unexpectedly, cause a fatal attack of suffocation. As in other parts of the body, an innocent growth may here develop the characteristics of malignancy, and furthermore, emphysema, bronchitis, thrombosis, cardiac weakness, or paralysis of the inferior laryngeal nerves may be the result of pressure from a goiter.

The important relation of the thyroid gland to the central nervous system and to the nutritive processes is shown in cases of exophthalmic goiter and in those of myxedema as well. While there is a more or less complete set of symptoms in the former, and while an associated well-marked bruit over the superior thyroid arteries is pathognomic of exophthalmic goiter, there are no doubt stages in its early development in which the bruit is absent, where hyperthyroidism is present, and where the patient's rapid pulse and other associated symptoms tend to show that the disease is either imminent or in process of development. I am convinced that exophthalmic goiter is not so uncommon as some general practitioners assume. Tachycardia and enlargement of the thyroid gland are its usual accompaniments. With reference to the significance of tachycardia, a physical examination of the lungs is of the utmost importance to exclude pulmonary tuberculosis, for occasionally it may be necessary to differentiate between it and Graves' disease. When in doubt as to the diagnosis in cases which have seemed obscure, where there is a rapid heart action, with or without febrile movement, and in which there is nothing in the nervous, pulmonary or cardiac apparatus *per se* to explain the frequent pulse, one should think of the possibility of Graves' disease. The bulging of the eyeballs may not develop early. Trembling of the hands, fatigue in the legs in locomotion, impaired ability to climb the stairs or to make ordinary physical or mental effort, oppression about the heart, anemia, emotionalism, nausea or vomiting, diarrhea, sweating, and emaciation may be more or less evident.

If the phonendoscope is applied to either of the superior thyroid arteries in pronounced cases, a distinct bruit can often be elicited. The disease may be of but a few months' duration, and yet may be quite complete in its symptomatology. On the other hand, it may have existed for years. Periods of recession with apparent improvement or subsidence may at times occur even though medication for its relief has not been employed.

Particularly in adults the following types of goiter should be treated with early operation: all nodular, cystic, and adherent tumors in the substance of the thyroid gland; malignant disease if sufficiently circumscribed, and cases of exophthalmic goiter. The insidious, increasing pressure on the windpipe produced by a growing goiter should be taken into account with reference to the operative needs of the case, for in addition to the deformity so frequently produced by the disease, it may extend for some distance downward into the thorax. Sometimes arteries of supply to the gland are tied as a preliminary operation, especially in exophthalmic goiter. This may modify the conditions so that a successful thyroidectomy may be done on a subsequent occasion.

Kocher has been the most forceful pioneer in this work. He has had in his clinic up to a recent date 3333 thyroidectomies, with only four deaths in his last thousand, and it is an interesting fact in this connection that the fatalities were all of them in individuals who, as the result of undue procrastination, had become wretched subjects for operation. The inferences from his work are of the greatest value to the profession. Large incisions, deliberate painstaking hemostasis, and the avoidance of antiseptics in the wound characterize his work. He has done a great many of these operations of all sorts under local anesthesia. Relying upon his views and experiences, we have done much of our recent goiter work in the same way. It is a great satisfaction to have the patient conscious and able to talk during the operation. The occurrence of injury to the recurrent laryngeal nerve or nerves, of nausea and vomiting, of pneumonia, or of postoperative hemorrhage is thus minimized. And, too, the straining often attending vomiting after general anesthesia may cause oozing of blood or an hematocele and suppuration following it. In the service of Dr. Charles Hamilton and myself there have been no deaths following our last sixty-five operations of all sorts upon the thyroid gland.

There is no reliable medical specific for either ordinary or exophthalmic goiter. The variety of medical treatment at various times employed is about the best possible evidence of its unreliability in the treatment of Graves' disease. Operation comes nearer being a specific, so to speak, than anything heretofore offered with which the writer is familiar. Early operation will generally cure such cases of goiter as are suitable for surgical interference, and a fair majority at least of cases of Graves' disease

It is not expected that these arguments will convince everybody. There always will be, as at the present time there are, medical men who persist in treating cases of appendicitis and other perilous surgical lesions. Among this number, however, will be found the majority of those internists who unfortunately do not get the patient to surgery until perhaps hopeless damage has been done. Fortunately, most medical men do not belong in this category.

150 East Broad Street.

TOXEMIAS OF PREGNANCY.

By S. H. BLODGETT, M.D.,

Boston, Mass.

At the beginning of this paper I shall have to offer a word of apology or explanation because in speaking of the toxemias of pregnancy I shall limit myself to those toxemias only of which some of the symptoms can be discovered by means of an examination of the urine. These, so far as we know at present, consist of only two; first, the commonly so-called uremic toxemia, and, second, that one (to which so far no name has been given) which causes an incorrect action of the pancreas and which is marked by vomiting and by the appearance of acetone and diacetic acid in the urine.

Of course it is a well known fact that it is not the retention of urea in the system that causes the clinical symptoms which we call uremic poisoning, but just what the exact poison is has not as yet been determined, so that at the present time, at least, we have to depend for our knowledge of the presence of this form of toxemia, and our premonition of the probable occurrence of convulsions, on the amount of urea excreted by the kidney as shown by the urinary analysis; taking into consideration, before giving our final judgment, the amount of nitrogenous food taken into the system and the amount of physical or muscular exercise indulged in at the time that the urine was being collected. It is sometimes claimed that without knowing the exact amount of nitrogenous food taken into the system we cannot tell what the exact elimination of urea in the urine ought to be. Theoretically, this may to a certain extent be true, but from the practical and clinical standpoint (and I speak as one who sees the periodical analyses of the urine of four or five hundred cases of pregnancy each year, and as one who is also fortunate enough to see the clinical outcome of these same cases), I can say that by considering the amount of urea eliminated in the urine in connection with the other things which I have mentioned, and considering the relation of the urea to the other solids, and the amount of albumin in the urine, we can very accurately foretell whether there is liability of the occurrence of uremic convulsions.

There are two forms of poisoning due to the uremic toxin; one develops very slowly and the poisoning goes on for some time more or less progressively. This form may occur at any time during pregnancy after the third month, but most frequently during the seventh or eighth month. The other form develops much more rapidly and usually occurs during the ninth month. In the first form the patient will give in answer to inquiries a history of having for some time had headaches at intervals, of partial loss of appetite, of lassitude, and of digestive disturbance, not, however, as a rule to the extent of vomiting; perhaps even of attacks of blindness and pains along the course of the nerves. The examination of the urine will show an excretion of solids from 30 to 60 grams, an excretion of urea from 5 to 10 grams, and from a slight trace to a considerable amount of albumin, with possibly a few casts; while the patient is taking an ordinary nitrogenous, varied diet. As this condition progresses we shall find that, while the nitrogenous food taken in is not decreased, the urea eliminated slowly but steadily decreases. This I consider one of the most important symptoms and believe that when the daily excretion of urea has fallen below 9 or 10 grams per day, while the patient is taking the average amount of nitrogenous food, we ought to watch the case very carefully.

The treatment will vary according to the symptoms and the results of the uranalysis present when we discover the condition. If we find that the urea is decreasing rather slowly, while the nitrogenous food taken by the patient has not been decreased in amount, we should limit very decidedly the amount of nitrogenous food, especially animal fiber, which the patient is allowed to take, and watch under these conditions the daily excretion of urea. A milk diet, when the condition is recognized early enough, is not necessary; but a large amount of liquid should be taken in the form of water, milk, and hot drinks. The amount of exercise which the person takes should be somewhat limited, also. If the treatment is going to have a beneficial effect, the amount of urea excreted will probably begin slightly to increase, and after it has become normal the patient can gradually be put back onto the ordinary diet, but the urea output should be watched carefully during the rest of pregnancy.

I would here call attention to the fact that the urea output in pregnancy is less than when in the non-pregnant condition and my experience is that a urea output of 15 grams in a pregnant woman would correspond with a urea output of about 20 grams in the same woman on the same diet when not pregnant. If, however, we have not discovered the deficient elimination of urea until it has progressed somewhat further, or if our early treatment does not produce the desired result, the nitrogenous elements of the diet should be still farther reduced, and the patient can have only fruits such as oranges, grape fruit, etc., and a milk diet, with what bread or crackers she may like.

I have discovered that as a matter of practice in giving a milk diet it is usually better relished by the patient and can be borne for a longer time without upsetting the digestion and causing a coated tongue if the patient is given a milk low in fat content. This can be accomplished by getting a partially skimmed milk or a milk which has set for twelve hours and from which the upper third has been poured off. As a matter of experience I have found that Holstein milk, when the patient has to be kept on a milk diet for a length of time, agrees better with the average patient and is more palatable than the Jersey or Guernsey milk.

The amount of physical exercise allowed should be reduced to a minimum, and if the urine does not amount to at least 1200 c.c. in twenty-four hours the patient should be advised to drink at stated times in the day at least eight ounces of water as hot as possible, and plenty of water at any time. In this form of toxemia the first serious effect of the poison is on the fetus; the fetal heart beat should be watched very carefully, and if this begins to weaken or ceases labor should be induced at once.

Care should be used to keep the skin in good condition and fairly active by the use of sufficient clothing and daily friction, but much bathing, unless under the greatest precautions against allowing a chilling of the body, should not be advised. If this treatment does not cause improvement or if we have not discovered the condition of the patient until it has apparently been progressing for some time, as instanced by a very low urea output and some of the clinical symptoms of so-called uremic toxemia, the question which confronts us is the termination of pregnancy. Here I wish to enter a very earnest plea against putting off too long the induction of labor, but I also wish to register my protest against the induction of labor indiscriminately in all cases in which the urea output may happen to be abnormally low. Before deciding finally in regard to the induction of labor, the urine analysis, the viability of the child, the clinical symptoms, and the prospect of improvement from treatment should all be carefully considered. We should remember that in this form of toxemia the child usually shows the first serious effect of the poison and we should carefully watch the fetal heart beat and if it begins to weaken or ceases altogether we should induce labor without delay.

The statistics presented below will have a great bearing on this particular point. If, after going over our case carefully and taking everything into consideration, it seems probable that convulsions are likely to occur I must very strongly urge the induction of labor at once, as in this case we can be sure of saving the mother's life and if the child is viable the child's life also; whereas, if we wait until convulsions occur the child is almost certain to be born dead or to die a few hours after birth, and we have very much less chance of saving the mother's life, while even if it is saved she will have serious kidney trouble following, for it has been my experience that the kidney condition which follows convulsions from this cause is far more serious and more lasting than when the poisoning of the mother has not progressed far enough to cause convulsions. In these cases also it is very important that the patient should not take any physical exercise. I have frequently seen cases in which the patient was showing symptoms and the urinary analysis indicated possible convulsions in which an attack of eclampsia was induced by a walk of a mile or two or by some other slight physical exercise, so that when it is decided to induce labor it is often necessary in urgent cases to etherize and remove the fetus as rapidly as possible, not allowing the woman to make any physical exertion at all.

Following the induction of labor we should give the patient a large amount of liquid so as to have a large amount of urine passed. Almost always nature tries to accomplish this herself and I have seen 14 quarts of urine passed in the 24 hours following the induction of labor when convulsions were imminent. If, however, we have not seen the case until convulsions have already occurred, we should empty the uterus as rapidly as possible, in order to prevent any more muscular exertion and consequent breaking down of muscular tissue, and if the convulsions continue after labor we should place the patient in hot packs and induce free perspiration and free movement of the bowels, even in some cases removing a pint of blood from the arm and replacing it with a pint of saline solution. But one should not in these cases use chloroform or ether to control the convulsions, as the kidney is already seriously damaged and ether or chloroform will add to the disturbance.

A rather odd thing that I have noticed in these cases has been that, when the patient has been taking an average amount of nitrogenous food daily and the urea output has been decreasing, if we stop the nitrogenous food entirely for several days, the urea output will increase very markedly, and the patient will feel better than she has for some time.

The second form of toxemia, attended by a low urea output, comes on very rapidly, sometimes even within a day or two. In these cases the symptoms are much more sudden in their onset, the history often being that the patient had apparently been perfectly well up to the occurrence of the convulsions, but in the majority of cases one will find on careful inquiry that for a few days she had had rather sudden severe headaches, pains along the course of some of the nerves, and pain in the stomach, with coated tongue and loss of appetite. The urine is small in amount as a rule, the specific gravity rather high, and the amount of urea low, sometimes as low as 4 or 6 grams in twenty-four hours. In such cases convulsions are imminent, and emptying of the uterus should take place at once, attended by the least possible physical exertion for the patient. If convulsions do occur in these cases they are likely to be more severe than in the class previously described and the prognosis is more serious so far as the mother is concerned but much better for the child, because the poisoning comes on so rapidly that there has not been time for the child to be seriously affected. It is in the fatal cases following this form of toxemia that on post-mortem examination we find marked changes in the liver. In this form, if an anesthetic is necessary, one should be sure to use ether, but after convulsions have occurred one should not use any anesthetic unless absolutely necessary. If any must be used, one should employ ether and oxygen.

If convulsions have occurred in a case of this class we should use the same treatment recommended in the previous form, emptying the uterus, and, if the convulsions do not cease, we should use hot packs to cause perspiration, obtain free evacuation of the bowels, and bleed, but should not force the ingestion of liquids.

As for the other toxemia about which I shall speak, while it is not strictly limited to pregnancy, still as about 90 per cent. of the cases occur during pregnancy it seems to me that it should be mentioned here. Of this I shall speak very briefly. This toxin affects primarily the pancreas and the clinical symptoms are nausea and vomiting; the means by which we determine that the nausea and vomiting are due to this particular toxemia is by the discovery of acetone and diacetic acid in the urine. In every one of these cases one will find on deep pressure over the head of the pancreas a decided sore spot, and in some cases even without any pressure the patient will complain of a pain deeply seated in the pancreatic region. The nausea and vomiting may vary in degree from vomiting during part of the day only to pernicious vomiting, where everything that is taken into the stomach is rejected, and where even without having taken food the patient vomits mucous fluid every few minutes day and night. If in a case of vomiting we find acetone and diacetic acid in the urine we may be sure that this form of toxemia is present, and that the administration of bicarbonate of sodium and proper regulation of food will relieve the condi-

tion. Of course one can easily understand that it may be exceedingly difficult, in the case of a patient who is vomiting constantly, to introduce into the system and have retained enough bicarbonate of sodium to take effect, and it is this problem that constitutes the only difficulty in the treatment. Bicarbonate of sodium given in a rectal enema is absolutely valueless, but it can almost always be given by the mouth, and if for any reason that should be impossible it can be given under the skin or even intravenously. I have never had to give more than 60 grains a day, and usually not over 20. In some cases the result will be immediate and in others we have to persist with the medicine for two or three days before we begin to see much diminution in the vomiting. It may be of interest if I mention a few ways in which the bicarbonate of sodium can be given. In some cases we have to use one of these methods; in other cases another. It can be prescribed: five grains dissolved in half a glass of water, repeated three or four times a day; or twenty grains dissolved in a glass of water, sipped frequently enough so that the whole amount is taken in twenty-four hours; or, to make it palatable to the patient, two and a half grains can be put in half a cup of hot water to which just enough weak tea (or a few drops of lemon juice, if tea is disliked) has been added to color it; this to be repeated every three to five hours. As I have said before, the principal point in this treatment is the ingenuity often required to get the bicarbonate of sodium into the patient. In some cases the improvement will be immediate, but in some severe cases, on account of the persistent vomiting or where the toxemia has been active for some time, it may be several days before improvement is seen.

In relation to the diet, as I have said before, I allow the patient to eat anything she may have a fancy for, but in exceedingly small amounts, and one must be very careful not to increase the amount of food quite as rapidly as the patient's appetite indicates. I have tried several series of cases with different classes of food for diet and have found that the best results were obtained when patients were allowed to have any articles of food for which they had a preference, but in very minute quantities, such as 1 oz. of milk and a piece of uneeda biscuit about one-half inch square repeated every two hours, or any other food that the patient craves, remembering to give it in these minute quantities.

As the acetone and diacetic acid disappear from the urine (which may not be for several days after the vomiting has begun to improve) I begin to decrease the daily amount of bicarbonate of sodium until we get down to five grains a day, which is continued sometimes until the patient is up and about again, and feeling as well as ever. In this connection I would note that there are other forms of vomiting besides those in which this toxin is present, and these other cases are not benefited by the bicarbonate of sodium treatment. Therefore, before beginning the treatment of a case of vomiting of pregnancy by bicarbonate of sodium, one should find out by means of the simple tests which any physician can make in his office whether the vomiting is caused by this particular toxin. As a matter of practice, I have noticed that the vomiting due to this toxin is more persistent and takes a few days longer to control in the earlier part of pregnancy than during the later stages.

I will add here the common clinical tests for acetone and diacetic acid. For acetone: Take a small amount of urine, say 2 drams, to this add 15 or 20 drops of acetic acid, then add a few drops of an aqueous solution of sodium nitroprussiate; in adding this latter one must be careful not to add enough to change decidedly the color of the specimen being tested; then add a dram or two of ammonia. If acetone is present, the color will slowly change to an amythest and then to a very deep red, depending upon the amount of acetone present.

The clinical test for diacetic acid, while it is not an absolutely reliable one, is a very simple one, and for that reason is the best clinical test which we have. It is best done in a test-tube, but even this is not necessary. To a small amount (about an ounce) of urine add, drop by drop, a solution in water of terchloride of iron. As the drops of solution of terchloride of iron fall through the urine they will become red and then change to white, if diacetic acid is present. If for any reason there is a question whether the drops change to red or not, if we filter the urine, to which has been added the iron solution, and then to the filtrate add more of the iron solution, we shall be enabled to see the red color more distinctly.

As a sort of postscript and to point the moral to some of the statements which I have made regarding the induction of labor where convulsions are threatened, I will present in tabular form the statistics of the Maternity Department of the Massachusetts Homeopathic Hospital for the past two years:

1909

518 confinements, 4 emergency convulsions, 10 induced cases

	Urinary Symptoms	Induced	LIVED		DIED	
			Mother	Child	Mother	Child
5	low urea + considerable albumin	late	0	0	5	5
2	low urea + considerable albumin + symptoms	late	0	0	2	2
1	low urea + considerable albumin + symptoms	early	1	1	0	0
1	low urea + trace albumin	early	1	1	0	0
1	low urea + trace albumin	early	1	0	0	1
10			3	2	7	8

1910

568 confinements, 4 emergency convulsions, 13 induced cases

	Urinary Symptoms	Induced	LIVED		DIED	
			Mother	Child	Mother	Child
1	low urea + considerable albumin	early	0	0	1	1
2	low urea + considerable albumin	early	2	0	0	2
4	low urea + considerable albumin	early	4	4	0	0
2	low urea + considerable albumin	early	2	0	0	-
2	low urea + trace albumin	early	2	0	0	2
1	normal urea + considerable albumin + symptoms	early	1	0	0	1
1	normal urea + slight trace + symptoms	early	1	0	0	1
13			12	4	1	6

*Children not viable.
†Child died by accident

In 1909 there were 518 cases of labor occurring at the hospital. Included in these were 4 emergency cases, that is, 4 cases that were in convulsions when admitted to the hospital; 10 cases of convulsions which occurred after the patient had been admitted to the hospital, and I have classified them as induced cases because labor was induced either before or after convulsions commenced. To

explain the terms "early" and "late," as applied to the induction of labor, I mean as far as these 1909 statistics go that a late induction denotes labor was induced the moment a positive symptom of a convulsive nature began, and by early induction I mean that labor was induced when we felt positive that it could be, at most, only a few hours before convulsions would occur.

In studying these cases from the urinary standpoint, we find there were five where the urine showed a low urea and a large amount of albumin. Here labor was induced as soon as the first indications of convulsions were apparent. In these five cases the five mothers died and the five children died. There were two cases with a low urea output, a large amount of albumin, and the so-called uremic symptoms (these two cases had headache, attacks of blindness, etc.). Labor was induced after convulsions began and both women died. There was one case which showed a low urea, a large amount of albumin, and uremic symptoms, in which labor was induced early. We thought convulsions were coming on directly, and labor was induced before convulsions had occurred and the mother and child both lived. There was one case of low urea and a trace of albumin. Labor was induced early and both lived. There was one other case where the urine showed a low urea and a trace of albumin. Labor was induced early and the mother lived but the child died. Out of these ten cases seven mothers died and eight children.

In 1910 we thought we would try the induction of labor earlier, when we thought convulsions were liable to occur, instead of waiting. There were 568 confinements during this year, the same number of cases of emergency convulsions were brought to the hospital, and in addition there were thirteen cases that we classified as induced cases.

In analyzing these we find that there were nine cases in which there were low urea and a large amount of albumin. In one case both the mother and child died; in two cases the mothers lived, but the children died; and in four cases both the mothers and the children lived. There were two cases in which labor was induced so early in each that the child was not viable, but both mothers lived, however. There were two cases of low urea with a trace of albumin in which labor was induced early and the mothers lived, also the children. There was one case in which the urea was normal, accompanied by a large amount of albumin and uremic symptoms. Labor was induced early, the mother lived, but the child died from an accident. I have forgotten what the accident was, but I think it was the cord around the neck. Anyway, it had nothing to do with the poisoning. There was one case of normal urea with a slight trace of albumin and uremic symptoms. One of the symptoms in this case especially was the weakening of the fetal heart. The mother lived and the child died three hours after it was born.

The numbers are so large that I think it is perfectly fair to compare the results. Seven mothers died in 1909 and only one died in 1910. Eight children died in 1909 and only six died in 1910. I have not counted the child that died from the accident, but I have counted the child that died when labor was not induced until the fetal heart began to show the effects of the poisoning. If we had induced labor in this case some hours earlier and not waited until the fetal heart began to fail, we could, I feel confident, have saved the child.

These statistics show that during 1909 in 518 confinements there were ten cases where convulsions occurred. In these convulsion cases 70 per cent. of the mothers died and 80 per cent. of the children; while in 1910 in 568 confinements there were thirteen cases in which we felt certain convulsions would occur and labor was induced (not in some of the cases, however, as early as I should now advise it). In these thirteen cases 11 per cent. of the mothers and 46 per cent. of the children died.

419 Boylston Street.

OMPHALORRHAGIA NEONATORUM.

By JOHN H. RICHARDS, M.D.,

NEW YORK,

LECTURER GYNECOLOGY, NEW YORK POLYCLINIC; INSTRUCTOR CLINICAL PATHOLOGY, CORNELL MEDICAL COLLEGE.

Various authors have described bleeding from the freshly discharged umbilical stump as hemophilia of the newborn, secondary hemorrhage from the umbilical stump with sepsis, hemorrhagic manifestations of syphilis, and other diseases in the newborn, etc. The majority of writers on the subject, however, believe that there is no relation between syphilis, sepsis, or hemophilia and this condition. Grandidier[1] reported 576 bleeders, of which only twelve showed any hemorrhage from any place during the first few days after birth. He states that only rarely do symptoms of hemophilia develop before the end of the first year. J. W. Legg[2] says that this condition is separated from hemophilia by the fact that after the bleeding from the cord has stopped there is no further tendency to bleed during life, and hemophilia is incurably chronic. Edgar[3] separates it from hemophilia, and calls the condition omphalorrhagia. This term describes the condition without attempting the etiology, and in view of the obscurity of the etiology I think that it is a good term. I will return to a discussion of the etiology later. I mention its relation to hemophilia simply that I might make it clear that there is no further relation than that they are both diseases in which is found defective coagulation of the blood. They differ in every essential respect, and the disease in question should not be called hemophilia.

As to the frequency of the condition Townsend[4] has given the following statistics: Of 5,225 births at the Boston Lying-in Asylum there were only 32 cases of all classes of hemorrhage. In the Lying-in Asylum of Prague Ritter[5] found as high as 1.4 per cent. The histories of the cases as a whole present nothing characteristic. The children are not especially feeble, nor are they born of feeble parents. They present no peculiarities of any character whatever excepting the bleeding.

History of Baby L.—Family history: Father 38 years old, strong and well. No history of syphilis or other chronic disease. Wassermann reaction negative. No member of family has hemophilia. Coagulation time normal. Mother 36 years old, strong and well. No history of syphilis or other chronic disease. Wassermann reaction negative. Two uncles and grandfather on mother's side give history of hemophilia. In the retrospect the mother thinks that she bleeds more than do most people. I have repeatedly taken her coagulation time, and it is uniformly increased, varying between 11 and 15 minutes, excepting on the sixth day post partum, when the coagulation time was 16 minutes. After eight years of married life with a normal sexual

history the mother for the first time missed her menses of October 8, 1908. She had a normal pregnancy. On account of her age, and following the advice of W. Gill Wylie,[8] I induced labor ten days before the expected time. This was followed by a normal single birth, with nothing of interest during the labor. The child was a well-developed child of eight pounds. On the fifth day the cord dropped off and the stump was clean. There was no jaundice present. On the night of the day on which the cord dropped off I was hurriedly called by the nurse on account of profuse bleeding from the umbilicus. On my arrival the bleeding had reached alarming proportions. The child appeared exsanguinated, and was gasping for breath. I could not feel the pulse at the wrist. The heart beat was very fast and weak. The child appeared lifeless. As fast as possible I tried to stop the bleeding, first by compression, and then by ligature. I sent for Dr. Bolling Lee in consultation. He, finding that there was bleeding between the sutures that I had placed, put a purse string suture around the umbilicus and lifted the stump up by forceps and then tied the suture. This stopped the bleeding. Then I noticed that there was bleeding from the nose and gums. Also, there was blood passed from the bowel and a little was vomited. At the suggestion of Thomas W. Hastings,[7] serum obtained from the father's blood was given. This was given in doses of 30 minims each hypodermically every three hours. Soon after the administration of the first dose the blood began to clot. This was the first clotting seen. We continued the serum for a period of four days. The coagulation time of the baby's blood was as follows: On the sixth day following the beginning of the hemorrhage there was no tendency for the blood to clot whatever. Drying took place before clotting. On the same day after the serum had been given the time was 40 minutes. On the seventh day the time was but 15 minutes. From this time on there was a gradual shortening of the coagulation time to within normal limits, where it has remained up to date. On several occasions the baby has had slight scratches, but there has been no tendency to abnormal bleeding. The general blood examinations were as follows:

Day.	6th.	8th.	10th	14th	60th
Hemoglobin	18 per cent.	25 per cent.	31 per cent.	38 per cent.	58 per cent.
Red cells	2,112,000	3,000,000	3,448,000	3,520,000	4,168,000
Index	.4	.4	.45	.54	.71
White cells	41,000	42,000	38,000	30,000	12,000
Blasts	xxx	xx	xx	x	0
Plates	20,000	90,000	134,000	188,000	347,000
Differential:					
Polynuclear	51.4	45.6	40.0	41.0	47.0
Lymphocytes	41.0	44.4	51.0	49.6	43.0
Large mon's	0.0	1.4	1.0	2.0	2.4
Transitionals	4.6	6.0	3.6	4.6	5.6
Eosinophiles	1.0	0.6	2.4	2.4	1.4
Mast cells	0.4	1.0	1.0	0.0	0.6
Stimulation	0.6	0.6	0.6	0.0	0.0
Myelocytes	1.0	0.4	0.4	0.4	0.0

These examinations present the picture of hemorrhage, and in addition show a remarkably low count of plates in the first few days after the hemorrhage. The number was found to increase steadily until they reached normal on the sixtieth day. One point of interest was the presence of a little blood in the mother's milk occasionally during nursing.

Etiology.—Very little is known as to the cause of this disease. Syphilis and other infections have been blamed frequently. Injury to the floor of the fourth ventricle has been advanced as a cause by Von Pruschen and Pomorski.[9] These latter have been able to support their claim by animal experimentation, but autopsies done on fatal cases of omphalorrhagia do not corroborate their findings. During recent years chemical changes in the blood have been ascribed as causes, and on account of the failure of the blood to clot to any extent it would seem that there must be some chemical change present; but as yet no positive findings have been recorded. From the results obtained from the treatment of the condition by the injection of human serum or by direct transfusion I think that the cause of the condition will be found on complete examination of the serum by the more modern methods of serum analysis. In order to see what it is in the serum of the human blood that causes after a few injections a complete cure of omphalorrhagia I will state the Morowitz[9] theory of coagulation, which is the one most commonly accepted. He believes that there is a thrombokinase from the tissue cells and from the intima of the blood-vessels which by the action of the calcium salts is enabled to act on the prothrombin to form active thrombin which unites with the fibrinogen to form fibrin. The only element according to this theory that is not present in normal human serum is fibrinogen, and it is inconceivable to assume that there is enough fibrinogen present in the serum administered to cause clotting and to cause it permanently. We can, I think, eliminate fibrinogen disturbances as causative of omphalorrhagia. There must be then in these cases some defect in the formation of the thrombin. There can hardly be enough thrombin present in the serum given to cause clotting for the rest of life, and since thrombin is only a product formed after the blood is shed it is not probable at all that the thrombin present in the serum given acts to stimulate the progenitors of thrombin to the perpetual formation of thrombin. Therefore, if the disturbance is in the formation of the thrombin it is to be found in one or more of the following: Thrombokinase, calcium salts, or prothrombin, or its antecedents. Fry[10] has shown that the thrombokinase in fishes, at least, is derived from the tissues alone. He has also demonstrated that the prothrombin is derived from the blood plates. Schmidt,[11] Fuld-Spiro,[12] Loeb,[13] and Morowitz[14] all think that the thrombokinase is derived from the tissues or from the intima of the blood-vessels when injured or from the tissue juices. Howell[15] thinks that the evidence of the presence of such a ferment is not conclusive. Sahli[16] thinks that there is some disturbance of the median thrombokinase in hemophilia. From the manner in which the blood serum was obtained for the injection of my patient, *i.e.* by puncturing the basilic vein with a sharp needle, it is inconceivable that any but a trace of thrombokinase could be present; for the blood did not flow over tissue, and the vessel wall was not injured to any extent. I conclude with reasonable surety that thrombokinase does not play an important part in omphalorrhagia.

There is left for our consideration, then, the calcium salts, and the prothrombin with its antecedents. Calcium salts do not act as curative agents in omphalorrhagia. They have been tried and no good effect noticed. Also in those diseases in which calcium salts do act beneficially they must be given over a long period of time, while in omphalorrhagia the serum need be given only for a short time. For

these reasons I think we can eliminate disturbance of the calcium salts from the etiology. If this reasoning is correct the disturbance is in the prothrombin or its antecedents. This is supported by the examinations that I made of the blood of my case. The white blood cells are not changed more than can be accounted for by the hemorrhage. The same is true of the hemoglobin and the red cells. But the changes in the number of the plates are not accounted for by any reason, excepting the disease. On examination of the table on page 69 it is seen that on the sixth day post partum there were only 20,000 plates found. After the injection of the serum they were found to gradually increase up to normal. The finding of a reduced number of plates would ally this condition with the purpuras instead of hemophilia. In hemophilia there is no change in the number of plates. As has been mentioned above, it has been shown that the prothrombin is derived from the plates (Fry). This reduction in the number of plates is due to over-destruction of plates, or to under-production of them. Should it be due to an over-destruction there must be some toxin or toxin-like substance causing the destruction, and on account of the results of treatment this toxin must find an antitoxin in the serum administered. I can find nothing in the literature to support this assumption either in theory or experiment. From the fact that the amount of serum needed to cure omphalorrhagia for all time is very small it would appear that the condition is due to a diminished production of plates, and that the producton is increased permanently by the administration of serum. The serum in this case acts as an activator. What it is that causes this underproduction of blood plates has not been demonstrated.

REFERENCES.

1. Grandidier: Osler's "System of Medicine," 1908.
2. J. M. Legg: Allbutt's "System of Medicine," 1901.
3. Edgar: "Textbook of Obstetrics," 1905.
4. Townsend: *Boston Medical and Surgical Journal*, 1870, cxxiii.
5. Ritter: Osler's "System of Medicine," 1908.
6. Personal communication.
7. Personal communication.
8. Von Pruschen and Pomorski.
9. Morwitz: Howell's "Textbook of Physiology," 1900.
10. Fry: *Folia Hematologia*, December, 1909.
11. Schmidt: Howell's "Textbook of Physiology."
12. Fuld-Spiro: Howell's "Textbook of Physiology."
13. Loeb: *Medical News*, April 1, 1905.
14. Morowitz: Howell's "Textbook of Physiology," 1900.
15. Howell: "Textbook of Physiology," 1900.
16. Sahli: *Zeitschrift für Klinische Medicin*, lvi, p. 240.

34 West Eighty-third Street.

AN UNUSUAL CASE OF FIBROID SCLEROSIS OF THE CORPORA CAVERNOSA.*

By M. ZIGLER, M.D.,

New York.

Instructor in Genitourinary Surgery, Post-Graduate Medical School and Hospital; Assistant in Genitourinary Surgery and Dermatology, Lebanon Hospital.

The following is the report of an unusual case of fibroid sclerosis of the corpora cavernosa. The patient is fifty-one years of age, a cigar packer by occupation, and has been married twenty-five years. There is no history of trauma, gout, or diabetes. He had a mild attack of gonorrhea prior to marriage, but denies syphilis. He has three healthy children. Five months ago he came to the Post-Graduate Hospital complaining that intercourse had been almost impossible for several weeks because of severe pain in the penis during erection, and also because of the fact that the distal end of the penis, during the attempted act, bent upward to an angle of 90 degrees toward the abdominal wall. Any attempt on his part to straighten the penis intensified the pain throughout its entire length, but more so at the corona and root.

Physical examination showed two thickened almost calcified plates on the dorsum of the penis. The one was at the distal end, extending from the corona backward over the body of the penis for about two-thirds of an inch. Its width was about one-half of an inch; its thickness, about one-eighth of an inch. The other plate was situated at the root of the penis extending forward about two-thirds of an inch. This posterior plate was the same width and thickness as the interior one. Both plates were hard and tender to palpation. The latter was more so. The examination of the rest of his body was negative. In fact the patient was in excellent health. The Wassermann test was positive plus (+). Treatment: Because of the latter reaction the patient was given iodides. He was started with ten grains of potassium iodide three times a day and kept on this dose for two weeks, after which it was gradually increased, one grain for each dose so that on August 1, 1911, he was taking forty grains three times a day. He noticed that for six weeks past there was considerable improvement in the symptoms, namely, that promptly upon curvature of the penis during an erection he was able to straighten the organ without any pain. He was then able to effect a vaginal entrance and have a successful intercourse. He also noticed that the plates were less tender to palpation. Neither he nor I thought that they had become softer or smaller. September 25, 1911, the patient said that the organ did not curve as much, and he thought the plates were softer and smaller. There was no more pain. The patient was taking seventy grains of iodides three times a day.

Conclusion: I have taken the liberty to report this case because of its rarity, its unusual etiology and its partial response to specific therapeutic measures. Most authorities have considered these cases hopeless, and due to gout, diabetes, or traumatism, and have advised irritating plasters, ointments, etc., locally.

Robert W. Taylor says of local treatment: "Such, however, is the uncertainty of ultimate favorable results that one is not warranted in causing these patients inconvenience or suffering." I do not believe that these plates can be entirely absorbed, neither do I believe that any further improvement can occur. But in view of the fact that this patient had shown considerable improvement under large doses of potassium iodide, and in view of a positive Wassermann reaction, I believe that we have data enough to warrant the assumption that this is a case of fibroid sclerosis of the corpora cavernosa due to syphilis.

*Presented before the Lebanon Alumni Association, October 31, 1911.

The Prognosis of Open Tuberculosis in Childhood.—B. Hahn as the result of an analysis of 133 cases of pulmonary tuberculosis treated at a children's sanatorium found that improvement was noted after a few months in only 22 per cent. of the cases, while only 14.3 per cent. more were improved after a lapse of six years.—*Zeitschrift für die Tuberkulose.*

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New York, January 13, 1912.

BANTI'S DISEASE.

SOME fifteen years ago Banti called the attention of the medical world to a singular disease, characterized by a greatly enlarged spleen, presenting a fairly typical pathological picture, and accompanied by a moderate degree of liver cirrhosis, a secondary anemia, and a leucopenia. This disease seemed to him to be a definite clinical picture of unknown etiology. Since Banti's original observation, numerous cases have been published, answering the description of his cases and agreeing with them in the obscure etiology.

In the *Zeitschrift für klinische Medizin* (Volume 74, Numbers 1 and 2) Alexander Neuberg publishes a very instructive case of Banti's disease that was closely observed for three years. The patient suffered from occasional nosebleed, was somewhat anemic, at one time had ascites, which disappeared without tapping, and on physical examination showed a very large spleen, hard in consistency, and a somewhat diminished liver. His condition, so far as subjective sensation and anemia were concerned, improved very much after the use of arsenic, and his general well-being became pronounced enough to make him think of marriage. About that time his blood was tested according to Wassermann technique, and to the surprise of all concerned gave a positive reaction! At once this case of Banti's disease, of unknown etiology and of typical clinical and blood picture, was explained by the existence of congenital syphilis, that diagnosis being somewhat strengthened by a history of several early deaths among the patient's brothers and sisters. Acquired syphilis could apparently be excluded, while the success of arsenic therapy was easily explained by our newly won knowledge of the efficiency of this drug as an antisyphilitic remedy.

This case leads Neuberg to oppose the conception of Banti's disease as a distinct morbid entity. He does not claim that syphilis is the etiological factor in every instance; indeed, he attempts to show that infectious diseases, prolonged gastrointestinal disorders, intestinal autointoxication, etc., may be assumed to have been the causative factors in many of the published cases of Banti's disease. The author insists, however, that Banti's is merely a definite symptomatic group that may be due to many causes. The pathological picture found in the spleen is, according to him, simply indicative of long-standing infection or damage by toxins, while the liver cirrhosis is a secondary phenomenon due to obstruction in the portal circulation by the splenic tumor. The frequent relief obtained by removal of the spleen Neuberg explains by the relief of the portal circulation and not by the disappearance of the primary morbid focus.

Neuberg's paper is very suggestive. It does not, of course, account for the many cases of primary splenomegaly, where no etiological factors can be discovered; on the other hand, it is a step in the right direction in urging clinicians to readjust older clinical observations in the light of recently developed diagnostic knowledge. The Wassermann reaction is, perhaps, one of the most valuable of such modern diagnostic methods, and it should be widely used in the study of chronic diseases of obscure causation.

FINGER-PRINT EVIDENCE.

GALTON, who stood ever for accuracy in scientific procedures, published in 1892 his "Finger Prints," and soon afterward appeared his "Index of Finger Prints." He had reached the conclusion that the chance of the finger prints of two individuals being identical is less than one in 64,000,000,000. Here was indeed circumstantial evidence that would be practically incontrovertible, and so has such evidence in several recent cases been accepted to be. For example, in November last an indictment based solely upon finger-print evidence, which may send a culprit to jail for the rest of his life, was brought by a Grand Jury. The finger prints of the alleged burglar were found upon a pasteboard box and several pieces of silverware that were stolen, these articles being taken to the finger-print bureau in Brooklyn. The prints were duly developed. Shortly afterward the suspected burglar was caught, his finger prints were taken, and they compared precisely with those found on the box and the silverware. Recently again, in a metropolitan court, a burglar had well-nigh established an alibi, but he was held on the only positive evidence against him, that of his grimy finger prints left on a pane of glass which he had removed from the door leading into a loft he had sought to plunder. The expert who demonstrated the evidential value of finger prints at this trial was Lieut. Faurot, the head of the Identification Bureau of the New York City Police Department. In order to demonstrate the conclusiveness of this system, the lieutenant asked the court to pick at random twelve men from among reporters, court officers, and others, who then stepped up and pressed their finger tips upon an inked block. Each imprint having been designated by a letter, one of the twelve was directed to grasp the same pane of glass which the prisoner had removed from the loft. Faurot, who had absented himself during these proceedings, now returned to the court room, when he readily identified the print on the glass with that among the twelve which was lettered "L."

Among further testimony to the merits of the finger-print system which Faurot gave on this trial was that regarding twins, the front and profile in whose photographs were remarkably alike, as were

also their Bertillon measurements. But by their finger prints the two were easily distinguished. The method is now relied on for evidence when photographs and the Bertillon measurements fail.

Once in its history was the finger-print method of identification successfully confuted—for but a brief period, however: A man was charged on suspicion in an English police court with having been found loitering with a felonious purpose in view. A previous conviction was sought to be proved against him by the production of finger prints identical with his from the police records. But he was in possession of papers evidencing that he had served in the army at the time of the alleged conviction, and these being presented he was promptly discharged. However, a week later it was demonstrated beyond peradventure that he had stolen the army papers from another man; besides other marks of identification (such as his handwriting) proved him to be the man with the record which the police had of him.

Many accredit Bertillon with having originated this finger-print system, but it would seem that Galton first indicated and systematized this method of identification, and that when he made it known to Bertillon the latter remained for a long time sceptical as to its validity or utility. Its possibilities of usefulness appear to transcend criminal proceedings. Railways are by this means identifying employees. Banks thus identify foreigners. In the Canal Zone Indians and other government employees who cannot write are thus identified. And in civil transactions there are many who can only sign their names by making "their mark," which is no means of identification at all; but the finger print is both a positive signature and is almost absolutely unforgeable. And such prints endure more than any other mark of the body, unvarying from age to age, and persisting after death, until decomposition. Injuries alone would change them, but the scar of a cut or wound would be an added identification.

SALUTARY EMOTIONS.

Spitzka some years ago estimated that the mortality from wounds in battle is in the defeated army in proportion to that among the victors as four to three or even as three to two. In similar trend Bonnette, a French army surgeon, writes in the *Press Médicale* on the physical intoxication of victory and the extent to which bodily pain can be vanquished by the sense of military triumph. Moreover, the victorious army is not only insensible to its wounds, but it defies disease in like measure; it is the beaten army that succumbs to pain and is the more ravaged by epidemics. The striking illustrations in this paper are drawn in the main from the Napoleonic wars. For example, members of the Old Guard raised themselves on the bleeding stumps of their amputated legs to cheer the Emperor; again, the great Larrey operated without ceasing for thirty-six hours on the wounded soldiers after the battle of Eylau, and emphasized the moral exultation that raised his patients beyond the dominion of pain.

Here is indeed a consideration well worthy the practitioner's attention—the extent to which a reasonable psychotherapy may be adjuvant to material means of cure; and specifically the extent to which such awakened emotions as hopefulness, courage, faith in the surgeon's skill, reliance on the physician's good prognosis will turn the scale in favor of the patient's recovery. One here recalls Meltzer's demonstration of how rich is the animal organism in factors of safety and of rehabilitation; when such emotions as those here noted can be brought to bear upon these factors results oftentimes marvelous and seemingly miraculous may be determined. Nor need one doubt, other things being equal, the accuracy of Bonnette's statement that the victorious army is less prone to such camp infections as typhoid fever and dysentery. In every infectious disease two elements are essential: the presence of the specific germ and the predisposition. A beaten army is a depressed army, and is by that very fact predisposed to infection, while the soldiers of a victorious army become by reason of the stimulus of their victory a barren soil to pathogenic bacteria.

Flatfoot in the Navy.

In the *United States Naval Medical Bulletin* for October last, Passed Asst. Surg. R. G. Heiner, U. S. Navy, discussed flatfoot in its relation to the Navy. During the year 1910 flatfoot was responsible for a greater number of invalidings than any other disease with the exception of tuberculosis. The object of Heiner's paper is to emphasize the necessity for careful examination of the feet of an applicant for enlistment, to show the poor results of treatment of flatfoot patients while they are in the service, and to describe a method of examining which will detect the weak, low, or fallen arches of the feet. That so many men have been passed into the Navy and subsequently been invalided on account of flat feet sufficiently emphasizes the importance of careful examination prior to enlistment. Heiner suggests that there be adopted, as an arbitrary limit of depression of the tubercle of the scaphoid, one-half inch, and would reject all feet below that standard, noting on the figure chart of the enlistment record the distance of the tubercle below the connecting line. It is the depression of the tubercle of the scaphoid to an undue degree when the body is in a certain position that mainly constitutes flatfoot. Heiner concludes that no recruit should be accepted who has eversion of the foot which cannot be corrected by muscular effort, or who has the front of the foot abducted, giving a convex inner border with bulging at the scaphoid tubercle, or whose scaphoid tubercle is more than one-half inch below a line connecting the lower edge of the internal malleolus with the lower tubercle on the head of the first metatarsal bone. Flatfoot is said to be unusually prevalent in America, and has been stated to be owing to the lack of walking exercise in the cities. Among the English, for instance, walking is universal, much more so than in this country, and flatfoot is comparatively rare in England. Whatever the cause of the condition may be, it is well that attention should be called to it, in order that steps may be taken to abate its prevalence.

Nephelometry.

In many physical and chemical reactions a cloudiness of a given medium gives us qualitative information of a definite value. The terminology in use to denote the degree of turbidity is purely relative, much like that employed by meteorologists to denote the degrees of cloudiness of the atmosphere. To determine approximately the absolute degree of cloudiness of media, it is usually necessary to await the full precipitation of the substance causing the same. This may require much valuable time, during which decomposition may occur. Furthermore, the substance in question may not be precipitated, although the centrifuge can be called upon in such a case. To obtain a complete idea of the amount of material which gives rise to cloudiness, we can only depend upon the tedious processes of quantitative analysis. It was inevitable that some attempt should be made to determine rapidly and with sufficient accuracy the amount of matter involved in giving a cloudy reaction. The nature of the Wassermann reaction alone would justify such an attempt. Hence it is not surprising that Zeiss, the well known dealer in optical apparatus, should put forward a nephelometer for medical men. The impetus thereto appears to have been due to Schlesinger (*Berliner klinische Wochenschrift*, October 16), although nephelometers have had a limited field in physics. The optical principles involved are touched upon but lightly in the article cited, and the instrument is not figured. The new instrument promises to be of value principally in milk and blood tests. The amount of fat in milk may be thereby determined. Of more interest are the possibilities of blood reactions, especially in connection with corpuscular studies, hemolysis, and the Wassermann reaction. An instrument of this kind is employed also in estimating the number of bacteria in an opsonic vaccine culture.

A Newspaper Attack on Dr. Park.

A morning newspaper of this city recently attacked Dr. William H. Park, director of the Bacteriological Laboratories of the Department of Health, accusing him of having patented a holding apparatus for pasteurizing milk and then forcing it upon the companies doing business in New York. The facts are that Dr. Park devised a simplified apparatus of the sort, the use of which would effect a considerable saving of money. This was installed in the plant of one company, but when another company wished to use it it was discovered that a man connected with the first company was attempting to get a patent for the process originated by Dr. Park. The latter at once wrote to Washington stating that he never intended to patent the device but wished to leave its use free to all milk dealers. The Commissioner of Patents replied that the only possible way of preventing the other man from obtaining a patent was for Dr. Park himself to apply for one and thus establish an interference. This he did, and obtained the patent about a month ago. Several of the dealers who had put in the apparatus arranged among themselves to pay the cost of the litigation, but thereby secured no rights in the patent. Dr. Park has never received any compensation for his invention, and any person is at liberty to manufacture or use the apparatus without paying royalty to anybody whomsoever. To those who know Dr. Park this is the natural and only possible explanation of the transaction, and it need never have been made but for the unfounded accusation of the newspaper. If this paper had in the first place applied to Dr. Park for an explanation it could easily have learned the facts; but then a sensational story of graft would have been spoiled, and it would be much easier to apologize later or to say nothing.

Retirement of a Veteran Editor.

The announcement is made in the current issue of the *Boston Medical and Surgical Journal* of the retirement of Dr. George B. Shattuck from active editorial management of that publication. Dr. Shattuck became editor of the *Journal* in 1881 and has, therefore, had an editorial experience of thirty-one years, a term exceeded in this country only by Dr. J. Minis Hays of the *American Journal of the Medical Sciences* and Dr. George F. Shrady of the Medical Record and equaled only by Dr. Frank P. Foster of the *New York Medical Journal*. Dr. Shattuck may well be satisfied with this long period of devotion to literary medicine, but his pride must be great as he reviews his work and sees how, under his management, the *Boston Medical and Surgical Journal* has not only maintained the high standards which have always characterized it, but has also steadily advanced in dignity and influence, holding its own with friendly rivals in the front rank of medical journals. It is to be congratulated upon having been guided for these many years by an editor of so many and such great accomplishments, and further that, as it states, it will still have the benefit of his counsel for, we hope, many years to come.

News of the Week.

Health Department's Plans for 1912.—Among the improvements and extension of work planned for the coming year are the following: (1) The grading of the milk supply, including the enforcement of pasteurization as already described. (2) The still further extension of hospital facilities for infectious diseases. (3) The establishment of forty milk stations provided for in the budget of 1912 in addition to the fifteen stations maintained during the past year. (4) The establishment of five clinics for school children. (5) The sanitary control of venereal diseases.

New York Academy of Medicine Undertakes Public Health Work.—At a meeting of the Academy of Medicine on December 4 it was announced that a committee had been formed on Public Health, Hospitals, and Budget, whose work would parallel the activities of the Bureau of Municipal Research in financial matters. The generosity of Mrs. E. H. Harriman has made it possible for the committee to avail itself of the services of an expert statistician. Among the duties of this committee are the organization of a bureau to collect facts in regard to public health, sanitation, and hygiene; to endeavor to establish active cooperation with all public health activities in the city; to keep the medical profession advised of all public health conditions; to render to health, school, and other authorities and to the community at large an authoritative opinion on public health matters; to hold frequent conferences with city officials; to hold public meetings, and to give publicity to the results of the research work of the committee. They will make suggestions and give assistance to the departments in the preparation of their annual budgets

and will make a close and constant scrutiny of hospital conditions in the city. They have already been instrumental in securing funds for contagious hospitals in Queens and the Bronx. The members of this committee are: Dr. Charles L. Dana, Dr. Linsley R. Williams, Dr. W. Gilman Thompson, Dr. John H. Huddleston, Dr. S. S. Goldwater, Dr. L. Emmett Holt, Dr Abraham Jacobi, Dr. J. A. Miller, and Dr. T. C. Janeway

Vaccination Fight in Olean, N. Y.—About 2,000 children have been excluded from the public schools of this town because they have not been vaccinated. The Anti-Vaccination League has offered to defend any person who may be arrested for not complying with the order of the Health Board compelling vaccination. The Anti-Vaccination League has advertised for instructors and proposes to establish a school of its own. There were 40 cases of smallpox in Olean last year.

Vital Statistics of Philadelphia.—The death rate of the city of Philadelphia for the year 1911 was 16.50 per 1,000 of population the lowest figure, with the exception of the year 1909, in ten years. As a result of the enforcement of special measures for conserving the lives of infants, there were 4,604 deaths among children under the age of one year, as compared with 5,232 in 1910. The total number of deaths for the year was 26,092, as compared with 26,879 for the year 1910. There were 14.1 deaths per 100,000 of population from typhoid fever, as compared with 72.4 in 1906, when filtered water first began to be used on a large scale in the city, and with 59.3 in 1907, 34.8 in 1908, 21.1 in 1909, and 17.4 in 1910. There were for every 100,000 of the population 165 deaths from pneumonia, 85 from cancer, 31 from diphtheria, 11 from scarlet fever. There was a decrease in the number of deaths due to almost all of the transmissible diseases, with an increase in the number due to cancer, heart disease, nephritis, and other non-transmissible diseases.

Suicides in 1911.—The record of suicides for 1911 is 12,242, as compared with 12,008 for 1910. The proportion of suicides as between men and women varies but little from year to year. Among professional men physicians head the list, the number being 27, as compared with 51 in 1910, 27 in 1909, and 42 in 1908; clergymen come next, 11 having taken their own lives in 1911. The causes of suicide have been as follows: despondency, 6,114; unknown, 1,480; insanity, 1,052; domestic infelicity, 1,208; ill-health, 1,343; business losses, 153; liquor, 204; disappointment in love, 773. The methods employed were shooting in 4,151 instances; poison, 3,450; hanging, 2,054; drowning, 984; throat-cutting, 604; asphyxiation, 646. Other methods resorted to less frequently were jumping from roofs or in front of trains, burning, stabbing, dynamite, and starvation.

Street Accidents During 1911.—The report of the National Highways Protective Association shows that during the year 1911 there were 423 persons killed and 2,004 injured by vehicles in the streets of New York. This is an increase of 13 per cent. over the fatalities of 1910, when 370 persons were killed and 930 injured. Automobiles were responsible for 142 deaths and 1,031 injuries, an increase of 38 per cent. over 1910. Wagons killed 172 persons. Public taxicabs caused the death of only four persons during the year. Of those killed in 1910, 182 were children under 16 years of age, while for 1911 there was a decrease of 7 per cent. in the number of children killed. The report also shows that there were 88 persons killed and 108 injured at grade crossings in New York during 1911. In New Jersey 43 persons were killed and 118 injured at grade crossings. The crossings of highways at grade resulted in 129 deaths and 226 injuries. The association will try to have a constitutional measure passed by the Legislature fixing the responsibility of chauffeurs and drivers, and they will endeavor to hasten the work of eliminating grade crossings.

The Death Rate in Augusta, Ga.—The annual report of the Health Board of this city, whose population is estimated at 50,000, shows that there were 854 deaths from all causes from November 30, 1910, to November 30, 1911. The death rate for the city was thus 17 per 1,000; of this percentage 13.8 is the white death rate and 22.7 the colored. There were 30 deaths from pellagra reported, 24, or 80 per cent., of which were among the whites and 66 2/3 per cent. were white females, while among the colored population there were no deaths of males and but 6 among the females.

A Plea for the Restoration of the Canteen in the Army.—A meeting of the National League for the Civic Education of Women will be held in this city at the Waldorf-Astoria on the afternoon of January 16, at 4 o'clock, at which "A Message from the Women of the United States Army" will be delivered by Mrs. James B. Burbank, wife of General Burbank of the U. S. Army, and Mrs. Charles F. Roe, wife of General Roe of the U. S. National Guard. Addresses advocating the restoration of the canteen will be delivered by the Rev. William Norman Guthrie, the Rev. Herbert Shipman, Dr. Louis Livingston Seaman, and the Rev. Edward S. Travers, chaplain West Point Military Academy. The Rev. Thomas R. Slicer will preside.

The American Museum of Safety.—The second annual meeting of the American Museum of Safety will be held in the Auditorium of the Engineering Societies' Building, 29 West Thirty-ninth street, on Thursday evening, January 18, at 8.15 o'clock. At this meeting the award of three gold medals will be made as follows: (1) *The Scientific American* gold medal will be awarded to the most efficient safety device invented during the last three years and exhibited at the museum's exhibit hall. (2) The Travelers Insurance Company gold medal will be awarded to the American employer who in the judgment of the American Museum of Safety has done the most for the protection of the lives and limbs of his workmen, by means of safety devices for dangerous machines and processes. (3) The Louis Livingston Seaman gold medal will be awarded for progress and achievement in the promotion of hygiene and sanitation, and the mitigation of occupational disease.

The Use of Common Towels Forbidden.—The New York City Board of Health, at its meeting January 4, adopted a resolution amending the Sanitary Code to forbid the use of common towels. The new section of the Code reads as follows: "No person, firm, or corporation having the management and control of any public lavatory, washroom, or public comfort station shall maintain in or about such lavatory, washroom, or public comfort station, any towel or towels for use in common."

Suicide by Quinine.—A young woman in Newark, N. J., killed herself recently by taking 188

grains of quinine, swallowing ninety-four two grain pills. She was driven to take her own life, it was said, by despondency following an operation for appendicitis three weeks ago.

The German Tramp Epidemic.—It is reported that the mysterious and fatal epidemic, which killed over seventy-five hoboes in Berlin at Christmas time, has appeared in Leipsic and Hamburg. The nature of the disease is still a matter of dispute, some regarding it as of bacterial origin, others maintaining that it was simply methyl alcohol poisoning. It is said that the International Sanitary Commission has been asked to investigate and make an official report on the disease.

Fewer Accidents in Mills.—The fatalities in the mills of the Pittsburgh district were reduced by 30 per cent. during the year 1911, there being 289 fewer deaths from mill accidents than in 1910. This decrease is directly due to the installation of safety devices.

Philadelphia Will Segregate Vice.—The reform administration of Philadelphia, after conferring with prominent clergymen, have declared officially that the social evil will not be tolerated in the city, but they have issued orders that resorts will be allowed to exist in certain parts of the city under strict police supervision. Police inspection of the restricted district will include hourly visits by uniformed men to see that no liquor of any description is sold and that no intoxicated men are allowed to visit them. The ordinance forbids the keeping of liquor in the houses, even for medicinal purposes.

Milk Regulations Amended.—The Board of Health of New York has amended its regulations regarding the classification of milk by requiring all milk dealers in the city to inform the department on or before January 18 what grade or class of milk they intend to sell. It is provided that no milk shall be sold under grades A (for infants and children), B (for adults), C (for cooking and manufacturing purposes only), or as condensed, skimmed milk, or concentrated milk, or modified milk, without a permit from the Board of Health, but an exception is made of hermetically sealed cans.

A United Medical School for the University of California.—Plans for the amalgamation of the various departments of medical instruction under the supervision of the University of California were adopted on December 22, 1911, at the meeting of the Board of Regents. It was decided to adopt the plan of securing paid instructors for clinical subjects, instead of relying upon practising physicians. The principal chairs of medicine, surgery, and obstetrics will be held by professional instructors, who will devote their whole time to teaching or research work.

Model Tenements Opened.—The East River Homes, a group of model apartment buildings located at Seventy-seventh street and the East River, were opened for inspection on December 5. The buildings were made possible through the generosity of Mrs. W. K. Vanderbilt, who invested $1,300,000 in the project. These buildings cover eighteen city lots and contain 383 apartments of from two to five rooms each. They were built for the purpose of providing homes at a reasonable price for persons afflicted with incipient tuberculosis or those who are delicate and predisposed to the disease, and offer all the advantages of a country sanatorium. The special features of the buildings are the liberal use of white glazed tiling and concrete, the avoidance of angles between the baseboard and floors, the outside staircases with many resting places, the utilization of the space usually given to halls and stairways for additional space in bedrooms. The roofs are fitted up as a garden and playground, and it is planned to fit some parts up for laundries. Each suite of rooms has its own bath, electric light, heat, and hot water included in the rent, which ranges from $1.25 to $2 per room per week. The trustees, of whom Dr. Henry L. Shively is president and Dr. Walter B. James vice-president, believe that these apartments will not only pay their carrying expenses but will pay 4 per cent. on the investment.

Harvey Society Lecture.—The seventh in the present course of lectures will be delivered by Professor Henry Fairfield Osborn of Columbia University on January 20 at 8:30 in the New York Academy of Medicine. The subject will be "Unit Characters in Heredity as They Appear to a Paleontologist."

Chattahoochee Valley Medical and Surgical Association.—The eleventh semi-annual session of this association will be held at LaGrange, Ga., Tuesday and Wednesday, January 16 and 17, 1912, under the presidency of Dr. L. W. Johnston of Tuskegee, Ala. The secretary of the association is Dr. W. J. Love of Opelika, Ala. Place of meeting, Elks Home.

Harvard's New Medical Plant.—When the buildings now under construction are completed there will be sixteen institutions forming the plant of the Harvard Medical School. These will represent a money value of $20,000,000. The six following buildings are in various stages of construction: the Harvard Memorial Cancer Hospital; the Thomas Morgan Rotch, Jr., building, which will house the Infants' Hospital; the Children's Hospital, which will cost $500,000; the Peter Bent Brigham Hospital, which has a fund for buildings and maintenance combined of $6,000,000; the State Psychopathic Hospital, which has an appropriation of $600,000 for grounds and building, and the Robert Brigham Hospital. There is also a project on foot to erect a Harvard dormitory and medical union clubhouse to be conducted on the same principle as the Harvard Union and dormitories, but exclusively for medical and dental students.

Large Hospital for Pittsburgh.—On January 1 the West Penn Hospital in Friendship Park was opened for public inspection. The main building is six stories high, with four wings each four stories high. It will accommodate 500 patients, and every room is an outside one. With equipment and furnishings there is represented an investment of $1,025,000.

A First Aid Hospital.—At Collinsville, Ill., an underground emergency hospital has been opened in a very large coal mine. The hospital is built in the heart of the mine and is designed to give first aid to the injured.

Bushwick Hospital of Brooklyn has been sold for $75,000 and plans have been filed for the erection of new buildings on a site which the hospital owns at the corner of Howard and Putnam avenues. It is expected that the new building will be ready for occupancy in the fall of 1912.

Dr. Blue to be Surgeon-General.—President Taft has sent to the Senate the nomination of Dr. Rupert Blue of South Carolina as surgeon-general of the Public Health and Marine-Hospital Service, succeeding the late Dr. Walter Wyman. Dr. Blue is a graduate of the Medical Department

of the University of Maryland in the class of 1892 and entered the service in March, 1893. His great work was the eradication of the plague from San Francisco. He has recently been stationed at Honolulu. In announcing the appointment, President Taft gave notice that hereafter the term of service of the surgeon-general shall be limited to four years.

Dr. Edward M. Looney, resident physician at the Deer Island house of correction, has been appointed Assistant Port Physician of Boston.

Dr. T. H. Frazer of Mobile, Ala., has been appointed as acting dean of the faculty of the Medical Department of the University of Alabama to succeed Dr. Rhett Goode, deceased.

To Honor Dr. John Morgan.—A proposal has been made to honor Dr. John Morgan, the founder of the Medical School of the University of Pennsylvania and the father of medical education in the United States, by erecting a memorial tomb, wherein his remains will be laid. It is claimed that Dr. Morgan's school antedated that of Harvard, having, together with Dr. Shippen, Jr., begun the systematic teaching of medicine in 1765 and having been elected in the same year to the Chair of Theory and Practice of Physic at the College of Philadelphia. Dr. Swithin Chandler was chairman of the committee appointed to investigate these claims, and the committee has reported that they are well founded.

Obituary Notes.—Dr. Richard R. Rogers, a graduate of the University of Pennsylvania in 1862, died at his home in Trenton, N. J., after an illness of three weeks. He was county physician for fifteen years.

Dr. Frederick D. Mitchell of Pawling, N. Y., a graduate of Bellevue Hospital Medical College, class of 1880, died at his home December 29, 1911, at the age of 53. He leaves a widow and one son. Dr. Mitchell began practice at Poughquay and came to Pawling twelve years ago.

Dr. Silas D. Black, known as the "Nature Poet," died in Los Angeles, Cal., on January 2, at the age of 60 years. He practised in Decatur, Ind., until three years ago.

Dr. James Lyman Belknap of Wolfboro, N. H., died from shock following a surgical operation at the Massachusetts General Hospital on December 29, at the age of 36 years. He was graduated from Dartmouth College in 1898 and from the Harvard Medical School in 1902. He was formerly assistant resident physician at the Massachusetts General Hospital.

Dr. James Warwick of Clinton, Mass., died suddenly on December 28, at the age of 68 years. He was born in England and was graduated from the Albany Medical College in 1877. He was a surgeon in the British Army for nine years and a member of the British Military and Naval Association.

Dr. M. Louis Weil, a graduate of Bellevue Hospital Medical College, New York City, 1889, died at his home in New York on January 3, at the age of 53.

Dr. Algernon Coolidge, Jr., a descendant of Thomas Jefferson, died at his home in Boston on January 4. He was 82 years of age.

Dr. Charles Emil Dohme, at one time president of the American Pharmaceutical Society and president of the Maryland College of Pharmacy, died on December 7, at the age of 68.

Dr. A. H. Read of Opelika, Ala., died suddenly on December 27. He was born in 1836 and graduated from Oglethorpe Medical College, Savannah, in 1858.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE MASS MEETING IN LONDON ON THE INSURANCE ACT.

London, December 22, 1911.

The Insurance Bill is now an Act, the Royal assent having been given on Saturday by commission. On Tuesday came the great mass meeting of the profession in London to protest against its provisions. "Seems rather a day behind the fair," does it not? But that is unquestionably the fault of the Council of the B. M. A., which assumed the leadership and was left to carry out the campaign. The meeting was a large one, crowding the Queen's Hall, was in deadly earnest, and practically unanimous. Elder practitioners declare they have never known such unanimity and juniors say this will only be the beginning. It was certainly a strange experience to find a great hall crammed with doctors shouting excitedly their determination to fight to a finish. It must be admitted that the proceedings were not exactly orderly, but afforded a vivid contrast to the deadly dulness that often characterizes medical meetings. This one began and ended with singing "Rule Britannia," the chorus of which, "Britons (doctors) never shall be slaves," was given with full strength of voice and lungs.

Sir Watson Cheyne took the chair and said the act had become the law of the land and soon insured persons would be asking for free medical attendance promised by the Chancellor of the Exchequer, but for which he has made no arrangement with the profession to provide it. Their terms had been stated to him again and again, but were not visible in the act, but ignored or shelved or handed over to outside bodies. They were there to say they wanted no more of the Chancellor's specious promises and refused to do as he desired until their demands were agreed to in a form that rendered further quibbles impossible. It was nonsense to pretend they refused to attend the poor—they would continue to do so, as they had always done, until their terms were granted; his terms would never be accepted. The act, as it stood, meant ruin to hundreds, aye thousands, of their brethren. To be united they must, he thought, stick to the B. M. A., the only organization they had for such work, even if they found the fault was in the Council. (Here were cries of "Turn them out.") He had no brief for the Association, in fact he had left it on account of certain unsatisfactory doings, but he appealed to them at this crisis not to follow his example lest it should cause disunion.

Dr. Fred J. Smith moved the first resolution, practically that of the Manchester meeting, reported in my last week's letter. He subjected the circulars of the B. M. A.'s Council to stringent criticism and convicted them of misleading statements. He anticipated nothing but undignified wrangling between the Insurance and Medical Committees. As to income limit, it was not conceded but he had strong evidence it would have been, only their negotiators were afraid it would be some risk to the government, so they sacrificed their profession instead. The Association had told their Council to get their six points or die in the last ditch. They had not died in that ditch, but flung their medical secretary therein to appease the appetite of the Chancellor of the Exchequer.

Mr. Milton Townsend seconded, and impressed on the audience that the meeting was not for a mere pious opinion. They would be asked to sign a requisition—the first step in a campaign. If they stood firmly together they could compel the government to grant their demands or drop the medical provisions in the act altogether. The resolution was about to be put when Sir Victor Horsley rose and asked a question which could not be heard completed on account of the angry cries which arose. He was invited to the platform and on the way was assailed with hissing, booing, and cries of "traitor." On the platform he stood for three or four minutes while the chairman's appeals for order were drowned in hostile shouts. Some cried "shame" and "hear him." One called out: "No other shall be heard until he has spoken." In an interval the chairman asked: "Are you afraid of what Sir Victor Horsley has to say?" but this brought fresh taunts of "He's a traitor." The chairman replied: "I must insist; you are spoiling the meeting," and was supported by some asking for "fair play," though their voices were scarcely heard for shouts of "We don't want to hear him," and "Go home; did Lloyd George send you?" etc. The chairman's tact at length prevailed and Sir Victor spoke for a few minutes. He had nothing very irritating to say, his point being that the resolution was inaccurate, as the representatives had not ordered the Association to accept only the six points, but if they could not get all in the bill they were to get all they could and settle the others with the commissioners. The resolution was then carried, only two or three hands of the vast audience being held up against it.

Mr. Raiment moved the second resolution, which reasserted the demands of the profession and held that everyone should refuse to take office until they were secured. He said boycott the act until the six points were conceded or the medical provisions dropped or a third alternative left them to make their own arrangements with the insured. It had been said government could appoint their own whole-time doctors. That would require 7,500 doctors at £600 a year at least, and each would have to attend 120 patients a day in summer and double as many in winter. They were charged with splitting the Association, but boycott was the original policy of the Association.

Dr. Arthur Helme of Manchester, seconding, said he was there to tell them the men of the North would stand by them in determining not to form panels of doctors under the act. That did not wreck the act, as the B. M. A.'s president of Council had said, and he threw back the words in his face. They were not refusing to work under the act on any terms; they offered on their own terms. They would give their own charity to the poor, not let Lloyd George dispense his at their expense. They could arrange an efficient medical service for the poor which would be absolutely under medical control. In this crisis the B. M. A. had failed them. Drs. Pinder, Brierley, and Hart, all of Manchester, followed with powerful speeches, showing how united is the North. So is the country generally, for Liverpool, Birmingham, Scotland, and even Ireland sent supporters to this London meeting.

Dr. Keay, member of the Council of the B. M. A., said no member of that body could object to the resolution, but in social legislation much was generally left for commissioners to deal with. He was heard impatiently and the resolution was carried unanimously, after which, on the proposal of Dr. Sydney Phillips, seconded by Sir John Tweedy, it was decided to send copies of the resolutions to the Prime Minister and Chancellor of the Exchequer. Copies of a requisition from members of the B. M. A. present, calling for a general meeting, were handed around and numerously signed.

After the meeting Sir Victor Horsley, Dr. Keay, and Dr. Rice-Oxley, three members of the Council of the B. M. A., who attended the meeting, issued a statement of what they had desired to say. Their chief point is that the resolutions passed express substantially the views of the Council and they conclude that they ascribe to "ignorance alone and not to intentional discourtesy the unfortunate intolerance" at the Queen's Hall.

The Scottish profession has had its say. A meeting in Glasgow on Saturday, attended by practitioners from all parts of Scotland, decided on an attempt to work under the act on condition that the six points of the B. M. A. were granted; otherwise not. Further, it was resolved to ask the Association's Central Council to strengthen the Scottish committee, give it executive power for Scotland, for which it was desired that a paid secretary with an office should be appointed.

The *Practitioner* received in five days 20,712 answers to the referendum sent out, as stated in my last letter; 20,149 answered no, 352 yes, and there were 211 queries. The *Practitioner* is following this up with a circular to the entire profession, asking a pledge not to accept any service under the act, providing that at least 23,000 combine in this promise.

The newly formed Medical Union meets to-day in Manchester to discuss a scheme for raising half a million sterling as a guarantee fund to help practitioners who may suffer from refusing to work under the act. It is hoped the B. M. A. and all other medical organizations will cooperate.

At the instigation of the Chancellor of the Exchequer the commissioners under the act, although not formally appointed, issued last night a preliminary memorandum to serve as some guide to the position of societies and other bodies affected, pending the compilation of a comprehensive memorandum at a later date, which they hardly expect to complete before February.

The Friendly Societies are taking steps to prepare for working under the act. Some of them hope to improve it by obtaining later such amendments as may be found necessary by experience. The grand master of the Manchester Unity, which has nearly 700,000 members, said the other day that if they foamed at the mouth and used all the adjectives possible it would not alter matters. Therefore the easiest course was to do their best to understand it and see how they could adapt it to their requirements. None of them wanted it, but he advised them to become an "approved society," as they could then retain their present investments and effect a saving in management expenses.

The National Deposit Friendly Society, with some 230,000 members and funds amounting to £1,400,000, has definitely determined to become an approved society under the act.

The sinister hope of some is expressed in the official journal of the Foresters' clubs, which assures its readers that the medical agitation is only "idle chatter that need not seriously be reckoned with," and goes on to declare that the doctors concerned "will certainly not resign or throw away

their living at the behest of the agitators attached to the British Medical Council." But what if these doctors have learned something from the tactics of the clubs in the past?

I have filled my space with a single subject, and touched on only part of that. But you must understand that it is the only thing that doctors here have cared to talk about these few days. Even old Father Xmas is being put into the shade and gets a bare mention between the disputed points that absorb medical attention.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

WASSERMANN'S CHEMOTHERAPEUTIC EXPERIMENTS ON CANCER—THE ELECTIVE DESTRUCTION OF MOUSE CANCER BY MEANS OF COMPOUNDS OF SELENIUM AND EOSIN—TOXICITY OF THE LATTER—RESULTS DO NOT WARRANT THE APPLICATION OF THIS METHOD IN HUMAN BEINGS.

BERLIN, December 20, 1911.

THE meeting held to-day by the Berlin Medical Society promises to rank among the most noteworthy that have been held in the past. For at this meeting Wassermann, in conjunction with Hansemann, presented their paper, entitled "Chemotherapeutic Experiments on Cancerous Animals," from which it would appear as if a long stride has been taken forward in the solution of the problem of the elective attack on tumor cells by way of the blood-stream.

At the outset Wassermann states the problem in its simplest terms: "Is it possible in the body to cause an elective destruction of the tumor cells without affecting the other cells of the body?" This is an aim that has not yet been realized. Of course, it has been possible, by means of the injection of any one of a large variety of substances directly into the tumor mass, to bring about the latter's destruction. But, in order that one might obtain a strictly elective action, it would be necessary that the active agent should circulate in the blood. With this end in view, Wassermann employed substances with known biological properties, such as, for example, cobra venom, which is known to act upon the cellular lipoids. From his investigations, however, it was found that the substance sought for would have to be a stronger one than is produced from biological sources. It was also discovered that well-developed mouse tumors do not undergo spontaneous absorption. In order to determine whether the serum of healthy individuals possesses a stronger destructive action on cancerous tissue than the serum of an individual suffering from cancer, cancer tissue was placed in such sera, respectively, and, with the aid of tellurium salts as suggested by an Italian investigator, it was sought to determine whether any of the cells were destroyed. This experiment was fruitless, so far as the aim sought for was concerned. Nevertheless, it showed that the tellurium salts were deposited in the cell-nests in the vicinity of the nuclei. This was also true of the salts of selenium. These metals were therefore deposited in the regions of the maximum cellular activity; this is particularly significant in the case of tumor cells, which have a most active metabolism, particularly in the nucleoplasm. Local injections of selenium and tellurium into mouse tumors, in fact, brought about their dissolution, but intravenous injections did not have this effect. In the search for a substance that would rapidly carry the selenium to the locality of the tumor, without the selenium at first being anchored by the other cells of the body, Wassermann hit upon the idea of combining this drug with the highly diffusible fluoresceins. After a series of painstaking experiments, more than two hundred new compounds being produced and tested, Wassermann at last succeeded in getting a combination of selenium and eosin that appeared to be effective. At present this preparation occasionally varies in its uniformity. A quantity of two and a half milligrams kills a mouse. In some cases, however, the animal can tolerate a relatively large dose. In selecting animals Wassermann chose those with hard tumors having a size no smaller than that of a grape. One injection was given daily for three days, and on the fourth day was omitted. On this day a distinct softening of the tumor was observed. On the fifth day another injection was given and the tumor became a cyst. After another day's pause a further injection was followed by a diminution in the size of the cyst, which sometimes disappeared entirely. But, as a rule, seven or eight injections were necessary to produce a complete cure. Particularly to be noted is the fact that frequently in the stage of absorption of the tumor the mice died, apparently because they were not adapted for this intensive process. It was also shown that, in cases in which a complete cure had not taken place, a recurrence of the growth was quickly manifested. The preparation was employed not only in experimentally produced tumors, but also in those occurring spontaneously, with success in both cases. One of the mice is still living, three months after the disappearance of the tumor. Wassermann emphasizes the fact that his results have been obtained only with mouse tumors and only with the particular strains with which they have experimented.

Hansemann describes in detail the microscopic changes occurring in the tumors. During the process of resorption the cellular remains are found mostly in the spleen and only slightly in the liver. Metastases from these organs have never been observed. That the rapid resorption of tumor masses corresponding to one-half of the original weight of the mouse subjects the latter to considerable danger is easily understood. If the selenium preparation is injected into healthy animals, the spleen becomes swollen and distended with lymphatic elements, the follicles lose their distinct contour, and lymphomata appear; but these in no way harm the animal. The drug is therefore harmless, so far as the changes produced in the organs are concerned. If the mouse succumbs, this is merely because of the toxicity of the drug. Hansemann also points out that mouse tumors and human tumors are not the same, and that his findings would not warrant one in applying this drug in the treatment of human beings.

Progress of Medical Science.

Boston Medical and Surgical Journal.

December 28, 1911.

The Popliteal Incision for the Removal of "Joint Mice" in the Posterior Capsule of the Knee-Joint. A Report of Cases. E. G. Brackett and R. B. Osgood.

A Review of Ten Years' Work in Anesthesia. F. Allen.

A Preliminary Note on Intravenous General Anesthesia. A. M. Dodge.

A Parasitic Multilocular Ovarian Cyst Weighing Ninety Pounds. P. E. Truesdale.

"Joint Mice" in the Posterior Portion of the Knee-Joint.—E. G. Brackett and R. B. Osgood report four cases in which "joint mice" and foreign bodies in the poste-

rior portion of the knee-joint were removed by means of a popliteal incision.

Ten Years' Work in Anesthesia.—F. Allen states that at the Massachusetts General Hospital no one anesthetic agent is pushed to the exclusion of others. Successful anesthesia requires careful preparation on the part of both patient and anesthetist. Indispensable in every surgical procedure of magnitude, in gas and oxygen anesthesia, and also in spinal anesthesia, is the preliminary use of morphine, atropine, and sometimes hyoscine. For the control of difficult subjects, *i.e.* plethoric, alcoholic, athletic, or obese people, the author gives large preliminary doses of morphine and atropine, induces anesthesia with A. C. E. mixture or anesthol, putting the patient under rather rapidly in order to avoid a stage of excitement, and maintains anesthesia with ether on a semi-open inhaler, possibly giving chloroform or C. E. again toward the end of the operation. A very useful maneuver in these cases is to use nasal tubes. The author also uses the closed method of etherization whenever he can, but chiefly in gynecological patients or in easily controlled patients of either sex. In heart cases he generally uses the A. C. E. ether sequence with oxygen. He believes that nitrous oxide and oxygen is the safest anesthetic if restricted to momentary administrations.

Intravenous General Anesthesia.—V. M. Dodge states that the originator of this method, Burkhardt, usually employs three solutions: (*a*) physiological salt solution; (*b*) physiological salt solution containing 5 per cent. ether, and (*c*) physiological salt solution containing 1½ per cent. isopral. Although in some cases the isopral solution was not used, the routine was to start the anesthesia with it and continue with the ether solution. These solutions are contained in large burettes, all connected by rubber tubing to a glass cannula, which is introduced into the vein in much the same manner as for the intravenous use of salvarsan. Any superficial vein may be used, but as a rule the median basilic of the left arm will be found the most convenient. Anesthesia is induced somewhat more rapidly than by inhalation, and after it is complete the plain salt solution is alternated with that containing the ether according to the depth of anesthesia required. As a rule, less than half the amount of ether used by inhalation is necessary, and the patients recover with the customary unpleasant after-effects of ether absent or much mitigated. Intravenous anesthesia is indicated in operations about the head and neck, in hemorrhage, in weak cachectic patients, in diseases of the respiratory tract where inhalation anesthesia is objectionable, etc. It is contraindicated in nephritis, extreme arteriosclerosis, severe heart lesions, plethoric patients, etc. In the author's opinion, its chief field of usefulness will be found in operations about the head and neck, in which it is desirable to have the anesthetic and anesthetist removed from the surgical field, and here it would seem to be the method indicated in a majority of cases.

Ovarian Cyst.—P. E. Truesdale reports a case of multilocular ovarian cyst, in which the tumor removed at operation weighed ninety pounds.

New York Medical Journal.

December 30, 1911.

A Localized Outbreak of Typhoid Fever Traced to Milk Infected by a Bacillus Carrier. Also a Case of Laboratory Typhoid Contracted from the Cultures. C. F. Bolduan and W. C. Noble.
Venereal Diseases and Their Relation to Infant Mortality and Race Deterioration. P. A. Morrow.
Sterility in Women. E. McDonald.
Diffuse Suppurative Labyrinthitis; Its Diagnosis and Its Relation to Endocranial Complications. J. Auerbach.
A Talk About the Climates of the Southwest. E. F. Elliott.
The Indication for Radical Operation in Frontal Sinusitis. S. McCullagh.
Social and Moral Considerations Related to the Medical and Surgical Care of Crippled Children. D. C. McMurtrie.
A New Method of Percussion. O. Lerch.

Typhoid Fever Traced to Bacillus Carrier.—C. F. Bolduan and W. C. Noble report an outbreak of forty-four cases of typhoid fever in New York City traced to the milk supplied by a farm on which there had been six cases of typhoid fever in 1904, one case in 1907, and one case in 1908. The dairyman handling the milk on this farm represented the last of the six cases in 1904, and was now the only person on the farm who had had the disease. Specimens of his stools were collected and examined for typhoid bacilli. The examinations disclosed the presence of enormous numbers of living typhoid bacilli; in other words, the man was a bacillus carrier.

Venereal Diseases and Infant Mortality.—P. A. Morrow states that syphilis is the only disease transmitted to the offspring in full virulence, killing them outright or blighting their normal development. This is shown not only in the lack of vitality, but also in the incapacity of resistance to disease. The chances of an infected child dying under fifteen years of age are nearly seven times greater than that of the child free from syphilis.

Sterility in Women.—E. McDonald discusses the treatment of this condition. A spare diet is conducive to conception, and likewise open-air exercise. The patient should be instructed as to habits of coition, all of which should combine to allow the seminal pool to remain in the posterior vaginal fornix as long as possible. A preliminary alkaline douche favors the vitality of the spermatozoa. In the treatment of sterility it is necessary to treat the special conditions that may cause it. If the vagina cannot retain the seminal fluid the posterior fornix should be stretched by means of a ring pessary or by tampons. A conical, elongated, stenosed cervix should be dilated with the small steel dilators of Starlinger. In the case of an infantile uterus a hard rubber stem pessary should be inserted under anesthesia, but preceded by a course of dilatation of the cervix for at least a couple of months. In this condition also electrical treatment by means of the galvanic current is of value. With the sterilized negative electrode in the uterus 50 milliampères are applied for five minutes at a sitting, combined with gentle massage, two or three times a week. If these measures fail it may be necessary to enlarge the internal os by operative means, of which the Pozzi-Fenwick operation is the best. In cases of decreased menstruation and approaching premature menopause the administration of lutein extract is of value.

Diffuse Suppurative Labyrinthitis.—J. Auerbach notes the following symptoms of this condition: spontaneous nystagmus, dizziness, disturbance of equilibrium, disturbance of vestibular irritability, and disturbance of hearing. In differential diagnosis the nystagmus should be distinguished from the optic, congenital, neurasthenic, cerebellar, and meningitic forms. Dizziness may be caused by neurasthenia, heart disease, arteriosclerosis, toxemia, or tabes.

Climates of the Southwest.—E. E. Elliott points out the great variety of climates that may be found even in limited areas of this region. From Denver on, all towns in northern New Mexico and northern Arizona are in the mountains and, therefore, of more or less great altitude, varying from 5,000 to 7,500 feet above the sea level, while the towns in the extreme southern portion of New Mexico and the southern half of Arizona are south of the high ranges, and therefore of lower level, running from 1,100 to 4,000 feet. This slight difference in latitude and marked difference in altitude produce distinctly different weather conditions throughout the year. The entire region, however, is comparatively dry. The winters in the more northern towns are necessarily more or less severe at times with snow, wind, and occasional intense cold, but the air is usually clear and bracing. The winter season is not nearly as long or severe as in the northern or eastern States. The summers and autumns are cool and delightful and usually free from high winds. The winters in the southern section are warm (with the possible exception of a few weeks), dry, and free from high winds. The sum-

mers are unbearably hot. This section includes all towns to the south from El Paso to the mountains near the coast of California. The maximum amount of outdoor living is possible for about eight months of the year.

Radical Operation in Frontal Sinusitis.—S. McCullagh states that in acute frontal sinusitis one should never operate unless it is impossible to obtain drainage by intranasal treatment, surgical or otherwise, or unless some complication arises that makes operation imperative. In chronic frontal sinusitis one should operate immediately in any case in which any of the following complications exist or threaten: cerebral abscess, epidural abscess, meningitis from extension, orbital cellulitis or abscess from extension, cellulitis or fistula due to perforation of the anterior wall of the sinus, necrosis, osteomyelitis, septicemia in the presence of any fundus change apparently due to the infection in the sinus, and in which malignant disease is suspected in the sinus. One should operate in every case where the allied conditions are such that much intranasal surgery will be required to obtain good drainage. One should operate when the symptoms point to or the *x*-ray plate shows marked involvement of the sinus, even though the ethmoids be but slightly involved and the obstruction to drainage removal by a slight intranasal operation, when circumstances are such that a prolonged course of treatment is impracticable. One should operate in any case in which toxemic symptoms are not promptly relieved by real or apparent relief of obstruction to drainage and appropriate local treatment.

Care of Crippled Children.—D. C. McMurtrie states that every effort should be made to inspire confidence in the crippled child, who should be encouraged and made to do all his abilities show. The crippled child needs normal training plus the special aid required to offset the handicaps imposed by his deformity.

Percussion of the Kidneys.—O. Lerch calls attention to the main points of his method of percussion of the kidneys, as described by him in MEDICAL RECORD, Vol. 79, page 201.

Journal of the American Medical Association.

December 30, 1911.

Transitory Mental Confusion and Delirium in Old Age. C. W. Burr.
A Point in the Treatment of Lateral Curvature of the Spine. E. A. Rich.
An Improved Hypodermic Outfit. H. Crenshaw.
Marked Varicose Veins of the Right Leg in a Patient Six Months Pregnant. A. J. Gilmour.
Improved Method of Preparing Agar. W. F. Thompson.
Improved Technique of Venoperitoneostomy for Relief of Ascites. H. E. Castle.
A New Appendiceal Crushing and Cutting Forceps. S. C. Glidden.
External Dislocation of the Knee. R. H. Fowler.
A New Symptom in Paralysis Agitans: The Cog-Wheel Resistance of the Extremities. H. N. Moyer.
Abuse of Normal Salt Solution. G. H. Evans.
The Baby-Tents of Chicago. F. W. Allin.
The White Cells in Tuberculosis. W. W. Watkins.
Prolapse of the Uterus Complicating Pregnancy. P. Findley.
General Paresis, Tabes, and Syphilis of the Nervous System. E. D. Fisher.
A Phenol Injection Treatment for Sphenopalatine Ganglion Neuralgia. G. Shuler.
Congenital Imperforate Anus, with Occlusion of Entire Colon. C. H. Hamilton.

Senile Mental Confusion and Delirium.—C. W. Burr describes the transitory mental confusion and delirium of old persons and attributes the symptoms to poisons carried by the blood rather than to the hardening of the arteries. The thickened arteries are often a mere local sign and there are indications of the action of a pathological process disturbing or destroying the proper working of all the important organs. Cerebral arteriosclerosis may be marked without any mental symptoms.

Lateral Spinal Curvature.—E. A. Rich has attempted to gain correction in this condition by means of lateral suspension and a figure-of-eight molded splint maintaining a steady pressure on the desired point of counterpressure on the pelvis and neck. This, however, is practicable only in children under ten or twelve. Employing much the same principle in another way for the older patients, he makes a light mold of the patient standing up and slightly suspended. This is later filled with plaster giving one a torso the exact replica of the patient. The torso thus made is lengthened in the waist and corrected much as described by Lovett and Sever. On this torso is made a plaster or celluloid jacket that fits over the corrected shoulders and neck. The jacket is removed from the torso by lateral incision on the side opposite the great curve and after completion buckled together again over the patient. Large areas on the side of the concavity can be removed from the jacket to allow greater freedom where pressure is not needed and to lighten the jacket. As the jackets cease to exert pressure more and more of the mass representing the curve and the rotation of the ribs is shaved off the torso and a corresponding amount of new plaster of Paris added to the opposite side, and on this further corrected torso new jackets are made.

Hypodermic Outfit.—H. Crenshaw describes an outfit that consists of a cylindrical vial about 4 inches long and ¾ of an inch in diameter; a perforated cork; an all-glass syringe with ground-glass piston; a platinum needle; and about one ounce of sterile water. The platinum needle of the syringe is inserted snugly through the perforated cork until the flange on the back end of the barrel rests against the cork. The vial is then nearly filled with the sterile water and the cork (with the syringe passed through it) is inserted into the mouth of the vial.

Varicose Veins During Pregnancy.—A. J. Gilmour reports a case of marked varicose veins of the right leg in a patient six months pregnant.

Preparation of Agar.—W. F. Thompson describes an improved method of preparing agar.

Venoperitoneostomy for Relief of Ascites.—H. E. Castle offers a modification of Routtе's operation of anastomizing the saphenous vein to the peritoneum for the relief of ascites. The curved incision in the upper part of the thigh prevents kinking of the vein. The author's method of anastomosis makes it possible to have the suture at a sufficient distance from the lumen of the vein to prevent any obstruction or obliteration of it. The subcutaneous transplantation of the vein reduces the formation of cicatricial tissue about it to a minimum. Anchoring the omentum prevents its contact with the anastomosis.

Appendiceal Crushing and Cutting Forceps.—S. C. Glidden describes a forceps whose longitudinal serrations crush the tissue of the appendix to a paper-like thinness, removing all fecal matter from the portion crushed. A sliding knife blade, buried in the point of one blade of the forceps, rises along the center as the ring between the forceps handle is pulled on, causing it to cut clean, leaving the appendix stump sealed ready for invagination. The part of the appendix which is removed is also sealed at the cut surface, preventing leakage of any fecal matter on the wound surface or sponges. The forceps first crushes and then cuts. It has also been used in removal of ovary and tube, as it leaves a clean incision, which is usually whipped over with a line of sutures.

External Dislocation of the Knee.—R. H. Fowler reports a case of this condition.

Cog-Wheel Resistance of the Extremities in Paralysis Agitans.—H. N. Moyer states that this sign is elicited by the examiner grasping the wrist with one hand and steadying the arm with the other above the elbow. Rapid flexion and extension of the arm are made. Instead of an even movement, without resistance, when there is no involvement of motility, one, two, or perhaps three slight hindrances to the movement are experienced by the examiner, which communicate to the hands of the examiner a jerky feeling. This is not sufficient to stop the movement of the extremity, so that it may be seen, but it is readily appreciated by the hand of the examiner. After the ex-

tremity has been passively moved for a short time the jerks will slowly disappear, to be followed by a return after a period of rest. The symptom is most easily elicited and is most commonly present in the upper extremity, though it is occasionally noted in the lower. When testing the leg the same method is pursued as when examining the arm, the patient being conveniently seated on a table and the leg rapidly flexed and extended at the knee. This symptom belongs to the early period of rigidity in Parkinson's disease, and it is this fact that gives it its value from a diagnostic point of view.

Abuse of Normal Salt Solution.—G. H. Evans states that the apparent harmlessness of sodium chloride has led to its misuse, the capacity of the kidneys to eliminate it being altogether too much overestimated. The toxicity of sodium chloride in large quantities has been abundantly demonstrated and the prevalent use of this remedy in cases of toxemia due to acute infections accompanied by marked diminution or absence of chloride excretion deserves condemnation. The harm resulting from large amounts of water introduced is probably even greater than that produced from the effects of chloride retention.

Baby Tents.—By F. W. Allin. (See MEDICAL RECORD, Vol. 80, page 49.)

The Leucocytes in Tuberculosis.—W. W. Watkins finds that the percentage of lymphocytes affords an apparently reliable indication of individual resistance to tuberculous infection. In healthy adults he found an average lymphocyte count of 41.5 per cent. and in none a count less than 29 per cent. Thirteen patients definitely cured of tuberculosis gave an average count of 45 per cent., while in advanced or progressive cases the averages were not over 24 or 25 per cent. In patients who have recovered there seems to be an increased percentage and in normal individuals it seems to be increased by high altitudes and absence of moisture and of high temperature. In the beginning of active tuberculosis there seems to be a slight increase, continuing as long as the lung tissue maintains its resistance. The blood of tuberculous patients with lymphocytosis differs from normal blood. The large mononuclears prevail but are different from the ordinary large ovoid lymphocytes. They may be two or three times as large as a polynuclear cell and have a large irregular cytoplasm and sometimes an irregular nucleus.

Prolapse of the Gravid Uterus.—By P. Findley. (See MEDICAL RECORD, Vol. 80, page 105.)

Syphilis and Parasyphilis of the Nervous System.—E. D. Fisher points out the differences between tabes and paresis, as well as their resemblances. Some authorities, like Mott and Ferrin, consider the two diseases the same, the differences only depending on their situation. The author combats this opinion. No case of paresis runs its course without spinal involvement, but nowhere is it as complete as in tabes. The cranial nerve lesions are different, the sensory symptoms predominate in tabes, and the shorter duration of paresis is another important point. Syphilis of the nervous system differs etiologically, clinically, and pathologically from the parasyphilitic diseases.

Phenol Injection Treatment of Sphenopalatine Neuralgia.—G. Sluder states that alcohol injections, such as are used satisfactorily on the nerve trunk, have not given satisfaction in the severe form of sphenopalatine neuralgia described by him in 1907. They have given relief for short periods of time only and always cause considerable pain which may last for several days. For the lesser grades of this neuralgia the alcohol injections have proved curative. The author has found in the severer forms that 5 per cent. phenol in alcohol injected into the sphenopalatine ganglion to the amount approximately of one drop is painless and apparently curative for the various forms of neuralgia. In this method cocaine is first caused to soak into the ganglion from the mucous membrane covering the sphenopalatine forearm. A straight needle is then introduced from in front backward and upward under the posterior tip of the middle turbinate, a distance of 5 to 6 mm.

Imperforate Anus.—C. H. Hamilton reports a case of this condition in a male infant, associated with an undeveloped colon which was 1 cm. in diameter and constricted at intervals of 8 cm. throughout its entire course.

The Lancet.

December 23, 1911.

Some Points in Heredity.—R. Clement Lucas criticises the doctrine of diathetic inheritance as applied to such diseases as gout, tuberculosis, syphilis, leprosy, malaria, and cancer. Syphilis, he believes, is not an hereditary disease. The microorganism causing it is transmitted through the mother to her child when the placental protection breaks down. In the field of eugenics the author suggests a practicable mode of sterilizing criminals and others with the *x*-rays. Twin bearing is hereditary. The Mendelian doctrine fails when applied to the cross-breeding of human races. When a negro unites with a white the result is a half-caste or mulatto. So also when a European unites with an Indian the result is a Eurasian. Mulattoes united in marriage should, according to the Mendelian law, segregate out into pure blacks, pure whites, and intermediates, but they do not; they continue to produce mulattoes, and Eurasians continue to produce Eurasians. Numerous pedigrees show the tenacity with which a defect or deformity, once developed, clings to a stock and is repeated generation after generation in spite of the infusion of new blood.

Ionic Treatment in Gynecology.—S. Sloan discusses the physics and chemistry of ionic medication and describes the apparatus required. The object of ionic treatment in gynecology is to remove sepsis and the accompanying inflammatory exudations. In inflammation of the tubes, ovaries, or the cellular tissue, if no suppuration is present, the iodine ion gives the best results. If the case is one of simple cervicitis then the zinc or copper electrode, covered with cotton wool, is inserted into the cavity of the cervix through the speculum, which is filled with a 1 per cent solution of the bichloride of the metal employed. When the endometrium is involved the zinc electrode should be introduced into the uterine cavity and if insufficient action results or the case is a very chronic one the copper electrode must be used. The latter is more likely to cause pain and bleeding. In cases of prolonged uterine hemorrhage the copper is the more potent electrode, although where the patient is very sensitive or there is any reason to fear pelvic cellulitis it is well to avoid the use of the bare copper electrode. Either the zinc or the copper can be used with perfect safety in solution by means of the speculum in all cases of sepsis of the cervix. Before an electrode is introduced into the cavity of the uterus, however, the vagina and the cervix must have been rendered as far as possible aseptic by ionic treatment if necessary, after which with moderate care no harm can result from the intrauterine application.

Ruptured Esophagus.—D. W. Roy reports a case of this condition associated with fat embolism in a man aged forty-three years who succumbed after an amputation of the leg for compound fracture. The author believed that the rupture of the esophagus resulted from the violent straining manifested by the patient during anesthesia.

Induration of Mediastinum.—W. Branden and J. B. H. Holroyd report a case of extensive fibroid induration of the mediastinum and right lung, with ulceration and sclerosis of the right bronchus, as well as perforation of the pulmonary artery of the same side. The disease occurred in a man aged sixty-two years. The case presented unusual difficulties in diagnosis and probably belonged to the class of pulmonary syphilis.

Carcinoma of the Colon.—J. S. Manson reports two cases which seem to be of special interest in showing that carcinoma of the lower bowel may coexist with various forms of benign growths of the female pelvic organs, and that the prominence of the latter may mask almost entirely the graver disease which gives so little sign of its presence.

Nervous Vomiting in Childhood.—E. B. Smith reports a series of seven cases presenting a type of nervous vomiting occurring in children about the age of the second dentition. The evidence in favor of the condition being a purely functional one is: (1) The underlying current of nervous instability or nervous inheritance present in every case. (2) The fact that the vomiting in at least the first two cases was preceded, accompanied, or followed by other functional nervous disorders, *e.g.* migraine and enuresis in the first case and habit spasm in the second, while the third case was a rheumatic subject and the seventh case suffered from the common precursor of functional nervous disorders, namely, rickets. The effects of unsuitable environment were demonstrable in the fifth case.

Ectopic Gestation.—W. M. Fergusson reports two cases of this condition with primary rupture into the abdominal cavity.

Appendicitis in a Scrotal Hernia.—C. H. James reports the case of a boy seven years old who had several attacks of appendicitis with an appendix situated in the sac of a scrotal hernia. There were three distinct and typical attacks of appendicitis, the last of which resulted in an abscess of the scrotum which opened externally and formed a permanent sinus. The track of the sinus was the lumen of the proximal portion of the appendix. In spite of this no fecal matter ever escaped by this route. Operation was followed by recovery.

British Medical Journal.

December 23, 1911.

Medical Education and Examinations. J. Griffiths.
Abdominal Section Under Spinal Analgesia, with or without the Aid of General Anesthesia. With Notes of Sixty-five Cases. L. McGavin.
The Routine Use of Spinal Anesthesia: A Study of Five Hundred Consecutive Cases. O. Richards.
A Case of Paroxysmal Tachycardia. R. O. Moon.
Leucodermia Undergoing Pigmentation on Exposure to Sunlight. K. H. Jones.

Medical Education and Examinations.—J. Griffiths believes that medical boards should throw upon the medical schools the responsibility of training and certifying the medical student as a fit and proper person to enter a hospital for training in clinical work; the machinery for giving such training should be under the inspection and supervision of the boards. The clinical training should extend over a period of three years, and each student should be examined in the work done at the end of every complete course. The certificates for each course should form the record of the student, and as soon as all certificates are duly filled the student should be entitled to State registration and to all the privileges such protection affords.

Abdominal Section Under Spinal Analgesia.—L. McGavin reports a series of sixty-five cases of laparotomy in which spinal analgesia was employed. The results in these cases were sufficiently encouraging to warrant the employment of this method more frequently in abdominal surgery, combined when necessary with general anesthesia. It may be found possible to replace this general anesthesia by injections of scopolamine and morphine and so to overcome the hypersensitiveness of the peritoneum and [illegible] malignancy.

Spinal Anesthesia.—O. Richards presents a study of 500 consecutive cases in which spinal anesthesia was employed. He concludes that this method, owing to its limited field, can never replace general anesthesia. Yet in a number of cases spinal anesthesia offers advantages which cannot be got in any other way, and its apparatus and technique are so simple that it is worth any surgeon's while to use it whenever there is anything definite to be gained by it. In the large number of cases in which there is nothing to choose between the methods the use of stovaine becomes a matter of taste and convenience. There seems to be a tendency in England to regard spinal anesthesia as a dangerous method and one that can only be employed successfully by a few experts who have devoted their attention to it. As far as the author's experience goes this is less true than it is of chloroform—the danger of spinal anesthesia is about the same, and the skill required for its administration is less.

Paroxysmal Tachycardia.—R. O. Moon reports a case of this condition.

Leucodermia Undergoing Pigmentation.—K. H. Jones reports a case of leucodermia in which exposure to the sun caused pigmentation in the areas affected.

Berliner klinische Wochenschrift.

December 11 and 18, 1911.

New Form of Hernia.—Pochhammer describes a case under the designation "properitoneal abdominal hernia in an old abdominal scar, strangulation of the hernia, intestinal gangrene, resection." The scar was due to laparotomy for rupture of the uterus intrapartum, and the hernia occurred two years later. It was readily replaced and an abdominal bandage worn. After three years of the hernia the latter became irreducible and the picture of strangulation appeared. The gut ruptured during the operation and 150 c.cm. had to be resected, for there were two loops in the hernial ring, which was seated in the posterior sheath of the rectus. Recovery was smooth.

A "Scalped" Finger.—Katz describes and illustrates a case of complete flaying of the left middle finger, which occurred to a woman as a result of falling from a ladder, which she was grasping at the time with her left hand, while holding a basket of laundry in the other hand. The fall was due to a faint. The rationale of the injury remained a mystery. Patient wore no ring and there was no nail or splinter in the rung of the ladder. She doubtless made a powerful instinctive effort to save herself, but this effort was antagonized by the force of gravity. The patient was not seen until some time later, and the detached skin was not recovered. The denuded finger was covered with flaps from the skin of the chest.

Progress in Knowledge of Tropical Diseases.—Hoffmann states that after a brilliant era of discoveries in this field a period of relative barrenness has succeeded, and proceeds to indicate some few things which have come to light quite recently. Incidentally he remarks that a period of amplification of older discoveries, of organization which shall apply the same, of new reference books, journals, societies, laboratories, etc., has necessarily followed upon the era of sensational discoveries. The recent epidemic of the plague in Siberia has caused us to modify our views of this affection. Rats and fleas play no part whatever in the spread of the pneumonic form of plague, while they are practically the sole etiological factor in the spread of the bubonic form. Not all species of rat flea propagate the disease; two only are so concerned, and alone need to be watched for. Cyanogen will destroy the flea but has no power over the bacilli. The use of iodoform is recommended as a preventive against the visitation of the flea. In the field of cholera the technique for cultivating the vibriones has been much advanced by various procedures, and older resources have been pronounced untrustworthy. The problem of fighting cholera consists in measures

directed wholly against the germ carriers. While leprosy germs may not be cultivated and made to reproduce the disease in animals, we are still in ignorance as to the natural mode of diffusion. If it could be shown that insects, especially the bed-bug, actually transmit the disease, this view would harmonize well with all the known facts, although direct transmission would by no means be excluded. That beriberi is due to phosphorus starvation seems to have been crucially demonstrated. The phaseolus bean when added to the diet seems sufficient to prevent the disease. The latter seems very prone to develop in the wake of acute infectious diseases, and may not itself constitute an affection *sui generis*. The part played by body lice in spreading exanthematous typhus is now recognized and taken into account in the prophylaxis. No advance has been made in identifying the bacterial cause. For the present the tabardillo or Mexican typhus must be regarded as identical with typhus proper. The papataci fly has recently been discovered in South America, although it has hitherto been believed to be a denizen of the old world only. The subject is not exhausted in the present issue and the article will be continued.

Treatment of Pulmonary Tuberculosis with Formation of Artificial Pneumothorax.—Klemperer sums up his article on this subject as follows. The establishment and maintenance of an artificial pneumothorax is an undertaking of some magnitude, but when properly carried out is not especially severe or dangerous. It can never be considered in connection with early or mild cases, but need not be restricted to the most severe cases. Whenever the dietetic-physical treatment, and the sanatorium and climatic cures and the application of tuberculin have all failed to control the disease, which advances even if ever so slowly, we should think of the possibility of the artificial pneumothorax before it shall be too late. Experience with cases in which a permanent pleural exudate is replaced by gas, and with others in which hemoptysis has furnished the indication, has shown that the best results are to be expected in a somewhat early stage, with symptoms of moderate severity.

Ultimate Results of Surgical Intervention in Graves' Disease.—Coenen analyzes some material recently reported by different operators. Baruch controlled 90 cases for a period of eighteen years, of which 51 had been treated by operation. Eighty of the patients he saw personally. Of those treated conservatively 18 per cent. had died, while under surgical treatment the mortality was 15.8 per cent. Of the 51 patients treated by operation not one had died of Graves' disease. The percentage of operative cures was 37.5; of improvements, 35.5; while 15 per cent. were not improved. Of the cases treated conservatively not one was completely cured and but two were essentially benefited. After operation the cases with cardiac hypertrophy became normal in this respect in 70 per cent. The amount of benefit derived from the operation appeared to be in direct proportion to the amount of parenchyma removed. Generally speaking there is a universal tendency of all symptoms of Graves' disease to improve after operation. This is seen notably in the exophthalmos. The work of the Kochers and of several other heavy operators appears to bear out the trustworthiness of Baruch's reports.

Varicose Veins.—Unger reviews some of the recent literature of this subject. Berger has lately compiled a bibliography of the latter which comprises 1,000 titles. The conclusions based on an analysis of this immense material are few in number. All young people should be operated upon as soon as the varices become an impediment to their activities. The earlier an operation is performed the better. The least dangerous and most satisfactory method is extirpation of the diseased portions of the veins. If the varices are extensive the entire saphenous vein, from the fossa ovalis to the ankle, should be resected. The vein should always be ligated and resected at its mouth. The operation is contraindicated, the author maintains, in patients of advanced age and in those suffering from any severe general disease.

Münchener medizinische Wochenschrift.

December 5, 1911.

Hernia of the Umbilical Cord.—Hannes states that children almost invariably perish as a result of this malformation. The latter is of rare occurrence, six cases having been seen in Küstner's clinic since 1900. Death usually occurs during the first week from peritonitis. The author therefore attempted to save the patient by a radical operation. The condition was recognized ten hours after delivery. The stump of the cord had become transformed into a tumor the size of a goose egg. At the insertion was a small defect of skin, through which the cranium was visible. Beneath the latter lay the intestine. The tissues down to the peritoneum were dissected off and the latter cautiously incised and extirpated in the area of the rupture. The hernial ring was enlarged, the intestines replaced, and the opening well sutured. Convalescence was smooth. Of the six cases alluded to this makes the fifth to be operated on successfully. One was left without intervention and died on the eighth day with an intestinal fistula. The children operated upon did not all survive, but death could not be attributed to the operation alone, and in one case at least of two which ended in death the operation could not be accused at all. One child died of asphyxia, to which the operation doubtless contributed. In summing up the results, Hannes states that at least four lives were saved for the time, and three of the children are still living.

Anesthesia in Normal Labor.—Weinmann discusses the use of anesthetics in physiological labors. Here belongs the inhalation of a few drops of chloroform or ether at each pain during the expulsive period. The author believes this practice to be very common in England and the United States, but states that it has not much vogue in Germany. Many routine practitioners inject morphine during the period of dilatation. It is said not to interfere with the latter, but caution is urged against using it too soon. Lumbar anesthesia may be used in selected cases. In nearly all maternities the morphine-scopolamine narcosis has been thoroughly tested. While some regard it as an ideal procedure, others have accumulated a long series of collateral effects and sequelæ which tend to bring discredit upon it. The author prefers pantopon alone as a routine measure, combined with scopolamine, if the pain is unusually severe.

Salvarsan in Scorbutus.—Since much of the picture of buccal scurvy is due to the activation of the mouth spirochetes, Tuschinsky and Iwaschenzow have tested the action of salvarsan, which has already been shown to destroy these parasites in various kinds of stomatitis. The bad state of nutrition in these patients is due largely to the condition of the gums. Repeated small doses of the drug caused a notable reduction in the number of spirochetes with corresponding improvement.

Motor Aphasia from Subdural Hematoma Cured by Trephining.—Borchers adds a case to the six successful operations which he found already recorded. The bullet which caused the hematoma did no further damage, while the compression of the brain substance left the latter quite intact. There were compressed the third frontal convolution (left side) and part of the central convolution, so that there was complete failure of the cortical functions pertaining to this locality. The functions returned at once and completely as soon as the pressure was removed.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

Syphilis.—Ascertain the date of initial lesion, the nature and approximate date of the secondary symptoms, the occurrence of any tertiary indications, the date of the last manifestation of the disease and of last treatment. In order that the medical officers at the home office may get a true picture of the early conditions, they will sometimes express the desire to have the applicant requested to furnish a statement from the only one in a position to give the information with authority—the attending physician.

While insurance offices have somewhat different methods of dealing with this question, they are practically unanimous in their conclusions that syphilitic infection is a distinct prejudice to a proposer for insurance. In other words, if insurable at all, the person who has been subject to syphilis is not eligible to insurance at ordinary rates, but most companies will issue an endowment or a rated up policy if they have good evidence that the applicant took adequate treatment, that the disease was arrested in the secondary stage, and that a period of time, varying from three to five years, according to the conviction of the company interested, has elapsed since the last manifestation of the disease and the cessation of treatment. The free use of alcohol increases the hazard of these risks.

Many cases have been observed by various authorities in which late constitutional symptoms followed what was supposed to be thorough early treatment. It must, therefore, be assumed that a large percentage of syphilitics will not live out their expectancy. The two chief elements in causing loss in this class of proposers are vascular changes, especially of the arteries of the brain and heart, and diseases of the nervous system in the form of general paralysis of the insane and tabes dorsalis. Most of the deaths from cerebral apoplexy, cerebral softening, sclerosis of the coronary arteries, and localized or general arteriosclerosis occurring before the age of fifty or fifty-five may justifiably be regarded as due to syphilis.

The issuance of an endowment policy that will mature between the ages of fifty to fifty-five, or of a policy rated up so that the premium will be large enough to protect the company against excessive loss in insuring these applicants as a class if they die at the ages stated, is the only practice that may be pursued safely in assuming these risks.

Before leaving this subject the examiner should be warned that some applicants will practise deception when questioned in regard to this subject. The acknowledgment of any venereal sore should lead to a careful investigation and all the facts reported even if the examiner is convinced that the lesion was a simple ulcer or chancroid. It may be expedient to omit the history of a venereal disease from the report, as many applicants will object to having it written in the examination blank where it will be seen by other persons. In that case, the full information may be sent in a separate communication or confidential letter directly to the home office, but the examiner should mail it *at once* and in a carefully addressed envelope.

Abscess, Ulcer.—Give date, duration, nature, part affected, and recurrences if any. A full account of any surgical interference and pathological findings should accompany the report. The object of chief interest in these cases lies in the fact as to whether or not there was any suspicion of diabetes, syphilis, tuberculosis, or malignancy, and it may be necessary to have the applicant furnish a statement from the physician who had the opportunity of observing the condition at the time of its occurrence before doubt can be removed.

Tumor.—Give the date, duration, nature, size, location, part involved, recurrence, and increase in size, if any, during the past two or three years. The examiner should always endeavor to secure a report of any pathological findings and surgical assistance. In these cases, also, it may be necessary to resort to a certificate from the attending physician or operating surgeon in order to clear up any suspicion of malignancy, tuberculosis or syphilis.

Diseases of the Skin.—Give dates, duration, extent, nature, parts involved, and number of attacks. The examiner will be expected to inquire closely into the nature of any skin trouble in order that he may determine whether it was a syphilide, tuberculide, or of a malignant character. It may not be possible to clear up the matter satisfactorily until the attending physician is communicated with. When the disorder was of a benign nature, such as eczema or psoriasis, it is important to know the extent and location of the surface of the body involved, and when it still exists covering large areas, such as the entire trunk, or has recurred often, it is apt to be a sign of some dyscrasia or constitutional disturbance and possibly call for rejection or the issuance of an endowment policy.

Disease of the Nose.—The ordinary and simple catarrhal troubles, so prevalent, need not excite any comment, but there should be some inquiry as to whether the catarrh is of a more serious nature, whether there is any condition requiring surgical interference such as extensive malformations of the bony structures or polypi. If there is a history of polypi with removal, it is advisable to ascertain the number of recurrences, if any, and the date of the last operation, as from six to twelve months should elapse in these cases, according to the number of removals, before acceptance of the risk.

Diseases of the Ear.—The chief trouble in the ear in which the life insurance companies are interested is otorrhea, some being considerably more exacting than others. There has been some relaxation in regard to the matter and it may be stated in a general way that these subjects may be insured when the discharge is neither bloody nor offensive, when it is not associated with pain or tenderness, when no granulations, polypi, or carious bone are present, and when the perforation is in the anterior lower segment of the drum, thus insuring good drainage. Most of these data can only be furnished after an examination of the ear has been made, and as the cases as a whole are not good risks, a statement from a competent aurist should be insisted upon before issuing a policy. Some companies do not accept such risks until at least two years have elapsed since the last appearance of any discharge. Extension of the inflammation to the tissues about the brain is not the only menace in otorrhea, as there is a fairly marked tendency to tuberculosis in those subject to it.

Scrofula, Swelling or Suppuration of the Glands.—In most subjects with either one of these troubles, the condition is due to tuberculosis or a tendency to

it, although it may arise from syphilis or lukemia. The examiner should, therefore, investigate carefully into the personal history and obtain, whenever possible, a report of any pathological examination.

Surgical Operations.—Give the date, diagnosis of the condition for which the operation was done, nature of the operation, the structures involved, the end result, any remaining effects, and state whether there was any suspicion of malignancy. It is often necessary to have the operating surgeon furnish a certificate covering these facts as well as any pathological findings, and whether there was any suspicion of malignancy or tuberculosis.

Deformities or Loss of Limbs.—When there has been an amputation of an arm or a leg, give the point at which the operation was done, especially when at shoulder or hip joint as this constitutes an impairment in most cases. The condition of the stump should be looked into, and it should be stated whether or not the applicant uses crutches when the lower extremity or a part of it has been removed.

In hip joint disease, try to find out if the original trouble was tubercular in character, and note carefully the presence of any scars in the region of the joint.

In spinal curvature, it is essential to know whether the curvature is lateral or anteroposterior, as the latter usually indicates former tuberculous disease. When the curvature is lateral, give some idea as to the amount of deformity and the amount of deviation by actual measurement from the median line, as many of these cases are acceptable if the deformity is not too great.

Hernia.—When there is a hernia, ascertain if there has ever been any difficulty in reducing it or in maintaining it by means of truss.

The National Sickness and Accident Insurance Law of Hungary.—Sir Thomas Oliver writes at some length on the national sickness and accident insurance law of Hungary, having investigated the matter during visits paid to Hungary during the past seven years. In Hungary there is no invalidity insurance, no insurance for unemployment, nor is there an old age pension. Insurance for sick benefit is obligatory on all employees in every branch of trade and commerce whose salary does not exceed $500 a year or $1.75 a day. The full income from all sources must not exceed $500 a year. On the other hand, insurance against accident is obligatory in every dangerous trade scheduled in the Act, quite apart from any relation to the amount of salary received by the individual; but for the purpose of recompense no salary is taken into consideration as being more than $500 a year, that is payments are only made upon that amount.

Sick benefit and accident insurance are united in and controlled by one central fund, upon the adminstrative body of which employers and employees are equally represented. In the event of disagreement, questions are referred to a selected jury. Since insurance against accident is not compulsory for workmen employed in some of tht less dangerous trades, and is not compulsory for persons employed in commerce, the scope of the insurance fund is the wider of the two. Under sick benefit are included: medical and surgical attendance, medicine, sanatorium and hydropathic treatment, and provision for personal maintenance; this provision is one-half of the wages of the individual insured, but in certain circumstances it may be raised to two-thirds of the wages. The financial allowance may continue for twenty weeks, and as it can be extended for one year, it takes the place to some extent of an invalidity fund. Malingering is far from uncommon. Maternity benefit is allowed for six weeks, but should recovery be retarded the benefit can be extended to twenty weeks.

In the event of an accident the sickness fund pays all expenses to the insured person for the first ten weeks; after that payments are made from the accident insurance fund. There is no liability over $500. Should there be complete incapacity for work the insured person receives 60 per cent. of the $500, but in the event of extreme indigence this may be increased to the full 100 per cent. Should an injured workman be taken to a hospital, the hospital receives 60 cents a day for thirty days, but this can be extended. A member's sick child can also receive medical attendance or hospital treatment free of charge for thirty days. As payment for injuries is made for the first ten weeks from the sickness instead of the accident insurance fund, a considerable strain is thrown upon the sickness fund; this is inequitable, since, owing to the effects of many of the accidents not lasting so long as ten weeks, the burden of maintenance falls upon the sickness insurance fund, to which employers and employees equally contribute, while the accident insurance fund, supported entirely by the employers, escapes. Syphilis, insanity, and trachoma are not paid for by the national insurance fund, but in a special manner by the State. In the event of death following an accident, funeral aid is given to the extent of twenty times the daily wages; the widow receives a pension equal to 20 per cent. of the yearly wages; each child receives 15 per cent., which is doubled in the event of the mother being dead; parents, grandparents, and orphan grandchildren receive 20 per cent. of the wages so long as the total sum of all the payments does not exceed 60 per cent. of the yearly wages of the injured workman. The State, it will be observed, makes no contribution in money to the sickness or accident insurance fund. It provides the buildings, the State workmen's insurance offices, and bears the expenses of administration. For the purpose of the Act, Budapest and the provinces are divided into districts. There are ninety-six district insurance offices. Each office has its own special medical institution. In the Budapest district there are 230,000 persons insured against sickness and 200,000 against accidents. The income for last year was $250,000. Of the 20 per cent of the income set aside for medical purposes, 15 per cent. goes to pay certain fixed sums to the medical men for outdoor patient work. The remaining 5 per cent. of the 20 per cent. is set aside for medical expenses incurred by visits made to the houses of the sick.

There are six medical institutions in Budapest where consultations are given daily, except on Sundays, by specialists. They are paid out of the 15 per cent. received from the total income of the fund. They receive in addition to a fixed salary a further amount according to the number of patients they examine. To the medical institutions attached to the insurance funds in Budapest all persons who are insured against sickness and accident can resort for special medical and surgical advice. These medical institutions, or ambulatoria, resemble the out-patient departments of our large hospitals. There are five medical institutions of a similar character in Budapest. Sir Thomas Oliver also discusses the working of the fund in provincial districts. On the whole the National Sickness and Accident Insurance Fund seems to work well in Hungary. —*British Medical Journal*, Aug. 19, 1911.

Life Insurance Payments.—During the year 1910 over 500 million dollars was paid out in claims and benefits by the life insurance companies and benefit associations in the United States and Canada. During the same year new insurance to the amount of more than 2,500 million dollars was written, the total insurance in force showing an increase of nearly 1,000 million over the year 1909.

Book Reviews.

PAIN: Its Causation and Diagnostic Significance in Internal Diseases. By Dr. RUDOLPH SCHMIDT, Physician to the Royal Empress Elizabeth Hospital, Vienna. Translated and edited from the Second Enlarged and Revised German Edition by KARL M. VOGEL, M.D., Assistant Professor of Clinical Pathology, College of Physicians and Surgeons, Columbia University; Clinical Pathologist and Assistant Attending Physician, St. Luke's Hospital; and HANS ZINSSER, A.M., M.D., Professor of Bacteriology, Leland Stanford, Jr., University. Second Edition. Price $3.00. Philadelphia and London: J. B. Lippincott Company, 1911.

PAIN is the most common and most important symptom which challenges the diagnostic and therapeutic skill of the practitioner. There are few diseases in which pain does not at some stage play an important rôle. In his eagerness to relieve this symptom the physician has been apt too often to overlook its significance as a signal of disease, either organic or functional. The well-known work of Rudolph Schmidt, which was introduced to English readers three years ago, now appears in a second and revised edition. In this, as in the former edition, the translators and editors have executed their task with consummate skill. Among the new features of the second edition may be mentioned the introduction of short case histories bearing on the topics under discussion and the more elaborate consideration of headache and gastralgia. An idea of the scope of this work may be conveyed by the citation of the chapter headings, as follows: the sensation of pain; the functional modification of pain; topography in its relation to pain; quality and time of occurrence; the nervous system; organs of motion; digestive system; urinary system and spleen; respiratory and circulatory systems; and cutaneous tenderness in visceral disease. The last chapter, which is devoted to a presentation of Head's researches on referred pains, has been added by the editors. It contains also an excellent series of diagrams showing the commoner seats of pain or tenderness in visceral disease. As one reads this volume one is profoundly impressed with its eminently practical character. It is the product of the hospital ward, the sick room, the clinic, the consultation room, and the pathological laboratory. The author draws upon his vast experience, and not upon that of others, as embodied in the literature. It is this refreshing originality which has become a rare commodity in these days of countless publications that, more than anything else, characterizes Dr. Schmidt's splendid volume.

A STATISTICAL SURVEY OF INFANT MORTALITY'S URGENT CALL FOR ACTION. By EDWARD BUNNELL PHELPS, M.A., F.S.S.; Editor *The American Underwriter* of New York City; Author of "A Statistical Study of Infant Mortality," "American Mortality Statistics," etc.

THIS is an address delivered at the first annual meeting of the American Association for Study and Prevention of Infant Mortality, at Baltimore, November 9-11, 1911, and is reprinted from the Transactions of the Association. The author presents a careful statistical study showing that throughout the world there is a mortality rate of at least 13 deaths under one year for every 100 living births. The fact is emphasized that probably two or three times as many infants manage to survive the adverse conditions to which they are subjected, but nevertheless retain the blighting effects of the latter throughout life.

THE INDIVIDUALIZATION OF PUNISHMENT. By RAYMOND SALEILLES, Professor of Comparative Law in the University of Paris and in the College of Social Science. With an Introduction by GABRIEL TARDE, Late Magistrate in Picardy and Professor of Philosophy in the College of France. Translated from the second French edition by RACHEL SZOLD JASTROW. With an Introduction by ROSCOE POUND, Professor of Law in Harvard University. Price $4.50. Boston: Little, Brown & Company, 1911.

THIS is the fourth volume in the series of books on modern criminal science published under the auspices of the American Institute of Criminal Law and Criminology. It is a profound study of a subject that concerns the jurist more than the physician; nevertheless, the alienist who is called upon to testify in a criminal case will profit by a careful perusal of this book, the greater part of which deals with the doctrine of responsibility in its various aspects in relation to crime. The titles of the chapters are as follows: the statement of the problem; the history of punishment; the classic school; the neo-classic school and individualization based upon responsibility; the Italian school and individualization based upon formidability; the doctrine of responsibility; responsibility and individualization; legal individualization; judicial individualization; and administrative individualization. The subject matter of this book touches the most abstruse problems in philosophy, such as that of free will versus determinism. The doctrine of responsibility from the viewpoints of psychology, medicine, sociology, law, penology, etc., is carefully unfolded. Although difficult reading, the text reveals the skill of the translator, who has rendered the meaning of the author into lucid and elegant diction.

CLINICAL AND MICROSCOPICAL DIAGNOSIS. By FRANCIS CARTER WOOD, M.D., Professor of Clinical Pathology, College of Physicians and Surgeons, Columbia University, New York; Director of the Laboratories and Attending Physician to St. Luke's Hospital, New York. Third Edition. With 194 illustrations in the text and nine colored plates. Price $5.00. New York and London: D. Appleton & Company, 1911.

THE appearance of three editions of this work within a period of six years testifies to the commendation with which it has been received. A profound grasp of the subject of clinical pathology together with a didactic skill and facility of expression has enabled the author to present a work that is admirably suited to the needs of the student and general practitioner. The subject matter of the present edition includes descriptions of the latest developments of the art of laboratory diagnosis. The technique of the Wassermann reaction and the preparation of vaccines are described in full. Sulphemoglobinemia, the antiformin method of examining sputum for tubercle bacilli, the tests for trypsin and erepsin in the feces, the tuberculin tests, the diagnosis of hydrophobia by means of smears from the brain, Folin's analytical methods in the examination of the urine, Herter's study of putrefactive processes by means of urinary analysis, the determination of arsenic in the urine, and hemolytic tests on the blood are among the subjects that have been introduced into the present edition. There is, however, no mention made of the glycyltryptophan test, of the cobra-venom reaction, of the phenolsulphonephthalein test. These may, however, be intentional omissions or they may have been too recent to permit their inclusion in this work. The latter is singularly free from error, is well written, and embellished with many fine plates and illustrations. The typography, paper, and binding are in keeping with the character of the text.

TUBERCULOUS DISEASES OF BONES AND JOINTS. Their Pathology, Symptoms, and Treatment. By Sir W. WATSON CHEYNE, Bart., C.B., F.R.S., F.R.C.S., D.Sc., etc.; Professor of Clinical Surgery at King's College Hospital; Senior Surgeon to King's College Hospital; Consulting Surgeon to Paddington Green Children's Hospital, etc. Price $5.50. London: Henry Frowde, Oxford University Press; Hodder & Houghton, 1911.

IN this well-printed and handsomely illustrated volume of 404 pages the author presents the second edition of his well-known work. The justification for a new edition is seen in the many modern developments in the treatment of tuberculous diseases of the bones and joints, which developments have proceeded along the lines of conservative rather than of operative treatment. The first half of the book is devoted to the consideration of bone and joint tuberculosis in general, its history, pathology, and treatment, while the second half takes up in turn the different joints and discusses them in detail. The entire subject is presented in a most thorough manner by one who is entitled to speak with authority on this important group of surgical affections.

DIE ERKENNUNG DER PSYCHOPATHISCHEN KONSTITUTIONEN (krankhaften seelischen Veranlagungen) UND DIE ÖFFENTLICHE FÜRSORGE FÜR PSYCHOPATHISCH VERANLAGTE KINDER. Von Prof. Dr. TH. ZIEHEN, Geh. Med.-Rat, Direktor der Psychiatrischen und Nervenklinik der Kgl. Charité in Berlin. Price .80 mark. Berlin: Verlag von S. Karger, 1911.

THE distinguished director of the psychiatric and neurological clinic of the Charité discusses in this essay that large group of children who exhibit no distinct disease of the mind, who are not at any rate victims of idiocy, imbecility, or debility, but who show to a greater or lesser degree numerous manifestations of disorders in the affective sphere of the mind. These disorders lead to antisocial tendencies, such as crime, vagrancy, and prostitution. These conditions are comprised under the term "psychopathic constitutions." The author discusses the means of recognizing these states and the public institutions established for the care of children affected with them.

Society Reports.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-Fourth Annual Meeting, Held in Washington, D. C., December 12, 13, and 14, 1911.

THE PRESIDENT, DR RUDOLPH MATAS, OF NEW ORLEANS, LA., IN THE CHAIR.

The Effect of Ligation of the Ureters.—DR. LOUIS FRANK of Louisville detailed a series of experiments concerning ligation of the ureters in animals. In many instances the ligation was followed by primary hydronephrosis. He exhibited specimens showing definite changes that took place in the kidneys after ligation of the ureters. Atrophy, without much change in the kidney, occurred in from 80 per cent. to 90 per cent. of the cases in which the ureters were ligated. Ligation of the ureter in operating was not an accident that was to be absolutely disregarded, as it left behind unpleasant conditions.

Dr. ALBERT VANDER VEER of Albany recalled the case of a patient who suffered decided pain for six years after an operation. The right ureter was accidentally ligated with silk. The patient came to him at the end of this time for relief. He made an exploration and found a sacculated condition of the left kidney, in which there were a number of abscesses. This kidney was removed and the patient recovered. The ligation of the ureter at the previous operation resulted in a train of symptoms, which went on for six years until relief was afforded by the removal of the left kidney.

Dr. ROBERT T. MORRIS of New York stated that the ureter had often been accidentally ligated by the surgeon in doing pelvic work when he did not know that he had done so, and the patient had never found it out because it gave rise to no symptoms. One should strive to guard against this accident in one's surgical work.

Dr. J. WESLEY BOVEE of Washington, D. C., was quite in accord with Dr. Frank that it was safe to ligate the ureter that was passing normal urine up to the limit of six weeks, and if one removed the ligature any time within that six weeks the function of the kidney was resumed and it would continue. But beyond that time, so far as experimentation was concerned, the function of the kidney was totally ended.

Dr. H. A. ROYSTER of Raleigh, N. C., agreed with Dr Frank that ligation of the ureter during operation was a more serious matter than we had been heretofore willing to admit, and sometimes a patient died following this accident.

Dr. GUY LEROY HUNNER of Baltimore firmly believed that ureters were tied without our knowing it. He had tied, to his knowledge, three ureters during operations. Both ureters were tied in one patient, and in the other the ureter was tied in a patient suffering from a condition similar to that of the first one, namely, cancer of the cervix.

Dr. RICHARD A. BARR of Nashville said that if a surgeon should tie both ureters he should undo his work and try to save the patient's life. In many cases we were confronted with the necessity of removing a kidney or implanting the ureter into the bowel, and where we were sure the patient had another kidney the simplest method was to tie the ureter off and remove the kidney at a subsequent operation.

Dr. FELIX E. BALBRIDGE of Huntsville, Ala., did not think the impression should go out from the association that there was no danger attending the ligation of these ureters. His experience had been unsatisfactory in that regard. He recalled one case in which he accidentally tied the ureter while operating, and the patient died five days afterwards.

Cancer of the Rectum and Lower Sigmoid with the Report of a Unique Case.—DR. MILES F. PORTER of Fort Wayne, Ind., said that every rectal neoplasm should be regarded as malignant until it was proven to be innocent. Cancer of the rectum or sigmoid rarely, if ever, developed from ulcer, fistula, or stricture. It was important to remember that cancers in this region were peculiarly prone to infection. Not infrequently nonmalignant tumors were removed under the impression that they were malignant conditions which subsequent events proved to be nonomalignant. December 12, 1907, he operated at Hope Hospital on Mrs. Y., who was referred to him by Dr. Ely of Plymouth, Ind. The patient had been having fecal vomiting for forty-eight hours when she was admitted. On opening the abdomen there was found what was taken to be an inoperable carcinoma of the lower sigmoid. The gut was divided well above the lesion, the lower segment closed and dropped, and the upper end anchored in the wound, establishing an inguinal anus. The patient was discharged from the hospital nineteen days after the operation. Some months later he saw the patient at her home. She seemed to be in good health, but was anxious to have the artificial anus closed. He explained to her why this could not, or should not, be done. The artificial anus at this time seemed quite small, due to cicatricial contraction. Later this contraction increased until it became very difficult for the bowel to empty itself, and the patient suffered severely at times on this account. During one of these attacks of pain there occurred a stool via the natural anus, which was followed by relief. Shortly after this Dr. Ely wrote him that the artificial anus had completely closed and the patient was well. The practical lessons which this case and others taught were: (1) That operative relief should be offered to all patients supposed to be suffering with cancer of the rectum and sigmoid, no matter how desperate they seemed. (2) That radical operations should not be undertaken except upon positive microscopic evidence

Umbilical Tumors Containing Uterine Mucosa or Remnants of Müller's Duct.—DR. THOMAS S. CULLEN of Baltimore referred to a case of intestinal polyp at the umbilicus and showed a photograph of the umbilicus with a small irregular tumor projecting from the umbilical depression. In the lower power picture it was possible to see the outer surface of this polyp covered by typical intestinal mucosa, and with the high power the junction of the squamous epithelium and intestinal mucosa. This polyp was very clearly seen. It was one of those cases in which the outer end of the omphalo-mesenteric duct had remained open. This patent extremity had turned inside out, presenting a polyp with intestinal mucosa on its surface. He then considered from the literature several cases in which umbilical tumors contained glands of an unusual type. After discussing the subject at length, he gave the following epitome of the composite picture of these tumors: at some time between thirty and fifty-five years a small tumor developed at the umbilicus, reaching its full size in the course of a few months. It was usually described as being the size of a small nut. Sometimes it was painful, especially at the menstrual period, and in at least one instance there was a brownish yellowish discharge from the umbilicus at such times.

The overlying skin was usually pigmented and there might be one or two bluish and brownish cysts just beneath the surface. These might rupture and discharge a little brownish fluid, and old clots. On section the nodule was dense, and was traversed by glistening dense fibrous tissue. Scattered throughout the nodule one sometimes found small spaces presenting a sieve-like appearance. These spaces were filled with brownish fluid. Occasionally there might be a small cyst several millimeters in diameter filled with brownish contents. Grayish, somewhat

homogeneous areas were occasionally distinguishable in the tumor. On histological examination the superficial squamous epithelium was usually found intact. It might be normal or thickened. The stroma of the growth was composed of dense fibrous tissue; sometimes a few bundles of nonstriped muscle were noted here and there in the fibrous tissue. In other specimens the nonstriped muscle was more abundant than was the fibrous tissue. Scattered throughout the field were glands, round, oval, or irregular. They occurred singly or in groups, and were lined with cylindrical epithelium. When occurring singly they frequently lay in direct contact with the fibrous tissue, but when found in groups were usually surrounded by a characteristic stroma that stained deeply and was much more cellular than the surrounding fibrous tissue. The cells of this stroma between the glands usually had oval or round vesicular nuclei. Frequently some of the glands were dilated and their epithelium was somewhat flattened. The cyst spaces noted macroscopically and filled with brownish fluid were likewise dilated glands, and the fluid was old blood. The stroma around the glands frequently showed fresh hemorrhage or remains of old blood to be recognized by the deposits of blood pigment. From the above description it was clearly seen that the gland picture was that of the characteristic uterine mucosa with its typical glands and its characteristic stroma, and further that the typical menstrual reaction was often present, as evidenced by the pains in the nodule at the periods, the accumulation of old menstrual blood with the formation of the small cysts, and in at least one instance by the occasional discharge of blood from the umbilicus.

Where Shall the Line Be Drawn Between Medicine and Surgery in Borderline Cases?—Dr. James E. Moore of Minneapolis said that all diseases of the thyroid, except malignancy and tumors, were medical in the early stages, because at that time a majority of them could be cured without operation. Many of them became surgical when neglected, or when non-surgical treatment failed. A case of goiter became surgical as soon as it gave serious symptoms which failed to yield to proper medical treatment. The danger was that it might be kept on the medical side of the border line until the best time for operation had passed. Diseases of the breast were always surgical. In face of the facts that eighty per cent. of tumors of the breast were malignant, and the mortality of cancer without surgical treatment was one hundred per cent., it was difficult to understand how any man could have the temerity to treat a nodule in the breast by any but surgical means. Every man who examined a nodule in a breast assumed a grave responsibility, and he owed it to himself as well as to his patients to give a positive opinion or to admit that he was unable to do so. It was a crime to paint a nodule in a breast with iodine and await developments, for the chances were that in four out of five cases it was malignant, and when it was malignant the patient's only hope was in an early operation. Most diseases of the stomach were still on the borderline. Malignant disease here, as elsewhere, was always surgical, and when medical men, laboratory men, and surgeons, by their combined efforts, would have arrived at a means of early diagnosis, as large a percentage of cures would follow surgery here as elsewhere, because this organ was very tolerant of surgery. All gastric ulcers were primarily medical because when promptly recognized the vast majority of them would recover under intelligent medical treatment. They became surgical when they caused perforation, persistent or recurrent hemorrhage or stenosis, and when for lack of or in spite of intelligent medical treatment they became chronic with thick walls and hardened bases. The present surgical treatment of gastric ulcer by gastroenterostomy was far from satisfactory. Dilatation of the stomach without stenosis was always medical. Surgeons had tried various methods for the relief of this condition, but had failed to secure satisfactory results. Diseases of the gall-bladder were practically all surgical. Medicine could do nothing for gallstones, or for an infected gall-bladder. Most diseases of the liver were medical, for up to the present time surgery had demonstrated a very limited field of usefulness. The kidneys furnished many borderline cases. In the presence of stone or pyogenic infection all agreed that the treatment should be surgical. The treatment of Bright's disease by decapsulation had been advocated and practised by a few, but had not afforded sufficient encouragement to give it a definite place in surgery. Visceroptoses had swayed back and forth across the boundary line, but at the present time experienced surgeons quite generally agreed that surgery was a failure in these conditions. Tuberculous peritonitis was still on the borderline, for it was an open question in the minds of both physicians and surgeons as to how these cases could be most successfully treated. Tuberculosis in all parts of the body furnished many borderline cases, and whether treated medically or surgically there was certainly great opportunity for improvement over our present methods.

Dr. Herman J. Boldt of New York City stated that there were a number of women who had a chronic catarrhal inflammation of the appendix, whose cases might be classed as on the borderline. He referred to women especially who had fat abdomens, who were to a greater or less degree neurasthenic or psychasthenic, and who could be cured by intelligent medical care, general hygiene, massage, etc. There were a number of women who were constipated, and who would get well by intelligent medical treatment. There was another large percentage of patients who had pelvic conditions which were on the borderline between medical and surgical treatment; consequently it behooved the practitioners to carefully study these cases and to give them the benefit of the doubt before resorting to operations which would cause the destruction of a function which was of vital importance to womanhood.

Dr. Samuel Lloyd of New York City could not agree with Dr. Moore with reference to decapsulation of the kidney. A young man, twenty-six years of age, was brought into his office some years ago, waterlogged, having one or two convulsions a day and threatened with death. The physician who brought the patient asked Dr. Lloyd to do a decapsulation of the kidney, and the latter said the patient would die on the table, and he would not do it without the consent of the family. The family united with the physician in the request. He decapsulated the patient's kidneys, they began to functionate normally in a short time thereafter, and the patient went through four years of active life. He felt confident that without decapsulation of the kidneys this patient would have died.

Dr. Robert S. Hill of Montgomery, Alabama, took exception to Dr. Boldt's remark about chronic appendicitis. A man with chronis appendicitis was like a man with a stick of dynamite in his side, and we were not justified, when we considered the small mortality of the operation, in allowing this man to go around doing his work, depending upon the general practitioner to handle him with care. This condition was frequently responsible for the neurotic conditions, and no case, such as Dr. Boldt described, should be turned over to the general practitioner.

Dr. Moore, in closing, said that he was firmly convinced that acute appendicitis was the result of chronic appendicitis; therefore, to avoid acute appendicitis and all its dangers, which was carrying away its thousands, we should remove all chronically inflamed appendices.

The Colon Bacillus, a Regulator of Population.—Dr. Robert T. Morris of New York said that disturbances

of the balance of nature by over-population of a locality with some animals, like rabbits and lemmings, was met by nature with epidemics, which rapidly reduced the numbers of these animals. In the early days of history the human species was subjected to similar epidemics. Preventive medicine had taken charge of most of these, and over-population was controlled by nature through endemics, toward which the decadent individuals were most vulnerable. Nature set a limit to the stage of development which might be attained by various animals, including man, and by species of plants. After an allowable stage of development had been reached, nature poisoned off what she seemed to consider the excessive number of individuals or undesirable individuals. This poisoning was accomplished in the plant and animal world by the toxins of various bacteria, chiefly. Preventive medicine had taken up one after another various bacteria engaged in endemic destruction of individuals. Until recently the tubercle bacillus was believed to be the most important among these. Now that the tubercle bacillus was under good control, perhaps we should find that the colon bacillus had stood next in order as nature's agent against over-population. Bacteriologists told us for many years that the colon bacillus group was nonpathogenic and even useful when at home in the bowel They did not put detectives upon its track when away from home restraints. Flagrant infractions were first noticed when the colon bacillus was found to be destroying the appendix or causing a cholecystitis, or an abcess of the kidney, but the acute demonstrations of the harmful influence of the colon bacillus comprised only a very small part of its work. The insidious influence of the colon bacillus and its toxins promised soon to be revealed as one of the most important in the history of disease. This bacterium was not only the direct cause of a large number of diseases, enumerated by the speaker, but it seemed to pave the way for a number of terminal infections, and it was the dominant but overlooked factor in such a range of ailments that we might fairly place it in the classification as one of nature's trusted agents for limiting population.

Benign Tumors of the Stomach.—Dr. Edward A. Balloch of Washington, D. C., said that benign tumors of the stomach, while comparatively rare, had been reported in sufficient numbers in the aggregate to make it necessary to consider them in the diagnosis of intra-abdominal disease. All forms of benign growths had been reported. According to their nature, they might originate from one or another coat of the organ. They seldom gave rise to symptoms unless they projected into the stomach or were so situated as to give rise to obstructive symptoms. Pyloric growths came in the latter category A small growth here would cause more trouble than a larger one elsewhere. For this reason none of the reported pyloric growths had been very large. The main question of interest in connection with these growths was that of diagnosis. No one reporting a case seemed to have made a correct diagnosis. With the pyloric growths the suspicion had been that the obstructive symptoms were due to malignant degeneration. In the case of growths elsewhere they had been referred to the kidney, the intestine, the omentum, or to the pelvic organs. The author reported two cases, one a personal one, and the other occurring in the practice of another surgeon. His own case occurred in the person of a woman, fifty-six years of age, unmarried. There was a history of a severe fall twenty years before, when the left side was severely injured. Vague dyspeptic symptoms for several years, principally pain and nausea, were related. The pain was worse after the menstrual periods. Enlargement of the abdomen was first noticed December, 1910 This had steadily increased, and, at the same time, the pain and nausea had grown worse. Examination showed a mass in the lower left quadrant, having the general size and shape of a kidney. It could be easily pushed into the left kidney region, but resumed its original position when pressure was removed. A diagnosis of wandering kidney was made and the patient sent to the hospital for operation. After she was anesthetized a further examination was made, when it was found that the mass could be pushed all over the abdomen. The diagnosis was then made of omental cyst, or a pelvic tumor with a long pedicle. After opening the abdomen the growth was found to spring from the greater curvature of the stomach. It was removed without difficulty and the patient made a rapid recovery. Pathological examination showed the growth to be a soft fibroma. The author expressed the opinion that the greater mobility of these growths was the principal criterion in their diagnosis. However, as this mobility was likewise an accompaniment of intestinal and omental growths, one must consider the symptoms in the case in differentiating these classes of growths. The operative features of these tumors presented no special difficulty.

Pyloric Stenosis Due to Overgrowth of Scar Tissue: "Gastric Keloids."—Dr. W. M. Jordan of Birmingham, Alabama, said that judging from his personal experience, nonmalignant new growths in the pyloric end of the stomach were much more common in the negro race than in whites. He had not observed a single case of this character in a white person, but had met with five cases in negroes If he ventured to suggest the term "gastric keloids" as descriptive of these growths, he would not wish to be understood as attempting to draw an exact pathological parallel between the keloids of the skin and stomach tumors herein described, but rather as undertaking to point out the anology between the two conditions, and to borrow a familiar clinical term to apply to an otherwise nameless condition. There were two men and three women, whose ages were respectively 28, 29, 38, 45 and 55. All gave stomach histories more or less suggestive of ulcer preceding the onset of obstruction. The smallest growth was the one which was resected. It as about one inch in diameter, while the largest was as broad as the hand. In every case the tumor was situated to the stomach side of the pylorus. In all but one the growth merged with the pyloric ring at one end and presented a sharply defined border at the other. The peritoneum overlying the growths was apparently normal. When the stomach was put on the stretch, as in lifting it out of the incision, the gastric wall overlying the tumor assumed a whitish, bloodless appearance, which made it easy to demonstrate the outline of the growth In one case the operation was partial gastrectomy, while the other four were treated by posterior gastrojejunostomy. Complete relief was noted in every case.

Dr. D. Edward Gavin of Mobile, Alabama, reported a case of congenital hypertrophic pyloric stenosis which was successfully treated surgically.

Dr. James E. Thompson of Galveston, Texas, said it had occurred to him in listening to the paper of Dr. Balloch, we might probably classify these cases more correctly as cases of myoma. Three years ago he read a paper on myoma of the stomach and collected a number of such cases. He found at that time that myosarcomata were moderately common They were extremely common in horses. In regard to the paper of Dr. Jordan, who made a comparison between fibroma of the uterus in the colored race and inflammatory tumors in connection with the pylorus, the speaker did not think they were fibromata, but myomata.

Dr. James E. Moore of Minneapolis, said, in speaking of tumors of the stomach, or tumors of the character under consideration, occurring in unusual places in the abdomen, it was well to bear in mind the possibility of their being parasitic growths, that is, having been original

growths from the uterus, they had become attached to the other viscera, and later nature made a separation. Many such cases were on record.

Dr. Balloch, in closing the discussion on his part, said at first he was very much of Dr. Thompson's opinion that this tumor looked very much like a sarcoma. It was pronounced by the pathologist a fibroma, and as there were no muscular elements in it the speaker had difficulty in conceiving how a soft fibroma could occur in that locality.

Dr. Jordan, in closing, said it was not his idea to draw a pathological parallel between these growths and anything else. He had gotten into the habit of calling them stomach keloids, not knowing what else to call them. It was not his purpose to claim that they were similar to fibroids of the uterus.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE

SECTION ON PEDIATRICS.

Stated Meeting, Held December 14, 1911

Dr. William Shannon in the Chair

A Case of Chondrodystrophy.—Dr. George Dow Scott presented this patient, a female child about nineteen months old. No history of syphillis or drunkenness in the parents or grandparents could be obtained. The child was born normally. She showed marked characteristics of the disease, the large overhanging head, the small tipped nose, the shortened long bones, the late dentition, the open fontanelle, the cuffed skin of the legs, rachitis, feeble musculature, inability to stand, and a marked kyphosis of the lower spine. An enlarged thymus gland was present. This condition had been confounded with syphilitic rachitis, hydrocephalus, and cretinism. Dr. Scott presented pictures of the bones on the screen which showed well the relationship of the epiphyses to the diaphyses. The thymus gland could also be seen.

A Case of Chondrodystrophy.—Dr. L. E. La Fétra presented a baby four weeks old, which showed a marked degree of deformity and dystrophy. He exhibited *x*-ray plates which showed the characteristic shortening of the arms and legs, a peculiar bending of the tibia and for purposes of comparison *x*-ray pictures were shown of a normal baby three weeks of age. The difference in the length of the bones was very marked and the shortening of the humerus, the tibia, and the femur was especially noted. The medullary cavity in all the bones was seen to be much wider than normal. Very marked exophthalmos was present in both eyes.

Dr. Charles Hermann said that these two cases were very interesting and together gave a complete picture of this condition. Dr. La Fétra's case showed a distinct exophthalmos which was rare in this condition. The radiograph showed not only the curvature of the shaft and the enlargement of the epiphyses, but a distinct change in the articulation at the knee. Dr. Scott said that in his case the thymus was slightly enlarged, which seemed peculiar in view of the fact that several authorities had advised the use of the extract of the thymus gland in these cases. In the Vanderbilt Clinic two such cases were at present under treatment. Some years ago he had tried the extract of the pituitary gland, but without marked effect. However, he thought its use was less empirical than the use of thymus extract.

Dr. Walter Lester Carr said these patients were certainly not normal; although they might be quick and alert they did not conform to the normal child. Some of them were precocious but their normal development was uneven, and sexually they were overdeveloped.

Dr. Ward B. Hoag said that the question of the differential diagnosis of cretinism from chondrodystrophy had been raised; while there were many physical points of resemblance between the two conditions, the marked difference in mentality should make the differential diagnosis fairly easy. There was practically an absence of mentality in the positive cretin, whereas in the individual affected with chondrodystrophy the mentality was not affected to any marked degree although they might be slow or backward.

Dr. George Dow Scott asked if these children's minds were really normal. He believed that they were undeveloped mentally.

Demonstration of a New Method of Obtaining Blood Pressure in Children.—Dr. B. Raymond Hoobler read this paper. (See Vol. 80, page 1323.)

Abdominal Cystic Tumor in a Girl Ten Years of Age.—Dr. Sara Welt-Kakels reported this case. The girl was brought to Mt. Sinai Hospital in the latter part of October, 1911. There was nothing of importance in her family or personal history except that she had suffered from bronchitis a great deal and had been kept from school for four months on account of her cough. During this time she gained eight pounds. Some eighteen months ago the mother noticed that the child's abdomen became larger. She was frequently nauseated after eating but rarely vomited; she had obstinate constipation, and frequent micturition, and occasionally complained of slight pain in the right iliac region. She was at present fairly well nourished, but pale; she weighed 68½ pounds, she had no Hutchinson's teeth; the skin and visible mucosa were normal. The tonsils were slightly hypertrophied. Upon inspection considerable enlargement of the lower abdomen was observed, but no venous distention, and there was no protuberance of the umbilicus. The greatest circumference of the abdomen was 27¾ inches; the distance from the umbilicus to the symphysis was 8 inches. On palpation, a large smooth tumor was felt; it was cystic and rather tense and pressed against the anterior abdominal wall, extending from above the symphysis to about 1½ inches above the umbilicus. Fluctuation could be readily obtained. The tumor was very slightly movable and occupied nearly the entire front of the abdominal cavity and did not seem to be connected with any of the abdominal viscera; rectal examination confirmed the latter observation. Evacuation of the bladder did not seem to change the contour of the tumor. The blood, urine, and feces of the patient did not reveal anything abnormal. They had concluded that this was most likely an ovarian cyst. In the differential diagnosis, cystic tumors of the kidneys, liver, omentum, and mesentery had to be considered, and also cysts having their origin in remnants of the omphaloenteric and Wolffian ducts.

Hirschsprung's Disease in a Boy of Seven Years.—Dr. Sara Welt-Kakels presented this case. The family history of the patient showed nothing abnormal, except that the mother had given birth to a child that died on the eighth day, never having had a movement of the bowels. The patient had been constipated from the time of his birth, the first movement occurring the third day after birth, after glycerin enemata and laxatives had been administered. A few days after birth the abdomen appeared to be large and distended. The bowels moved only once in two or three days and the movements were small. During his second year the child grew rather worse, at one time being constipated for thirteen days. The sphincter of the anus was stretched and a tube inserted through which large masses of feces were evacuated. Following this the child improved, but after two months he again became worse. In his fourth year he had diphtheria, and subsequently became weaker, not walking much, but preferring to lie down and sleep. At that time he came under Dr. Kakels' observation. He then weighed 29 pounds; the circumference of his abdomen measured 27 inches; the distance from the xiphoid process to the um-

bilicus was 7½ inches, and from the umbilicus to the symphysis 5½ inches. The umbilicus did not protrude. The superficial veins were distended and movements of the intestines were visible through the abdominal walls. Percussion all over the abdomen showed tympanitis, but there was no tenderness on palpation, and no resistance could be felt anywhere. Digital examination showed the tonus of the sphincter somewhat increased, but Foges' proctoscope could be introduced without difficulty and it led into a spacious cavity; at the upper end of it small, hard fecal masses could be seen. The tympanitic distention of the abdomen, visible peristaltic action of the intestines, obstinate constipation, occasional vomiting and abdominal pain, and the fact that symptoms had been present from birth supported the diagnosis. Blood, urine, and feces did not show anything abnormal. The etiology of this rare disease was not quite clear. Danziger had collected 110 cases in the literature in 1907, including his own son, an infant of three weeks. Hirschprung assumed that in this disease there were a congenital dilatation and hypertrophy of the colon, a partial gigantism. Others believed that there was only a congenital dilatation of the gut, that the hypertrophy was compensatory, and that the stagnation of the contents of the gut caused the hypertrophy. Others again believed that there was only an undue length with a multiplicity of flexures of the gut at birth which led to dilatation and hypertrophy. Marfan maintained that a functional stenosis might result from an anomalous position of the sigmoid flexure in its relation to either the colon descendens or the rectum, which might again be responsible for the stagnation of the contents; in a smaller number of cases volvulus of the sigmoid flexure, anomalous valves, etc., were found forming a mechanical obstruction. The prognosis on the whole was not favorable, although occasionally patients might reach an advanced age. Death occurred not so often from complete obstruction of the bowels as from colitis, ulcerations, and perforative peritonitis. The most urgent indication was the removal of accumulated feces; in Concetti's case about 10 kilos of feces were removed by high irrigations. Permanent drainage, massage, and electricity applied to the abdominal walls together with proper dietetic measures were applicable to these cases. The outlook for recovery was better when they resorted to surgical treatment. The establishment of an artificial anus had been proposed, as well as resection of the large intestines, anastomosis, and colopexy. According to Danziger's statistics of 35 cases operated upon, 21, or 60 per cent., were cured, while of the 50 cases not operated upon 44, or 74.6 per cent., died.

Acute Glandular Fever in Children.—Dr. SIDNEY V. HAAS said that although a score of years had passed since E. Pfeiffer first read a paper describing this disease, and although the condition had since been recognized and written about by many other observers, there was still much discussion as to whether such a condition existed *sui generis*, or whether it represented a state of glandular enlargement secondary to infection of the nasopharynx or mouth, or perhaps an abortive form of some disease having glandular swelling as an accompanying symptom. The chief argument of those opposed to considering the condition as a separate disease was that the glands involved drained the nose, nasopharynx, pharynx, and mouth, and that through these the more distinct group of glands became involved, and hence the symptom-complex was only a manifestation of glandular enlargement due to a regional infection. The symptoms characterizing glandular fever and those which refused to fit into any other disease were fever and malaise, acute swelling, and tenderness of the glands of the neck, accompanied by a lesser involvement of the entire glandular system. The disease occurred in both sporadic and epidemic form, the latter seemingly the more common. Perhaps this was because single cases went unrecognized, or were classed as adenitis. Park West described an epidemic of 96 cases among forty-six families extending over a period of three years. Many smaller epidemics had been reported. In New York City, in the spring of 1911, there was an extensive epidemic. Dr. Haas said that in his private practice from February 20 to June 2 there had been 12 cases in 10 families, and in the out-patient services of Vanderbilt Clinic and Lebanon Hospital he had seen many others. From a study of the previous history of these cases the fact was brought out that symptoms of the exudative diathesis existed in every instance as shown by charts. Perhaps further experience would demonstrate that this condition was a predisposing factor. The fact that epidemics had been reported by Pfeiffer, Rauchfuss, and others made it appear that the condition was contagious. Again, when the disease entered a household where there were other children, one or more usually became affected. The affection was essentially one of early childhood, the overwhelming number of cases occurring under the age of ten, and most of these under the age of five years. There seemed to be no predilection for either sex, and social condition did not seem to be a factor. More cases occurred during the spring months than at any other time. The pathology of glandular fever was still obscure, though there seemed to be evidence pointing to the streptococcus infection at least as the cause of complications. It seemed not unlikely that more than one organism might be responsible for the condition. Cultures taken from the throats of patients showed streptococci, staphylococci, pneumococci, and influenza bacilli. Streptococci in pure culture had been found in two cases reported by Shaffer in broken-down glands; in two cases reported by Bothowsky and Korsakoff that came to autopsy streptococci in pure culture had been found in the cervical and axillary glands, and in the liver, spleen, kidneys, medulla of bones and heart's blood. Morsakoff took cultures of the urine in five cases complicated by nephritis and found streptococci in pure culture in three of them. According to Park West the incubation period in glandular fever was about seven days. The onset of the disease was usually sudden, though slight fever and malaise might precede the outbreak by a day or two. There were usually a variable degree of prostration, pain in the limbs, irritability, moderately rapid pulse, and occasionally vomiting and pain in the abdomen. There was usually pain in the throat. There was usually a slight coryza and a slightly congested pharynx. The temperature ranged from 102° to 105° F., the pulse from 100 to 140, with the respiration in normal ratio to the pulse and temperature. An enlarged gland would be found at the angle of the jaw which, even in the early stages of the disease, would cause the head to be held rigid in the position of torticollis. Swallowing was painful and the glands were exceedingly tender. The chest and circulatory system were usually negative. Within from twelve to forty-eight hours after the onset of the disease the gland at the angle was masked by a large and very tender mass, just beneath and posterior to the upper end of the sternomastoid muscle, and varying in size from a pigeon's to a goose egg. The glands along the anterior border of the sternomastoid muscle, and the posterior servical, supraclavicular, submental, submaxillary, and parotid glands, and the fine network of glands that covered the lateral and posterior aspects of the neck became enlarged, and the axillary, epitrochlear, inguinal, and mesenteric glands likewise frequently became affected. The glandular swelling was bilateral, although not always synchronous. In some cases the liver and spleen became palpable after a few days, but not regularly. In some instances the fever and prostration disappeared in from one to three days and the glands gradually diminished in size, while in others, after a moderate fever for a few days, there was a sudden rise in

temperature to 104 or 105 F., the glands enlarging until they assumed the size of goose eggs or smaller. After four or five days the attack subsided and the glands receded slowly, sometimes taking several weeks to become normal. The same group of glands might swell and subside several times, the exacerbations continuing for several weeks. The prognosis was good, although a few fatal cases had been reported. In atypical cases the differential diagnosis might offer some difficulties, but the entire absence of other physical signs and the quick changes in the size of the glands, the number of glands involved, the unusual localization and extreme tenderness, and the absence of blood changes characteristic of diseases having unusual glandular enlargement for a symptom, should suggest the diagnosis. Dr. Haas called attention to the points of difference between glandular fever and adenitis, Hodgkin's disease, leucemia, parotiditis, and calculi in the salivary ducts. When the condition became prolonged it had to be differentiated from malaria and from pyelitis: and if abdominal pain and tenderness were marked, from appendicitis. The complications encountered in a small number of cases were nephritis and a systolic mitral murmur, which appeared to be hemic in character and regularly disappeared after recovery. The failure to recognize glandular fever might lead to false and grave prognoses, and hence the disease was entitled to a place in all text-books on pediatrics which at present failed to mention it, and to a fuller consideration in those which did.

Dr. CHARLES HERMANN said that as long as the specific organism causing glandular fever was unknown, they were probing more or less in the dark. While the streptococci were frequently present, it was probable that they were secondary invaders. The nasopharynx would naturally be supposed to be the portal of entry, but this was by no means certain. The point of attack was frequently at some distance from the point of entry of the infectious material. Of this acute poliomyelitis was a striking example. It seemed likely that the virus of acute glandular fever had a special affinity for the cervical lymphnodes affected just as the virus of mumps had for the parotid gland. There were numerous examples of such selective action. There was not a very close relation between glandular fever and mumps. The incubation period was much longer in the latter and the age incidence was different. Glandular fever was not uncommon in infancy, whereas mumps practically never occurred in children under one year of age. The cases reported emphasized the close relation between the exudative and lymphatic diatheses.

Diagnosis and Treatment of Vomiting in Infants by Means of a Simple Duodenal Catheter.—Dr. ALFRED FABIAN HESS read this paper, in which he stated that it was possible to insert a soft rubber catheter (Nelaton No. 15 F.) past the pyloric sphincter and into the duodenum. The catheter was introduced in the same way as an ordinary stomach tube, and with some experience the technique became almost as simple. The main difference between this catheter and the duodenal tube previously described by Dr. Hess was that the catheter did not depend upon gravity or peristalsis to direct it to the pylorus. The force of inserting it propelled it along the natural path of the food to the pyloric opening. This gave it the additional advantage of a probe with which one might test the tonicity and irritability of this sphincter. Radiographs showed that the catheter invariably, on entering the stomach, bent sharply to the left to reach the fundus, and that therefore the more vertical position of the stomach of the infant, did not account for the ease with which the catheter entered the duodenum. It was probable that, unknowingly, others had entered the duodenum by this method, and that reports on the capacity and contents of the stomach had been open to sources of error from this source. By means of the catheter they could readily diagnose pylorospasm, and differentiate it from vomiting from other causes. In cases of spasm a persistent resistance was encountered at the same point whenever they attempted to advance the catheter; this was frequently accompanied by sensitiveness of the pylorus. Failure to traverse the pylorus after repeated attempts was proof of the existence of marked pyloric stenosis. A mild degree of stenosis, sufficiently slight to permit the catheter to pass, could not be differentiated from simple spasm. Cardiospasm frequently accompanied pylorospasm. This sign had been frequently overlooked because of the too forcible insertion of the stomach tube. If a soft rubber tube was introduced into the esophagus, it might be found impossible to enter the stomach. This spasm frequently prevented the food from entering the stomach, it being checked at the cardia. An increased duodenal secretion frequently accompanied pylorospasm, just as did a marked gastric secretion. This secretion was found to contain protease, lipase, and amylase to a marked degree, so that in this connection one might speak of a pancreatic hypersecretion or succorrhea. There were cases of cardiospasm and pylorospasm not accompanied by increased gastric secretion. In a case of this kind there was no pancreatic hypersecretion. The catheter was of value in the therapy of pylorospasm, as its passage through the pylorus seemed to relax the ring and thus to diminish the vomiting. It would be of advantage to pass the catheter frequently in such cases. Another form of therapy consisted of duodenal feeding, which radiographs had shown to be feasible. However, it should be reserved for such cases as did not retain food given by gavage, and should be given slowly and in not too large amounts. It had been found to be of great value in cases of this kind.

Why Our Obstetricians Should Either Extend Their Line of Endeavors or Confer Earlier with the Pedotrophist."—Dr. WARD BRYANT HOAG read this paper, in which he referred to the great awakening on the part of both the medical profession and the laity in regard to the causes of infant mortality. Commendable endeavors were being made on all sides for the care and restoration to health of sick infants, but apparently only meager thought, and this from the medical profession, was being given to the conservation of the health and strength of the infant from the time it came into the world. A little discreet advice for the baby at birth, and a little "follow-up" supervision afterward were better than a great deal of endeavor after the baby had needlessly been allowed to develop nutritional disturbances. At present there was no recognition of a specialty in work among children which applied to what might be called "prophylactic work" or simply "care of children." Pediatrics was defined as relating to the diseases of children and their cure. With these facts in mind the writer had consulted with the occupant of the Chair of Greek in Columbia University for an appropriate word to express this field of endeavor, and the word "pedotrophy" had been suggested. This word meant "care of children." In their work with children the greatest possibilities lay along protective and preventive lines. The time was ripe for the schools and specialists to extend their usefulness by recognizing the prophylactic specialty of childhood work, pedotrophy. Twenty per cent. of all children born died during the first year of life. Of all births recorded in the Greater City of New York, 43 per cent. were attended by midwives, and, although there were no statistics, the mortality among these was unquestionably high. Gastrointestinal diseases caused the death of from 60 to 75 per cent. of the infants that died during hot weather, and from one-third to one-half of each year's victims died

before the third month of existence. In the Borough of Manhattan in August, 1900, of the 1,081 deaths under one year of age, 331 died of gastrointestinal diseases and 325 died before the third month of age. During the same month 15 died from nutritional diseases during the first week of life, 24 died during the second week of life, 27 during the third week, and 109 during the fourth week. This large increase in mortality for the fourth week was characteristic of all months of the year. It seemed apparent, if not indisputable, that there was some radical defect or neglect on the part of those who should early advise regarding the child's nutrition and care; that mothers were left largely to their own initiative until the child became sick. The best obstetricians in this city, and they had no superiors the world over, admitted that they took little thought regarding the many details influencing infant nutrition and care. This advice was largely left to the nurse, and she too frequently failed to fill the breach. This failure on the part of obstetricians was further emphasized by the fact that in most of our large lying-in institutions no part of the regular attending staff was made up of practitioners who gave special thought to infant feeding or questions pertaining to infants in general. After entering a vigorous protest against the nefarious practice of midwives, Dr. Hoag said that the attitude of the general practitioner was much the same as that of the specialist. They all thought too little about the infant during the first days, and only began their endeavors after much damage had been done from following general principles or the advice of those about the house. As for the remedy, what had been done could be repeated; possibly it could be improved upon. In institutional work, that of the Free Out-Door Maternity Clinic, conducted by Dr. I. L. Hill and Dr. Herman Schwarz of New York City might well be considered a model. Those interested in this line of work should study their report for 1909. Of 784 children born under their charge from November, 1908, to November, 1909, 38 died and 105 passed from their attention. This brought the mortality well under 6 per cent., a very marked contrast to the general mortality reported in the city. This work was among the very poor. In private work the writer was conversant with the records of 117 born between 1905 and 1909, where but two failed to live one year because of nutritional diseases, a mortality of less than 2 per cent. All lying-in institutions should have an attending pedotrophist, who should assume to advise from birth on all questions concerning the baby. The mothers should be taught the fundamental care of the baby during their stay in the institution. When the mother and child left for home there was a well-trained baby and a mother with some definite idea of her responsibilities as a mother, a mother who knew what she was expected to do for her baby and how to do it. The mother thus taken into the confidence of her physician respected only the advice that came from a physician, and would seek his advice rather than that of some old woman who called on her. Among the poor the "follow-up" work and advice of a trained nurse were invaluable, both to the baby and to the household in general. In private practice certainly no less was due the mother than in the institution. If the surgeon did not care to properly instruct the mother, he should have an associate who should attend to this work.

Dr. George L. Broadhead thought that Dr. Hoag's paper was a valuable one, but that he was inclined to be too severe on the obstetrician and the general practitioner. He did not think that as a class they paid so little attention to the details concerning the nutrition of the infant under their care. The day had long since passed when the duty of the obstetrician ceased when he tied the umbilical cord and handed the baby over to the nurse. It seemed to him that the child was deserving of at least as much attention as the mother. The results obtained by Dr. Hill and Dr. Schwarz in the Free Out-Door Maternity Clinic were certainly excellent. Every mother should be instructed to bring her baby to the dispensary connected with the institution in which she had been confined. There were excellent dispensaries in connection with a number of the maternity hospitals in the city. No obstetrician or general practitioner should neglect this, that the mother was properly instructed as to how to care for her infant. With all the clinics and facilities at hand here in New York, Dr. Broadhead could not see why babies should not be properly treated.

Dr. Floyd M. Crandall said that the paper had interested him because it was in the line of preventive medicine, and certainly great advances had been made in that direction. There were three classes of people who had charge of babies from the first day of life. The first was the obstetric specialists; among this class the improvement had been great during the past twenty years. The second class might improve very much; this class embraced the general practitioners who did much obstetric work and paid but little attention to pediatrics; it was a hard proposition to know just how to deal with them. They were the worst kind of baby-weaners, usually telling the mother to buy a certain kind of baby food and use it according to directions. Midwives formed the third class. Much could be accomplished by following up babies when the birth report went in, but often this report did not go in until a week or more after the birth of the child, and by that time the damage was done. The first week was one of the greatest importance to the baby's welfare.

Dr. George Dow Scott said that in his work in this line in New York City and in Boston he had been impressed with the fact that the mother's breasts were so often neglected. More attention should be paid to the breasts of the mother, as well as to her diet, and this would tend to make the milk better, give her less trouble in nursing her baby, and lessen her desire to wean the baby from the natural milk.

Dr. Charles Hermann thought Dr. Broadhead was speaking from the theoretical standpoint: it was not sufficient to tell the mother simply to come to the dispensary. There was great trouble in getting the mothers to return. On this account the visiting nurse was indispensable.

Dr. Ward B. Hoag, in closing the discussion, said he did not wish to criticize any one class of men; his remarks were to be considered as one more effort added to the many already devised to lower the infant mortality. The large mortality of infants during the third week of life was evidence of some radical defect in the advice given during the first week. Too many bottle-fed babies came from the lying-in hospitals, and too often the instructions given concerning the contents of the bottle were such that it was evident proper consideration had not been given the subject.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Ohio State Medical Board.

June 6 to 8, 1911

ANATOMY.

1. How and where is the clavicle attached to the scapula?
2. What are the different kinds of motion of the elbow joint, and name the bones entering into its formation?
3. Name the ligaments of the hip joint.
4. Name the muscles that flex the thigh, also the leg.
5. Give the course and subdivisions of the subclavian artery.
6. Name the three divisions of the axillary artery.
7. Name the superficial veins at the bend of the elbow.
8. Give shape, location, dimensions and capacity of the stomach.

9. What are the divisions of the trifacial nerve? Name the branches of the third division.
10. Give the boundaries of the popliteal space.

PHYSIOLOGY.

1. What are the properties of protoplasm? What is its relation to nutrition?
2. What are the functions of organized cells?
3. Describe the white blood cells. What conditions affect their relative number, within physiological limits?
4. What salts affect the action of the heart and how?
5. What is the principal source of heat in the body?
6. What part of digestion takes place in the stomach?
7. What kind of food does the secretion of the liver assist in digesting? What other office has it?
8. Describe the portal circulation.
9. Describe the motor area of the brain.
10. Give the location of the center of vision. How is this determined?

MATERIA MEDICA AND THERAPEUTICS.

1. Name three external antiseptic remedies. Give indications and uses.
2. Name the various preparations of aconite and give dose of each. State therapeutic uses.
3. Iodine. Name principal salts and preparations. Give dose of each and state therapeutic uses.
4. What are the uses of narcotics? Name the principal ones giving the dose of each.
5. What preparations of mercury are used as cathartics? Give dose of each.
6. What drugs would you use in anemic conditions? Write two prescriptions including remedies recommended.
7. Potassium salts. Name the principal ones and give dose and use of each.
8. Why is atropine combined with morphine? Give dose of each.
9. What are the symptoms of opium poisoning? Give treatment. What class of people bear opium badly?
10. Discuss the dangers incident to the treatment by x-ray.

CHEMISTRY.

1. Name the constituents most frequently found in water which render it unfit for drinking purposes. Give test for each.
2. Name the albuminous bodies and give the source of each.
3. Name the principal inorganic acids. Give the properties and uses of one. Name the principal organic acids. Give their sources and properties and uses of one.
4. By what tests chemically applied would you determine whether a specimen of human milk was up to the standard?
5. Give a reliable method for determining the quantity of hydrochloric acid in the gastric contents.
6. Give the chemical nature of phenol, its properties, poisonous effect and antidotes.
7. Classify poisons from a physiological basis.
8. What is alum chemically, and when may it be used to improve an impure water supply?
9. Mention three different processes by which carbon dioxide is generated in nature.
10. What is the chemical name of tartar emetic? Give its poisonous effects and antidote.

DIAGNOSIS.

1. Describe reduplication of the heart sounds. What is its significance, and state in what diseases it may occur?
2. State diagnostic significance of mitral systolic murmurs.
3. Describe irregular pulse (arrhythmia) and state clinical significance of its varieties.
4. In what morbid conditions is dyspnea present?
5. What pathological alterations of the lungs cause a decreased resonance on percussion?
6. What diagnostic sign is furnished by diplopia?
7. In what pathological conditions is the liver generally found enlarged?
8. When is the knee jerk exaggerated, and in what affections does it occur?
9. Name abnormal constituents of the stools and state their pathological significance.
10. In what diseases does hiccough occur, and what diagnostic value is derived therefrom?

PATHOLOGY.

1. What is the pathology of follicular tonsillitis?
2. What pathological changes take place in senility?
3. Give the pathology of catarrhal appendicitis.
4. What is the basis of the opsonin treatment, and describe the effect of an injection of bacterial vaccine?
5. Give the pathology of tabes dorsalis.
6. Name the paths of bacterial infection; the paths of extension.
7. Give the pathology of tuberculosis of the hip joint.
8. What is the difference between an antitoxin and a bacterial vaccine?
9. Give the pathological anatomy of catarrhal bronchopneumonia.
10. What are some of the adulterations found in foods and how would you detect them?

PRACTICE.

1. How would you manage and treat a case of diabetes mellitus?
2. Give the causes, symptoms and treatment of acute Bright's disease.
3. Give the pathology, symptomatology and treatment of poliomyelitis.
4. Give pathology, symptoms and treatment of pericarditis.
5. Define rheumatic fever; give symptoms, complications and treatment.
6. Give etiology, symptoms and treatment of erysipelas.
7. Give diagnosis and prognosis of laryngeal tuberculosis.
8. Give diagnosis of aneurism of the descending aorta.
9. Give etiology and diagnosis of influenza.
10. Give pathology and diagnosis of cholera infantum. What hygienic precautions are essential to prevent it?

OBSTETRICS.

1. When the cord is around the child's neck, what serious results may occur? How obviate?
2. How would you determine the death of the fetus in utero?
3. What symptoms would indicate concealed hemorrhage?
4. Name the different displacements of the uterus and outline general treatment.
5. Give symptoms and treatment of cystitis.
6. Give symptoms and treatment of placenta prævia before term and at full term.
7. Name the diagnostic points of the fetal head and state their uses.
8. How would you manage a breech presentation, and what is the most dangerous complication?
9. Give symptoms and treatment of puerperal eclampsia.
10. Describe the formation of the placenta and decidua and give its use or function.

SURGERY.

1. What is the latest method of treating tuberculous sinuses?
2. What is hypodermoclysis? Give technique and formula for intravenous infusion, also the quantity you would use in an adult.
3. Give causes, symptoms and treatment of hip-joint disease.
4. Describe the most feasible operation for empyema of the antrum of Highmore.
5. How would you treat internal hemorrhoids?
6. Diagnose an infective exudate in the pericardial sac. How would you proceed to give relief?
7. Ligate the internal carotid artery. Give indications for so doing. What precaution is necessary?
8. What is plastic surgery? Give an example.
9. How would you treat acute septic infection?
10. What are echinococcus cysts? Where most frequently located? What is the prognosis?

DERMATOLOGY, SYPHILOGY AND DISEASES OF THE EYE, EAR, NOSE AND THROAT.

1. What is tinea tricophytina? Mention its principal varieties and give treatment.
2. Describe psoriasis. How is it differentiated from squamous eczema?
3. Describe acute eczema—its difference from erysipelas.
4. What is meant by the initial lesion of syphilis?
5. Describe mucous patches.
6. Define astigmatism. Mention its causes, symptoms and the means to improve the vision with lenses.
7. Describe iritis. Mention its varieties, causes and treatment.
8. Describe acute catarrhal laryngitis; give treatment.
9. Describe otitis media purulenta. What dangers may result?
10. What are the causes of nasal hemorrhage, and how can it be stopped?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

OHIO STATE MEDICAL BOARD.

June 6 to 8, 1911.

ANATOMY.

1. The clavicle is attached to the scapula: (1) At the acromion process by the superior acromio-clavicular ligament and the inferior acromio-clavicular ligament. (2) At the coracoid process by the coraco-clavicular ligament, the conoid ligament, and the trapezoid ligament.

2. THE ELBOW JOINT: (1) The articulation between the humerus and ulna allows of flexion and extension. (2) The articulation between the head of the radius and the humerus also allows of flexion and extension. (3) The superior articulation between the radius and ulna allows of pronation and supination of the hand.

3. *Ligaments of the hip joint:* Iliofemoral, cotyloid, transverse, capsular, and teres.

4. *Muscles that flex the thigh:* Iliopsoas, sartorius, rectus femoris, pectineus, gracilis, adductor longus, adductor brevis, tensor vaginæ femoris.

Muscles that flex the leg: Sartorius, gracilis, semitendinosus, semimembranosus, biceps, gastrocnemius, popliteus.

5. See Cunningham's "Anatomy" (1909), page 821; or Gray's "Anatomy" (1910), page 625.

6. The first portion of the axillary artery is above the pectoralis minor, the second part is behind that muscle, and the third part is below it.

7. *The superficial veins at the bend of the elbow* are: Radial, median cephalic, median basilic, ulnar, cephalic, and basilic.

8. See Cunningham's "Anatomy" (1909), page 1051; or Gray's "Anatomy" (1910), page 1271.

9. *Divisions of trifacial nerve:* (1) Ophthalmic; (2) superior maxillary; (3) inferior maxillary. *Branches of the third (inferior maxillary) division:* Masseteric, deep temporal, buccal, internal pterygoid, external pterygoid, auriculo-temporal, lingual, and inferior dental.

10. BOUNDARIES OF THE POPLITEAL SPACE. *Externally, above:* By the biceps. *Externally, below:* By the plantaris and external head of the gastrocnemius. *Internally, above:* By the semimembranosus, semitendinosus, gracilis, and sartorius. *Internally, below:* By the inner head of the gastrocnemius.

PHYSIOLOGY.

1. *Properties of protoplasm.* "Protoplasm is a semi-fluid substance which swells up but does not mix with water. It is transparent and generally colorless, with refractive index higher than that of water but lower than that of oil. It is neutral or weakly alkaline in reaction, but may under special circumstances be acid, as, for example, after activity. It undergoes stiffening or coagulation at a temperature of about 54.5° C. (130° F.), and hence no organism can live when its own temperature is raised above that point; it is also coagulated and therefore killed by alcohol, by solutions of many of the metallic salts, by strong acids and alkalies, and by many other substances."

Protoplasm has the properties of: Movement, irritability, ingestion, absorption, excretion, growth, and reproduction.

Nutrition is practically one of the properties of protoplasm, and includes ingestion and absorption as well as excretion. Nutrition is the resultant of these three processes.

2. *Functions of organized cells. Epithelial:* Absorption, protection, secretion, excretion, motion, and reproduction. *Connective:* Strength; elasticity; support; union; to form sheaths for vessels, muscles, nerves, etc.; protection; to form trabeculæ, etc.; to preserve body heat. *Muscular:* Contractility. *Nervous:* Conduction of impulses.

3. The white blood cells are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear, (3) transitional, (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their fate is uncertain; it has been asserted that they are converted into red blood cells; they play a part in the formation of fibrin ferment; they are sometimes converted into pus cells. Their *functions* are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (4) they help to maintain the proper proteid content of the blood plasma.

Conditions affecting their relative number, within physiological limits: Digestion, exercise, cold baths, pregnancy, and lactation.

4. *Salts affecting the action of the heart:* "Immersed in a solution of 0.7 per cent. of NaCl, an isolated frog's heart will retain its rhythmicality for some time, but it ultimately passes into a condition of diastolic relaxation. It is precisely the same with KCl, and if a solution of the same strength as that of NaCl is used the arrest occurs much earlier. The K ions and Na ions act precisely in the same manner; that is, they ultimately produce a condition of diastolic relaxation; moreover, K ions are more efficacious than those of Na. But with Ca ions it is different. A beating heart, if immersed in an isotonic solution of $CaCl_2$, ceases beating, but in a condition of systole (calcium rigor). If, however, a solution of NaCl is added the heart beat recurs and the strength of the contractions is increased."—(Lyle's *Physiology.*)

5. The principal source of heat in the body is muscular energy.

6. In the stomach proteids are converted into proteoses and peptones.

7. The secretion of the liver assists in digesting fats. *The other functions of the bile* are: (1) To aid in the absorption of fats; (2) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (3) to eliminate waste products of metabolism, such as lecithin and cholesterin; (4) it has a slight action in converting starch into sugar; (5) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (6) it has a very feeble antiseptic action.

8. See Cunningham's "Anatomy" (1909), pages 901 and 1120; or Gray's "Anatomy" (1910), pages 754 and 1327.

9. The *motor areas* are located and arranged on the cerebral cortex immediately in front of the fissure of Rolando. At the upper part of the convolutions in front of this fissure are areas connected with the movements of the lower extremities; then from above downward are located the centers for movements of the shoulders, arms, wrists, fingers, face, lips, tongue, and larynx and pharynx.

10. *The center of vision* is in the occipital lobes, and particularly in the cuneus. Removal of the right occipital lobe in an animal is followed by left hemianopsia, removal of the left lobe by right hemianopsia, and removal of both occipital lobes by total blindness.

MATERIA MEDICA AND THERAPEUTICS.

1. *Three external antiseptics:* Mercuric chloride, formaldehyde, and silver nitrate.

Mercuric chloride is used for washing the surface of a part prior to operation, also for injections and dressings; it should not be used for instruments or excretions.

Formaldehyde is used for disinfecting rooms, houses, instruments, furniture, and clothing.

Silver nitrate is used as a prophylactic against ophthalmia neonatorum, also in the treatment of that disease; also in local treatment of ear, nose, and throat diseases; in diseases of the skin, and for solutions in gonorrhea, urethritis, vaginitis, and other diseases of the genital tract.

2. ACONITE. *Official preparations, with adult dose:* Fluid extract, ℥j; tincture, ℥x. *Medicinal uses:* For fevers, some inflammatory conditions, in high arterial tension, in nervous palpitation of the heart, and congestive dysmenorrhea; also externally for neuralgia, pruritus, herpes, chilblains, etc. *Therapeutic effects:* First stimulates and then paralyzes heart and also sensory nerves; lowers blood pressure; dilates peripheral blood-vessels, is a respiratory sedative; reduces body temperature; is a diuretic and diaphoretic.

3. The official preparations and doses of iodine and the iodides are: Iodine, 1/10 of a grain; compound solution of iodine, 3 minims; tincture of iodine, 1½ minims; potassium iodide, 7½ grains; sodium iodide, 7½ grains; ammonium iodide, 4 grains; strontium iodide, 7½ grains; zinc iodide, 1 grain; diluted hydriodic acid, 15 minims; syrup of hydriodic acid, 1 dram.

"Iodine is alterant, rubefacient, vesicant, caustic, antiseptic, and parasiticide. It is used locally in the form of the tincture in sprains and bruises, over the chest in various lung troubles, in lupus, in chronic rheumatism, in pleurodynia and intercostal neuralgia, in ringworm, and in erysipelas. It is administered internally in diseases asso-

ciated with nutritional disorders, as tuberculosis in its various forms, in hypertrophy of the thyroid gland and tonsils, in cervical and ovarian cysts, and in the late stages of syphilis. It may be employed in inhalations. It is of value as a local application in rhinology, laryngology, and even in ophthalmology.

"The *iodides* are used to aid in the absorption of inflammatory products, as in pneumonia, pleurisy, etc., and in tertiary syphilis, chronic rheumatism, etc. In tonsillitis and sore throat they are used as a gargle (gr. 2/5 to ℥i). The most generally used iodide is that of potassium, dose, gr. 5-℥i in solution. Sodium iodide and strontium iodide are often used. Dose, gr. 5-℥ss. Ammonium iodide is the most irritant and most energetic in action. Dose, gr. 2-10. Hydriodic acid in 1 per cent. solution is frequently employed in the form of the syrup. Dose, ℥i-4. The compound solution of iodide, or Lugol's solutions, is given internally in doses of ♏i-5, diluted.

"The tincture of iodine is used locally only. An ointment of iodine may be applied locally in certain inflammations."—(Gould and Pyle's *Pocket Cyclopedia.*)

4. *Narcotics are used* to relieve pain, to induce sleep, to allay irritation and spasm. *Chief narcotics:* Opium, gr. jss; morphine, gr. ¼; hyoscyamus, gr. iv; stramonium, gr. j; cannabis indica, gr. j; also alcohol, ether, and chloroform.

5. *Preparations of mercury used as cathartics:* Hydrargyrum cum creta, gr. v; massa hydrargyri, gr. v; hydrargyri chloridum corrosivum, gr. 1/30; hydrargyri chloridum mite, gr. ij.

6. *For anemic conditions:* Iron, arsenic, manganese, nux vomica.

℞ Tincturæ ferri chloridi, ℥ij.
Acidi phosphorici diluti, ℥iij.
Spiritus limonis, ℥j.
Syrupi simplicis, q.s. ad ℥iij.
Misce. Signa: A dessertspoonful in water after each meal.

℞ Ferri sulphatis exsiccati.
Potassii carbonatis, ää ℥j.
Syrupi., q.s.
Fiant pilulæ, no. xxiv.
Signa: One pill after each meal.

7. *Potassium salts:* Carbonate, gr. xv; bicarbonate, gr. xxx; acetate, gr. xxx; citrate, gr. xv; sulphate, gr. xxx; bitartrate, gr. xxx; nitrate, gr. vij; chlorate, gr. iv; permanganate, gr. j; iodide, gr. vij; bromide, gr. xv; cyanide, gr. 1/5.

The *carbonate* and *bicarbonate* are used for itching and for skin diseases; the latter is also used for dyspepsia, rheumatism, gout, jaundice, and gallstones. The *acetate* and *citrate* are used for gout, rheumatism, in dropsy, renal diseases, cardiac diseases, and in general as diuretics. The *sulphate* and *bitartrate* are used as cathartics, the latter also as a diuretic. The *nitrate* is used (by inhalations of its fumes) in asthma. The *chlorate* is used for inflammatory conditions of mouth and throat. The *permanganate* is used for wounds, sores, ulcers, erysipelas, and as a douche in gonorrhea, gleet, etc.; also as an antidote to morphine poisoning. The *bromide* is used in epilepsy, insomnia, neuralgia, migraine, delirium tremens, convulsions, nymphomania. The *iodide* is used in syphilis, asthma, chronic rheumatism. The *cyanide* is used to relieve vomiting, gastrointestinal pain, and cough.

8. Atropine is often combined with morphine when the latter is used, for the following reasons: (1) To prevent nausea and insomnia; (2) to intensify the effect of the morphine, and so a smaller dose may suffice; (3) to neutralize the effect on the pupils. Dose of atropine, gr. 1/160; of morphine, gr. ¼.

9. The *symptoms of poisoning by opium* are as follows: "At first there is usually a period of excitation, marked by restlessness, great physical activity, loquacity, and hallucinations. The patient then becomes weary, dull, and drowsy; he yields to the desire for sleep, from which at first he may be roused. The lips are livid, the face pale, the pupils contracted, and the surface bathed in perspiration. The condition of somnolence rapidly passes into narcosis. The patient cannot be roused, and lies motionless and senseless, with completely relaxed muscles. The pulse, at first full and strong, becomes feeble, slow, irregular, and easily compressible; the respiration slow, shallow, stertorous, and accompanied by mucous râles. The patient rapidly becomes comatose, and, in fatal cases, dies in from forty-five minutes to fifty-six hours, usually in from twelve to eighteen hours. In cases of recovery after the stage of narcosis the pulse and respiration gradually return to the normal, and the condition of coma passes into one of deep sleep, lasting twenty-four to thirty-six hours."

Treatment "Wash out the stomach with a dilute solution of potassium permanganate, leaving about 500 c.c. in the stomach, and maintain the respiration. In the first or second stage the 'ambulatory treatment' should be adopted to prevent, if possible, the establishment of the third stage. If this stage develop the main reliance is to be placed in maintaining the respiration by artificial methods, until the poison has been eliminated. Strong coffee, or caffein, by the mouth or rectum, are of benefit. The same cannot be said of atropine. The urine should be drawn by the catheter."—(Witthaus' *Essentials of Chemistry.*)

Infants and children bear opium badly.

10. *The dangers incident to treatment by x-ray* are: Burns, dermatitis, and sterility.

CHEMISTRY.

1. Sewage, bacteria, lead, and refuse from factories. *Sewage* is detected by the addition of a few drops of potassium permanganate, which will be decolorized in the presence of organic (or oxidizable) matter. *Bacteria* are detected by making cultures and subsequent bacteriological examination. *Lead* is detected by the addition of hydrogen sulphide, which becomes darkened by any lead present in the water.

2. *Albuminous bodies: Protamines*, found in spermatozoa of some fish. *Histons*, found in red blood corpuscles and thymus of calf. *Globulins*, found in muscles, fibrin, and clotted blood. *Scleroproteids*, found in bone, cartilage, connective tissues, skin, hair. *Keratins*, found in skin, hair, nails. *Elastins*, found in yellow elastic connective tissue. *Collagens*, found in white fibrous tissue, gelatin. *Phosphoproteins*, found in milk and eggs. *Chondrin*, found in cartilage. *Neurokeratin*, found in sheath of medullated nerves. *Ossein*, found in bone. *Nucleoprotein*, found in the cells of the body generally. *Glucoproteins*, found in mucin and connective tissues. *Chromoproteins*, found in oxyhemoglobin. *Derived proteins*, found in the products of digestion of the proteins.

3. *Principal inorganic acids:* Hydrochloric, sulphuric, nitric, phosphoric, and boric. *Hydrochloric acid* is a colorless gas with a pungent, penetrating odor, a sharp, sour taste, acid reaction, and very irritant to the tissues. It is irrespirable and does not support combustion. It is only used for manufacturing purposes.

Principal organic acids: Acetic, citric, tartaric, butyric, tannic, lactic, and oxalic. *Oxalic acid* is a white crystalline solid, irritant, and with an acid taste. It is used for bleaching and removing stains.

4. The milk may be tested by taking the specific gravity, using Feser's lactoscope and the centrifuge.

5. *To determine the quantity of free hydrochloric acid in the gastric contents:* "To 10 c.c. of the filtrate decinormal sodium hydrate is added in such a quantity that a drop of the mixture no longer responds to Gunzburg's phloroglucin-vanillin test. The amount of the decinormal soda solution used multiplied by 10 gives the figure of the free hydrochloric acid. The percentage of free hydrochloric acid can be obtained from this figure by multiplying it by 0.00365."—(Einhorn.)

6. *Phenol* is phenyl hydroxide, C_6H_5OH. It is also called carbolic acid, but it is not an acid, nor is it an alcohol. Pure phenol is a colorless crystalline solid with a characteristic odor and an acrid burning taste, soluble in 15 parts of water, and freely soluble in alcohol and ether; it is a powerful antiseptic, coagulates albumin, and prevents fermentation.

Symptoms of poisoning: The skin and mucous membrane (where either has been in contact with the phenol) are hardened and whitened. There are burning pains in the mouth, esophagus, and stomach; vomiting, stupor, lowered pulse and temperature, contracted pupils, syncope, collapse, and death; the urine becomes discolored (greenish or black).

Treatment: Administer albumin, saccharated lime, sodium sulphate, or alcohol; then wash out the stomach.

7. Poisons may be classified (from a physiological basis) as: Corrosives, irritants, neurotics, septic poisons, and gaseous poisons.

8. *Alum*, chemically, is a double sulphate, being aluminium ammonium sulphate, $Al_2(SO_4)_3(NH_4)_2SO_4 + 24\,Aq$.

Sometimes alum is added to turbid or polluted waters: a flocculent precipitate is formed which carries down with it many bacteria and renders the water clearer and purer.

9. *Carbon dioxide may be generated in nature* by: (1) Respiration of men and animals; (2) combustion of fuel; (3) fermentation.

10. The *chemical name* of tartar emetic is antimonyl potassium tartrate. *Poisonous effects:* Nausea, vomiting, burning pain in esophagus and stomach, intense thirst, pain on swallowing, purging, pulse first quick, then slow and

weak, skin cold and moist, cramps in extremities, vertigo, syncope, loss of consciousness, and collapse. *Antidote* Tannin, or tincture of cinchona.

DIAGNOSIS.

1. *Reduplication of heart-sounds.* "The normal heart sounds consist of two systolic and two diastolic sounds so blended as to form one systolic and one diastolic tone because of the synchronous closure of the valves of the right and left heart. Under many conditions this synchronism is so interfered with as to produce doubling or actual division of one or both sounds. The phenomenon of reduplication has aptly been compared to the sound produced by the closure of double swinging doors. A normal heart, if temporarily overacting, may be the seat of doubling or splitting of the heart sounds; but in general it may be said that, hearing a reduplicated second sound or triple rhythm at the apex, one should suspect the presence of mitral stenosis or myocardial degeneration. *Gallop rhythm* is a form of reduplication heard over the whole heart, though sometimes more plainly over one side that may be graphically represented. It is usually strongly suggestive of marked incompensation, interstitial nephritis, emphysema, arteriosclerosis, and exophthalmic goiter."—(Greene's *Medical Diagnosis.*)

2. *Mitral systolic murmurs* may indicate: Mitral regurgitation; acute endocarditis; anemia (or chlorosis); an acute infectious disease, in children; or, in infants, a patent ductus arteriosus.

3. *Arrhythmia* occurs when the normal rhythm of the pulse is disturbed. There are five chief varieties: "(1) The *intermittent pulse* may be observed as the result of excessive eating, the habitual use of tobacco, coffee, and tea, exercise, mental excitement, myocardial disease, and reflex irritation such as produced by constipation, dyspepsia, lithemia, hypochondriasis, etc. (2) The *irregular pulse* may be due to the same causes as the preceding. As a pathological condition it is most often encountered in organic cardiac disease, especially that which gives rise to mitral regurgitation. (3) The *dicrotic pulse* is one in which the first impulse is quickly followed by another impulse or secondary wave. It owes its production largely to conditions which relax the arterial walls and lower the tension, especially adynamic affections such as typhoid fever. (4) *Pulsus paradoxus* is that condition of the pulse in which the pulse-wave becomes small and feeble during inspiration; it may occur in health but is rather common as the result of pericardial adhesions. *Water-hammer* or *Corrigan's pulse* is that pulse which is characterized by a short, sharp, strong impulse which seems to collapse under the examiner's fingers. It is best detected by holding the arm up, and is diagnostic of aortic regurgitation during compensation."—(Hughes' *Practice of Medicine.*)

4. *"Dyspnea may be due* to obstruction of the air passages, pressure upon the respiratory system from without by tumors, and distention of abdomen, diseases of the lungs and pleura, heart disease, asthma, anemia, or paralysis of muscles of respiration as the result of hemorrhage, tumors, or degeneration of the respiratory center in the medulla or toxic agents in the blood. It may be *inspiratory* when it results from obstruction, as in foreign bodies in the larynx or trachea, or it may be *expiratory*, as in emphysema or bronchial asthma. A combination is the more frequent condition. In all forms of dyspnea it is important to determine whether the shortness of breath bears any relation to exertion. Dyspnea *independent of exertion* is a serious condition and is symptomatic of severe cardiac and pulmonary disease. Dyspnea *dependent upon exertion* is less serious and is observed in health, simply debility, anemia, obesity, and somewhat moderate cardiac debility."—(Hughes' *Practice of Medicine.*)

5. *Decreased resonance on percussion* may be found in: Phthisis, pneumonia, pleural effusion, and hydrothorax. Areas of consolidation, especially near the surface of the lung, yield a marked dullness.

6. Diplopia (unless due to the action of alcohol or a few drugs) indicates paralysis of the ocular muscles.

7. *The liver is generally found enlarged* in: Passive congestion (usually from valvular cardiac disease), amyloid disease, cancer, fatty infiltration, hypertrophic cirrhosis, leucemia, hydatids, abscess, or gumma.—(Butler's *Diagnostics of Internal Medicine.*)

8. The knee-jerk is exaggerated when the inhibitory fibers from the cerebrum are cut off. This may occur in: Cortical hemiplegias, lateral or amyotrophic sclerosis of the cord, hysteria, neurasthenia, tetanus, or strychnine poisoning.

9. *Abnormal constituents of the stools* may be: Undigested food, blood, mucus, pus, fat, calculi, intestinal parasites, foreign bodies, and fragments of tumors.

Undigested food may indicate: Diarrhea, overfeeding, dyspepsia. *Blood*: Hemorrhage, ulcer, or cancer in stomach, intestines, or liver; fissures, hemorrhoids, portal obstruction, intussusception, acute yellow atrophy of the liver, typhoid. *Mucus:* Intestinal catarrh, inflammation of intestines, dysentery. *Pus:* Rupture of an abscess into the alimentary canal, dysentery, ulceration of intestines. *Fat:* Cancer, or inflammation of pancreas, impaction of pancreatic duct. *Calculi:* Gallstones. *Intestinal parasites:* Worms, etc.

10. See French's "Practice of Medicine" (1910), page 1052; or Osler's "Practice of Medicine" (1909), page 1034.

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), page 735, or Osler's "Practice of Medicine" (1909), page 445.

2. *The chief changes that take place in senility:* Cessation of growth; loss of weight; loss of stature; brittleness of bones; rigidity of cartilages; loss of elasticity of crystalline lens; feebleness and atrophy of muscles; grayness of hair; diminution of sexual activity and power; arteriosclerosis, or other diseased conditions of the arteries; lessened capacity of chest; atrophy and degeneration of digestive glands, kidneys, and testicles or ovaries; slowed reflexes; impairment of the special senses.

3. See French's "Practice of Medicine" (1910), page 807; or Osler's "Practice of Medicine" (1909), page 513.

4. The basis of the opsonic treatment is the belief that the leucocytes can be aided in their work of phagocytosis or bacteriolysis if a certain substance is added to the blood-serum.

The effect of an injection of bacterial vaccine is: Rise of temperature, pain in joints, an urticarial or erythematous rash, itching, chill, giddiness, faintness, vomiting, heart-failure, collapse, convulsions, coma.

5. See French's "Practice of Medicine" (1910), page 1082; or Osler's "Practice of Medicine" (1909), page 887.

6. *Paths of bacterial infection:* Through abraided skin or mucous membrane; through mucous membrane of digestive, respiratory, or genitourinary tract; through conjunctiva.

Paths of extension: By continuity of tissue, by blood current, by lymphatics, by reinfection, or by mechanical conveyance from one place to another.

7. See Rose and Carless' "Surgery" (1911), page 678; or Da Costa's "Surgery" (1908), page 552.

8. An *antitoxin* consists of a product of bacteria, but not the bacteria themselves; whereas a *bacterial vaccine* is a preparation of killed bacteria.

9. See French's "Practice of Medicine" (1910), pge 687; or Osler's "Practice of Medicine" (1909), page 622.

10. *Some of the adulterations found in foods are:* Alum, copper, lead, lime, iron, turpentine, water, anilin colors, pepper, essences, gypsum, starch, burnt sugar, flour, potatoes, oleomargarine, chicory, acorns, turmeric, glucose, gelatin, salt, grit, sand, pollen, dirt, acids, leaves. For *detection* see some good book devoted to the subject.

PRACTICE.

1. See French's "Practice of Medicine" (1910), page 974; or Osler's "Practice of Medicine" (1909), page 420.

2. See French's "Practice of Medicine" (1910), pages 910, 912, and 915; or Osler's "Practice of Medicine" (1909), pages 686, 688, and 690.

3. See French's "Practice of Medicine" (1910), pages 1068 and 1070; or Osler's "Practice of Medicine" (1909), pages 915 and 917.

4. See French's "Practice of Medicine" (1910), pages 568 and 573; or Osler's "Practice of Medicine" (1909), pages 775 to 783.

5. See French's "Practice of Medicine" (1910), pages 222, 225, 226, and 230; or Osler's "Practice of Medicine" (1909), pages 219, 221, 223, and 226.

6. See French's "Practice of Medicine" (1910), pages 218, 219, and 221; or Osler's "Practice of Medicine" (1909), pages 210, 211, and 213.

7. See French's "Practice of Medicine" (1910), pages 360 and 306.

8. See French's "Practice of Medicine" (1910), pages 646 and 649; or Osler's "Practice of Medicine" (1909), pages 857 and 860.

9. See French's "Practice of Medicine" (1910), pages 132 and 137; or Osler's "Practice of Medicine" (1909), pages 152 and 155.

9. See French's "Practice of Medicine" (1910), page 800; or Osler's "Practice of Medicine" (1909), pages 507, 511, and 500.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), page 319; or Hirst's "Obstetrics" (1909), page 141.

2. Symptoms of death of fetus are: cessation of the signs of pregnancy, the abdomen and uterus are both diminished in size, the fetal heart sounds and movements are absent, there is no pulsation in the cord, the mother's breasts become flaccid and occasionally secrete milk. If the fetus has been dead for some time crepitus of its cranial bones may be elicited.

3. See Williams' "Obstetrics" (1909), page 807; or Hirst's "Obstetrics" (1909), page 584.

4. *The different displacements of the uterus* are: Retroversion, retroflexion, anteversion, anteflexion, lateral version, lateral flexion, descent, prolapse, ascent, and malocation (to front, back, or one side).

General treatment consists in: Removal of cause (when possible), reposition, retaining in position by tampons or pessaries, breaking up of adhesions, various operations (according to the conditions present).

5. CYSTITIS. *Symptoms:* Frequent urination, with tenesmus and a burning sensation in the urethra; later on pain in the bladder, hematuria, and the urine contains pus and epithelial cells. Chills, rapid pulse, fever, and headache may also be present. *Treatment:* Rest in bed; the imbibition of plenty of milk and water, and the avoidance of all highly seasoned food; laxatives; diuretics; sitz bath; irrigation of the bladder with an antiseptic solution; hot fomentation and vaginal douches are often helpful; sometimes intravesical medication is necessary.

6. See Williams' "Obstetrics" (1909), page 813; or Hirst's "Obstetrics" (1909), pages 575 and 577.

7. See Williams' "Obstetrics" (1909), pages 151 and 211; or Hirst's "Obstetrics" (1909), pages 92 and 395.

8. See Williams' "Obstetrics" (1909), page 280; or Hirst's "Obstetrics" (1909), page 425.

9. See Williams' "Obstetrics" (1909), pages 525 and 541; or Hirst's "Obstetrics" (1909), pages 630 and 635.

10. See Williams' "Obstetrics" (1909), pages 110, 128, 132, and 156; or Hirst's "Obstetrics" (1909), pages 143, 120, and 125.

SURGERY.

1. *Treatment of tuberculous sinuses:* "The treatment varies with the conditions present, and must include measures directed to the lesion from which the sinuses have originated. The extent and direction of any given sinus may be demonstrated by the use of the probe, or, more accurately, by injecting the sinus with a paste of bismuth and vaseline—subnitrate of bismuth, 30 parts; white vaseline, 60 parts; soft paraffin, 5 parts; wax, 5 parts—and following its track in an *x*-ray photograph. It has been found by Beck of Chicago that the injection of bismuth paste is frequently followed by healing of the sinus, and that, if one injection fails to bring about a cure, repeating the injections every second day may be successful. Iodoform suspended in glycerin may be employed in a similar manner. When these and other non-operative measures fail and the whole track of the sinus is accessible it should be laid open, scraped, and packed with gauze until it heals from the bottom."—(Thomson and Miles' *Manual of Surgery.*)

2. *Hypodermoclysis* is the subcutaneous injection of saline infusion. And see Rose and Carless' "Surgery" (1911), pages 280 and 278; or Da Costa's "Surgery" (1908), pages 243 and 242.

3. See Rose and Carless' "Surgery" (1911), pages 678 and 684; or Da Costa's "Surgery" (1908), pages 552 and 556.

4. See Rose and Carless' "Surgery" (1911), page 812; or Da Costa's "Surgery" (1908), pages 765 and 142.

5. See Rose and Carless' "Surgery" (1911), page 1161; or Da Costa's "Surgery" (1908), page 1014.

6. See French's "Practice of Medicine" (1910), page 572; and Rose and Carless' "Surgery" (1911), page 939; or Da Costa's "Surgery" (1908), pages 395 and 348.

7. The *indications* for ligating the internal carotid artery are wounds and aneurysm. Special care must be taken when opening the sheath to avoid wounding the internal jugular vein, vagus, and cervical sympathetic nerves, and ascending pharyngeal artery. The needle should be passed from the side of the internal jugular and the pneumogastric. For description of the operation see Rose and Carless' "Surgery" (1911), page 331; or Da Costa's "Surgery" (1908), page 416.

8. "*Plastic surgery* includes operations for the repair of deficiencies, for the replacement of lost parts, for the restoration of function in parts tied down by scars, and for the correction of disfiguring projections. Many reparative operations have been devised. Among them are: cheiloplasty, or the construction of a new lip; the closure of a cleft in the palate, the lip, or the penis; the making of a new nose; skin-grafting, grafting of muscle or tendon; nerve-grafting; the introduction of celluloid or metal into the tissues to act as supports; the injection of paraffin into the tissues to amend a depression; the diminution in the size of a lip or a nose; the amendment of protuberant ears; the correction of distortion due to cicatrices; excision of scars; closure of congenital sinuses and of fistulæ; removal of disfiguring growths."—(Da Costa's *Surgery.*)

9. See Rose and Carless' "Surgery" (1911), page 80; or Da Costa's "Surgery" (1908), page 196.

10. See Rose and Carless' "Surgery" (1911), pages 226 and 1068; or Da Costa's "Surgery" (1908), page 343.

DERMATOLOGY, SYPHILOLOGY, AND DISEASES OF THE EYE, EAR, NOSE, AND THROAT.

1. *Tinea trichophytina* is a contagious parasitic affection characterized by the development of circumscribed patches or rings. It is also called *ringworm*. *Varieties:* Tinea trichophytina capitis, barbæ, corporis, unguium. *Treatment:* Washing, epilation (if on a hairy part), and the use of parasiticide applications.

2. *Psoriasis* is a common chronic inflammatory disease of the skin, characterized by variously sized lesions, having red bases covered with white scales resembling mother-of-pearl. It affects by preference the extensor surface of the body. The lesions are infiltrated, elevated, clearly defined, covered with white, shining, easily detachable scales which, upon removal, reveal a red, punctuate, bleeding surface. The eruption is absolutely dry, and itching is usually absent.

PSORIASIS.	ECZEMA SQUAMOSUM.
1. Predilection for elbows, knees, and scalp.	1. No seat of predilection.
2. Patches small, round, and sharply marginated.	2. Patches large, irregular, and ill defined.
3. Scales abundant, firmly attached, and mother-of-pearl in color.	3. Scales scanty, loosely attached, and grayish or yellowish in color.
4. Moisture never present.	4. Often history of antecedent moisture.
5. Itching slight, often absent.	5. Itching marked.
6. Disease often lasts with recurrent attacks throughout a lifetime.	6. More amenable to treatment.

(Schamberg.)

3. *Eczema* is an acute, subacute, or chronic, noncontagious inflammatory disease of the skin, characterized primarily by erythema, vesicles, papules, or pustules, and, secondarily, by scales and crusts, and accompanied by itching and burning. The various forms of eczema constitute about thirty per cent. of all skin diseases. There are several varieties corresponding to the most predominant lesion. These may continue as such or terminate in eczema rubrum or eczema squamosum. The diagnosis of eczema is, as a rule, easy. The most distinctive features are: (1) Serous exudation; (2) the gradual merging of the patches into the surrounding healthy skin; (3) polymorphism of the lesions; (4) the symmetry of the eruption; (5) the marked itching and burning.

ERYSIPELAS.	ECZEMA ERYTHEMATOSUM.
1. Sudden onset with chill and marked constitutional symptoms.	1. No constitutional symptoms.
2. Eruption sharply marginated.	2. Fades into surrounding skin.
3. Glazed, shining surface; great edema.	3. Dull, scaly surface; slight infiltration.
4. Color violaceous.	4. Color bright or dull red.
5. Burning pain.	5. Itching more marked.
6. Occurrence of discrete vesicles or blebs.	6. Vesicles occur in patches if at all.
7. Progressive peripheral spreading.	7. Spreading irregular.
8. Runs an acute course.	8. Runs a chronic course.
9. Contagious.	9. Not contagious.

(Schamberg.)

4. The initial lesion of syphilis is the chancre.

5. See Rose and Carless' "Surgery" (1911), page 149; or Da Costa's "Surgery" (1908), page 282.

6. *Astigmatism* is an error of refraction caused by some irregularity of the curvature of the refracting surfaces of the eye.

Causes. "Astigmatism is usually due to a change in the curvature of the cornea, with or without some shortening or lengthening of the antero-posterior diameter of the eyeball. It is also caused, in part at least, by defects in the curvature of the lens; this lenticular astigmatism may partly neutralize that of the cornea. It is usually congenital and there is often an hereditary tendency. It may, however, be acquired, and is then caused by corneal changes resulting from inflammation, injury, or operation. Pressure of the lids in ametropia is sometimes considered a factor in acquired regular astigmatism." (May.)

Astigmatism is corrected by cylinders, sphero-cylinders, or crossed cylinders. The curve of the corresponding cylinder corresponds to the ametropic meridian; consequently its axis is at right angles to this meridian.

7. "*Plastic iritis.* An inflammation of the iris in which a scant, fibrinous exudate is deposited on the anterior or posterior surface of the iris, the pigment layer at the edge of the pupil thereby becoming adherent in places to the capsule of the lens. The symptoms are intense pain in the forehead and face, lacrimation, photophobia, dimness of vision, pericorneal injection, loss of luster of the iris, and hazy, distorted, and immobile pupil. The course of the disease is from 2 to 4 weeks. Synechiæ often result. It is due to exposure to cold, syphilis, tuberculosis, rheumatism, etc., but may be secondary to other ocular inflammation, traumatism, foreign body, etc. The original cause should be treated by the administration of the iodides, salicylates, mercurials, etc. The instillation of atropine, dark glasses, and, if pain is severe, hot compresses, leeches to the temple, and morphine should be prescribed. The diet should be liquid. Puncture of the cornea to relieve tension may be necessary."

"*Serous Iritis.*—A chronic inflammation in which an inflammatory product, poor in cells, settles in the anterior chamber, causing a haziness of the aqueous, and deposits on the posterior surface of the cornea. Opacities on the posterior portion of the cornea and vitreous and lenticular opacities and posterior synechiæ often follow. This condition results from debility, anæmia, syphilis, etc., and may follow cataract operations. In addition to constitutional treatment, atropine should be instilled twice daily, and sometimes paracentesis and iridectomy may be indicated. Heat, diaphoresis, and the iodides will aid in the absorption of the exudate.

"*Suppurative Iritis.*—A rare condition in which the inflammatory product is purulent and saturates the tissues of the iris and overflows into the anterior chamber, forming a hypopyon. It results from infection or diabetes."

(Gould and Pyle's *Pocket Cyclopedia.*)

8. See French's "Practice of Medicine" (1910), page 600, or Osler's "Practice of Medicine" (1909), page 596.

9. See Rose and Carless' "Surgery" (1911), page 880.

10. See Rose and Carless' "Surgery" (1911), page 842; or Da Costa's "Surgery" (1908), page 390.

Obstetrical Anatomy of Double Congenital Luxation of the Hip Joints with Reference to the Pelvis.—J. Dalmas has made a study of the pelvis of women who suffer from double congenital luxation of the hip. He concludes that the pelvis in these cases is not a contracted one, the only contraction being found in the large pelvis, due to drawing together of the wings of the os innominatum. The superior and inferior straits and the cavity are all generally increased. They are found decreased only in cases in which there is a general atrophy of the entire pelvis. The pelvis is markedly anteverted and there is a marked lordosis of the spine.—*L'Obstetrique.*

Tracheobronchial Adenopathies in Children.—H. Grenet considers the study of tracheobronchial enlarged glands of great importance. They are always present in young tuberculous subjects and are not easy to diagnose. There are other forms of infectious adenitis that are not tuberculous. All pulmonary affections are accompanied by enlarged tracheobronchial glands. These may be secondarily invaded by the tubercle bacillus. Typhoid fever, mumps, and various infections of adenoid growths and tonsils also produce enlarged glands. They are found in hereditary syphilis and in leucemia. Tuberculosis is the main cause of tracheobronchial adenopathy, which is never absent in tuberculosis of childhood. It is also found in nursing infants. They are occasionally infected from the intestines, although more rarely than from above. Tracheobronchial adenopathy, although secondary, constitutes almost the only focus for bacilli and may be the point of departure for pulmonary or generalized tuberculosis.—*Annales de Médecine et Chirurgie Infantiles.*

Books Received.

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MEINE PRAPARATIONSMETHODE DES OPERATIONSFELDESMITTELS JODTINKTUR. By Dr. ANTONIO GROSSICH. 80 pages; paper; price 75 cents. Rebman Company, Publishers, New York.

SERUM DIAGNOSIS OF SYPHILIS AND THE BUTYRIC ACID TEST FOR SYPHILIS. By HIDEYO NOGUCHI. 238 pages; illustrated; cloth; price $2.50. J. B. Lippincott Company, Publishers, Philadelphia.

TEXT-BOOK OF OPHTHALMOLOGY. By Dr. ERNST FUCHS; translated by ALEXANDER DUANE, M.D. Fourth Edition. 980 pages; with 441 illustrations; cloth; price $6.00. J. B. Lippincott Co., Publishers, Philadelphia.

LA FATIGUE ET LE REPOS. By Dr. FERNAND LAGRANGE. 300 pages; paper; price 6 francs. Librairie Felix Alcan, Publishers, Paris.

TRANSACTIONS OF THE AMERICAN OTOLOGICAL SOCIETY. Vol. XII. Part II. Forty-fourth Annual Meeting, Hotel Chelsea, Atlantic City, N. J., June 20 and 27, 1911. 466 pages; paper. Published by the American Otological Society.

THE OPHTHALMIC YEAR BOOK. Vol. VIII. By EDW. JACKSON, M.D., THEO. S. SCHNEIDEMAN, M.D., and WM. ZENTMAYER, M.D. 455 pages; illustrated; cloth. The Herrick Book & Stationery Co., Publishers, Denver, Colo.

MINOR SURGERY. By LEONARD A. BIDWELL, F.R.C.S. 265 pages, with 88 illustrations; cloth. Published for the Univ. of London Press by Hodder & Stoughton and Henry Frowde.

ANÆSTHESIA AND ANALGESIA. By J. D. MORTIMER, M.B., F.R.C.S. 276 pages; illustrated; cloth. Published for the Univ. of London Press by Hodder & Stoughton and Henry Frowde.

LEITFADEN DER ELEKTRODIAGNOSTIK UND ELEKTROTHERAPIE. By Dr. TOBY COHN. 212 pages; illustrated; paper; price 6.60 M. S. Karger, Publisher, Berlin.

DIE STÖRUNGEN DES VERDAUUNGSAPPARATES ALS URSACHE UND FOLGE ANDERER ERKRANKUNGEN. Part I. By Dr. HANS HERZ. 218 pages; illustrated; paper; price 6 M. S. Karger, Publisher, Berlin.

DIE STÖRUNGEN DES FARBENSINNES IHRE KLINISCHE BEDEUTUNG UND IHRE DIAGNOSE. By Dr. HANS KOLLNER. 428 pages; illustrated; paper; price 14 M. S. Karger, Publisher, Berlin.

ABHANDLUNGEN AUS DEM GEBIETE DER GEBURTSHILFE UND GYNÆKOLOGIE. Vol. II. Part I. By Dr. W. TAUFFER. 109 pages; paper; price 4 M. S. Karger, Publisher, Berlin.

THE MORTALITY OF ALCOHOL. By EDWARD BUNNELL PHELPS, M.A., F.S.S. 75 pages; price $2.00. Thrift Publishing Company, New York.

TREATMENT OF FRACTURES BY MOBILISATION AND MASSAGE. By JAMES B. MENDELL, M.D., B.C. 458 pages; illustrated; cloth; price $4.00 net. The MacMillan Company, Publishers, New York.

THE TRIUMPH OF AMERICAN MEDICINE IN THE CONSTRUCTION OF THE PANAMA CANAL. By J. EWING MEARS, M.D., LL.D. 25 pages; illustrated; cloth. Wm. J. Dornan, Publisher, Philadelphia.

A STUDY IN TROOP LEADING AND MANAGEMENT OF THE SANITARY SERVICE IN WAR. By Major JOHN F. MORRISON and Major EDWARD L. MUNSON. 245 pages; cloth; price $1.50. U. S. Cavalry Association, Publishers, Fort Leavenworth, Kan.

THE PRINCIPLES OF SANITARY TACTICS. By EDWARD LYMAN MUNSON, A.M., M.D. 206 pages; cloth; price $2.00. U. S. Cavalry Ass'n. Publishers, Fort Leavenworth, Kan.

BIOLOGICAL ASPECTS OF HUMAN PROBLEMS. By CHRISTIAN A. HERTER. 344 pages; cloth; price $1.50 net. The Macmillan Company, Publishers, New York.

A SYSTEM OF MEDICINE. By Sir CLIFFORD ALLBUTT, K.C.B., and HUMPHRY DAVY ROLLESTON, M.A., M.D., F.R.C.P. Vol. VIII. 1070 pages; cloth; price $6.00 net. The Macmillan Company, Publishers, New York.

ÜBER DAS KONDITIONALE DENKEN IN DER MEDIZIN UND SEINE BEDEUTUNG FUR DIE PRAXIS. By D. V. HANSEMANN. 184 pages; paper; price 5 M. August Hirschwald, Publisher, Berlin.

A HANDBOOK OF HEALTH. By WOODS HUTCHINSON, A.M., M.D. 330 pages; illustrated; cloth; price $1.25 net. Houghton Mifflin Company, Publishers, Boston and New York.

HAYDEN'S EXAMINING AND OPERATING AERO-URETHROSCOPE

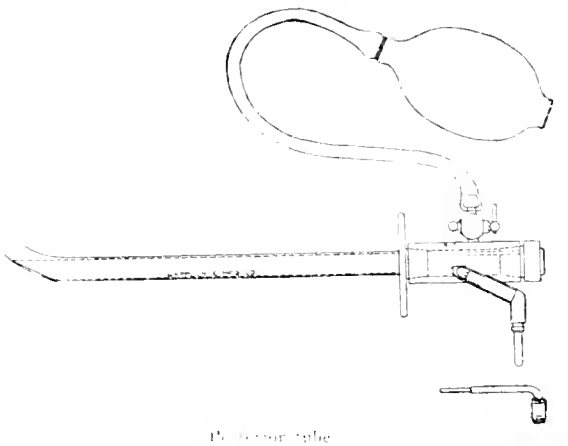
By JAMES R. HAYDEN, M.D.

NEW YORK.

[illegible] GENITO-URINARY DISEASES, COLLEGE OF PHYSICIANS AND SURGEONS (COLUMBIA UNIVERSITY); ATTENDING GENITO-URINARY SURGEON, BELLEVUE HOSPITAL.

In the present type of urethroscopes, with either direct or indirect illumination, there are several practical objections: (1) The difficulty of making applications, or of operating on the urethra under direct and unobstructed inspection. (2) The canal cannot be dilated with air, which is most essential in some pathological conditions. (3) The lamp in the direct form obscures the field more or less and if smeared with blood or secretions gives no light.

To obviate these objections and to supply an instrument with unobstructed field, in which the operator can see the lesions while treating them, I have devised the present urethroscope, which can be used either in the anterior or posterior urethra, and even in the bladder, where the ureteral orifices can be found and catheterized, small stones or foreign bodies removed, and the mucous membrane clearly seen. The tubes for the anterior urethra are 5



Posterior tube.

inches long and those for the posterior urethra 6¾ inches, but can be lengthened or shortened according to the requirements of the case, and made in any caliber. The proximal ends of the obturators and tubes are *milled* so as to give the operator a firm hold, and *flattened* above and below to prevent their rolling when laid down. The little lamp consists of a carbon filament in front of which is a planoconvex "collecting" lens, which gathers and projects the rays to the distal end of the tube where the field is seen in brilliant illumination. The lamp is held in a metal collar *outside* of the tube so that it does not encroach on the field, is not in the way of applicators, examining or operating instruments, and cannot be soiled and obscured by blood, secretions, or the lubricant. If *air distention* is required, an air tight cap with magnifying lens is slipped over the proximal end of the collar and the urethra *easily* and *carefully* dilated by *slowly* compressing the little bulb which forces air down the tube, where it can be retained by shutting off the stop cock. Water distention may also be used, if so desired. For simple examination, treatment, "fulguration" or the "ultra-violet ray," a magnifying lens is attached to the collar by a slender rod which allows of the use of applicators and any kind of instruments under direct visual inspection.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended January 6, 1912.

	Cases	Deaths
Tuberculosis Pulmonalis	396	167
Diphtheria	264	20
Measles	505	7
Scarlet Fever	239	8
Smallpox		
Varicella	173	—
Typhoid Fever	65	11
Whooping Cough	22	3
Cerebrospinal Meningitis	3	3
Malarial Fever	—	—
Totals	1,667	219

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended January 5, 1912.

Places	Date	Cases	Deaths
CHOLERA			
Bulgaria: Varna	Nov. 6	1	
Dutch East Indies			
Total Sept. 24-Oct. 9, 1911: Cases, 322; deaths, 256			
Batavia	Nov. 12-18	6	2
India: Calcutta	Nov. 5-11		39
Italy			
Total Nov. 26-Dec. 2: Cases, 51; deaths, 34			
Provinces—Caltanisetta	Nov. 26-Dec. 2	2	2
Girgenti	Nov. 26-Dec. 2	43	29
Messina	Nov. 26-Dec. 2	3	2
Syracuse	Nov. 26-Dec. 2	1	1
Malta	Nov. 19-Dec. 2	4	4
Dec. 23 declared free from cholera			
Philippine Islands: Province—Union	Oct. 29-Dec. 4	5	5
Straits Settlements: Singapore	Nov. 5-18	3	3
YELLOW FEVER			
Brazil: Manaos	Nov. 19-Dec. 2		4
Ecuador: Bucay	Nov. 16-30	2	
Guayaquil	Nov. 16-30	8	4
Milagro	Nov. 16-30	1	
Mexico: Merida	Dec. 12-23	4	5
Total Aug. 1-Nov. 23: Cases, 49; deaths, 25			
Venezuela: Caracas	Nov. 16-Dec. 7	11	
PLAGUE			
Algeria: Philippeville	Oct. 19-Nov. 11	8	2
Including 5 cases, p. 2096, Vol. XXVI			
Brazil: Rio de Janeiro	Nov. 12-18	2	
Chile: Iquique	Nov. 12-25	1	2
Dutch East Indies: Java—Pasuerocan			
Residency, Malang District	Nov. 12-18	6	4
Soerobaya	Oct. 17-27	2	
Ecuador: Guayaquil	Nov. 16-30	46	19
Egypt: Provinces—Assiout	Oct. 14-Dec. 13	16	14
Kena	Nov. 20-Dec. 13	3	3
Minieh	Dec. 13	1	
India: Bombay	Nov. 19-Dec. 2	17	16
Calcutta	Nov. 11		6
Karachi	Nov. 26-Dec. 2		3
Indo-China: Saigon	Nov. 13-19	3	
Mauritius	Nov. 3-9	4	4
Philippine Islands: Cebu: quarantine station	Dec. 4	1	
On s.s. *Montrose* from Shanghai			
Straits Settlements: Singapore	Nov. 5-18	3	3
SMALLPOX			
Algeria: Algiers	Nov. 1-30		1
Canada: Ontario—Kingston	Dec. 19-23	1	
Ottawa	Dec. 10-23	12	
Quebec—Montreal	Dec. 17-23	2	
Ontario	Dec. 17-23	20	
Ceylon: Colombo	Nov. 12-18	1	
China: Canton	Nov. 11-25	15	3
Hongkong	Nov. 12-18	9	6
France: Marseilles	Nov. 1-30		1
Paris	Dec. 3-9	15	
India: Bombay	Nov. 19-Dec. 2	19	8
Indo-China: Saigon	Nov. 13-19	2	
Italy: Genoa	Dec. 1-15	6	1
Leghorn	Dec. 16	5	1
Naples	Dec. 3-9	8	
Palermo	Nov. 26-Dec. 9	570	219
Japan: Arima-Mura	Nov. 12-18	6	1
11 miles east from Kobe			
Java: Batavia	Nov. 12-18		1
Mexico: Chihuahua	Nov. 20-Dec. 26	30	6
Juarez	Dec. 19-23	1	
Magdalena	Dec. 23	45	13
Mazatlan	Dec. 11-26		3
Monterey	Dec. 11-24		2
Porfirio	Dec. 3-9	3	3
San Duval	Dec. 16		Present
Tampico	Dec. 1-20	4	4
Tapachula	Nov. 1-22		13
Russia: Moscow	Nov. 19-25	5	
Odessa	Nov. 26-Dec. 2	2	1
St. Petersburg	Dec. 19-25	10	1
Spain: Valencia	Dec. 3-9	6	1
Teneriffe: Santa Cruz	Dec. 3-9		6

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Original Articles.

SOME EXTRAPULMONARY SOUNDS WHICH SIMULATE RALES.

By GEORGE E. BUSHNELL,

COLONEL MEDICAL DEPARTMENT, U. S. ARMY.

THE fact that sounds of various origin which imitate râles may be obtained by auscultation over the normal thorax has not received the attention that its importance in diagnosis warrants. The study of these sounds is of special interest in examinations for early pulmonary tuberculosis in which weighty diagnoses are frequently based upon scanty auscultatory phenomena.

1. The sounds produced by the contraction of muscles, especially of the trapezius, are well known. The hum of contracted muscular fiber is not only confusing but the tension of which it is a sign interferes with a free respiration in the apices. It may be difficult to be certain that the enfeeblement and the apparent change of character of the respiratory sounds resulting from the tension of the muscles are not due in part to pulmonary conditions. It has been found that in peculiarly difficult cases it is of advantage to cause the subject to recline prone upon a high couch, first one and then the other arm being allowed to dangle over the edge while the back is under examination. This position will often be found to relax the offending muscles completely. Muscular contractions do not often simulate râles so perfectly as to mislead an examiner of any experience, although the writer has known the mistake to be made when the muscular contractions were localized over a small area.

2. Marginal sounds are crepitations which are heard during inspiration over the base of the lungs and are not associated with other evidences of organic disease of this portion of the lung.

According to Von den Velden[1], sounds occurring in the lung margins have been mentioned by writers since the middle of the 19th century. They have been interpreted by some as pneumonic or bronchiolitic râles or pleural rubbings, and by others as due to atelectasis. Others still have not attempted an explanation, and a few have apparently regarded them as so-called accidental or external sounds. Rosenbach[2],[3],[4], in an article upon pseudo-pulmonary and pseudo-pleural sounds, calls attention to the muscle sounds over the apices and states that a modification of the same sound is observed on auscultation and palpation over the lower and lateral parts of the thorax, especially in the axilla between the sixth and tenth intercostal spaces. They are found, he says, especially in individuals with broad intercostal spaces and considerable mobility of the lower edge of the lung. The creaking (Knarren) which represents exactly the type of the new leather sound is not only audible, but in some cases palpable. In other cases the sound is still perceptible by palpation but differs from the leather sound of pleurisy. The audible and palpable creaking is regarded by him as arising in the intercostal muscles. It is the plainer, he says, the greater the extension of the muscle, and is therefore heard best in young individuals who breathe vigorously, but is also found in older dyspneics and in emphysema. It is distinguished from pleural friction sounds by the fact that it appears symmetrically, is surprisingly constant, and occurs in the absence of other symptoms of disease.

Burghart[5] discovers râles at the base of the lung at a point between the mammillary and anterior axillary lines "in even trivial catarrhs of the apices." These râles are for him pathological, and according to his theory are due to the presence of bronchial secretion which has been aspirated from the diseased focus. The râles, he says, differ in quality according to the nature of the aspirated secretion and the length of time during which it has lain in the lower margin of the lung, being usually fine, dry crepitating, but sometimes coarser and moister. The râles are always heard on the diseased side. If they are heard on the other side it appears later that this side is also affected. The râles are interpreted by him as an early sign of apical tuberculosis. The sounds under consideration are sometimes known as the marginal sounds of Burghart. This name should not, however, be given to them even if the pathological significance ascribed by Burghart to them is accepted, for Burghart was not the first to express this view. According to Wintrich (cited by Von den Velden) Walshe enunciated it in 1851. Kuhn[6], discussing "Burghart's symptom," approves of Burghart's explanation for some cases, but says that in others the crepitations are so extraordinarily fine and so similar to the sound caused by entrance of air into atelectatic tissue that they could hardly be explained by the presence of a collection of fluid. He considers slight moist, or dry, pleurisy to be the causal condition, rejecting atelectasis on account of the persistence of the sounds, since in true atelectasis the sound would be heard but once. In support of the pleurisy theory he brings forward the fact that the presence of fine crepitations in exudative pleurisy has been mentioned by Strümpell, Fardieu, Rothbach, and especially Janowski[7], who reports hearing in even slight cases of pleurisy fine râles resembling the so-called crepitatio redux of the last stage of pneumonia, the diagnosis being established in some cases by the subsequent removal of fluid by aspiration, after which the sounds disappeared. Janowski explains these sounds by the pressure of pleural fluid by which the agglutination of single pulmonary vesicles is effected, *i. e.* by what might be called a disseminated atelectasis. Kuhn assumes a dry pleurisy for less "moist" crepitations,

which he says are of course to be heard also on expiration, although he does not state whether their presence in expiration is assumed by him on theoretical grounds purely, or has been determined by actual observation. Von den Velden[1] recognizes the presence of marginal sounds in healthy lungs. According to him they disappear almost always after 12 to 15 breaths; are especially frequent in women, even in young women; are also met with in older corpulent men of a sedentary mode of life, but almost never in young men. He considers them due to a pure uncomplicated form of marginal atelectasis, the cause of which is to be sought in diminished activity of the diaphragm or "in inability to use the ribs in the usual way in inspiration." He finds the sounds present also in apical tuberculosis, more frequently and at an earlier time upon the affected side. In this condition also he considers the sounds to be due to a pure marginal atelectasis, at least in the beginning, the atelectasis being caused by a diminished activity of the diaphragm. Wilson[2] mentions crepitant râles sometimes associated with subcrepitant râles as being frequently present during deep inspiration at the bases of the chest posteriorly and laterally in persons whose respiration is habitually shallow, not only in the case of the bedridden, but also in many healthy persons, especially after middle age.

Sahli[3] refers to the marginal sounds as physiological crepitant râles. They are due, in his view, to the fact that "when there is little need of air the lungs are not freely expanded so that the alveoli at the borders of the lung may become empty through compression. If then the patient be made to take several full breaths the air rushing into the collapsed alveoli may cause crepitation. These physiological crepitations usually occur symmetrically on both sides, especially in front, and disappear after a few breaths." The American editors of Sahli refer to what are apparently the same sounds as subcrepitant râles resembling friction sounds in the lower axillary region of apparently normal individuals, and cite, with approval, Cabot's view that they are to be attributed to a partial atelectasis resulting from disuse of the thin pulmonary margins. Cabot[10] speaks of the sounds as crepitant and subcrepitant râles heard along the thin margins of the lungs at the base of the axillæ and in the back. They are sometimes transitory, disappearing after a few deep breaths have been taken by an individual who had previously been breathing superficially. In other cases they persist despite deep breathing. Cabot found the marginal sounds present in 228, or 61 per cent. of 356 normal chests. They are rarely to be heard in persons under 20. After 45, on the other hand, he says it is unusual not to find them. Cabot's conclusions are that we must recognize the fact that "it is almost or quite physiological" to find the finer varieties of crackling râles at the base of the axillæ in persons over 40 years of age. Cabot refers to these sounds as disappearing after a few deep breaths in most cases, but sometimes as "audible as long as we choose to listen to them."

Rosenbach is undoubtedly correct in ascribing the "sound of new leather" to the contraction of the intercostal muscles. It is heard best, as he says, in young individuals who breathe vigorously. The sound of muscular contractions, which, to the writer's ear, is softer than the leather sound of pleurisy, may be heard during vigorous inspiration, but is not conspicuous and is usually absent. Its character should not lead to confusion with intrathoracic sounds. If Rosenbach had described more distinctly the sound which he says differs from "the leather sound of pleurisy" he might be credited with being the first to assert that the marginal sounds are physiological. At all events the credit is due him of having indicated the correct method of investigation, the examination of healthy individuals for the presence of a phenomenon before it is decided to be of a pathological nature.

Burghart's view that the marginal sounds are due to the aspiration of mucus from an apical lesion is inherently improbable. Such aspiration would not be confined to the lower margin but would involve the entire lower lobe, in which case sounds heard would not be limited to the margins of the lungs as is the case with the marginal sounds.

The theory of Kuhn that the sounds are due to a dry pleurisy has had many unconscious supporters, for "dry pleurisy at the base" figures in many diagnoses of lesions of the upper lobe, and marginal sounds are, perhaps, responsible for more errors than any other auscultatory phenomenon. Crepitations due to dry pleurisy and also to pleurisy with effusion, as especially described by Janowski, no doubt occur at the base of the lung and are to be distinguished from marginal sounds. The modern tendency is to refer the marginal sounds to an atelectasis or to a condition approaching atelectasis due to deficient expansion of the thin margin of the lung.

Atelectasis, according to Fraenkel[11], is most frequently met with in the edges of the lungs, especially of the lower lobe, but true atelectasis is due to definite intrathoracic disease, pleurisy, pneumothorax, the plugging of a bronchus with secretion, etc., or if due to compression exerted through the diaphragm, as from meteorism, abdominal tumors, liver abscess, the pressure must be sufficiently great to crowd up the diaphragm beyond its expiratory position. A sedentary life, obesity, advancing years, etc., are quite insufficient causes of atelectasis in the absence of pulmonary or abdominal disease. Cabot[10] attempts to prove that the marginal sounds are due to atelectasis by showing that after a few full breaths the lungs will be found to extend downward nearly an inch beyond their former level. This he explains by the distention of previously collapsed air vesicles. The phenomenon is well known but is usually interpreted differently. Hofbauer and Holzknecht[12] state that "in almost all cases inspiration alone is deepened in deep breathing, the expiration not increasing in strength. The reason of this is that the inspiration is produced by muscular action and so is capable of increase, whereas the expiration cannot be increased because it depends upon the elasticity of the lung. The auxiliary muscles of expiration are not generally called into play, for this would mean the resort to a mechanism foreign to ordinary respiration. There develops, therefore, even under physiological conditions, a distention of the lung during deep breathing."

The descent of the diaphragm is due to a distention of the lung above its usual size, not to a return to normal after collapse, the proof of which is that the lung returns gradually to its former level after the cessation of deep breathing, the phenomenon being met with in the robust, in which there can properly be no thought of a collapsed condition of the bases of the lungs sufficient to account for the change in level. It must be remembered that, while the base of the lung is undoubtedly especially exposed to compression through the diaphragm, in compensation for this it is directly subject to the

influence of the most powerful and freely movable parts of the respiratory apparatus, the diaphragm and the lower thorax. Compression (or relaxation) of this part of the lungs sufficient to cause atelectasis could not, therefore, be anticipated except in the presence of well-marked pathological conditions.

A massive atelectasis of the pulmonary margin is then out of the question in the etiology of the marginal sounds. If by a partial or incomplete atelectasis is meant the presence of atelectatic cells, or groups of cells among expanded cells, it need only be said that such a supposition is not warranted by the mode of production of atelectasis (Lichtheim[2]). With regard to Cabot's hypothesis that the marginal sounds are produced by the separation of agglutinated walls of bronchioles partially collapsed by compression or disuse, one cannot, of course, disprove the possibility of such partial collapse under some conditions, but the explanation does not fit with the observed facts concerning marginal sounds. It might, perhaps, pass in the case of the tuberculous apex, but it is impossible to believe that in the average healthy individual the most strongly breathing portion of the lung is in a condition of partial collapse during rest, and if we adopt this hypothesis to explain the continuance of marginal sounds in the athlete we would be obliged to suppose that the lung margins are compressed during each expiration sufficiently to bring the walls of the bronchioles into contact, a most improbable assumption. In the expiratory ascent of the lung its retraction occurs not only vertically upward, but also, on account of the shape of the thorax, necessarily inward. We cannot conceive of the lung margin as being, as it were, pinched between the ascending diaphragm and the ribs in such a way as to be subjected to actual compression.

Several writers have pointed out that the marginal sounds are found in a considerable percentage of healthy persons, but we cannot accept the limitations as to the prevalence of these sounds which are set by them. The marginal sounds are heard in children and in young men as well as in young women. They are found in individuals who are sedentary, obese, advancing in years. They are also heard in young athletes. Dr. E. H. Bruns has found them in a young man who was training for a prize fight. They are heard on the affected side in apical tuberculosis. They are also to be found on the healthy side in the same case. The marginal sounds, in short, are a purely physiological phenomenon. The usual transitoriness of the sounds is the cause of their ascription to atelectasis. The real reason why they are transitory is that, as already indicated, the average individual when breathing deeply inspires more strongly than he expires, with the result that after a few inspirations he is no longer able to breathe as vigorously as is necessary for the production of the sounds. If expiration equals inspiration the sounds are producible until the subject is exhausted. To balance expiration with deep inspiration is only possible by bringing into action the expiratory muscles. To do this some instruction is generally requisite. In studying the marginal sounds select a young man with a well developed chest, a man of athletic training is to be preferred. After a little instruction in forced expiration, mark in the axilla (the right axilla is preferable) the level of the base of the lung on full inspiration and on forced expiration. The latter line will be found at, or a little above, the level of the nipple. The inspiratory line will be from 3½ to 4½ inches below this in the anterior axillary line in good breathers. Cause the subject to empty his lungs as completely as possible, and then take a full breath. The inspiration should be strong and full, but not extremely rapid. Its duration should be from 1 to 2 seconds. Auscultation of the thorax between the two lines, if the breathing is properly performed, reveals the presence of a shower of crackles, sounds resembling crepitant râles but not quite so fine. The sounds are heard only during inspiration and may be obtained anywhere in the region indicated. They are not, however, obtained synchronously over this surface, as is shown by the following experiment. Let two examiners apply their stethoscopes simultaneously, the one a little below the expiratory line, the other a little above the inspiratory line. During inspiration each examiner denotes by some sign the instant when he first hears the marginal sounds. It will be found that the sounds invariably reach the upper stethoscope first. In some experiments conducted by the writer, the duration of the inspiration being about two seconds, the interval was approximately one second, varying naturally with the respective location of the stethoscopes and the rapidity of the inspiration. It will be further noted that when the lower stethoscope catches the sounds the upper instrument no longer perceives them. Accidental sounds, a click or two, may be heard, but the shower of crackles has passed. Cause the subject to lie upon a table and observe the relation of the marginal sounds to Litten's phenomenon. It will be found that the marginal sounds are heard as the shadow passes, or just after it passes, the stethoscope. Another experiment is of interest as bearing upon the subject of the respiratory distention of the lung. Mark the inspiratory level as above, and cause the subject to take 10 deep breaths, inhaling as deeply and exhaling as little as possible. As Cabot states, the inspiratory level will have descended nearly an inch. Mark this level and reverse the process, directing the subject to breathe 10 times, inhaling as little and exhaling as strongly as possible. Determine again the inspiratory level and it will be found that it has returned approximately to its first position. If it is found that after repeated deep inspirations the subject is no longer able to produce the marginal sounds as well as at the beginning advantage may be taken of the foregoing observation by causing him to make several forcible expirations, after which it will be found that he can again inspire deeply, and the marginal sounds will be heard as clearly as at the outset, unless he be too greatly fatigued. The marginal sounds are rightly named, being generated absolutely at the margin of the lung. Their cause is believed to be the peeling off of the diaphragm from the chest wall as the lung descends into the complemental space. The costal and diaphragmatic pleura are of course slightly lubricated surfaces and no reason is apparent why their separation should not produce more or less moist sounds if such separation is effected with vigor. In fact, under the circumstances, no other explanation is possible unless it be friction of the tip of the lung as it plows its way downward, so to speak, between the pleural folds of the complementary space, which seems the less probable hypothesis.

While we have found marginal sounds present most conspicuously in the lungs of robust men, other writers, observing the presence of these sounds in early tuberculosis, have drawn the conclusion that they are dependent upon deficient action of the diaphragm. For example, Von den Velden[1] states

that the marginal sounds are generally not to be demonstrated in coughing consumptives and large infiltrations on account of the ventilation of the margins caused by hard and frequent coughing. He considers that the marginal sounds constitute an auscultatory control of the activity of the diaphragm, which ranks with Litten's phenomenon but in the reverse way. While the presence of Litten's phenomenon shows mobility of the diaphragm, the marginal sounds are an evidence of its inactivity. And De la Camp[14], with Von den Velden's approval, expresses the opinion that marginal sounds are to be considered as the auscultatory equivalent of Williams' phenomenon. Now Williams' phenomenon, if present in tuberculosis of the upper lobe, is an evidence that the disease is sufficiently extensive to produce an inelasticity of the lung which prevents the diaphragm from readily descending to its normal extent. The lower lobe is, however, still capable of distention under forced inspiration, and hence the marginal sounds may be produced, whereas in "the coughing consumptive" the lower lobe is habitually more or less distended and as a result of this the diaphragm is incapable of excursions of sufficient amplitude and force to produce the marginal sounds. The theory set forth in this paper differs from that of the writers cited in that it assumes that the marginal sounds are a normal phenomenon which occurs as long as the lung has its normal volume, and ceases when the lung has become overdistended, while the other theory assumes that the marginal sounds only occur during the process of expanding an atelectasis.

Dr. W. B. Borden, examining 75 ambulant tuberculous patients, under the writer's direction, for Litten's phenomenon with a view to determining whether there is any relation between this sign and the marginal sounds, found Litten's phenomenon present in 58 out of 75 cases. Of these 58 cases 46 had marginal sounds. Marginal sounds were present in 48 out of the 75 cases. Of these 48 cases, 46 presented also Litten's phenomenon. From this study it is evident that there is a very close connection between Litten's phenomenon and the marginal sounds, in that both are dependent upon freedom of movement of the diaphragm.

3. Sounds originating in the sternum and in its articulations: We distinguish three kinds: First. Fine sounds resembling crepitant râles found over the sternum. Second. Coarser sounds resembling medium moist râles, or sometimes finer moist râles, which originate in the costosternal articulations. Third. Clicks which likewise originate in the costosternal articulations. Sounds of the first class are heard during deep inspiration over the sternum. They resemble crepitant râles, but are not quite so fine and dry. The quality of the sounds is different from pulmonary râles. The adjective "cartilaginous" best describes it. The crepitations are numerous. There is a shower of fine crackles. They are sometimes heard only over the manubrium, sometimes only in the vicinity of the ensiform appendix, but usually are found best over the gladiolus. They are sometimes heard over a limited area on ordinary breathing, while inspiration following expiration and cough develops them over the entire sternum. These sounds may be elicited over the sternum, near the insertion of the great pectoral muscle when the arm is swung forcibly from before backward, the breath being held. These sounds are not transmitted beyond the sternum. They are believed to be due to the bending of the bone or of the costal cartilages by the respiratory act, or by the tugging of the attached muscles. Sounds of the second class are heard loudest over the costosternal articulations during deep inspiration. They imitate medium sized moist râles. They are transmitted to the neighboring soft parts and sometimes for several inches along the rib to which the articulation belongs. They do not appear to be propagated to the other side of the chest. They are distinguished from pulmonary râles by the fact that they are heard loudest over the articulation and may be transmitted along the rib with diminishing intensity. In some cases the diagnosis is difficult. These sounds may sometimes be brought out by swinging the arms while the breath is held. The sounds are heard oftenest, in the writer's experience, over the 2d costal articulation of the left side. They are usually confined to one articulation but in one case they were heard over the 2d, 3d, and 4th articulations of the left side at the same examination, and were progagated along the 2d rib to the mammillary line and nearly to this line along the 3d rib, the subject being a young athletic man in good health. The clicks of the third class are sounds resembling articular sounds. They are single sounds, rather coarse, of a "bony" quality, not usually loud, and are propagated along the rib to which the articulation which generates them belongs, and may be occasionally transmitted through the sternum to the other side of the chest. In one case the sound which was produced in the 4th costal articulation of the left side was propagated along the corresponding rib as far as the anterior axillary fold. This finding was twice corroborated by other observers. The sound is rare and has only been discovered in men of athletic training. Of 19 healthy young men examined especially for sternal sounds, the sounds were found in ten; in one of these clicks of the 4th costosternal articulation were heard; in another, sounds like moist râles over the articulation of the 2d rib, left side, extending 1½ inches along the rib; the remaining eight had the finer sternal sounds. Special attention is invited to the case first mentioned for the reason that this man understood well the method of expiration and cough, and coughed with great vigor during the examination. It is believed that if this method were thoroughly understood by the men the percentage of positive results would have been much increased. Some of the men did not grasp the idea at all; others carried it out quite imperfectly. The examination is fatiguing and the usual preponderance of inspiration over expiration diminishes the time of effective breathing so that thorough examination of a subject is difficult. The finer sternal sounds are fairly constant, but there is an irregularity in the appearance of the coarser sounds which is not to be explained altogether by the above considerations. If it is correct to suppose that the coarser râles and clicks are produced within the articulations an explanation of their intermittent appearance may be sought in the laws which govern the production of sound within joint capsules. As is well known, the snapping sounds produced within a relaxed joint capsule depend upon a relaxation, or at least a certain optimum tension, of the muscles which control the joint. For this reason the sounds are best heard when the joint is first put in motion after a period of rest, disappear after brief use, and often cannot be again obtained until after rest. In some cases the tension of the muscles must be exactly at the optimum degree or the sounds will not be produced at all. This is illustrated by a condition to

which the writer is subject. If he bends the trunk forward, a position is sometimes reached, more or less by accident, in which a snapping sound is produced during expiration, near the ensiform cartilage. The phenomenon subjectively is rather a motion than a sound, but the noise of the slip is perceptible to others at a distance of a yard. The accompanying sensations lead to the diagnosis of motion at the articulation of the 7th costal cartilage on the right side with the sternum. Now, though the sound may sometimes be reproduced indefinitely, as soon as others attempt auscultation it immediately disappears. A certain degree of muscular tension appears to be necessary to produce the phenomenon, and even the idea of an examination suffices to change the tension so that the sound disappears.

It appears probable that the clicks are made possible by a stretching of the joint capsules in the athlete which permits a greater separation of the articular surfaces than is found in the subject whose thorax has not been subjected to severe strain. All three classes of sternal sounds may be found simultaneously in the same subject. Sounds resembling the moist râles of the second class of sternal sounds may be obtained on auscultation of a freshly removed sternum while an assistant holds the bone firmly with one hand and moves the costal cartilages with the other.

From the difficulty which exists in distinguishing the sounds originating in the articulations from the râles of morbid processes in the underlying lung, observations made upon well-marked cases of tuberculosis would naturally be viewed with suspicion. For that reason the writer has cited solely the results obtained in the examination of healthy men. It is desired now to mention briefly, cases of suspected and real tuberculosis in which the sternal sounds caused difficulties in the diagnosis.

Case I.—A patient who had had a winter cough was examined by his physician and the diagnosis of pulmonary tuberculosis was made. He then consulted a specialist who, having given 5 mgm. old tuberculin without reaction, declared that tuberculosis was not present. Nevertheless the patient went to the Southwest and was seen by a physician, a very good diagnostician, who, after examining the patient's lungs, said that he would stake his professional reputation upon the presence of pulmonary tuberculosis notwithstanding the fact that the tuberculin test had been negative. The patient then came under the writer's care. He was a middle-aged man of very good physique, well nourished, and appearing in good health. There was no fever further than occasional rises of a few tenths of a degree under rest and full feeding, no cough, no expectoration. The lungs presented nothing abnormal except that over small areas in the second and third interspaces on the right side close to the sternum, and in the second interspace on the left side also close to the sternum, what seemed medium sized moist râles were heard very distinctly on deep breathing. These were considered at first to denote small tuberculous lesions. But the progress of the case led to suspicions as to the diagnosis. The situation of the supposed tuberculosis was unusual for initial lesions. The continued good health as time went on, the entire absence of cough and expectoration, the history as regards tuberculin, all seemed incompatible with the supposed significance of the physical signs. The patient was reexamined with special reference to sternal sounds. The sounds in the second and third interspaces could be elicited when the patient held his breath and swung his arms. He had also the finer sternal sounds very well marked. He was discharged from treatment, returned to work, and has been in fine physical condition, as he states in a recent letter, for more than a year.

Case II.—A young cavalry lieutenant, aged 25, whose father died of tuberculosis, had two attacks of pneumonia at West Point six and seven years ago. There was an obscure history of occasional attacks of asthma in 1907. After great exertions in a desert country he fell sick and was admitted to hospital in California for a cold and diarrhea. Here he had a slight attack of asthma, reacted positively to the v. Pirquet test, and was sent to Fort Bayard. On examination, February 24, 1911, no morbid signs were discovered except pleural adhesions over the lower lobes, more marked upon the right, resulting, probably, from the pneumonic attacks. As a result the latissimus dorsi muscles were hypertrophied, and the upper thorax was unusually flexible. In spite of the handicap of the pleural adhesions the patient was a sprinter and active and athletic in every way. Marginal sounds were absent. Very marked sternal sounds propagated along the ribs were obtained. After a few weeks of rest the patient was returned to duty, April 4, 1911.

Case III.—An officer, aged 33, admitted February 10, 1911. Health impaired by tropical service in 1907. Has not felt well since. Somewhat neurasthenic. Recent history of positive sputum for tubercle bacilli, which is probably a mistake. Patient has no sputum, no cough, and no fever. An attack of influenza in December, 1910, with high fever. Some impairment of percussion note and prolonged expiration over both apices, especially the right. Sternal sounds heard over ensiform cartilage and manubrium on ordinary breathing. On expiration and cough they are heard over the entire sternum and are propagated along 2d and 3d ribs, right side, very plainly. The sternal sounds at the 3d costal articulation are perceptible to the patient when the breath is held and the right arm swung. The patient has been a baseball pitcher. The right clavicle is very movable. The sounds of motion at the right clavicular articulation are loud, but plainly different from the sternal sounds already mentioned. Diagnosis made was arrested tuberculosis, both apices. Patient was returned to duty in August, 1911.

Case IV.—A professional man, aged 50, devoted to athletics and a hunter of big game, suffering an impairment of health was declared to have tuberculosis. At a later time the diagnosis was withdrawn as based on insufficient evidence. The disease was supposed to be located in the left axilla. Examination by the writer showed the presence of marginal sounds in the left and also in the right axilla. A well-marked click was heard on deep inspiration over the 4th costal articulation, right side, which was propagated with distinctness along the rib for a distance of about three inches. The sternal sounds of the first class were numerous and loud, and, as has been noticed in other athletes, were somewhat coarser than in other subjects.

The writer has not been able to discover any mention of the sternal sounds in the literature accessible to him. As for their practical importance the finer sounds might be mistaken for evidence of disease of the anterior margin of the lung. Their quality, however, should attract attention. The clicks, so far as known, have not led to error of diagnosis. Perhaps sufficient evidence has been presented to

show that the sounds of the second class, which simulate râles, may cause confusion and it is this class of sternal sounds which especially calls for further study. The location of the loudest sounds and the propagation of the sounds along the rib in diminishing loudness should excite suspicion. But if the transmitted sounds meet with a "layer of good conducting infiltration or of thickened pleura," or "of small cavities acting as resonators," such as Turban assumes in explanation of some of his results in the study of the transmission of râles by bone from one lung to the other, it is apparent that an examiner who is not on his guard may be misled as to the nature of the lesion and may even diagnosticate a widespread tuberculous infiltration when none whatever exists. Special care is requisite in examining the lungs of the athlete on account of the variety of sounds producible in his mobile chest. Turban mentions a patient who considered that his medical advisers were proficient in physical diagnosis if they required him to cough during examination of the lungs. The writer agrees with this patient. Cough during examination is essential to determine the extent of a lesion and to bring out râles in seemingly quiescent lesions. The method of expiration ending in a cough and followed by a full inspiration has the advantage of bringing the expiratory muscles into action and of thus tending to diminish or prevent distention of the lungs from repeated inspirations. If efficiently performed it will be found, in the majority of cases, the best method of determining the presence of moisture within the lungs. But it is also the best means of eliciting marginal sounds, and often, at least in the untrained subject, the only means of producing sternal sounds. The use of the method, then, should be guarded by full knowledge of the fact that it may bring forth a variety of sounds not due to morbid processes within the thorax.

4. Another sound which resembles fine râles has not been described, so far as the writer knows. If the stethoscope is pressed rather firmly upon the skin of certain patients over muscular areas of the thorax, a fine crepitation is produced. This crepitation can be caused by a second, sometimes by a third, pressure upon the same spot, rarely by more than three. The crepitation is close to the ear and is like extremely fine, moist râles. It has never been detected except over the pectoral muscles and the latissimus dorsi.

In cases in which the phenomenon is well marked the crepitation is produced by the rise of the muscle against the stethoscope in full inspiration, though the instrument be lightly and properly applied, and under these circumstances a careless examiner may be misled. The sign is rather rare. It seems to be confined to patients of rather thick, not dropsical, subcutaneous tissue. With a little experience it is easy to predict the cases in which at least it will not be found. In one case the sound was elicited only over a plexus of small varicose veins over the left pectoral muscles on a level with the top of the axilla. In other cases the soft parts have appeared normal. It was found by Borden in 6 out of 58 healthy soldiers. Case I, above mentioned, presented the phenomenon to a marked degree. That it may lead to confusion in diagnosis is shown by the following case:

Case V.—A young man of 19 had a winter cough and was somewhat overworked. Being examined physically for appointment as non-commissioned officer of the militia in an Eastern State he was rejected on account of pulmonary tuberculosis. He was examined at a later time by a specialist who confirmed the diagnosis. He then came to New Mexico and was examined by the writer in 1910. The site of the supposed tuberculosis was the left axilla. There were marginal sounds at the base of the lung at this point and fine crepitations were exquisitely manifest in the latissimus dorsi. No morbid signs were present and the patient was assured that he had no tuberculosis. Not altogether trusting this diagnosis, with a view to remaining longer in a favorable climate, the young man obtained a position with a bridge gang which was constructing a high steel bridge. Although unfamiliar with the work, he was able to endure its severity with physical advantage, and after laboring for several months he returned to the East, having gained an inch in height, two inches in chest expansion, and fifteen pounds in weight, quite convinced that he had no tuberculosis.

Sahli[9] mentions, besides the active muscular sounds of the thorax, a so-called passive variety which he says "may be produced by the displacement of bundles of muscular fibers under the stethoscope by light movement of the instrument or by the respiratory excursion of the chest itself. These sounds may be recognized by intentionally moving the stethoscope and so reproducing them when the patient is not breathing. Other sounds originate from similar conditions, as, for instance, that produced by pressing the stethoscope over the lobulated fat of the female breast. These sounds frequently resemble crepitation very closely." Sounds caused by the slipping of muscular fibers are, in the writer's experience, most marked over the pectoralis major in the anterior axillary fold. They may be reproduced by movements of the stethoscope as Sahli says, but by gentle lateral movements, not by repeated intermittent pressure as in the phenomenon now under discussion. These latter sounds are evidently not due to active muscular contraction, first, because they are quite different from the well recognized muscular sounds especially common over the trapezius; secondly, because they are heard best when the underlying muscle is passive; thirdly, because they are not heard at all over spare, well-muscled chests in which purely muscular sounds should be heard most readily. They are finer sounds than those produced by pressure of the stethoscope upon lobulated fat. They are distinctly a phenomenon of juicy tissue, whether subcutaneous or muscular is uncertain. The question suggests itself whether they may not be a sign of retention of water. They do not occur in clinical edema in which the tissues are filled with fluid. But if the state of the nutrition be such that there is a tendency to an accumulation of fluid above the normal, but short of true edema, the fluid might conceivably be displaced by pressure with the production of sound. If this be the explanation no reason is apparent why the phenomenon should be confined to the thorax.

REFERENCES

1. Von den Velden: *Beitr. z. Klinik d. Tub.*, Vol. IV, 1905, p. 113.
2. Rosenbach: *Berl. kl. Woch.*, 1876.
3. Rosenbach: *Breslauer Aertzliche Zeitschrift*, 1881.
4. Rosenbach: *Wiener kl. Rundschau*, Vol. XIII, 1909.
5. Burghart: *Deutsche Militärärztliche Zeitschrift*, Vol. 29, 1900.
6. Kuhn: *Deutsche Militärärztliche Zeitschrift*, Vol. 34, 1905.
7. Janowski: *Zeitschrift f. klin. Med.*, Bd. 36, 1898.
8. Wilson: "Diagnosis," p. 100.
9. Sahli: "Diagnostic Methods," 2nd Am. ed., p. 286.
10. Cabot: "Physical Diagnosis," pp. 163, 361.

11. Fraenkel: "Spez. Path. u. Therap. d. Lungenkrankheiten."
12. Hofbauer and Holzknecht: "Zur Physiologie u. Pathologie der Atmung"—quoted by Sefeldt in *Beitr. z. Klinik d. Tub.*, XV, 3.
13. Lichtheim: *Archiv. f. exp. Path. u. Pharm.*, Vol. X.
14. De la Camp: *Berl. kl. Woch.*, 1905.
15. Turban: "Diagnosis of Tuberculosis of the Lung," Am. Ed., 1899.

FORT BAYARD, N. M.

THE TREATMENT OF ACUTE LOBAR PNEUMONIA.*

BY CHARLES EDWARD NAMMACK, M.D., LL.D.,

NEW YORK,

VISITING PHYSICIAN TO BELLEVUE AND TO ST. VINCENT'S HOSPITALS, PROFESSOR OF CLINICAL MEDICINE, CORNELL UNIVERSITY MEDICAL COLLEGE AT NEW YORK.

FROM time to time an article will appear in current medical literature advocating some special line of treatment for pneumonia, and claiming a remarkably low death rate for the cases so treated. Such articles are usually based on a limited number of cases, occurring in the same locality and in the practice of one individual, whose temporary success in a series of cases awakens his enthusiasm. But when such statistics are compared with those of a vast number of cases collected from the general hospital and private practice throughout the United States, as was done by Wells in 1904,[1] it will be seen that pneumonia still continues to exact its toll of 20 to 25 per cent. of deaths. Thus, of 465,400 cases, Wells found a mortality of 20.4 per cent., and among 43,455 cases collected by Norris and Musser 21.06 per cent. died.[2] These figures form a striking contrast to the reports of some observers, who claim a percentage recovery of from 95 to 100 per cent. in a limited number of cases treated according to some pet plan.

It is of course understood that pneumonia is an acute generalized infectious septicemia, with a localized expression in the lung; yet many practitioners seem to be unable to rid themselves of the obsession that the lung must furnish the sole object of investigation and attack. We read of measures addressed to the local condition as if this alone were the enemy to be overcome; yet the lung presents exactly the same condition after the crisis, when the danger is over, as it did a few hours before, when the patient's life trembled in the balance. Patients may be overwhelmed by the general toxemia when the physical signs show little or no lung involvement, or may exhibit extensive lung involvement with little or no general disturbance.

The patient with the pneumonia, and not the pneumonia that is with this particular patient, must furnish then our fundamental concept of the management of the individual case. The obvious corollary is that there can be no specific adapted to every case, but that, inasmuch as the disease is self-limited and terminates by crisis, our efforts must be directed to facilitating the crisis, supporting the patient, preserving him from unnecessary stress and strain, and meeting emergencies as they may arise. Clinically, we meet with three classes of cases: (1) those who will recover in spite of all you may do to them; (2) those who will die in spite of all you can do for them; (3) a very large intermediate class in which the result may depend upon skillful, judicious therapeutic intervention. During an epidemic of pneumonia, or during the prevalence of influenza, which is so often complicated by pneumonia, certain measures of prophylaxis are advisable for the individual, for the community, and for the physician himself. Individual prophylaxis is best secured by keeping the nose, mouth, and throat as clean as possible by antiseptic sprays, mouth washes, and gargles; by the avoidance of crowds of coughing and sneezing persons; by abstaining from the use of alcohol, which paralyzes the sentient sentinel nerves of the respiratory mucous membrane, and by guarding against exposure, exhaustion, and privation.

Communal protection demands that the infected person should be isolated and his discharges carefully disinfected. The physician who takes charge of a case of pneumonia assumes a grave personal risk, and should have thorough knowledge of the disease, sufficient physical endurance, freedom from alcoholic or drug habits, unclouded judgment, executive ability, and self-confidence.[3] Even then pneumonia cannot be prevented, but it need not be invited. A number of our modest brethren allow their patients to believe that a "threatened pneumonia" can be aborted, but it is hardly necessary to say to this audience that any abortive treatment of acute lobar pneumonia is theoretically impossible.

Given a case of pneumonia then, in private practice, the first question that naturally arises is, have we a specific for this generalized septicemia? If all pneumonias were caused by the pneumococcus, and if all pneumococci were alike, we might hope for an affirmative answer. At present the answer is—no. Our dependence then must be on the general measures to meet the indications previously outlined, and I have nothing new to offer you on that heading, but only a recital of the means that have helped me in hospital and private practice during thirty years. As soon after the initial chill as possible, the patient is put into a warm bed and given a mustard foot bath in the bed, under extra covering and with vigorous rubbing of the legs for thirty minutes. He is then given an enema of two ounces of epsom salts with two ounces of glycerin and twelve ounces of water. I avoid the use of the customary hypodermic of morphine at this stage unless pain is so great as to be uncontrollable by strapping the chest and by hot applications, or unless nervous excitement is so great as to seriously disturb circulatory equilibrium. My next order is for either ten grains of blue mass or a powder of calomel, five grains, with sodium bicarbonate, fifteen grains, to be followed in six hours by a saline laxative. Thereafter and during the progress of the disease I order a high, hot, large normal salt solution irrigation every morning, and also the epsom salts and glycerin enema every evening, because I believe in stimulating the splanchnic circulation, keeping the lower bowel empty, and preventing the development of troublesome tympanites later in the disease. For the same reasons I avoid overfeeding the patients, avoid articles of diet which may produce flatulence, and forbid the use of beverages containing carbonic acid gas. Patients are fed, however, every three hours with milk, eggs, broths, coffee, and other fluid foods, with water enough to make up an aggregate of five pints in twenty-four hours. They are not awakened from sleep at night. Sleep should not only be encouraged, but secured if need be by one of the newer hypnotics, or by morphine if you must, before it passes into marked insomnia with exaltation or delirium. A delirious patient requires constant vigilance. The sick room should be well lighted, and solicitous ignorance on the part of rela-

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tions should not stand in the way of the unlimited admission of free, fresh, flowing air. It seems to me, however, that we have been carried away by the glowing accounts of success in pneumonia by putting patients out on balconies and roofs. Pure air at a temperature of 65 F. has always satisfied me, with the exclusion of visitors and of the consideration of any business matters. The nurse should be efficient but not meddlesome. Too much meddlesome medication does more harm than good. Drugs and food should be given together if possible, and the patient's toilet wants should be attended to at three-hour intervals, and he should have absolute quietude of mind and body between these intervals.

Next I endeavor to have an accurate blood count made, including a differential enumeration of the leucocytes, and to have a thorough uranalysis done. A daily blood chart thereafter, with a daily examination of a twenty-four hours' specimen of urine, will keep us alert for complications. A comparison of the blood pressure with the pulse rate will also give us valuable prognostic and therapeutic indications. If the pulse rate is less than the blood-pressure reading the patient is doing very well. Some clinicians believe that the remarkable reduction of arterial pressure which accompanies the onset of the disease should be encouraged, and such practitioners administer remedies to favor this circulatory depression, such as veratrum viride, aconite, nitroglycerin, iodide of potassium, etc. Others presume that Nature is mistaken, and endeavor to correct her error with digitalis, adrenalin, etc. I am one of those who believe that low blood pressure can only result in vasomotor paralysis with consequent stagnation of the bloodstrain, so that the tissue cells lose their accustomed stimulus and are consequently constantly bathed in a solution of their own wastes.[3] Therefore I use from the outset strychnine, caffeine, alcohol, and camphor. I have not had the same success with ergot that has been claimed by some of my colleagues. Nor do I place much reliance upon digitalis in the presence of high fever. After the crisis, however, digitalis may be clearly indicated. Adrenalin is a drug which, when given hypodermatically in good-sized doses, helps in tiding over the crisis.

The fever in pneumonia causes the relatives, and sometimes the attending physician, a great deal of unnecessary anxiety. Fever is a specific reaction against injurious materials which affect the tissues, and is, in its essentials, a protective reaction.[4] Accepting this definition, fever requires no interference unless it becomes high enough to add to the poisoning of the vital centers. A temperature of 104° F., associated with a moderate leucocyte count, with a blood pressure which is higher in the manometer reading than the pulse rate, and with clear heart sounds, gives a better outlook than does a temperature of 102° F., with a low leucocyte reaction, with low systolic arterial pressure, and a muffled first sound with a pulse of 120. Hyperpyrexia, however, indicates danger, and should be promptly met by the application of cold compresses, cold sponging, and ice bags to the chest. Coal tar antipyretics should never be used. Quinine still has some ardent advocates, and its hypodermatic use has lately been extolled for its chemical and antitoxic, rather than its antipyretic, effect.[5] But, inasmuch as it is the death of the pneumococci, and not the neutralization of their toxins, which must precede the recovery of the patient, this action of quinine would seem to be inadequate. Personally, I believe that alcohol is a good antipyretic. Alcohol reduces temperature by increasing heat loss by evaporation and radiation; it lessens heat production; and, most valuable of all, it supplies an easily oxidizable fuel to be burned up instead of the tissues. In patients accustomed to its use, especially in the alcoholic pneumonias so numerous in Bellevue Hospital, I use it with a free hand, in half-ounce doses frequently repeated, unless coexisting kidney complications contraindicate. Its drawback is that it promotes vascular relaxation, but this risk must be accepted when the alcohol is needed.

The pleuritic pain of the early stage of pneumonia is usually severe, sometimes agonizing. If possible, I avoid the use of morphine, which obscures the symptomatic field, dulls the nervous reflexes, and causes an insistent demand for its repetition by the patient, which is dangerous to accede to. Strapping the chest, local applications, the Paquelin cautery, and mental encouragement should be used to the limit, before morphine. Cough may also be distressing in the early stages, but here again the use of any opium preparation is a two-edged sword.

After the stage of onset, the toxemia of pneumonia becomes manifest in the functions of the cerebrum, of the cardiovascular and of the respiratory systems. The first brain symptoms are excitation, restlessness, insomnia, and delirium, followed in severe cases by depression, stupor, and coma. The measures already described, of aerotherapy, hydrotherapy, and elimination by the bowels, skin, and kidneys, have done something to forestall these dangers, but if pronounced they may require enteroclyses of physiological salt solution, or the Murphy drop method, with increase of diaphoresis by hot packs, and an ice helmet to control delirium. Insomnia may require trional in hot milk, chloralamid in cold whiskey, or, if unavoidable, ¼ grain morphine hypodermatically. The cardiovascular symptoms are harder to conquer, and, when pronounced, compel us to use our remedies by intramuscular, rather than hypodermic, injection, since Meltzer has shown that muscular tissue contains such a network of veins that injections therein are almost as promptly taken up as when given intravenously. My own faith rests firmly on strychnine and alcohol for steady and continuous effects, despite the doubting Thomases of the pharmacological laboratories. I hold camphor in sterilized oil and adrenalin in reserve for emergencies, and believe that I have seen good results in Bellevue from the intravenous injection of 1 milligram of strophanthin in cardiac collapse, after the failure of the first mentioned remedies.

The dyspnea of mechanical obstruction by involvement of large portions of lung is best relieved by oxygen. Not the canned oxygen supplied by manufacturers, but that of the free, fresh, flowing air. Edema of the lungs, if dependent upon low arterial pressure, will be helped by intramuscular injection of adrenalin, which raises the blood pressure by stimulating the vasoconstrictor fibers of the splanchnic vessels and thus drives the blood into the brain, lungs, and heart. If associated with high blood pressure, artificial respiration seems to facilitate the discharge of serum from the tubes and to facilitate the pulmonary circulation.[6]

When your patient has safely come through all these dangers, and has entered upon convalescence, keep him in bed a week longer, carefully estimating each day the working power of his heart, and keep

him a second week in a chair on a sunny porch. The complications of pneumonia are many and cannot be touched upon within the time limits of this paper. One word only. Cases of "unresolved pneumonia" will resolve themselves into post-pneumonic empyema upon the sterile introduction of an aspirating needle.

If I may be allowed to summarize this discursive recital of an old story, I may say that the factors upon which I hope for success in the treatment of pneumonia are isolation, ventilation, disinfection, elimination, and support. The factors making for fatality are, half enough air, half enough water, half enough rest, too much meddlesome medication. Our search for a specific has hitherto been fruitless. Serum therapy, from which so much was hoped, has thus far signally failed. There are several reasons for this failure which, however, need not be gone over here.

In our line of treatment we must consider two things: the action of the infecting organism on the tissues; the defensive powers of the host. With the former we can do very little by therapeutic means. The latter must be fortified by every means at our command. Death ensues from an overwhelming extent of the inflammation, or from toxemia, producing the condition known as cardiac failure. The entering wedge of this condition is laid at the very beginning of the attack in the vasomotor paresis which transfers a great excess of blood from the arterial to the venous circulation, and this loss of circulatory equilibrium must be fought from the very outset. The time to treat "heart failure" is before it has developed. The physician who withholds cardiac support until his patient presents a dry brown and fissured tongue, low muttering delirium, a pulse rate of over 120 with a low arterial pressure, and a feeble first mitral sound with a failing second pulmonic sound has lost his golden opportunity. In spite of all our measures of support, this condition may develop, and it is here that venesection sometimes gives brilliant results by abstracting a pint of toxin-laden blood, and diluting the remainder by introducing liquids by the mouth or rectum, or by hypodermoclysis. Venesection should never be done in the very young, the very old, the anemic, or the weak. It is not indicated in the stage of onset, as the formation of the exudate at that time consumes from 2 to 4 pints of blood.

The view that heart failure is due to the poverty of calcium in the circulating blood in pneumonia has recently been put forward, and the administration of calcium chloride in 10-grain doses every three hours is eloquently advocated.[7] For the same reason, the free use of sodium chloride has been urged. These remedies have no deleterious effects, and their use may be added to that of the other measures herein recommended.

REFERENCES.

1. Wells, E. F.: *Journal of the American Medical Association*, September 24, 1904.
2. Musser, John H. and Norris, George Wm.: Osler's "Modern Medicine," Vol. 2, page 625.
3. Wells, E. F.: Crofton's Clinical Therapeutics," Page 516.
4. MacCallum, W. G.: Transactions Harvey Society.
5. Proceedings of Association of American Physicians, MEDICAL RECORD, June 10, 1911.
6. Emerson, Haven: *Archives of Internal Medicine*, III. Page 369.
7. Mitchell, James R.: MEDICAL RECORD, August 5, 1911. Page 265.

42 EAST TWENTY-NINTH STREET.

MULTIPLE HEREDITARY TELANGIECTASIS OF THE TONGUE, TURBINATES, AND SEPTUM WITH RECURRING HEMORRHAGES.*

BY CORNELIUS DOREMUS VAN WAGENEN, M.D.,

NEW YORK.

A SEARCH of the literature of this subject discloses a small group of ten families, which have been assembled, since Babbington[1] first attempted to describe this disease in 1805, by the individual reports of Wickham Legg[2], Chari[3], Rendu[4], C. O. Hawthorne[5], A. Brown Kelly[6], Parkes Weber[7], and William Osler[8]. Doubtless there may have been others, but if so they either have been withheld for private reasons, have been erroneously classed with hemophilia, or have been incorporated in that comparatively numerous group of the acquired angiomata, such as, for example, occur in the course of a cirrhosis of the liver, or are said to be diagnostic of certain forms of intraabdominal malignancy.

This patient came under the writer's observation, at the Vanderbilt Clinic, in the early days of September, 1911, and in the service of Prof. William Kelly Simpson. Mrs. E., aged 32 years, a native of Russian-Poland, but resident in this city for the past seven years. Of the family history nothing more remote than her parents can be definitely learned. Her mother, now 55 years of age and living in Russia, has suffered from frequent attacks of bleeding from the nose since early childhood, but she has not been known to bleed from the tongue or other parts of the mouth, the skin of the head, face, body, or extremities, or from the rectum. Regarding the father's health no information whatever is obtainable. Four brothers and three sisters are living in Russia, and all are healthy, save two brothers, one twenty-seven and one twenty-two years of age, each of whom has suffered from epistaxis since early childhood, but has never had any hemorrhage from any other part of the body. This patient is 5 feet 5 inches in height and weighs 193 pounds. In the ten years of her married life she has had six normal births and one miscarriage. Four of this issue died in the early months of infancy, but in none was any bleeding noted or any "spots" of any kind, such as are present in the mother. The two living children, a boy and a girl, aged respectively 3¼ and 8½ years, are apparently perfectly healthy, and have manifested none of the phenomena of the grandmother, mother, or uncles. This patient has a varicose condition of the right lower extremity which followed the first pregnancy. For the past nine years she has presented pretty much the same appearance as now. During this period she has had bleeding from the tongue and nose, but never from any part of the body. These attacks have been irregular in point of time and have begun without warning or known cause. There has never been any swelling of the lower extremities, other than the varicosity above mentioned, nor any trouble with any of the articulations. There have been no subcutaneous extravasations or persistent contusions. There have been no exsanguinating hemorrhages from relatively slight wounds. She has never had any prolonged illness, especially none attributable to the stomach, liver, or gall-bladder. Some three years ago she underwent

*Read at the meeting of the Section in Laryngology and Rhinology of the New York Academy of Medicine, October, 1911.

an exploratory laparotomy at The Women's Hospital. Dr. Edward W. Pinkham, the operator, has informed me that there was nothing in her condition which contraindicated abdominal incision.

On examination the tongue was found irregularly studded from base to tip with numerous discrete, elevated, pink to cherry-red, and purple spots, especially prominent along the free border, and of the varying diameter of 1 to 3 mm. In addition, a similar pinhead tumor was found on the anterior tip of each inferior tubinate body, and still another on the mucous membrane covering the left side of the cartilaginous portion of the nasal septum. In other respects the upper respiratory tract was entirely free from involvement. Several cherry-red pinhead spots on the face and arms, which had, however, never attracted her attention, completed the findings. Two days later the writer witnessed the first of several nasal hemorrhages which occurred during her presence from time to time in the clinic building. The flow was moderate, but continuous, quickly saturating her handkerchief. The blood seemed to swell up into the left inferior nasal fossa. Careful sponging disclosed the bleeding point to be the septal tumor above located. An application of thrombokinase[6] promptly stopped the bleeding. At this sitting two new spots were noted at the junction of the hard and soft palate and to either side of the median line. She was placed on twenty-grain doses of the lactate of calcium, four times daily and given the tube of thrombokinase with instructions for its use in the presence of bleeding. A four-day quiescent interval followed, considered accidental, as a subsequent period of irregular attendance without any definite treatment served to reestablish the original condition. This period of apparent inaction afforded the writer and his associate, Dr. A. S. Blumgarten, an opportunity to investigate the condition of her blood. The coagulation time seemed to be a matter of considerable importance and several methods were employed, taking not only the patient's blood, but also as a control that of her children, of Dr. Blumgarten, and of the writer. Three methods were employed with the following results:

	Mother.	Boy.	Girl.	Dr. B.	Dr. v.W.	
Needle and slide	3 min.	2.30 min.	2.30 in.	2.40 min.	2.30 min.	
A. E. Wright	3.20 "	2.30 "	2.30 "			Thermos bottle used as constant heat chamber.
Rudolf	2.30 "	2. "	2. "			

In hemophilia the time is 6, 9, to 14 min., or incomplete in an hour's time. Dr. Blumgarten also made a microscopic examination: Red blood cells, 3,600,000; white, 12,000; hemoglobin, 80 per cent. Differential count: polymorphonuclears, 60 per cent.; large lymphocytes, 9 per cent.; small lymphocytes, 30 per cent.; eosinophiles, 1 per cent.; basophiles, 0 per cent.; blood plates, somewhat increased.

Dr. Howard Fox, in reporting the Wassermann reaction as negative, stated that there was no unusual behavior at the site of his withdrawal of blood. Dr. Ward A. Holden reported a normal condition of the eyegrounds and vision. Her menstruations have been regular, with a duration of three to four days and a moderate flow. Retroversion of the uterus is present.

Dr. A. McI. Strong of the Department of General Medicine determined the average systolic pressure to be 130 taken on a Janeway sphygmomanometer, and added, after a careful physical examination, that he considered her "a very normal person."

With the above data in hand it is the writer's belief that the phenomena of this patient's life, as well as that of her relatives, place her and them in the family group which gives title to this paper. Any attempt to connect her case with the acquired type may be at once dismissed, but some confusion of thought may arise in a differentiation from hemophilia. In such a contingency the tumors and dependent hemorrhages seem the only points of possible agreement. Although a search of the literature has been made, no case of hemophilia has been found which presents such evidence of persistent vascular excess as here obtains. The hemorrhage may occur, but is not so prolonged or so exsanguinating. In all other respects there seems to be a marked absence of the salient features of a purely bleeder family. Viewed from the standpoint of heredity, we must at once apply the generally accepted belief that in hemophilia the female is exempt, though capable of transmitting it, while the male only gives evidence of the disease. Dr. Francis P. Kinnicutt, writing in the June number of the MEDICAL RECORD, 1905, lays down certain laws governing hemophilia transmission. (1) As a rule the daughters of a bleeder father are exempt from the evidence of the disease, but transmit it to their offspring. (2) The sons of a bleeder father are also, as a rule, exempt and do *not* transmit it to their offspring. (3) The daughters of a bleeder father may transmit the disease to a single one, to several, or all of their offspring. (4) Where there are several daughters the capability of transmission to offspring may be confined to a single one, or all the daughters may transmit it. (5) Occasionally there is a direct transmission from father to son throughout several generations. (6) The disease does not appear in the issue of the sons of a bleeder family who are not themselves bleeders.

Now, in the family group of which it is claimed this patient and her relatives are added examples as many *females* as males have been afflicted. In this patient's family even the peasant obtuseness to family traits and characteristics gives a very definite equality between the sexes, and it is quite possible that an examination of her ancestry at first hand would yield other instances.

The span of life in hemophilia is short, while in these cases it is quite variable, one patient having been first observed in the sixty-fifth year of life. A. Brown Kelly, however, writes that forty-two seems the most frequent age for dissolution, and October the month of greatest frequency in bleeding.

It must be evident to you that all treatment is beset with unusual difficulties. Indeed, the literature is so engrossed with the diagnostic side as to afford little aid and but cold comfort to patient or physician. For the control of the actual bleeding we seem to have an efficient sterile hemostat in thrombokinase, and one which should be of considerable aid and comfort in the hands of an intelligent and thoughtful patient. The sum total of the therapeusis seems to be the remittent administration of the calcium salts, the chloride or lactate, over long periods. This may be correct in hemophilia, with its lowered or incomplete coagulation time, but in this instance any attempt to hasten an already fairly normal coagulation time would seem to be expending effort outside the blood-vessels. We have here to deal not with any chemical change, but with a permanently dilated endorgan, with weakened walls, and covered by a rarefied mucous membrane. Either or both are liable to break and

bleed under some sudden increase in the blood pressure, such as would follow the common acts of stooping, sneezing, or the movements of the tongue against the teeth in mastication. Obliteration of the lumen of the affected blood-vessel, by destruction of its intima, would seem a reasonable method of attack. With this end in view cauterization, alone or preceded by excision, has been tried by one observer. The result was fairly lasting, but the process was very painful, and was immediately followed by a prolonged and serious hemorrhage. In the facial and other cutaneous lesions the electric needle has met with some success. This method might be very beneficial to this patient if applied to the nasal tumors. For the tongue, the writer has been considering the injection of hot water into the base of these tumors. In other situations this method has been beneficial and is said to cause little or no pain.

BIBLIOGRAPHY.

1. *Lancet*, 1865, vol. ii.
2. *Lancet*, 1876, vol. ii, p. 856.
3. Erfahrungen auf dem Gebiete der Hals- und Nasenkrankheiten, Wien, 1887, S. 60 et seq.
4. *Gazette des Hôpitaux*, 1896.
5. *Glasgow Medical Journal*, June, 1906.
6. *Lancet*, 1906, vol. i, p. 60.
7. *Lancet*, 1907, vol. ii, p. 160.
8. *Quarterly Journal of Medicine*, 1907-08, p. 53.
9. Strong, L. W.: *The Laryngoscope*, Feb., 1911, vol. xxi, No. 2, p. 1.

616 Madison Avenue.

THE MANAGEMENT OF INGUINAL HERNIA IN CHILDHOOD.

By WILLIAM FRANCIS CAMPBELL, M.D.

BROOKLYN, N. Y.

It is a surprising fact, gleaned from the writer's personal observations, that there is a marked difference of opinion among practitioners regarding the management of the reducible inguinal hernias of childhood. Furthermore, when a case is presented for treatment and a clear, concise statement is due the parents regarding the advantages of a truss, the management of the truss, how long it should be worn, the proper time for radical operation, the advantages of radical cure, etc., opinion is not only divided among practitioners, it is often confused, misleading, and inept.

Confusion of thought and wide differences of opinion are excusable in the presence of obscure pathological lesions; but the pathology and treatment of inguinal hernia has long since reached a plane of scientific accuracy; and if the fundamental principles are well understood the family physician will anticipate the surgeon in voicing a definite line of procedure which will bring into fine cooperation both physician and surgeon, and the one will supplement, not supersede, the work of the other. For in the hernias of childhood there is special opportunity for team work which will reflect creditably upon both. It must be remembered that in these hernias there is a preoperative period in which intelligent supervision and vigilant attention may be rewarded by spontaneous cure, or failing in this it will carry the child safely over the first few years till a proper time can be selected for operation.

The fundamental principles in the treatment of these hernias are reduction and retention; more specifically, after all causes of intraabdominal pressure, such as tight belly bands, indigestion, constipation, phimosis, stone in the bladder, etc., which cause crying and straining, have been removed; keep the hernia continuously reduced by closing the hernial opening.

This can be accomplished in two ways: (a) By mechanical appliances—truss. (b) By radical cure—operation.

Remember that in infants it is possible to obtain a spontaneous cure by maintaing continuous reduction by means of a truss, but after the second year the chances of cure by this method are doubtful. At this time, however, surgical treatment is eminently satisfactory and restores normal conditions at once. The rule then should be fairly uniform: (a) In infants apply truss continuously as soon as the hernia is diagnosed. (b) After the second year consider radical operation if the nutritional index is favorable.

Treatment by Truss.—Treatment by truss in an infant should begin as soon as the hernia is diagnosed. But this treatment can be efficient only when the principles of the treatment are understood and its application is in the hands of a vigilant and careful nurse. There is probably no surgical appliance which has been more abused, which demands more intelligent supervision and receives less then the truss. The measuring, ordering, fitting and hygiene of the truss are worthy a high order of intelligence—at least the physician should not abdicate in favor of the trussmaker. It is this shunting of responsibility that mars the results.

One of the most important things in connection with efficient truss treatment is the appreciation of the fundamental principle, a truss to be efficient must be worn continuously. That rule is to be interpreted in its literal sense; for it is obvious that the purpose of the truss is to keep the hernia reduced, to prevent its escape into the sac, and to bring about obliteration of the sac. Hence the support must be continuous, day and night, during the bath, when the truss is changed. In other words, from the time the truss is applied there must not be a moment when the hernial opening is left without support. Should the child cry or cough or strain during a moment when the opening is unsupported, the hernia may again protrude and spoil the results obtained by months of treatment.

How can such continuous supervision best be attained?

First: The management of the truss in infants should be under the supervision of the physician, not the trussmaker. The physician should measure, select, fit, and make the first application of the truss.

Second: The nurse should receive specific instructions in reference to the purpose of the truss, the location of the hernial opening, the proper placing of the pad, the hygiene of the truss and the inguinal region, the proper support of the hernial opening by the fingers of the nurse when the truss is removed for cleansing the parts. This instruction is as important as the ordering of the truss, for without it the truss will accomplish nothing but irritation to the infant.

Furthermore, it should be understood that when the physician prescribes a truss he does not dismiss the patient, he accepts a patient, who is to receive his professional care so long as the truss is worn. It cannot be made too emphatic that the cure of a hernia never results from the mere application of a truss; it is truss plus proper supervision. Again, the mechanical treatment of hernia

does not imply that the treatment is to be left to a mechanic. It is more than the mere prescribing of the truss. It implies accurate measurement for the size of the truss; definite instructions as to the type of truss, careful shaping of the truss so that the truss conforms to the patient, not the patient to the truss.

Eliminate once for all the consideration of such unreliable relics as "hanks of worsted" and "folded skeins of Berlin wool," their inefficiency is only equalled by their uncleanliness.

In selecting a truss be sure that it is first, efficient, and second, cleanly. To be efficient it must possess a metallic spring which can be so adjusted to the child that it conforms to the shape of the pelvis and maintains a pressure that holds the hernia without irritating the skin. To be cleanly it must be simple in design, waterproof throughout, so that it may be unaffected by urine, and frequently cleansed.

One of the most important considerations is the hygiene of the truss. Since continuous pressure is the price of cure, it is evident that the skin will tolerate this treatment only with the most scrupulous cleanliness and persistent vigilance. The problem is to prevent excoriations of the skin which is constantly subjected to pressure and soiled with urine.

To this end the skin and truss must be kept clean and dry. The best results are obtained by having two trusses. The truss is kept on while the child is being bathed; when it is removed for cleansing the underlying skin the nurse is instructed to maintain pressure with the fingers over the hernial opening. The skin is then cleansed and sponged with alcohol and witch hazel, dusted with talcum powder, and the clean and dry truss adjusted in place. This is to be repeated as often as necessary to keep the skin clean and dry. Should excoriations of the skin occur, apply zinc oxide ointment.

After the truss is prescribed, fitted and shaped, and full directions given for the after-care, the physician's supervision is still essential, for the child that wears a truss is a patient until the hernia is cured. One important fact must be kept in mind —the child is growing, and the truss must be changed and adjusted to meet the demands of growth. Hence the patient should be seen at regular intervals; for the mechanical treatment of hernia, especially in children, will be successful only in proportion to the careful supervision of the family physician.

After the age of two years, if the hernia still persists, the truss should be abandoned and a radical cure performed because: 1. The chances of cure steadily diminish up to the age of puberty. 2. Truss pressure causes atrophy of the underlying muscles, thereby diminishing the protection afforded by the muscles, and lessening the chances of radical cure. 3. The wearing of a truss interferes with proper exercise and thus interferes with bodily development. The child who wears a truss is handicapped in the struggle for existence. 4. The cures by truss are often apparent, not permanent. There are many recurrences. 5. Radical operation removes at once the serious handicap with all its disagreeable sequelæ by establishing normal conditions. 6. With the age limitation mentioned above it is the author's experience that the younger the child the more satisfactory the results of operation.

394 Clinton Avenue.

THE IMPORTANCE OF THE ROENTGEN RAY IN THE DIAGNOSIS OF BONE DISEASE.*

By SAMUEL B. CHILDS, M.D.,

DENVER, COLO.

When we consider that the bones are the framework upon and around which the superstructure of the body is built and that for the pursuit of daily vocations it is necessary that this framework be kept intact, or if diseased that that condition be detected as early as possible, it becomes imperative that every means at our disposal be employed in diagnosing these insidious lesions, which many times are so surrounded with the soft structures of the body that palpation is unsatisfactory and subjective symptoms must be largely depended upon for a diagnosis. Furthermore the subjective symptoms of many of the diseases of bone are similar, and, not infrequently, are referred to a part of the bone not affected, yet the methods employed for the cure of these diseases may be very different, palliative in one case, mechanical in another, a conservative operation in a third, while, in still another a radical operation, such as amputation of an entire lower extremity, may be necessary to afford the patient his only chance for recovery.

The field of bone disease is extensive and forms an important part of the work in every general hospital, not to mention the number of cases that are treated daily by specialists at their offices. We have all seen cases of bone disease in which the correct diagnosis has not been made for a considerable length of time, during which period the destructive process in the bone has not been retarded but increased by incorrect treatment.

As the title of this paper indicates, I regard it of the utmost importance that an *x*-ray examination be made early in every case of suspected bone disease, not that necessarily we may be able to make a positive diagnosis in every case from the plate alone, but the evidence from the plate taken in connection with the clinical signs will enable us in many cases to make a correct diagnosis, or at least to have a permanent record of the condition of the bone which may be of great service in watching at a subsequent examination any point that may suggest the possibility of disease. In another class of cases, the *x*-ray plate alone can tell the amount of destruction that has taken place in the bone texture.

No attempt will be made to go into detail in the enumeration of the symptoms in the different varieties of bone disease, but in the following, periostitis, ostitis, osteomyelitis, osteoarthritis exostoses, cysts, malignant disease and tuberculosis, an *x*-ray examination has proved itself of great value in diagnosis and a few cases illustrating some of these conditions will be cited.

Case I.—Man, aged 35, had an operation performed for osteomyelitis of the lower end of the left tibia when fifteen years of age; after several weeks the bone healed and had occasioned no further trouble until twenty years later, March, 1911, when the patient complained of pain in the same locality, associated with some fever. The lower part of the leg was tender on pressure and slightly swollen. At this time, the patient was referred by Dr. Chas. Jaeger for an *x*-ray examina-

*Read at the annual meeting of the Colorado State Medical Society, 1911.

tion. The plate revealed a circumscribed medullary abscess of about three-fourths of an inch in diameter through the external face of the tibia three inches above the ankle joint. At the time of operation, after chiseling through the cortex, the abscess cavity was readily found and the pus evacuated. For several days the patient's condition was satisfactory, and then a gradual rise in temperature to 104° associated with much pain about the left ankle and foot, restlessness, sweats, and great prostration evidenced the fact that the patient was in a desperate condition from sepsis from some focus not yet evident. An amputation of the leg seemed imperative to save the patient's life, for, from the pain in the foot and ankle joint associated with the constitutional symptoms present, the natural inference was that these parts had become infected. At this time an *x*-ray examination was made of the ankle joint and foot and the bones were found to be normal; a slight change, however, was noticed in the texture of the cancellous tissue about an inch below the location of the abscess cavity previously drained. Another opening was made in the bone at this point, no abscess cavity was present, but there was a slight discharge of sero-pus from the cancellous tissue. A communication was established with the opening in the bone previously made, and within twenty-four hours the temperature dropped to 100° with corresponding improvement in all the symptoms and from this time the patient went on to satisfactory recovery. Without the aid of the *x*-ray examinations in this case, an amputation of the leg undoubtedly would have been made. This case also illustrates the fact that in a case of osteomyelitis a focus of infection may remain quiescent for many years only to light up upon sufficient provocation. In a paper on osteomyelitis which the writer read before the Denver County Medical Society in 1906 three cases of osteomyelitis of the femur were cited in which the *x*-ray located the abscess cavity in the shaft of the bone several inches from the knee joint although the pain was referred to this joint in each case.

The characteristic changes on the *x*-ray plate in a typical case of osteomyelitis consist in a marked proliferation of the periosteum and cortex of the bone in the neighborhood of the focus of infection, with a change in the arrangement of the normal striæ of the cortex or an interruption of the fibers, or grain, so to speak, of the bone. If abscess cavities are present in the medulla, they are indicated by circumscribed areas of greater translucency than normal. For the detection of the extent and locality of the disease it is necessary that plates be made from both the anteroposterior and lateral aspects.

The presence of proliferating periostitis and ostitis upon the *x*-ray plate differentiates osteomyelitis from sarcoma, tuberculosis, or bone cysts. Furthermore, by the *x*-ray plate we can determine whether we are dealing with a case of periostitis, whether the lesion is confined to the cortex, or whether the medulla of the bone is involved, and, a point of great importance to the surgeon, the extent, location, and number of abscess cavities can be definitely located.

Case II.—Man, aged 30. Osteomyelitis of the humerus with clinical manifestations strongly suggestive of sarcoma. Patient referred by Dr. L. E. Lemen. The arm was much swollen, not tender to pressure, but a dense infiltration of all the soft parts of the arm was present suggesting the strong possibility of an extensive enlargement of the shaft of the humerus. This condition had been increasing for several months, until at the time of the examination the arm from its size and the pain present was practically useless. The *x*-ray plate showed that the brawny condition of the arm was due to an infiltration of the muscles and tissues about the bone and that there were three distinct abscess cavities in the shaft of the bone, one below the surgical neck of the humerus, a second about the middle of the shaft, and a third near the lower end of the humerus. *Diagnosis:* Osteomyelitis with abscess cavities.

At operation the *x*-ray findings were verified.

Case III.—Osteomyelitis with deformity simulating Colles' fracture.

Female, aged 5. This case was referred by Dr. Parker, a previous diagnosis of fracture of the lower end of the radius having been made on account of the swelling that resembled a silver fork deformity. The *x*-ray plate showed an abscess of the lower end of the radius with destruction of bone substance. Complete recovery followed drainage of the abscess cavity.

Case IV.—Female, aged 9. Sent to Colorado with the diagnosis of tuberculosis of the metatarsus of the right foot. Patient referred for *x*-ray examination by Dr. C. A. Powers. The entire shaft of the second metatarsal bone was shown to be diseased with an enlargement of the bone and areas of softening. From the appearance of the plate, tuberculosis of the bone was excluded and a diagnosis made of an ostitis with areas of softening and the probability of malignancy was suggested. Infiltration of the soft tissues in the region of the affected bone was present. The metatarsal bone was removed and a microscopical diagnosis rendered of small-celled sarcoma. Amputation at the lower third of the leg was performed shortly after the pathologist's report was received.

From my experience, in the interpretation of bone disease from the *x*-ray plate, it has been found of the utmost importance to regard the amount of proliferative periostitis and ostitis present, and in any case where there is an unsymmetrical enlargement of the bone with areas of softening without an accompanying proliferative periostitis and ostitis, the strong probability of a malignant disease is always to be considered. In the diagnosis of sarcoma at a later stage, the pushing out of the growth from the cortex through the periosteum is diagnostic, yet I have seen several cases of sarcoma of the bones in which the entire growth was encapsulated with layers of thickened periosteum. One of these was a mixed-celled sarcoma of the lower end of the femur in which egg shell crackling was well marked. This case was reported in the *Denver Medical Times* in 1907.

There is probably no class of cases in which more frequent mistakes have been made in diagnosis than in that grouped under the head of arthritis deformans. Many of these cases are treated every year for rheumatism, are sent to various medicinal springs in the hope that the water and baths will cure the infirmity, and while the correct diagnosis is not made and suitable treatment applied the osteophytes are increasing in size and number, the joints becoming more stiff, the tendons, ligaments, and muscles losing their elasticity and becoming contracted so that by the time a correct diagnosis is made the patient has become greatly crippled, and

is in a condition in which the hope of a cure is entirely dispelled and only palliative treatment remains. Attention was called by the writer to the importance of an early *x*-ray examination in these conditions in a paper entitled, "The *X*-Ray as a Valuable Aid in the Diagnosis of Osteoarthritis," read before the Denver County Society in 1906. In osteoarthritis one or several joints may be involved, and while the exciting cause in many cases is difficult to ascertain, traumatism seems to play an important factor in some cases, particularly in the hip joint.

Case V.—Man, aged 40. Referred for diagnosis by Dr. Arneill. Patient had complained of stiffness and soreness in the back for some years, had consulted several doctors who regarded the case as rheumatism and had given treatment accordingly. The patient, of course, obtained no relief from the medication; the stiffness in his back became worse until he was practically incapacitated for work. The *x*-ray examination showed a well organized bony exudate between the upper lumbar vertebræ thoroughly welding them together. *Diagnosis:* Hypertrophic osteoarthritis. If the correct diagnosis had been made much earlier, this man's condition certainly could have been made more comfortable and the advance of the disease probably checked by the application of proper mechanical supports. These cases of hypertrophic osteoarthritis of the spine are comparatively common.

The atrophic form of osteoarthritis is frequently seen in old people and the ravages of the disease are marked by their distorted and almost useless hands and fingers. The diagnosis is easily made by the *x*-ray for the destructive process of bone is well shown on the plate and is easily differentiated from so-called gouty deposits or tophi about the joints, for in the latter condition there is no destruction of bone and the deposits are confined to the soft tissues.

In the destructive form of osteoarthritis associated with tabes the characteristic destructive changes in the bones with a probable subluxation of the joint are characteristically shown upon the *x*-ray plate. This disease is most frequently manifested in the knee joints, where it is commonly known as Charcot's knee. I have plates of two different cases in which I was able to make the diagnosis of a tabetic destructive osteoarthritis in the lower lumbar vertebræ. This condition in the spine is very rare, but few cases having ever been reported, and is known as Charcot's spine. In connection with hypertrophic osteoarthritis attention is called to a condition with which it may be confused, both clinically and upon the *x*-ray plate, namely exostoses.

Case VI.—Man, aged 55, referred by Dr. Richards. Patient had had considerable pain in the back which had persisted more or less since an injury to his back twenty-five years previous. In addition to the pain above mentioned, when he assumed certain positions, such as straightening the spine after bending forward or straightening the spine after bending laterally, he was occasionally seized with a severe pain or cramp which was of such severity as to render him helpless for a few minutes. An *x*-ray examination of the spine showed a well marked exostosis in the shape of a horn springing from the side of the body of the third lumbar vertebra. The differential diagnosis in this case from hypertrophic osteoarthritis was made from the fact that the growth was single, was well defined with a broad base blending with the vertebra, and the shadow was that cast by dense bone of normal structure and did not spring from the joint surface.

Bone Tuberculosis.—It is the general opinion that the *x*-ray cannot detect changes in the bone before the diagnosis can be made by clinical signs. In the hands of an expert diagnostician this is probably correct. If, however, we accept the theory that tuberculosis of the joints practically always starts in the epiphyses and that the synovia are affected secondarily either with or without breaking down of the bone substance, a carefully taken and accurately interpreted *x*-ray plate should show destructive changes in the bone trabeculæ, if present, before the synovia becomes infected. Such a destructive process or the extent of it cannot be determined clinically.

It is granted that a bone infection may exist in its incipiency before any change in the texture of the bone has taken place; in this case only normal shadows will appear upon the plate, but with a thorough knowledge of the normal shadow cast by the parts in question we should be able to detect a very slight change in the texture of the bone, as soon as a destructive process starts. It is not the fault of the *x*-ray that these changes are not shown but rather that of the interpreter who, in many cases, fails to attach the proper significance to a slight deviation from the normal shadow.

If we accept the theory that tuberculosis of joints affects primarily the synovia and secondarily the bones, we must admit that the *x*-ray cannot show the pathological changes in these soft structures until after a considerable lapse of time and that secondary destructive processes are present in the bone. It is of extreme importance in every case that an *x*-ray plate be made of both the normal and suspected joints, for in this way we may be able to detect a very slight change, not merely in the bone texture, but in the relative size of the bones, as atrophy of the femur takes place comparatively early in a tuberculous hip and should be given its proper interpretation. The writer has been able to make a correct diagnosis in tuberculous hips by contrasting the relative position of the normal and suspected heads of the femur to the acetabulum before any other signs were apparent upon the plate. In the suspected hip the head of the femur is likely to be drawn closer within the acetabulum than normal, due to the contraction of the muscles giving the head and neck of the femur an unnatural position to the acetabulum; again, a peculiar haziness about the shadows of the joint should always be looked for, and, if present, should be regarded as suggestive of a pathological joint.

Spasm is the first sign clinically in any inflamed joint, and yet how often is this danger signal completely overlooked or not given its proper interpretation by the general practitioner. Not infrequently cases are seen that have been treated by the general practitioner for rheumatism for quite a period of time and an *x*-ray examination shows a destructive process well established in the bone. Even if the *x*-ray as interpreted at the present day does not disclose minute pathological changes in the bones forming the joint until after the diagnosis can be made clinically, it is of great value in recording the first focus that appears, and in noting, from time to time, the progress of the disease or in showing

when bone resolution is becoming established. The appearance of a tuberculous focus is characterized by a greater translucency of the bone at this point, due to the absorption of the lime salts with partial or complete interruption of the normal striæ and an absence of any constructive bone process about the focus or the cortex of the bone.

CASE VII.—Female, aged 6 years. Had been treated for rheumatism of the right hip for three months, before consulting Dr. Fosdick Jones, who referred her for an *x*-ray examination. The plate showed the epiphysis of the head of the femur normal but disclosed several small foci with loss of bone substance in the rim of the acetabulum. *Diagnosis:* Primary tuberculosis of the acetabulum.

Syphilis of the bones attacks, primarily, the periosteum and later encroaches upon the cortex, causing nodosities or small cavities. The *x*-ray plate discloses this condition very accurately, and nodosities or small cavities in the cortex, with a thickened periosteum are diagnostic of syphilis. Occasionally a gumma develops in the spongy portion of the bone and may give rise to no clinical symptoms. The appearance on the *x*-ray plate closely resembles tuberculosis.

Bone cysts are often difficult to differentiate clinically from myelogenous sarcoma. Pain in bone cysts, however, is apt to be much less than in sarcoma. This diagnosis is most accurately made through the agency of the *x*-ray, which shows a marked difference between the two conditions. Bone cysts are always within the periosteum, and show a symmetrical enlargement of the bone with a uniform thinning and expansion of the cortex enclosing one or more translucent areas. In myelogenous sarcoma the growth is commonly seen pushing through the periosteum in an irregular manner. The normal striæ have disappeared and the whole mass has a hazy or blurred appearance. In periosteal sarcoma fine spicules of bone are seen radiating from the periosteum with translucent areas marking the site of bone involvement.

In the Roentgen ray we are employing an agent which for several years has demonstrated successfully its ability to depict upon the sensitized plate minute changes in the texture of the bones, and it is only since we have acquired by experience the ability to interpret correctly the meaning of these changes, as well as the changes from the normal in other structures of the body, that we are in a position to realize the great importance in diagnosis to the profession of the discovery of Roentgen.

726 FOURTEENTH STREET.

PHYSICAL THERAPEUTICS IN THE MEDICAL PRESS.*

BY MARY L. H. ARNOLD SNOW, M.D.,

NEW YORK.

THE medical press in this age of progress and exhaustive scientific research should be the beacon light of the busy practitioner, preventing him from running on the rocks and wrecking his lifeboat. At no time in the world's history, as during the last decade, has the medical profession made such advancement, not only in the study and cure of disease, but in its prevention and the preservation of health, and as a natural sequence the profession asks that the medical press shall keep abreast of the times if it desires the patronage of those whose highest and most pleasurable duty it is to heal the sick and whose debt to their patients demands knowledge of all measures that will lessen or relieve the ills of humanity.

In response, the medical press that of old was characterized as some one has aptly expressed it by "doubt, pessimism, and intolerance," has been obliged to remove the shutters from its windows and let in a flood of sunlight of knowledge. A recent writer sounded the tocsin of war against the journalism of the past when he said: "With all the earnestness at my command, I want to insist that it is time to take account of stock to get our scientific, ethical, and commercial bearings, and set out for the future with confidence, trust, and steadfast purpose." It is the journal edited along such lines that brings hope to the progressive insurgent in medicine. Its policy is broadmindedness and tolerance. It is a missionary in the field of medicine and represents neither man nor money power, but independent democracy. Independent in that it believes in equal rights for all, in that merit warrants success, and in that it reserves the right to be conservative when relief of human ills demand it. Dr. Butler's terse remarks are very apropos: "Truth, courage, independence, liberality, should characterize the medical journal—more charity and less dogmatism, a recognition of the right of every sentient creature to his own opinion. So long as it boycotts those who dissent from its dogma it will breed hypocrites and humbugs."

Contributions to such journals are accepted on their intrinsic worth whether treating of drug therapy, surgery or physical measures. All sources of information are their fountain heads of knowledge. Each subject, be it old or new, is a mine. Lack of selective instinct lowers the grade of medical journalism: the editor, not being conversant with certain subjects, either refuses papers from those whose experience makes them advocate special measures from a wish to disseminate their knowledge, or he accepts inferior articles of little practical value to the reader on the subject of which they treat.

The trend of modern medicine, owing to the materialistic time in which we live, is away from that of a cabalistic nature, away from the mysterious, the empirical, looking solely for cause and effect. The result is that never were the various narrow pathies and cults so well patronized as now, so that the old-time practitioner with his saddle bag and drugs is fast becoming a picture of the past. It is to meet this demand of the public, looking more and more into the cause and the prevention of disease as well as its cure, that the medical press should devote more time, thought, and space to many subjects to which little or no space has been given in the past, for not only are the subjects being investigated and used by the public, through either ethical or nonethical channels, but they give results obtainable in no other way.

Physical therapeutics is the treatment of disease by those natural measures in contradistinction to drugs which assist or correct nature in her efforts to restore a normal condition. It includes electricity, radium, light and heat, hydrotherapy, mechanotherapy, and diet.

Electricity is probably one of the most potent agents in the hands of man. It comprises the constant, continuous, or galvanic current; the induced, interrupted, or faradic current; the static, the high-

*Read before the American Medical Editors' Association in Los Angeles, Cal., June 26, 1911.

frequency, and the sinusoidal currents, as well as being the source of the *x*-ray.

In past times the *constant and induced currents* were used largely in diagnosis. The employment of the constant or galvanic current with its polar characteristics having a sedative, analgesic, styptic, or destructive property, is indicated in the treatment of reflex troubles, in affections requiring a mild stimulant; in conditions suitable for styptic electrolytic action as new growths and hemorrhages; for destructive action on cicatrices, warts, epithelial hypertrophies, connective tissue or bony or cartilaginous growths such as fibroma, osteoma, enchondroma, etc. Metallic electrolysis, so ably expounded by Massey, invades the field of surgery and gynecology; passive congestions, local sepsis and cancer, operable or inoperable, find it a most useful agent. Phoresis is a vehicle for drug therapy and is of value as a means of anesthesia in minor surgery, in the practice of medicine, and in dentistry. The induced or faradic current is a mild stimulant.

The static current, yielding at least twenty different modalities, is replete with possibilities. The recognition of its therapeutic indications, application, and value is as yet in its infancy. Its effect on stasis alone is one worthy of widespread attention from the medical profession. When a sprain can be cured, not simply relieved, in three treatments with a modality that can do no harm even in the hands of a novice, suffering demands investigation of its claims. Its use is indicated in all inflammatory conditions, except those of an infectious nature—sprains, bruises, arthritis, myositis, gout, synovitis, rheumatoid arthritis, and the painful neuroses such as sciatica and neuritis. Its great tonic and metabolic action marks its indication in the general treatment of paralysis, neurasthenia, hysteria, tuberculosis, and asthenic conditions in general. Its power to relieve tension makes it valuable in the treatment of pathological states characterized by muscular contractions. In dermatology it is most satisfactorily used as the wave current, brush discharge, or the high-potential discharges, which locally render microorganisms inert. It stimulates normal metabolism locally, lessens edema and congestion, relieves pain and itching, and promotes secretory activity. It will be indispensable when recognized in the field of the neurologist, surgeon, dermatologist, internist, gynecologist, and genitourinary specialist. It is an agent unrivaled in the treatment of the above conditions.

The static induced current is a most powerful muscle exerciser when of low frequency, and is indicated in conditions requiring special muscular activity to overcome atrophy. Its possibilities far exceed those of the induced or faradic current.

High-potential currents with the vacuum tube are stimulating, rubefacient, antizymotic, and analgesic, affecting metabolism by local heat production, restoration of secretion, and when direct from the machine relieve stasis with its consequent relief of pain.

High-frequency currents with their great thermic action call for pronounced recognition in the treatment of high blood pressure and its accompanying conditions, as well as in the management of infectious processes which heretofore have been treated only by the knife.

The sinusoidal current is like the faradic in action. It is a muscle exerciser, analgesic, improves nutrition, and is useful in connection with spondylotherapy.

The mystical *x*-ray has been honored with greater attention by the medical press than any of the other electric modalities, as it early became the surgeon's spectacles, and the existence of a surgical age demands the acknowledgment in the press of anything novel pertaining to the subject. Diagnostically and therapeutically its field is almost limitless. In radiography, it reveals the hidden. In radiotheraphy, owing to its marked inhibitory action, it is an agent employed to treat abnormal growths such as sarcoma, carcinoma, and fibroma. In the treatment of fibroids in particular, it robs the surgeon of many a case. In the treatment of skin diseases it is a remedy *par excellence*. Owing to its daring use by hero enthusiasts and those who have applied it in an unscientific manner and suffered in consequence, many of the profession at present hesitate even to consider its employment. The medical press is the agency to right matters here.

Radiant light and heat represent the employment of the electric arc, the incandescent light, the mercury vapor lamp, the actinolite, the solar arc lamp, the Finsen apparatus, the Minin blue light, incandescent bath cabinets, and arc light cabinets.

Physiologically considered, radiant light and heat have an actinic as well as a thermic action. They induce hyperemia, allay and cure inflammation, and relieve acute and infectious symptoms. They have a place in the treatment of atonic conditions, states of faulty metabolism, inflammatory diseases such as otitis media, cystitis, appendicitis, phlebitis, and adenitis, as also some dermatological affections.

To obtain convective heat, moist or dry, the use of the poultice, hot-water bag, Russian bath, hot-water bath, hot douche, local and body hot-air apparatus, hot-box, and Turkish bath is indicated. The value of hot water, as in the use of the hot douche and hot-water bag, is known to every practitioner, but if the therapeutic action of radiant light and heat and of convective heat was more widely understood, the practitioner would as quickly adopt the most approved and improved apparatus for the production of heat as he abandoned the "one hoss shay" for the modern automobile.

Convective heat is indicated in the treatment of tonsillitis, felons, mastoiditis, inflammatory conditions of the pleura and abdomen, joint inflammations and sepsis, where it is the treatment of choice. Many an arm and leg might have been saved had the physician in charge acted with a full knowledge of the value of hot-air treatment. It also invades the domain of the surgeon, laryngologist, internist, dermatologist, and gynecologist.

Hydrotherapy includes the study of the action of heat and cold and other uses of water of varying temperatures, internally and externally. Temperature determines its physical actions of relaxation or contraction, stimulation or depression or sedation. Therapeutically it is used to advantage in fevers, alimentary tract disturbances, respiratory affections, functional nervous diseases, and in fact in the treatment of all conditions calling for better elimination.

Mechanotherapy indicates manual or instrumental manipulation of the parts of the human body. As such it includes massage, therapeutic exercise, and mechanical vibration. Ling and his followers and Weir-Mitchell and his school long ago demonstrated the efficiency of the first named, and exercise in this country owes its scientific progressiveness to such able members of the profession

as Drs. Savage and Sargent. Activity is essential to well being, but to obtain results exercise must be prescribed from a physiological basis for any pathological condition.

Mechanical vibration is an agent whose value as a diagnostic measure is not exceeded even by the stethoscope and it needs but to be more generally known to be fully appreciated. It has chemical as well as thermal, reflex, metabolic, and mechanical actions. Its therapeutic action thus covers the field not only of massage but of osteopathy as well. In the hands of the general practitioner, for this reason, it has indeed become a most powerful weapon against much current quackery.

Dietetics is a study of foods as regards their elements, properties, nutritive value, purity, and selectiveness in the treatment of disease in order to establish and maintain normal balance. It is a very important study not only in relation to diseases of the alimentary tract and all conditions pertaining to metabolism, but also in connection with high blood pressure, a subject of interest to all. Some of us eat to live, while others live to eat. To those who belong to either class the study of dietetics is of prime importance. To one class it tells what is best to select in order to keep well, while to the other it points the way to keep well in spite of their indulgent proclivities.

The above is an outline as to the possibilities of the subjects for which I appeal to you for greater recognition. The results obtained by their use speak to the laity, who in turn demand more and more from their physicians a knowledge of drugless methods if their patronage is to be retained.

Measures of such wide applicability and fields of usefulness should be made more generally known to the surgeon, neurologist, laryngologist, internist, gynecologist, dermatologist, and genitourinary specialist; and such an advance can come about honestly only through the medical press, a power that inspires and influences—an educator—the pulse of scientific progress in the medical world.

329 West Fifty-Seventh Street.

RADIOACTIVE WATERS IN THE TREATMENT OF GOUT.

By A. C. BURNHAM, M.D.,

NEW YORK.

The marked and indisputable success of the spa treatment of gout and rheumatism has long been attributed to the strict régime and favorable climatic conditions of the individual spas. Following the discovery of radium it was found that many of these waters possessed a distinct property of radioactivity, which added to their therapeutic significance an element heretofore entirely disregarded. In Germany the attempt has been made to determine the therapeutic value of this new agent (especially in the treatment of rheumatism and gout) with sufficient success to warrant a thorough and systematic investigation of the entire subject in this country.

In 1905 Neusser[1] reported favorable results in two cases from the use of radioactive waters applied locally. In 1908 Dantwitz,[2] working in Neusser's clinic, reported further good results from the use of radioactive baths in joint affections and neuralgias. Since 1908 numerous investigators (Laquer, Nagelschmidt, Riedel, His, and others) have reported favorable results from the use of radioactive waters in a variety of conditions. Today there is no question of the activity and value of radium emanations. The discussion resolves itself into the question: When and where is such a therapeutic agent indicated?

The radium emanations have been used in a variety of pathological conditions with varying degrees of success, but the results obtained in gout have been so striking, and so in accord with the laboratory finding, that they warrant further confirmation. Radium itself is so expensive that it is beyond the reach of the practitioner. The radioactive waters are easily obtainable, and are in such a form that they may be freely prescribed.

Preparation: Radioactive water may be obtained by one of the following methods: (1) From natural radioactive springs. This is naturally a difficult matter, as the springs in America have not been tested for this property to any extent, and furthermore because the radioactive content of these waters is usually insignificant. (2) By the use of radium salts, usually radium bromide, in tablet or powder form, dissolved in water. (3) By the use of artificially prepared and tested radioactive water. The last method is probably the best because it is the most practical, the least variable, and most reliable of the three methods.

Dosage: The strength of the radium emanations is measured in units. The Mache-unit is the one commonly used; it is equivalent to 116 volt-units. The usual daily dose is 1,000 units, which may be increased up to 5,000 or even 10,000 units. Much larger quantities have been given without bad effects. The baths usually contain from 5,000 to 10,000 units.

Administration: The radium emanations may be administered, in gout, by one or more of the following methods: (1) Internally, in doses of 1,000 to 2,000 units per day, beginning with a small dose, 500 units, and gradually increasing to the desired maximum dose. It should be given in small doses at intervals during the day rather than one large dose. (2) Subcutaneous or intravenous injection in doses of 300 to 1,000 units per day. (3) Baths containing 1,000 to 5,000 units. As the good effects from these baths are due to the inhalation of the emanations, the patient should be completely enclosed in a bath cabinet, and the baths should last from twenty minutes to an hour or more, the patient inhaling the emanations during this period. One or more baths may be given daily, care being taken not to overtax the strength of the patient. (4) Inhalation. This method requires: (a) An apparatus which liberates the emanations: (b) a closed compartment capable of permitting the patient to move freely, to read, eat, etc.; (c) an apparatus to supply the required oxygen; (d) an apparatus to remove the excess of CO_2; (e) an apparatus to remove the excess moisture from the air. His has such an apparatus installed in the Charité Hospital in Berlin.[3] The patient is required to remain in this compartment for several hours daily. The results from this form of administration are good, but necessarily it is expensive and not at present applicable in private practice. (5) Local applications. Compresses and clay may be used as local applications. They have been especially recommended for the relief of pain. Raw surfaces and mucous membranes have been sprayed and washed with the radioactive water. Body cavities, the nose, throat, stomach, rectum, bladder, etc., may be douched with saline solution to which radioactive water has been added.

Action: The action of the radioactive waters in gout is not clearly understood. Certain facts have, however, been proven, and these facts are so in keeping with our present theories of gout that the value of the emanations seems almost beyond discussion. Gudzent, working in His' clinic, found in the blood of gouty patients two forms of monosodium urate. One of these is stable and relatively insoluble, while the other is unstable and much more easily dissolved. He demonstrated further that the insoluble form was changed into the soluble form, in test-tube experiments, when exposed to the influence of one of the decomposition rays of radium, the "β-rays." If a solution of monosodium urate is injected beneath the skin of a rabbit there results an active infiltration of leucocytes with all signs of severe inflammation. This inflammatory reaction is followed by necrosis and the disappearance of the urate in from twelve to fourteen days. The urate is taken up and carried away through the phagocytic action of the leucocytes. Now, if the process is carried on under the influence of radium emanations the result is different. The leucocytic infiltration is entirely absent and the inflammatory reaction is much less marked. On the other hand, the necrosis is much more extensive. At the same time, in spite of the absence of phagocytosis, the tophus disappears.* Therefore we are justified in the conclusion that the radium emanations dissolve and break up monosodium urates, both *in vitro* and in the living organism. The increased necrosis is due to the fact that the monosodium urate in solution is an intense tissue poison.† The uric acid metabolism in gouty patients shows a decided change under the influence of the emanation treatment. Gudzent‡ found that the uric acid entirely disappeared from the blood in thirteen out of fourteen cases examined before and after treatment. Furthermore, there was a noticeable diminution in the size of the tophi during treatment. If a person, on a purin-free diet, be given a certain amount of uric acid about 50 per cent. of it appears in the urine. This occurs whether the subject be healthy or suffering from gout. The difference in the action is that in health this excretion takes place in twenty-four hours, whereas in gout it requires three or four days or longer. This reaction is almost pathognomonic of gout and is known as the "delayed excretion of exogenous purin." After emanation treatment this characteristic sign of gout is absent and the organism apparently reacts to exogenous purin in a normal manner. Lowenthal found in one patient under emanation treatment a marked increase in the uric acid excretion: before treatment it was 0.274 gram; during treatment it was 0.513 gram. At the end of this treatment the patient was tested with large doses of purin bodies and the excretion occurred normally, although there had been a distinct retardation in the excretion of exogenous purins before emanation treatment was begun. The general metabolism is said to be increased during treatment. This question is, as yet, undecided.

Three theories have been advanced to account for the disappearance of the uric acid in the blood: (1) Activation of the ferments. This causes the oxidation of the uric acid and its further disintegration into CO_2 and ammonia. (2) Direct action on uric acid. In this theory the emanations are supposed to act directly on the uric acid, causing its solution and disintegration. (3) Increased activity of the kidneys, which, consequently, excrete the superfluous uric acid from the blood. The first theory is to-day the most widely accepted one, although the other theories may also act to complete the process.

Excretion: The emanations are partly broken up in the body, but the larger part is excreted through the lungs regardless of the method of administration. This excretion takes place most rapidly when the inhalation or injection method is followed, and less rapidly by the other methods. When given *per os* the emanations continue to be excreted for three or four hours or slightly longer. Excretion takes place to a slight extent through the kidneys, occurring about one hour after a large dose is given. Some observers have not been able to find any in the urine even after fairly large doses. The feces regularly show a small degree of radioactivity after the emanations have been given internally. The rapidity of excretion when the emanations are given by inhalation suggests the futility of expecting prolonged action by this method unless it can be carried out over long periods. When given by mouth the action, in consequence of the longer period of excretion, may be made almost constant by giving small doses at frequent intervals (three to five times daily).

Results of treatment: It is too early to outline definitely the types of cases in which we may expect the most benefit, and at what stage the most improvement may be expected, but, in general, it may be said that the best results may be looked for in those cases in which the gouty process is not too far advanced. Little improvement can be expected in the old, deformed joints where tissue changes have become permanent and where the patient is suffering not so much from the gout itself as from the erosions and deformities of the joints. During the early part of the treatment the patient notices a distinct increase in the symptoms. This increase has been noted for many years in patients undergoing treatment at certain spas. The absence of this reaction or the severity of the same has no influence on the prognosis, many patients getting entirely well who have shown no reaction at all, and *vice versa*. Improvement begins usually after two or three weeks, except in older and weaker patients, in whom it is sometimes delayed until the sixth or seventh week. In all cases the treatment should be continued at least four weeks.

I have been able to collect fifty cases of gout treated by means of radium emanations. These cases were in the main reported in the German literature. Of these cases less than 20 per cent. were reported unimproved, and in only one case was the patient distinctly worse at the end of the treatment. The percentage of cures is no mark, however, of the enthusiasm of the observers. In almost every case in which improvement was expected, that is, in young individuals without marked changes in the joints and kidneys, the result was most favorable.

Conclusions.

1. We have, in radioactive waters, a heretofore unrecognized therapeutic agent of real clinical value.

2. Both *in vitro* and in the human body the radioactive waters have an indisputable action on the purins.

3. In gout the action is in many cases, if not in every case, a favorable one.

4. Further study of the radioactive waters, both from a clinical and from a scientific standpoint, is most desirable, and further investigation will no doubt show their value, not only in gout and the allied diseases, but in many cases of neuralgia, muscular rheumatism, and other diseases of like nature.

REFERENCES

1. *Münchener medizinische Wochenschrift*, 1905, No. 8.
2. *Zeitschrift für Heilkunde*, 1908, No. 2.
3. Gudzent: *Medizinische Klinic*, 1910, No. 42.
4. His: *Medizinische Klinic*, 1910, No. 16.
5. Gudzent: *Therapie der Gegenwart*, Dec., 1910.

157 West Seventy-Ninth Street.

A FATAL CASE OF BISMUTH PASTE POISON.

By LEONARD W. ELY, M.D.,
DENVER, COLO.

A number of fatalities have occurred from the use of bismuth paste, but Dr. Beck,* the author of this treatment, states that in doses up to 100 grams the paste is quite innocuous. I have had rather a wide experience with bismuth paste in tuberculous sinuses, and have strongly advocated its use.† Indeed, until its introduction an infected abscess from Pott's disease was thought an invariably fatal complication. It should be recognized, however, that bismuth paste has its dangers, and if we can find an entirely innocuous substance to replace it, we shall do well to make the change.

The case I would report is as follows:

G., 3 years old. Diagnosis: Caries spinalis thoracis. Duration of disease, about one year. The case was a typical one, with a well-marked kyphosis and a freely discharging sinus in the right lumbar region, which ensued on an abscess. This abscess was opened April 12, 1911.

July 7, 1911. An injection was made into the sinus, consisting of the regular bismuth paste mixture, 1 part bismuth subnitrate to 2 parts vaseline. July 9. A sharp rise in temperature, to 103° F., followed the injection.

August 24. The temperature soon subsided, and the child did well thereafter. An injection of about 2 ounces of the paste was made to-day.

August 26. A sharp febrile reaction again followed the injection, reaching 103 F°.

September 15. The temperature soon subsided, and has since run between 97.5° and 99.6°. A skiagram shows involvement of the vertebræ. About 2 ounces of the paste were injected to-day. Sept. 19. The injection was followed by the usual rise in temperature, which is slowly subsiding.

September 30. The abscess is almost healed. A drop or two of pus occasionally exudes. The patient has a blackish discoloration on one side of her tongue, but seems in fairly good condition.

October 5. The child has been vomiting constantly, has lost weight steadily, can keep nothing on her stomach, and is very restless. October 8. 8 c.c. of olive oil was injected into the sinuses. October 9. Rectal feeding begun and continued to the end. The temperature does not run above 100° F.

October 14. The patient is growing steadily worse, and refuses all food. Ulcers on both sides of the mouth, between the cheek and alveolar process, are spreading rapidly. Some little discharge of bismuth followed the injection yesterday of 8 c.c. of olive oil. The temperature is practically normal, and pulse runs about 120-130. The mouth is dry and brown. The child is emaciated, sleepless, and tosses her head about. The blackness of the tongue has persisted and increased.

October 17. Two bloody stools. Exitus.

*Emil G. Beck: "The Surgical Treatment of Tuberculous Sinuses and Their Prevention," Transactions of the Sixth International Congress on Tuberculosis, 1908.

†*American Journal of Surgery*, January, 1910.

Appendicitis and Angina.—A. Krogius notes in an analysis of 1,000 cases of appendicitis operated upon in the surgical clinic of Helsingfors during the period from 1901 to 1908 that there was no evidence of epidemicity; that no relationship could be discerned between appendicitis on the one hand and influenza and enteritis on the other; but that the figures and curves showed an etiological relationship between appendicitis and angina.—*Von Langenbeck's Archiv.*

Frequency and Pathogeny of Crural Hernia in Children. Case in a Child of Ten Years.—H. L. Rocher and M. Dantin state that crural hernia exists in children, although rare. Its maximum frequency is between the ages of ten and twelve years. Its pathogeny is allied to an anomaly of the internal part of the crural ring, a dysplasia of the crural septum, or ligament of Gimbernat, or to the presence of a preformed cul-de-sac. The author's theory of its occurrence gives the origin to a failure of the parietal region of the abdominal wall, while that of Murray gives it a serous origin. The author believes that both of these theories have their application in certain cases. They have a common point, namely, congenitality of the lesions. Sex has not a marked effect on the occurrence of this variety of hernia. These hernias are generally single, rarely double. They generally occur gradually, and are not recognized early in their occurrence. The author gives histories of two cases in which the hernia was of considerable size and appeared gradually.—*Gazette Hebdomadaire des Sciences Médicales de Bordeaux.*

Vaccinotherapy by Irradiated Vaccines.—Maurice Renaud presents a biological study of typhoid vaccine. His vaccines are prepared from cultures of the bacillus of Eberth isolated from the blood of a typhoid patient whose disease was demonstrated at autopsy to be typhoid. Its virulence is such as to kill animals in twenty hours after injection of 7 to 8 milligrams. Forty-hour cultures on gelose are emulsified in physiological salt solution; the emulsion is thus exposed to the irradiation of a quartz lamp for 30 minutes. After this treatment the bacilli have entirely lost their virulence; they are incapable of reproduction and cultures remain sterile. They lose their motility, but undergo no other changes in form. This vaccine may be employed without fear or precautions. It is very easily absorbed when injected under the skin. The local reaction is slight and appears after a few hours. The author compares the effects of inoculation of this vaccine and of virus. The injection of vaccine causes but a short reaction; with an equal dose of virus the reactive period is the same. With both there is a primary period of excitation analogous to that of infections of acute beginning, and this excitation arouses the protective mechanism of the body. The author believes that the microbic products, pure and unmodified, are less toxic than has been supposed, which accounts for the larger doses possible. These irradiated vaccines cause an extremely sudden and brief reaction which never causes grave symptoms and they are eliminated rapidly and completely. Such inoculation presents no dangers, and no risks are incurred. Death is never caused by the intoxication. It causes an immunity and the appearance in the blood of antibodies; large doses may be used to obtain immunization. Each new injection increased the bactericidal properties of the blood. More than 40 typhoid patients were inoculated.—*La Presse Médicale.*

MEDICAL RECORD.

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HABIT, SYMPTOMS, AND DISEASE.

EVERY physician is conversant with the affections of the nervous system which are the manifestations of some unusual and long-continued habit. They are exemplified by the "habit spasms," simulating chorea, in children, and by the varied group of "ties" in adults of neuropathic constitution. These affections involve the nervous mechanism of the body, and it does not seem strange that habit should lead to perversion of function in that mechanism. Most physicians, however, would be surprised to be told that a similar perversion of function, because of habit, may occur, and frequently does occur, in other mechanisms and tissues of the body; yet this is the text of a recent address delivered before the Medical Research Club of the University of Pittsburgh by the well-known Canadian pathologist, J. George Adami ("International Clinics," Twentieth Series, Vol. IV).

Adami tells of a patient cured of incipient tuberculosis, who continued to cough and to bring up an excessive amount of mucoid expectoration long after all other symptoms and signs of the disease had disappeared, the reality of the cure being evidenced by a gain of fifty pounds in weight. The cough could be explained easily enough—it was of that nervous type engendered by habit and seen very frequently in such conditions. There seemed to be no reason, however, why habit should not explain the increased amount of expectoration, habit this time affecting not nervous function, but secreting tissues or individual cells. As soon as this explanation occurred to Dr. Adami numerous similar phenomena were easily explained, among them chronic nasopharyngeal discharge after infections of the nasopharynx, continued and excessive production of saliva after a single salivating dose of mercury in a susceptible individual, obstinate diarrheas after dysenteric affections, and the like.

In generalizing from these and other observations Adami points out that there are three orders of cell activities: (1) those determined by nervous stimulation, which may be termed *neurogenic*; (2) those determined by direct stimulus of the individual cells by anything modifying their immediate environment—the *environmental*, and (3) the *automatic* activities, namely, which proceed in spite of absence of sustained stimuli of the first two orders. The automatic activities are not independent of development: they are simply a continuation of activities initiated by single or repeated nervous or environmental stimuli, and they continue after the cessation of the stimulation. The cells thus develop "habits of activity" and these habits go far in explaining various manifestations of life in health and in disease.

A postulate of this theory is the possibility of some altered or unusual activity of a group of cells under the stress of unusual environment; this altered activity may be transmitted by heredity to other cells, derived from the original group and thus lead to some quite unusual manifestation in the body. This postulate Adami cautiously applies to the possible explanation of the origin of cancer in some instances; cells active in some new direction may lose their original function and increase their simple vegetative powers, they "assume the habit of growth," and this may lead to the formation of a neoplasm.

Lack of space forbids further consideration of Adami's address; the original paper may, with profit, be consulted by workers in search of a stimulating presentation of old problems and of new explanations of the phenomena of disease.

DEGENERATION.

THE looseness with which the word degeneration is employed forms a serious obstacle to the proper appreciation of involutionary phenomena in the human species. It is often difficult to discriminate between involution and evolution. There should be a science of comparative involution, yet it would be very difficult to imagine such a phenomenon as degeneration in the animal kingdom as a whole. There is a so-called degeneration which is conterminous with death and infertility, and one with which longevity and fertility are not incompatible. There is a so-called degeneration associated with antisocial and criminal tendencies and one associated with diseased states, specially nervous and mental diseases; and the two types need not overlap. Degeneracy is constantly being confounded with heredity, and recent progress in our knowledge of the latter shows that much so-called degeneracy is purely a matter of remote inheritance, certain types of individual continuing to appear without any real deterioration of the stock as a whole. Degeneration may or may not be considered as atavistic, and it may or may not be brought in association with physical stigmata.

There seems to be little correspondence between the degeneration of races, of families, and of individuals. Degeneration can mean only that each succeeding generation is less fitted for existence than the one which preceded it, until the entire race or stock perishes. The numerous theories constantly advanced to account for the extinction of the old Greeks and Romans, the medieval Normans, etc., show how small is our real knowledge of these subjects. Climate, disease (especially malaria), constant warfare, luxury, race suicide, neglect of the soil, miscegenation with inferior races, and inability to breed with other races—these represent only a few of the theories advanced from time to time. It would seem that the expression "race regeneration" is a simple figure of

speech for race extinction, or that it represents a mere begging of the question. Evidences of degeneration may coincide with extinction, just as they occur when the race is flourishing or at an equilibrium. Degeneration in a family may simply mean extinction from very obvious causes or it may mean the continued reappearance of remote ancestral qualities augmented by unwise crossing, such as has often been recorded in royal families. Individual degeneracy in a sound stock suggests the familiar "black sheep," a subject best understood in connection with remote heredity. It must be borne in mind, however, that a new type of individual may develop in a perfectly sound stock as a so-called sport or freak.

At a recent meeting of the Deutsche Naturforscher und Aerzte (*Berliner klinische Wochenschrift*, October 30) Bumke read a paper on nervous degeneration as an entity, in which he insisted that so far from conducing to degeneracy the hereditary forces invariably tend to repair the damages sustained by individuals. In other words, heredity means regeneration. Diseases are not concentrated but diluted in succeeding generations. Some element like crossed heredity or consanguinity is necessary to prevail against this conservative force. Much socalled heredity is actually accounted for by injury to the germ plasm, such as occurs so readily from parental syphilis, alcoholism, tuberculosis, plumbism, etc.

STREPTOCOCCUS STRAINS.

When the remarkably favorable results of the use of diphtheria antitoxin became generally known, efforts were immediately made to produce sera for the treatment of other infections, notably those in which the streptococcus had been found and in which it was believed to be the causative factor. These conditions are numerous and differ widely in the clinical pictures which they present. Therefore, when antistreptococcic sera proved to be of little therapeutic value, the explanation was offered that these various diseases were caused by different varieties or strains of the organism.

Efforts to differentiate these strains were for a time unsuccessful. The appearance of the chain produced was proved to be due to the medium used, so that such names as *S. longus*, *S. brevis*, and *S. conglomeratus* were not justified by facts. The more recent advances in immunity also failed to furnish needed information since the various strains seemed to be related so closely that agglutination, anaphylactic, and complement fixation tests proved unsatisfactory. Schottmüller, however, grew the organisms on blood agar plates, and from the information so obtained was able to distinguish four strains: (1) *Streptococcus pathogenes* or *erysipelatos*, producing a wide hemolytic zone; (2) *S. viridans* or *mitior*, producing green pigment and a narrow hemolytic zone which differs somewhat in character from that of the pathogenes; (3) *S. saprophyticus* or *anhemolyticus*, producing no hemolysis; (4) *S. mucosus*, producing some green pigment and also a mucus-like material. *S. mucosus* resembles the pneumococcus in that it is soluble in bile salts and develops a capsule, so it is usually considered to be a strain of that organism. *S. saprophyticus* is found in nasal, buccal, and vaginal secretions and on the skin, and is generally nonpathogenic. *S. pathogenes* possesses high virulence for man and animals and has been isolated from patients suffering from severe diseases, such as rheumatism, erysipelas, scarlet fever, and puerperal sepsis. *S. viridans*, on the other hand, exhibits a much lower grade of virulence and is found in the milder conditions, as chronic rhinitis and bronchitis, and chronic endocarditis.

Naturally, the claim was made that these varieties expressed merely the reaction of the single organism to changes in environment, but Le Blanc (*Centralbl. f. Bakt.*, etc., I Abt. Orig., Bd. 61, H. 1 & 2, p. 68) and Rolly (*Idem*, p. 86) have shown that none of the alleged instances of transformation from one type into another can be substantiated. Although grown for variable lengths of time on such media as saliva, milk, and horse serum, and subjected to changed physical surroundings, in each case the culture has retained the characteristics of its strain. It is of course probable that these divisions, now recognized as separate strains, will be further differentiated following improvements in technique. This probability is strengthened by the experience which has been obtained from the use of vaccines. The results following autogenous vaccines are generally so much superior to those obtained from stock emulsions that the conclusion is almost unavoidable. The almost uniformly mild course of those diseases which result from infection with *S. viridans* will suggest the prognostic value in the determination of the particular strain of the streptococcus which may be present in any given infection.

TOTAL HYSTERECTOMY IN TUBERCULOUS PREGNANT WOMEN.

It is generally admitted that if a tuberculous pregnant woman becomes rapidly worse in the early months of pregnancy, the latter should be terminated. The usual method is the artificial induction of abortion, but after the second month or thereabout the unfavorable result of the often copious and protracted hemorrhage must be borne in mind; and despite the care enjoined upon the husband in reference to the prevention of a further pregnancy such a contingency is very likely to happen. Hoehne at a recent meeting of the Medical Society of Kiel (*Münchener medizinische Wochenschrift*, October 24) commended the practice under these circumstances of total vaginal hysterectomy, including ablation of the adnexa. The idea was first carried out by Bumm upon a series of women now aggregating twenty-six. The author has thus far operated three times, but in one case he performed a supravaginal abdominal hysterectomy, leaving the adnexa intact. Hemorrhage was less than in the average abortion. Further, as general narcosis is not always justifiable in pulmonary tuberculosis, the author preferred lumbar anesthesia. Again, in these cases removal of the ovaries so far from being harmful was believed to exert a favorable influence in turberculosis. In any case, the latter disease showed quite a notable improvement as the joint result of interrupted gestation and castration.

Eck's Fistula and the Liver.

In theory an Eck's fistula in the dog furnishes a satisfactory opportunity for studying the hepatic functions in health and disease. In practice, however, the technique is often defective. Not only have many dogs died from the intervention, but certain accidents may prevent experimentation. Among these are pancreatic fat necrosis. The operative mortality, however, has now been reduced to about ten per cent. Unfavorable anatomical conditions may interfere with the proper establishment of a fistula. Fischler, at a session of the Naturhistorisch-Medizinischer Verein zu Heidelberg (*Münchener medizinische Wochenschrift*, December 5) now immunizes his dogs to trypsin before the operation, in order to prevent necrosis of the pancreas. He has studied especially protein metabolism and the so-called meat poisoning which invariably occurs promptly in emaciated dogs, but only after a considerable interval in fat animals. This intoxication is manifested by depression, anaurosis, ataxia, catalepsy, and stupor. If the liver is anatomically intact there are no phenomena of excitement, but the latter supervene if a degenerate state is present. The intoxication seems to be due to an alkalosis from the alkaline cleavage products of the meat. This would make it appear that a function of the liver is the neutralization by acids of these toxic alkaline products.

News of the Week.

Beriberi Suspects in Philadelphia.—Four East Indian sailors who arrived in Philadelphia on the British steamship *Karema* are held in quarantine at Marcus Hook suspected of having beriberi.

Meningitis in Texas and Oklahoma.—A dispatch from Dallas, Tex., says that the reports in regard to the prevalence of meningitis in North and East Texas have been very much exaggerated. There have not been more than 500 authenticated cases in the State; of this number 100 have been officially reported in Dallas, about 100 in Fort Worth, and 97 in Waco. The other cases are scattered over the State. A panic not justified by the situation has prevailed and the opinion is expressed that normal conditions will be reestablished in a few weeks. Many physicians from cities and towns in the Southwest have visited the hospitals in Dallas where they are instructed in means employed to combat the disease. There have been some cases of the disease in the extreme southern portion of Oklahoma, and Shreveport, La., has put into effect a rigid quarantine against all points in Texas where meningitis is known to be prevalent. All railroads have been ordered to discontinue selling tickets from such places to Shreveport.

Pellagra in Tennessee.—Dr. Olin West, who has been making an investigation under direction of the State Board of Health of Tennessee, has reported that he has found hookworm in ninety-five of the ninety-six counties of that State.

Epidemic of Measles.—More than 1,500 cases of measles have been reported in the city of Wilkesbarre, Pa.

The War on Bubonic Plague.—Since the epidemic of bubonic plague in San Francisco, in 1908, the Federal Government has expended more than $1,000,000 in combating it. At first efforts were made to exterminate rats, but, later, attention was turned to squirrels which have acquired fleas from rats, and among the myriads killed 10,000 have been found to be infected with the bubonic plague.

Anti-Mosquito War in Hawaii.—The Health Department of the Territory of Hawaii is conducting a vigorous crusade against mosquitos in Honolulu. The Federal Government has detailed Dr. G. W. McCoy of the Public Health and Marine-Hospital Service to serve as Sanitary Adviser to the Hawaiian Government and to have charge of the mosquito campaign.

The Death Rate for Chicago for 1911.—The death rate for Chicago for 1911 was 14.55 per 1,000, the total number of deaths being 32,672. The number of deaths from preventable disease was 1,600 less than for 1910. Pneumonia was responsible for the largest number of deaths, 4,929, and tuberculosis ranked next with 3,726. The death rate from typhoid fever was 93 per cent. lower than it was twenty years ago.

The Boston Death Rate.—The officials of Boston's health department state that the death rate of that city as given by the United States Census Bureau for the year 1911 was incorrect and that those of the Health Department are right. The actual death rate for the year was 17.1, while the figures given out at Washington were 18.5 per 1,000 inhabitants.

Many Lives Lost by Fire in 1911.—There were 497 lives lost by fire in Greater New York in 1911 as against 329 for 1910. This great increase was partially accounted for by the 147 lost in the Triangle Shirtwaist Factory disaster. This catastrophe led to the organization of the Committee of Safety, which, in cooperation with the Legislature and representatives of the city government, created the Bureau of Fire Prevention, which is doing considerable work in spite of an inadequate appropriation.

New York City Needs More Hospitals.—The report of the State Board of Charities, made public on January 12, shows that the hospitals of New York are greatly overcrowded. During the year ended September 30, 1910, the public hospitals cared for 88,085 patients and gave 1,669,766 days' treatment. The report states that the greatest amount of congestion was found in the Metropolitan Hospital, the Kings County Hospital, the City Hospital, the Cumberland Street Hospital, and Bellevue Hospital. In the latter alone there were more than 800 beds in excess of the normal capacity, and at times additional cots and mattresses were placed on the floor between the beds to accommodate the large number of patients. The number of mattresses thus used had aggregated as high as 480 in a single night. The need for hospital buildings that will accommodate 1,200 patients is imperative and provision should be made for a much larger number if the hospital facilities are to keep pace with the growth of the city.

Charitable Gifts.—A costume ball given at Sherry's on January 11 netted $5,000 for the Lying-in Hospital of New York City. In the will of Moritz H. Rosenstein there are bequests of $1,000 each to the Montefiore Home and Mount Sinai Hospital, and of $500 each to the Lebanon Hospital and the Hebrew Benevolent Society. Richard T. Crane of Chicago has left $2,135,000 to be devoted to charitable works; $25,000 will go to the Visiting Nurse Association and $10,000 to the Lake Geneva Fresh Air Home. Mrs. Mayer Lehman has given $100,000 to Mt. Sinai Hospital, the income of which is to be used in preventive work. It is not yet decided just what course this work of prevention will take, the planning of which

will be left mainly to the medical staff, but it will doubtless be done mainly in the homes of the poor and will include an extension of the present work of the visiting nurses.

The Western Reserve University, located at Cleveland, O., has completed its fund of $1,000,000 which is to be used as a permanent endowment for its Medical Department. About a year ago John D. Rockefeller agreed to give $250,000 of this amount contingent upon the institution raising the remainder. Mr. H. M. Hanna then gave another $250,000, and this was followed by two gifts of $100,000 each, one of $50,000, three of $30,000, two of $25,000 each and several smaller amounts which completed the fund. The Western Reserve Medical Department represents the absorption and consolidation of five medical institutions which have existed from time to time in Cleveland, the oldest dating back to 1835. This institution was one of the first to require college preparation as one of the conditions of entrance.

To Investigate Chicago Medical Colleges.—The Chicago Medical Society has appointed a committee to investigate seven medical colleges recognized by the State Board of Health. One of the objects of the investigation, in addition to the betterment of facilities, is to secure accurate statistics so that the findings of philanthropic investigators may be disputed or upheld in a decisive manner.

The Hat-Pin Law in Zurich.—Owing to the many accidents in street cars and trains which have resulted from projecting hatpins a law was put into effect on January 1 prohibiting the wearing of unprotected hatpins. In a single day gendarmes arrested 110 women of all classes who were fined 5 francs each.

A New Hospital for Stamford, Conn.—Work has been begun on a new hospital for Stamford which it is estimated will cost over $319,000, all of which amount is in hand except about $30,000. It is expected that the plant will be ready for occupancy in eleven months.

New Hospital for Nelson, B. C.—A $70,000 hospital building is to be erected in Nelson toward which the people have voted to authorize a civic grant of $15,000.

Clinton Hospital Near Completion.—A new maternity hospital has been erected in connection with the general hospital of Clinton, Mass., which will be ready for occupancy about March 1.

New Post-Graduate Hospital Buildings Opened.—The new buildings and laboratories of the Post-Graduate Medical School and Hospital were opened for inspection on January 11. The new building adjoins the old one and contains 480 rooms, or 130 more than the old building, and was erected at a cost of $1,500,000. It is claimed that there is nothing for the work of post-graduate instruction that has been omitted from the equipment of this institution. In the evening a dinner in commemoration of the opening of this building was given at Delmonico's where more than 200 members of the staff of the hospital and their guests were present. Dr. George M. Miller presided. The speakers were Dr. Samuel W. Lambert, Dean of the College of Physicians and Surgeons of Columbia University; Brigadier-General G. H. Torney, Surgeon-General of the Army; James M. Beck, Dr. Abraham Jacobi, and Augustus E. Thomas.

The American Hospital Association will hold its Fourteenth Annual Conference in Detroit, Mich., on September 24, 25, 26, and 27, 1912. Any information regarding this association, as well as application forms for membership, may be had by addressing the secretary, Dr. J. N. E. Brown, Toronto, Canada.

The Harvey Society Lecture on January 20 will be delivered by Prof. Henry Fairfield Osborn; the subject will be: "Unit Characters in Heredity as They Appear to a Paleontologist."

Public Health Lectures.—The series of lectures which form a part of the New York work of the American Medical Association Public Health Education Committee, which are given under the joint auspices of the Public Health Education Committee of the Medical Society of the County of New York and the Hygiene Committee of the New York City Federation of Woman's Clubs, will be given at the New York Academy of Medicine on alternate Wednesday evenings and Thursday afternoons from January 10 to March 28, 1912.

The Medical Association of the Greater City of New York held its annual election of officers on January 15. The following were elected: *President*, Dr. Reynold Webb Wilcox; *Vice-President*, Dr. Ransford E. Van Gieson; *Corresponding Secretary*, Dr. Frank C. Raynor; *Treasurer*, Dr. A. Ernest Gallant; *Chairman for Borough of the Bronx*, Dr. Nathan B. Van Etten; *Chairman for Borough of Brooklyn*, Dr. Robert E. Coughlin; *Chairman for Borough of Queens*, Dr. L. Howard Moss.

Report of the Finance Committee of the New York Academy of Medicine.—Dr. L. Emmett Holt, chairman of this committee, in his annual report, said that the committee is of the opinion that the first step toward the end in view, namely, the enlargement of the academy, is to pay for the real estate which was purchased a little over one year ago. This will require just double the amount thus far subscribed. Up to the present $110,000 has been subscribed by 329 members, or about one-quarter of the membership. With the real estate free from all indebtedness the academy would then be in a strong position to ask the outside public for a new building. The committee urgently asks the hearty cooperation of those who have already given in securing subscriptions from others, and of those who as yet have not subscribed to do their part as generously as others have done.

A Tour for Foreign Physicians.—In connection with the International Hygiene Congress, which will meet in Washington in September, a six weeks' tour has been arranged for visiting physicians which will embrace visits to New York, Philadelphia, Atlantic City, Baltimore, Washington, Chicago, Montreal, and Albany. It is announced that the cost of this tour will be from $425 to $625 from Europe and return.

Physicians in the United States Number 130,000.—According to the last census there are 130,000 physicians in the United States; this includes doctors of every description, as well as osteopaths, psychopaths, hydropaths, etc. There is one doctor to every 650 of the population and the average income of a physician is said to be $1,200 per annum.

Vital Statistics Legislation.—In a report of this subject it is pointed out that in only 24 of our States do we know how many human lives are lost each year; in 25 States no books are kept. In only 9 States are any birth records kept, and in most of these this has been done but a few years. In the census report for 1910 the fact appears that our

death ratio is based on returns from only 58.3 per cent. of the entire population. In Alabama, Florida, Georgia, Kentucky, Louisiana, South Carolina, Tennessee, Texas, and Virginia an effort has been made to register deaths in the larger cities, but none has a general registration of deaths or recording of births. Proper legislation for securing vital statistics is urged in these States. Aside from the value of vital statistics from the point of view of public health, birth records have an important legal significance, as attested by the following instance: George A. Wagner of Manchester, N. H., has been elected Probate Judge of Hillsboro County, but cannot take office because no record of his birth can be found.

British Medical Association.—The eightieth annual meeting of this Association will be held at Liverpool, July 23-26, 1912, under the presidency of Prof. Robert Saundbey, Sir James Barr being the president elect. The address in medicine will be delivered by Dr. George Alexander Gibson of Edinburgh; the address in surgery by Mr. Frank Thomas Paul of Liverpool.

The Seventeenth International Medical Congress will be held in London, August 6-12, 1913, under the presidency of Sir Thomas Barlow. The usual rules have been adopted. The official languages will be English, French, and German, though Italian will be allowed in the reading and discussion of papers. The subscription will be $5.00 for members and $2.50 for the wives and daughters of members accompanying them. Members will receive the volume of the transactions recording the proceedings at the general sessions and also that of the section in which they have been enrolled. The program of the Congress and of its various sections will be published not later that September 30, 1912, and will be sent to all those who shall have inscribed themselves as members before that date. Information concerning the reductions in fares granted by railway and steamship companies, hotel and boarding-house accommodations, excursions and other entertainments, etc., will be published before April 30, 1913.

Dr. Albert Warren Ferris of New York, who resigned from the post of president of the State Commission in Lunacy to resume the general practice of internal and nervous diseases, has been appointed resident physician of The Glen Springs, Watkins, N. Y., and will take up the duties of his new position in February.

The North Central Branch of the American Urological Association will be held in St. Louis on February 5, 6, and 7. The headquarters of the meeting will be at the Jefferson Hotel, Twelfth and Locust streets. Hotel reservations may be made through Dr. Bransford Lewis, 1050 Century Building, St. Louis.

The Ninth International Red Cross Conference will be held in Washington, D. C., from May 7 to 17, 1912. In connection with the meeting there will be an exhibition, divided into two parts, the Marie Feodorovna and the General, the former of which offers prizes aggregating approximately $9,000 and the latter approximately $3,000. Information regarding this prize competition may be obtained from the Chairman of the Exhibition Committee, American Red Cross, Washington, D. C.

A Hospital for Animals.—The New York League for Animals plans to build a hospital somewhere on the East Side of the city, the object of which shall be to care for sick animals that work or those that are pets until they are cured. This idea is new in this country, but has been put into practice in both London and Paris. The league already has a dispensary in Lafayette street, where more than 500 cases a month are seen to. They plan to expend $225,000 on the hospital, and $50,000 has already been contributed, of which Mrs. Russell Sage has given $10,000, Mrs. Alfred G. Vanderbilt $10,000, and a like amount by an anonymous donor.

A Memorial for Dr. William Price Pryor.—Dr. J. B. Rolster of Oklahoma City, Okla., has given the sum of $500 toward the erection of a memorial tablet to the memory of the late Professor William Rice Pryor to be placed in the new building of the New York Polyclinic Medical School and Hospital.

A Memorial Hospital.—The Hospital Corporation of Springfield, Mass., announces that $30,000 of the $50,000 required for the proposed memorial to Dr. Frederick W. Chapin, formerly vice-president of the institution, has been pledged. This memorial will take the form of an addition to the Springfield Hospital, which is badly in need of larger accommodations.

Hospital Gifts Fall Off.—The annual collection of the Saturday and Sunday Association, which is taken up in one hundred churches of New York, amounted this year to only one-half as much as usual, only $15,000 having been contributed.

Dental Surgeons Wanted in the Army.—The Surgeon-General of the Army announces that there will be examinations for the appointment of Acting Dental Surgeons on April 1, 1912. Application blanks and full information concerning these examinations can be procured by addressing the Surgeon-General, U. S. Army, Washington, D. C.

Dr. W. W. Keen of Philadelphia has been re-elected president of the American Philosophical Society.

Dr. Walter S. Cornell has been appointed Director of Medical Inspection of Schools of the City of Philadelphia. He will be in charge of a staff of fifty-five physicians who will constitute, under the new school code, the medical examiners for the public schools. He will have under his charge fifty-five nurses, who will administer to the children in the schools, visit their homes, and see that the physicians' orders are carried out.

Physicians' Motor Club of Philadelphia.—At the annual meeting, held January 9, Dr. S. Leon Gans was elected *President;* Dr. L. Webster Fox, *First Vice-President;* Dr. John I. Robrecht, *Second Vice-President;* Dr. Charles A. E. Codman, *Third Vice-President;* Dr. J. Gurney Taylor, *Secretary,* and Dr. Lewis H. Adler, Jr., *Treasurer.*

Dr. A. S. Begg of the Harvard Medical School has been appointed to the Chair of Histology and Embryology in the Medical Department of Drake University, Des Moines, Iowa.

Dr. Harry T. Inge of Mobile, Ala., has been appointed Chief Surgeon of the Mobile and Ohio Railroad Company, to succeed Dr. Rhett Goode, deceased.

The Manhattan Medical Society will meet at Reisenweber's Café on Friday evening, January 26. The papers to be presented will deal with the ethical and financial relations of the physician.

Obituary Notes.—Col. Egon A. Koeper died at his home in Washington, D. C., January 11, at the age of 76. He was deputy surgeon-general for the army some time ago and retired from practice a number of years ago. He was born in Prussia, where he received his early military training.

Dr. Frank Baldwin of Brooklyn, N. Y., a

graduate of the New York University Medical College in 1877, died from pneumonia at his home on January 13 at the age of 57 years. He was a member of the Kings County Medical Society and the Brooklyn Gynecological Society as well as of many others.

Dr. F. J. Yager of Campbellsburgh, Ky., died at his home, January 10, at the age of 90. He had practised medicine for over seventy years.

Dr. Virginia F. Bryant of Nahant, Mass., a graduate of Boston University School of Medicine, Boston, in 1884, died at her home, January 4, at the age of 54 years.

Dr. Charles W. Taylor of Lowell, Mass., a graduate of the Medical School of Harvard University, Boston, in 1884, died at his home, January 4, at the age of 52 years.

Dr. James S. McLaughlin of Westfield, Mass., a graduate of Dartmouth Medical School, Hanover, in 1893, died at his home January 2. He was 46 years old.

Dr. Joseph R. Pollock of Fort Worth, Tex., a graduate of Hahnemann Medical College and Hospital, Philadelphia, in 1871, died at his home, December 27, at the age of 66 years.

Dr. John D. Bedford of Honeygrove, Tex., a graduate of Missouri Medical College, St. Louis, in 1883, died in Dallas, Tex., December 31, at the age of 54 years.

Dr. W. T. Whiting of Lafayette, Col., an assistant to Dr. Victor W. Porter, was killed when his automobile collided with an interurban car. He was 25 years old.

Dr. John W. Quillian of Gainesville, Ga., a graduate of Atlanta Medical College in 1873, died at his home, January 5, at the age of 65 years.

Dr. Frank E. Bundy of Boston, Mass., a graduate of the Medical School of Harvard University, Boston, in 1862, died January 6 at the age of 73 years. He had studied under Dr. Oliver Wendell Holmes and was a member of the Massachusetts Medical Society.

Dr. William P. Kistler of Allentown, Pa., a graduate of Bellevue Hospital Medical College in 1867, died January 8 at the age of 67 years.

Dr. J. Cameron Struthers of Hazelton, Pa., a graduate of the Medico-Chirurgical College of Philadelphia, died at his home, January 8, at the age of 32 years.

Dr. James A. Hopkins of Milton, Del., a graduate of Jefferson Medical College, Philadelphia, in 1858, died January 8 at the age of 78 years.

Dr. Robert Sanders died at Palmerton, Pa., on January 5, at the age of 24 years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1910. He was interne at the Palmerton Hospital.

Dr. Morris F. Cawley died suddenly at Allentown, Pa., on January 6, at the age of 55 years. He was graduated from the Medical Department of the University of Pennsylvania in the class of 1888. He was Surgeon-Major of the Fourth Regiment, N. G. P.

Dr. Oscar Howe, of Fisherville, Mass., the oldest man in South Grafton and at the time of his retirement four years ago the oldest practising dentist in Massachusetts, died on December 29, at the age of 81 years.

Dr. James S. McLaughlin of Westfield, Mass., a graduate of Dartmouth Medical School, Hanover, in 1893, died at his home January 2, at the age of 46 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE INSURANCE ACT, MEETINGS AND PROTESTS—THE UPRIGHT POSITION DURING ANESTHESIA—THE VARIETIES OF CHLOROFORM—LONG AS A PIONEER—ARTHRITIC DISEASES.

London, December 29, 1911.

The war against the Insurance Act is still being waged with vigor. The requisition for a general meeting of the B. M. A., signed by above 500 members, was presented on Wednesday and by the by-laws this must be convened within twenty-one days—therefore it must be held next month. But the articles of association provide that resolutions passed at any such meeting have no effect on the Council. If they dislike it they can obstruct any action upon it for half a year, and moreover the members of the Council can decline to resign, thereby retaining the administration in their own control, however hostile may be their constituents, just as the present government is holding onto office although it is universally admitted that the English electors have no confidence in it. When the Association was reorganized there was much talk of securing representation on the Council, but, excellent as the rules may look at first glance on paper, some of the older members predicted that they would work in such a way as to preserve the powers of the "inner clique," and that is what has happened. It is quite possible for the Council, while preserving the letter of the by-laws, to defeat their intention and defy the members. How far the dignity of the majority of the Council, now that the position is becoming plain, will permit them to hold onto office remains to be seen. There is certainly a demand for their resignation from a large proportion, probably a majority, of their constituents. It is stated and generally believed that Mr. Lloyd George admitted he could not carry the six points through the House of Commons, and for this reason the socialistic element on the Council sacrificed the profession to the political exigencies of the Chancellor. This is regarded as admitting of no excuse and is to a great extent accountable for the refusal to hear Sir V. Horsley. But the general apathy of the profession is at the bottom of the mischief—neglecting to elect representatives who understand the questions that concern practitioners and will insist on their rights.

The great London meeting which I described last week has been followed by many others in various parts of the country, and they mostly endorse the resolutions of that mass meeting.

In Manchester the projected formation of a "National Medical Union" is almost complete and influential members of the profession from many districts are daily being added to the committee. This union is not opposed to the B. M. A., but rather intended to compel the older body to do its duty in the present crisis.

In Scotland the two colleges and the faculty have held meetings and decided to issue a manifesto urging united action to get their demands granted by the Insurance Commissioners, failing which they will advise all practitioners in Scotland to refuse to work under the act. A voice of dissent has been raised in Edinburgh, where Dr. C. F. Knight defends the act and is trying to organize a society to carry it out. It does not seem likely that his opposition will accomplish much, but it

illustrates the statement of elderly practitioners that the profession has "never been unanimous and never will be."

The referendum issued by the *Practitioner*, asking a pledge not to serve under the act, has been responded to by more than half the number of 23,000 stipulated for as necessary to make the promise binding. Sir James Barr, who is president-elect of the B. V. M. A., telegraphed his reply to the *Practitioner*, wishing it success and adding: "Insurance Act must not be allowed to disgrace the statute book."

Anesthesia has been more than usually prominent in our conversation of late, perhaps because it is proposed by some to adopt the upright position of patient being subjected to chloroform. Dr. J. H. Chaldecott, anesthetist to St. Mary's Hospital, brought this proposal before the Harveian Society on December 7 in a paper in which he stated that he had given chloroform in the upright position to 1,400 persons without any fatality and, in fact, without the occurrence of symptoms of danger. Old traditions die hard, and the traditional recumbent position is so general that at present few have ventured to try another, and it must be admitted that there was good reason for adopting the posture that has become so universally considered the safest. Dr. Chaldecott is, however, one of the few who have tried the upright position and he has been so satisfied with it that for the past six years he has continued to do so as often as possible. For some operations I must agree with him that it is much more convenient for the operator, and as he has found it more comfortable for the patient, and in such cases safer, we may expect it to be more frequently adopted. In nasal and nasopharyngeal operations it must be most convenient, and some useful hints were given to insure success; thus the patient must be properly prepared so as to avoid unnecessarily deep anesthesia and so prevent vomiting. A high-back chair must be used to keep the patient bolt upright. This is most important, as an easy chair lets the patient slip down into "a huddled up position," and any chair with arms lets them get in the way. The feet should be supported on a high stool or another chair to prevent the patient from fixing them on the floor and pushing backwards. Stress was laid on the method of holding the patient's head; the anesthetist, standing behind, should support it on his chest during induction. When ready for operation he should pass his left arm around the neck to control it, holding the inhaler tube with the fingers and feeling at the same time any swallowing movements or variation of pulsation in the neck vessels. The right hand works the bellows and sponges out the mouth if needful. A dental prop should always be used for nasal cases, as the tendency to asphyxial symptoms requires the mouth to be kept slightly open throughout. To prevent struggling, gas or ether may be used at first or ether and ethyl chloride. The safety of the patient is always the first consideration, and as to this Dr. Chaldecott concludes that the upright position is the safer, and for nose and throat operations many will endorse his views. In his 1,400 cases the breathing was more quiet, syncope did not occur, nor any other alarming symptom; mucus did not pass into the larynx and tongue forceps were seldom required. A sponge in the nasopharynx was recommended, though some surgeons object on account of blood turned into the anterior curves obscuring the view, but it is less inconvenient than frequent sponging. Vomiting was less common than in the traditional posture.

In the Section on Anesthetics (R. S. M.) a letter from the editor of the *British Pharmacopœia* asked for an opinion on the propriety of including chloroform derived from methyl alcohol. The general opinion was decidedly in favor of its inclusion, although one member thought the ethyl product less dangerous. Others were convinced there was no difference and that acetone chloroform was also equally good. The point most important was that whichever was employed must be pure. One member remarked that rather more acetone chloroform was required than of ethyl or methyl, and said experiments on animals bore out his view. The president thought that, as in each case the end produced was the same, it was not material from what source it was obtained. A question as to whether a committee should consider the question was negatived and the meeting decided to reply that methly chloroform should be included in the B. P., and further recommended the inclusion of acetone chloroform.

Dr. Dudley Buxton read a paper on the pioneer of ether anesthesia—Crawford Long, a man who had a horror of advertisement or of premature exploitation of results of research. Long observed that painful knocks were not felt under ether and used it, therefore, in 1842 instead of gas, and his work was well known in the State of Georgia. When Morton sought recognition for his nostrum, lethion, which was only ether, Long was persuaded to publish his cases—earlier by 4½ years. This proved his claim to be the first to try ether for producing anesthesia. After an account of Long's career Dr. Buxton dilated on the state of medical opinion at the time concerning mesmerism and other attempts to secure insensibility to pain during surgical operations. He traced the methods tried from 1841 to 1911 and compared their results, concluding with an appeal to anesthetists to supplement their practical skill by actual scientific research.

The nomenclature of chronic arthritic diseases was the subject of a paper by Dr. Burt at the Manchester Medical Society. He thought their great chronicity was an important cause of their bewildering classification, as secondary changes took place before postmortem examinations could be made, so that the pathological appearances were largely due to wear and tear. Mr. Lane had shown that excessive use of a healthy joint would induce osteophytes, and destruction of cartilage. Slides were shown to illustrate such formations in the cobbler's thumb, the miner's right hip, and the left knee in cases of right hemiplegia. Bony formations were most frequently met with in those diseases in which movements were encouraged, *e. g.*, gout, senile arthritis. But in cases of great damage to ligaments or bone giving much pain on movement, osteophytes were rare, though if such cases improved enough to permit movements, wear and tear would come into operation and bony additions would result.

Anatomical Alterations of the Sweat Glands in Disease.—Veit denies that these changes occur even in nephritis. The former positive findings are attributed to post-mortem artefacts of autolytic and bacterial origin.—*Deutsches Archiv für klinische Medizin.*

OUR LETTER FROM PARIS.

TREATMENT OF REBELLIOUS COLITIS—TREATMENT OF DEEP EXTRAPULMONARY TUBERCULOUS LESIONS BY RADIUM—TREATMENT OF SYPHILIS WITH 606—HYDATID CYSTS OF THE KIDNEY—DIAGNOSIS AND TREATMENT OF CHRONIC POSTERIOR URETHRITIS—NECROLOGY.

PARIS, December 15, 1911

THE surgical treatment of rebellious colitis was the subject of a long discussion which has just been ended. According to Jacob in France colitis was considered exclusively a medical disease, and only exceptionally was the surgeon called upon to treat it. The surgical treatment of rebellious colitis may be carried out by three operations: appendicostomy, cecostomy, and ileosigmoidostomy. The first two only may be used in chronic dysenteric colitis. Appendicostomy consists in the approximation of the appendical cavity to the skin of the abdomen, with the object of making lavage of the large intestine through the appendicular canal. This is a simple, benign operation; it causes no infirmity, and makes a simple, continent fistula, allowing to pass out neither fecal matter nor the wash-water, and from this point of view it is superior to cecostomy, which makes a true artificial anus which is especially disagreeable to the patient. Cecostomy should be utilized in grave cases in which it is necessary to place the large intestine at entire rest; it is useful only in those cases in which it is the only hope of recovery for the patient. Sieur thinks that in the presence of a grave colitis with fever and ulcerations in the rectum and anus we should rather undertake cecostomy. Moty thinks that the indication for appendicostomy is present in severe dysenteries as plainly as for the removal of the appendix in appendicitis. He advises operation not only in chronic cases, but also in acute or subacute ones which do not yield rapidly to medical treatment. The treatment of deep extrapulmonary tuberculous lesions by the introduction of tubes containing radium into the tuberculous tissues was taken up by Dominici and Cheron, who have thus obtained most interesting results. The authors conclude that radium therapy is not only superior to other methods of treatment of tuberculous lesions, but that it is certain and efficient in osseous and glandular tuberculosis: they think that we should combine the action of this therapeutic measure with that of surgery and various other physical agents such as x-rays, hot air, diathermia, etc.

The treatment of syphilis with 606 was presented by Hallopeau, who described a case of death after injections of 606 in a relatively healthy subject. This was a man thirty-five years of age who had contracted syphilis seven years before, in 1902. The patient had a first injection intravenously of 30 centigrams, which was well borne; on the sixth day he was given a second injection of 40 centigrams, which was followed by severe symptoms and death four days afterward. Hallopeau thinks that 606 is a dangerous remedy which has several times caused death of relatively healthy subjects. Gaucher knows other similar cases, and holds not only that 606 does not cure syphilis but that it is a dangerous product, being a violent nerve poison; all the patients who have died after injections of 606 have died with epileptiform attacks. In a case of death in which the viscera were analyzed death seems to have occurred through a subacute arsenical intoxication causing uremia and kidney degeneration. Balzer and Pierre Marie think that 606 is not as dangerous a remedy as has been alleged; if it is methodically and prudently used it renders great service.

Paul Bar gave the results that he obtained in pregnant syphilitic women treated with 606. He has noted that this remedy has a rapid action on mucous patches; in intravenous injections this drug has produced no severe immediate symptoms. As an untoward effect he has observed in a pregnant woman a severe albuminuria. In the new born at term, if syphilitic, 606 is useful in causing the disappearance of symptoms. Emery, who has studied especially the action of 606, has published an article on this subject in *La Clinique* for November, 1911, in which he states that in the large number of cases the symptoms would have been prevented by a prudent employment of the medicine and a dosage more proportional to the apparent resistance and the organic integrity of the patients. In almost all the cases in which fatal results have been reported the dose of 40 centigrams had been exceeded. Emery has seen no bad result in any of the 1,400 patients whom he has treated, and he thinks that this immunity has been due to the prudence with which he limited the doses injected. The maximum dose should be 30 centigrams, but it should be no greater than 10 centigrams in debilitated, cardiac, albuminuric, and nervous patients. With this remedy he has obtained in all periods of the disease the most complete and permanent clinical results.

The French Urological Association held its fifteenth session at Paris from the 5th to the 7th of October, Raffin of Lyons being president. The question of the day was non-hydatid cysts of the kidney. Letulle and Brin of Angers presented papers on this subject. True cysts of the kidney are of two kinds: (1) The polycystic kidney, which belongs to the category of embryonic malformations; (2) serous cysts of the kidney, which may be observed in healthy or pathological kidneys. In the healthy kidney the serous cyst seems to be of congenital origin; in diseased kidneys the cysts result necessarily from retention, and appear to date back to the earliest development of the kidneys. Large serous cysts should be treated by resection of the pocket, like hematic cysts. The polycystic kidney should not be operated on: we should never operate except when they present complications. Pousson, Lugueux, and Carlier took part in the discussion of this subject.

George Luys presented three excellent projections of pictures taken from nature, representing the principal lesions of the posterior urethra observed in the course of chronic posterior urethritis. It is impossible, he said, to diagnose and treat a posterior urethritis unless we make use of direct control by means of a urethroscope. Neither the examination of the urine in four glasses nor the exploration by means of an olive bougie, nor even rectal touch of the prostate will give evidence of the gross lesions of the prostatic urethra. The symptoms of which the patients complain are general and badly defined: they generally consist simply of impotence, ejaculation troubles, and pains irradiating into the thighs or lumbar region, but none of these symptoms is characteristic. The only method of making a perfect diagnosis is to practice urethroscopy by the simple straight tube introduced into the posterior urethra; the treatment

should consist first of a slow and methodical dilatation of the posterior urethra, and then of applications made directly by sight, and consisting of the actual cauterization, or application of tincture of iodine, or of a solution of silver nitrate.

Henri Monod, Director of Public Charities and Hygiene to the Minister of the Interior, Commander of the Legion of Honor, has just died at the age of 68 years. He organized in France a sanitary defense against great epidemics. It was he to whom we owe the systematic organization, the rational and efficient defense against pestilential maladies of our country; the "International Office of Hygiene" was his last creation. It was he who took the most active part in the enactment of laws for the practice of medicine and the protection of the public health. He was very active also in bringing about a law for the obligatory assistance of old and infirm persons; he thought that society should assist all those whom age or infirmities render incapable of self-support. He believed that all unfortunates not manifestly responsible for their own misery should be assisted. But above all Henri Monod was a zealous worker for social preservation, especially with reference to tuberculosis.

CANADIAN PUBLIC HEALTH ASSOCIATION.

(From Our Special Correspondent)

THE section devoted to the consideration of social questions had its meeting on Thursday morning, December 14. This was essentially a woman's meeting, the greater number of the papers read being by women and the presiding officer being Dr. Grace Ritchie England. Dr. George Adami, Professor of Pathology, McGill University, read the first paper, his subject being the value of exhibitions as agents in the public health campaign. The speaker has a high opinion of the value of exhibitions from the sanitary educative standpoint and thought that the daily press was becoming one of the most effective agents in making people aware of the defects in conditions relating to public health. A very excellent paper was read by Miss Ethel Hurlbatt, Principal of the Royal Victoria College, Montreal. The speaker said that Canada was beginning to realize that the health and well-being of the individual involved that of the community, and the latter was coming to recognize its duty in enforcing proper precautions for the care of individual lives. Miss Hurlbatt suggested that there was need of women sanitary inspectors in factories where women were employed as well as in many homes.

An extremely interesting paper was contributed by Dr. A. D. Blackader, Professor of Pharmacology and Therapeutics, McGill University. The subject discussed was that much-debated matter, the more important causes of infantile mortality in large cities and the influence exerted by milk depots. Attention was drawn to the fact that in England fourteen out of every one hundred born die during the first year. The rate is higher in many European cities. In the Province of Quebec the number is eighteen and in Ontario fifteen. In New York it has been brought down from twenty-six to eighteen because of greater attention to sanitation and the milk supply. In Montreal the death rate from all causes looks small when compared with the tremendous mortality of infants. The argument that those who are not very strong die, and that thereby the world may be better off in the end, does not hold good. Some of the most brilliant men of the ages have been very delicate as infants. Sir Isaac Newton, for example, was brought safely through the period of infancy only by great care and attention.

A feature of the meeting was a symposium on town planning and housing. This is a matter of great moment to Canada, as, in the East in particular, overcrowded slums in cities are forcing themselves upon the notice of the public. Dr. Helen MacMurchy, Toronto, read a lengthy extract from a report made by Sidney and Beatrice Webb, who last year made a trip through Canada in order to observe social and economic conditions. Their conclusions were as follows: "To put it shortly, the Canadian city is still essentially uncivilized, it is neither properly paved nor drained, nor supplied with water fit to drink, nor equipped with any adequate public health organization. This is particularly true of the cities of Quebec and Ontario, proud as they are of their civilization. The newer cities of the West have gone in much more for collectivist organization of the means of healthy city life. But after ages will wonder at the stupidity of a government and a people which take so much trouble to bring in immigrants from every corner of Europe, even the Ruthenians and Armenians, and for sheer lack of public thought let its own Canadian babies die in quite unnecessary holocausts, and for sheer lack of civic organization allow even the laborers it has brought over to be decimated by enteric fever due to a contaminated water supply." Some of the papers read were even more harsh in their criticisms. Dr. Charles A. Hodgetts, Ottawa, dealing with the question of town planning and housing, said in part that one must acknowledge that Canadians were behind the times and had made and continue to make serious mistakes in the laying out of cities and towns, and in not planning for their development. Acknowledging this fact, it was the duty of Canadian citizens to learn by the mistakes of the older countries of Europe. The lumber town of forty years ago was still the lumber town; overgrown, it had not risen to the realization of its importance or to the dignity of its position as the federal capital of a great and growing nation. Nor did the great seaport of Canada, its commercial capital, present any outstanding features to lead one to eulogize the foresight of its healthy and intelligent citizenship or the system adopted of converting a once fine family residence into an apartment house or a tenement house of the worst type. All the new and older cities, according to the speaker, were, from the town planning and housing standpoint, monstrosities. Dr. J. E. Laberge, Assistant Medical Officer of Health, Montreal, discussed town planning and civic authorities. He remarked that until recently this important matter had received little consideration from the public authorities, due to the ignorance of the public in matters of hygiene. "Have wide boulevards in the place to which you transfer the people from the crowded slums. Let these outside surroundings be places where the people can obtain air, light, good and abundant supply of water, and good housing. This work should not be left to outside enterprise, but should be taken up by the municipal authorities. To educate the citizens to see that their city becomes large, beautiful, healthful, sound, and prosperous." In a paper entitled "Housing Problems" Dr. Charles J. C. O. Hastings, Medical Officer of Health, Toronto, described the unsanitary conditions existing in the

slum districts of New York, Milwaukee, and Toronto. It was pointed out that Toronto had its slums as other cities, and it was of no use for people to try to disguise the fact, but the inhabitants must wake up, like the inhabitants of other cities, to the prevailing conditions, and not live in a "fool's paradise." He said that in Toronto there were 910 families living under distinctly unsanitary conditions, some only in one-room tenements or in cellars. Tenement houses the speaker declared to be nothing more nor less than mere packing houses, human packing houses, and he urged the necessity for securing transportation facilities to districts on the outskirts of cities, where people could be properly housed in individual homes in beautiful garden cities.

The last general session was given over to a discussion of biological sewage disposal. Dr. P. H. Bryce, Chief Medical Officer, Department of the Interior, Ottawa, gave the first address of this symposium on the physical and economic aspects of biological sewage disposal plants. He gave a history of the development of methods and knowledge of this subject, and dealt with the points embodied in his paper in an instructive manner. Mr. Willis Chapman, C.E., Toronto, referred to the progress in Canada in biological methods of sewage disposal during the past twenty years. Berlin, Ontario, was the first municipality to adopt sewage purification works, after several government institutions in Canada had made experiments with various methods. Many other places had adopted methods of different kinds, but the first septic tank was tried in 1901, though the septic tank boom is now beginning to subside. He made the prophecy that at the end of the decade now dawning every municipality in the Dominion of Canada would have sewage purification works.

Mr. T. Aird Murray, C.E., Toronto, spoke of the engineering problems involved in biological methods of sewage disposal. He exemplified this by a description of the sewage disposal works designed by himself at Lethbridge, with the view of securing the maximum removal of suspended solids, and said that the most that had been done was to secure an effluent that could easily and economically be rendered nonpathogenic. Dr. G. G. Nasmyth, Toronto, told of the chemical problems involved in methods of sewage disposal. He said that the oxidation processes practically involved the chemical process, in that organic matter acted on by oxygen became inorganic matter and humus. Bacteria in presence of air were essential for purification of sewage. In the opinion of the speaker the trickling filter system, from the point of view of economy and success, had come to stay, because it was in line with the methods of nature.

Dr. J. A. Amjot, Professor of Hygiene at Toronto University, read a paper embodying his views on the bacterial problems involved in biological methods of sewage disposal. He pointed out that it was only possible by bacteria to dispose of sewage properly. Two methods were ordinarily employed for this purpose, the anaerobic and the oxidation. The first method compelled the holding of sewage for about twenty days, although probably 50 per cent. of the bacterial action occurred during the first twenty-four hours. The oxidation method was more satisfactory by far, but even with it it was utterly impossible to secure any system in the results. The sludge tanks would reveal many different kinds of bacteria, even if they were treated alike. In them the oxidized matter was retained and treated for a day or two; little could be accomplished in a few minutes. The engineer must decide the exact way in which the system should be worked. It was decidedly not safe to depend upon slow sand filtration alone, and disinfection should also be employed.

The officers for 1911 were Dr. T. A. Starkey, Professor of Hygiene, McGill University, *President;* Major Lorne Drum, Permanent Army Medical Corps, Ottawa, *General Secretary;* Dr. G. D. Porter, Toronto, *Treasurer.* At a meeting of the Executive Council held on the afternoon of December 15 the new officers of the Association elected were: *President*, Dr. Charles A. Hodgetts, Ottawa. *Vice-Presidents*, Drs. M. M. Seymour, Regina; J. W. S. McCullough, Toronto; E. Bayard Fisher, Fredericton. *General Secretary*, Major Lorne Drum, Ottawa. *Treasurer*, Dr. G. D. Porter, Toronto. The next place of meeting will be Toronto.

THE CAUSATION OF UTERINE CANCER.

To the Editor of the Medical Record:

Sir:—In pursuance of the research which has for its object the determining whether or no the incipient stage of cancer of the uterus is coincident with maximum weight, strength, and health of the patient, a second series of cases has been collected in addition to those already published in Medical Record, May 20, 1911. Averaging up both series, which embrace collectively 53 uterine cancer cases and 26 controls (unfortunately no account can be taken of the additional 32 controls which failed to specify any definite time of maximum weight, but which report "Never gained in weight," "Have always been thin," "Indigestion for years," or somewhat similar conditions, which would preclude the probability of maximum weight in recent years), the following results are obtained:

Average age of 32 uterine cancer patients in Series 1, 49 years.

Average age of 21 uterine cancer patients in Series 2, 48 years.

Average age of 13 control cases in Series 1, 53 years.

Average age of 13 control cases in Series 2, 47 years.

(Average age of 32 omitted control cases, 48 years.)

Average maximum weight of 32 uterine cancer patients in Series 1, 3 years ago.

Average maximum weight of 21 uterine cancer patients in Series 2, 4 years ago.

Average maximum weight of 13 control cases in Series 1, 18 years ago.

Average maximum weight of 13 control cases in Series 2, 15 years ago.

Summing up the two series, we get:

Average age of 53 uterine cancer patients, 48 years 6 months.

Average age of 26 control cases, 50 years.

Average maximum weight of 53 uterine cancer patients, 3 years 6 months ago.

Average maximum weight of 26 control cases, 16 years 6 months ago.

Conclusion.—The maximum weight of uterine cancer patients is coincident with the incipient stage of the disease.

E. Atlee.

Philadelphia, Pa.

Progress of Medical Science.

Boston Medical and Surgical Journal.

January 4, 1912.

Relation of Chronic Appendicitis to Colitis. M. V. Tyrode
Rontgenology of the Enteron. H. W. Van Allen.
Memorials to Dr. Thomas Dwight; 1, J. Collins Warren; 2, J. B. Blake; 3, D. Cheever.
A Case of Cesarean Section for Placenta Previa. J. G. Hanson.

Relation of Chronic Appendicitis to Colitis.—M. W. Tyrode reports a series of cases illustrating the frequent coexistence and interrelation of colitis and appendicitis. The author does not discredit operations for chronic appendicitis, but merely pleads for more thorough attention to the colon before rushing chronic cases to operation. He also emphasizes the great necessity of after-treatment of the colon in cases of chronic appendicitis associated with colitis, a large proportion of which cases are so associated. He condemns most strongly the removal of the appendix through the smallest possible opening and the failure to explore the whole abdominal cavity when there have been chronic symptoms.

X-Ray Study of the Alimentary Tract.—H. W. Van Allen discusses the following conditions of parts of the alimentary tract which may be determined with the aid of the *x*-rays: position, general shape, motility, obstruction, areas of disease, and success or failure of operative procedures or usefulness of apparatus that may be applied.

Memorials to Thomas Dwight.—J. C. Warren, J. B. Blake, and D. Cheever record their tributes to the memory of the late professor of anatomy of Harvard University.

Cesarean Section for Placenta Previa.—J. G. Hanson reports the case of a multipara in whom a successful cesarean section was performed for a central placenta previa coexisting with a rigid undilated os.

New York Medical Journal.

January 6, 1912.

Vertigo from the Standpoint of the General Practitioner and the Otologist. E. B. Dench.
Hygiene and Economic Features of the East River Homes Foundation. H. L. Shively.
Primary Degeneration of the Pyramidal Tract. A. Gordon.
The Relative Merits of the Spa Treatment of Heart Troubles at Bad-Nauheim and in America. L. F. Bishop.
Treatment of Stomach Disease at Carlsbad and Wiesbaden. H. G. Watson.
Saratoga Springs.—History; Origin; Chemical Constituents; General Therapeutic Action. D. C. Moriarta.
Saratoga Springs; Specific Clinical Indications. G. F. Comstock.
Hypertrichosis; Its Treatment with the *X* Ray. S. Stern.
A Comparative Study of the Wassermann and Weil Cobra Venom Reactions for Syphilis. H. J. Schwartz.

Vertigo.—E. B. Dench classifies the cases of aural vertigo as follows: (1) Cases due to a chronic non-suppurative inflammation of the middle ear. (2) Cases due to a residual suppurative inflammation of the middle ear. (3) Cases due to aural suppuration. (4) Cases due to involvement of the auditory nerve trunk, as the result either of a specific inflammation involving the nerve trunk, or due to a degeneration of the end organ of the auditory nerve as the result of some middle ear inflammation or of some general diathetic condition. In the very large proportion of cases in which one can exclude specific disease or a neoplasm at the base of the brain, involving the auditory nerve trunk, a vertigo is due to some underlying disease of the middle ear or labyrinth.

The East River Homes.—H. L. Shively describes the group of tenement dwellings recently erected through private philanthropy in New York City, which dwellings are especially adapted to the requirement of tuberculous families and delicate persons liable to tuberculosis. As completed and now ready for occupancy, the East River Homes are four large fireproof buildings which will house 383 families in suites of from two to five rooms. There are 75 suites of two rooms, 212 of three rooms, 60 of four rooms, and 36 of five rooms. There are ample courts for air and light, to which access is had through passageways extending from street to street designed after the *Durchhäuser* of German and Austrian cities. These open passages insure a free circulation of air in all the courts. There are outside staircases in each of the four corners of the courts. The entire roof area of these sanitary homes is utilized for outdoor life and fresh air treatment. The roofs are fitted with loggias, open and partially enclosed toilet rooms, and comfortable seats, and upon an upper deck are spaces for open air drying of linen. Flowering plants and shrubbery to make the roofs as attractive as possible will encourage their fullest use by the tenants. On the façades fronting the park and streets are individual balconies on every floor, communicating with the bedrooms and living rooms by large triple hung windows.

Primary Degeneration of the Pyramidal Tract.—A. Gordon reports a case which presents from the clinical standpoint a classical type of Erb-Charcot spastic paraplegia, and from the pathological standpoint an exceptionally clear form of primary sclerosis of the pyramidal tracts.

Spa Treatment of Heart Disease at Nauheim and in America.—By L. F. Bishop. (See MEDICAL RECORD, Vol. 80, page 1304.)

Treatment of Gastric Disease at Carlsbad and Wiesbaden.—By H. G. Watson. (See MEDICAL RECORD, Vol 80, page 1304.)

Saratoga Springs.—By D. C. Moriarta. (See MEDICAL RECORD, Vol. 80, page 1301.)

Saratoga Springs: Specific Clinical Indications.—By G. F. Comstock. (See MEDICAL RECORD, Vol. 80, page 1302.)

X-Ray Treatment of Hypertrichosis.—S. Stern states that in cases in which one has to deal with a limited number of dark coarse hairs, the electrolysis treatment is still the method of choice and offers the best and quickest results; but in a patient with a great many hairs, sometimes involving practically the entire face, treatment by electrolysis offers very little relief. One cannot remove all the hairs; a great many keep on returning, and where the hairs are closely approximated one is bound to get a certain amount of scarring. By means of the *x*-rays it is a very simple matter after a certain number of treatments, to produce a complete alopecia of the part treated. The author has obtained brilliant results in the treatment of certain affections of the hair follicles, such as sycosis, trichophytosis, favus, etc. Then he has found that even after a complete alopecia was produced, if the treatment was then discontinued the hairs would generally return in two or three months, but if an occasional exposure was given for a certain length of time the alopecia could be made permanent.

The Wassermann and the Weil Cobra Venom Reactions.—H. J. Schwartz concludes that the Weil reaction seems to be specific for syphilis, with the sole exception of carcinoma. The Wassermann and Weil reactions do not run parallel, but are complementary to each other one proving sensitive under conditions in which the other fails. He believes that the application of the two tests, both in the diagnosis and treatment of syphilis, is highly important.

Journal of the American Medical Association.

January 6, 1912.

Medical Education and the Midwife Problem in the United States. J. W. Williams.
A Typhoid Bacillus Carrier of Forty-Six Years' Standing and a Large Outbreak of Milk-Borne Typhoid Traced to This Source. C. Balduan and W. C. Noble.
Vaccine Inoculation Prophylactic and Curative, of Typhoid Fever. J. M. Phalen.
The Occurrence of a Positive Wassermann Reaction in Two Cases of Non-Specific Tumor of the Central Nervous System. I. Newmark.
The Treatment of Intestinal Amebiasis. W. E. Musgrave.

The Purin Content of Common Articles of Food. H. D. Arnold and R. C. Larrabee.
Disorders of Purin Metabolism. A. C. Reed and G. B. Wallace.
Pernicious Vomiting of Pregnancy. C. B. Ingraham.
Cacodylate of Soda in the Treatment of Recurring Erythema Multiforme (Erythema Perstans). Report of a Case. William Cuthbertson.
Obstetric Experiences Among the American Indians. F. Shoemaker.
Aneurysm of the Palmar Arch. D. B. Robinson.
A New Tonsil Hook. L. F. Long.
Knee-Joint Amputations. Report of a New Method. C. E. Phillips.
Case of Intussusception Complicated by Volvulus. C. S. Lawrence.

The Midwife Problem.—J. W. Williams states that the laity should be taught that poorly trained physicians are dangerous, that most of the ills of women result from poor obstetrics, and that poor women in fairly well-conducted free hospitals usually receive better care than well-to-do women in their own homes; that the remedy lies in the hands of the public, and that competent obstetricians will be forthcoming as soon as they are demanded. There should be an extension of obstetric charities—free hospitals and out-patient services for the poor and proper semi-charity hospital accommodations for those in moderate circumstances. The author also advises a greater development of visiting obstetric nurses and helpers trained to work under them and the gradual abolition of midwives in large cities and their replacement by obstetric charities. If midwives are to be educated it should be done properly and not in a makeshift way, and even then disappointment will probably follow.

Typhoid Bacillus Carrier.—C. Bolduan and W. C. Noble report an extensive epidemic of typhoid fever in the Borough of the Bronx and three wards of the Borough of Manhattan, in New York City. There were 300 cases, more than the average number occurring within these restricted limits. An investigation traced the origin to a certain dairy in Camden, N. Y. The conditions of the dairy were exceptionally clean, but there had been an undue prevalence in that village of typhoid fever also traceable to this dairy, the owner of which had had typhoid in 1863 or 1864; since that time there had been a number of cases in his family. The tests showed him to be a carrier, though he had not himself suffered in late years from the disease. The authors call attention particularly to the fact that milk may be infected by a chronic carrier, even though he is exceptionally careful. The dairy was kept much better than the average, but the occurrence of repeated infection from this source showed the danger. The dairyman died of "heart disease" last September.

Antityphoid Vaccination.—By J. M. Phalen. (See MEDICAL RECORD, Vol. 80, page 1203.)

Wassermann Reaction in Nonspecific Tumor of the Central Nervous System.—L. Newmark reports two cases presenting this association. He believes that while observations tending to diminish the diagnostic value of the Wassermann test should be regarded with circumspection, perplexing cases will sometimes occur. In such the interpreter will have to choose between some error in the complicated test or the existence of occult syphilis, as it would seem rash to question the specific nature of the reaction.

Treatment of Intestinal Amebiasis.—By W. E. Musgrave. (See MEDICAL RECORD, Vol. 80, page 97.)

Purin Content of Common Foods.—H. D. Arnold and R. C. Larrabee note that milk and eggs and all articles made from them are essentially purin-free. Vegetables are practically purin-free, but seeds contain a certain amount of purin in the plant embryos. A satisfactory method is to compare the foods according to the number of grams of purins in a kilogram of the food. Cod may be taken as the standard to determine the unit. There are about 0.5 gram of purin in one kilogram of cod. This amount may be considered as one unit. Grouping the foods according to the number of units one can construct the following classification: One unit: tripe, cod; two units: mutton, rabbit, halibut, pork, beef (ribs), ham, veal, and salmon; two and a half units: turkey, chicken, and beef (sirloin); four units; beefsteak; six units: liver; twenty units: sweetbreads (thymus).

Disorders of Purin Metabolism.—A. C. Reed and G. B. Wallace state that the meaning of the term uric acid diathesis has been gradually narrowed down until it includes only those diseases or clinical syndromes which are more or less connected with a pathological purin metabolism. Uricacidemia may be entirely independent of abnormal purin metabolism, but, nevertheless, variations in the amount of uric acid in the blood and urine are constant in the uric acid diathesis and can only be considered as due to a disorder of purin metabolism. The authors review the pathology of gout, the principal disease intimately connected with the uric acid diathesis, acidemia and urate deposition. They also point out how renal insufficiency may resemble gout and, in fact, the two conditions are often confused. Rheumatism is also confused with gout, but acute rheumatism seems entirely separate from primary purin disturbance. The fact that the major part of uric acid destruction normally occurs in the liver lends probability to the view that any disease-process limiting the functional power of the liver would seriously disturb purin metabolism, and this is supported by the occurrence of uric acid excretion in hepatic cirrhosis and acute yellow atrophy. It might also partly account for the uricemia often found in hepatic cancer. It is important to determine the tolerance of the patient to purin-free diet, but this is not sufficient alone. The endogenous as well as the exogenous purins have to be considered, and, as in the case of sugar in diabetes, it is highly important to ascertain the tolerance of the patient and increase it if possible. With the purin tolerance known the diet should be regulated to contain just under this value of purins.

Pernicious Vomiting of Pregnancy.—By C. B. Ingraham. (See MEDICAL RECORD, Vol. 80, page 105.)

Cacodylate of Soda in Enythema Multiforme.—W. Cuthbertson recommends the use of cacodylate of soda in all cases of erythema, more especially in those of the angioneurotic type.

Obsterics Among the American Indians.—F. Shoemaker states that the Indian women are becoming more and more in the habit of calling white medical assistance, and he reports briefly four cases, one of urethrovaginal fistula after labor with other complications, one of calcareous degeneration of the placenta, one of severe localized infection with high temperature, and the other a tedious twin labor lasting over four days and requiring active measures to bring it to an end. These cases, with others of like character which have come under the author's observation, suffice to show that Indian women are subject, like the whites, to serious accidents in the function of parturition.

Aneurysm of the Palmar Arch.—D. B. Robinson reports the rare case of a railroad switchman, aged 35, in whom, after a slight traumatism, an aneurysm, the size of a hickory nut or larger, developed at the center of the deep palmar arch. It was easily ligated and removed and recovery was uneventful.

Tonsil Hook.—L. F. Long has devised a new tonsil hook whose advantages are that a snare can be slipped on or off the tonsil without changing the hold on the tonsil after the hook is once placed. The hook, once placed, will stay in place and not drop out when pressure is relaxed, as a slight thickening on the lower two-thirds of the inner surface of the prongs holds it in place.

Knee-Joint Amputations.—C. E. Phillips states that his method consists in disarticulating the tissues of the knee, leaving the patella attached to the anterior flap.

sawing off its posterior surface and its sides with a bevel and fitting it into a notch between the condyles. The stump is very satisfactory. The patella forms its center and laterally the two condyles share their portion of the weight in such a manner that it is normally distributed as in the flexed knee, while the large bearing surface formed by the tough skin taken from the anterior aspect of the knee can bear the full weight of the body without abrasion or discomfort. Other advantages are the broader end surface and enlargement furnished by the condyles which will retain an artificial leg from slipping, and another is the short flap which is sufficient to cover the stump made by forcibly drawing down and fixing the patella, bringing with it the skin, fascia, and muscles, which, if allowed to retract, would fail to cover a still shorter stump.

Intussusception Complicated by Volvulus.—C. S. Lawrence reports the case of a male, aged *22*, who was subject to attacks of abdominal pain. His appendix had been removed at the age of 18, but without relief, and the attacks later increased in frequency. They were accompanied by nausea and vomiting, and in the attack reported there seemed to be obstruction, and the vomit was bad smelling. Operation was performed and an iliac intussusception with twisting on the mesenteric axis was found, the whole mass was removed, and the ends of the intestine were connected with a Murphy button.

The Lancet.

December 30, 1911.

Cancer of the Rectum and Its Treatment. P. Lockhart Mummery.
Radiography in Intestinal Stasis. A. C. Jordan.
A Case of Ruptured Extrauterine Pregnancy, with Remarks upon Diagnosis. I. B. Muirhead.

Cancer of the Rectum.—P. Lockhart Mummery believes that by far the most important predisposing cause of this condition is a simple growth in the bowel, such as a polypus or simple adenoma. Cancer of the rectum spreads by the lymphatics and by direct extension. Metastasis does not apparently occur early. Unfortunately there are no symptoms of any importance at an early stage. The earliest symptoms are a tendency to looseness of the bowels, a feeling as if the bowel was not completely emptied after an evacuation, and bleeding. Constipation is not as a rule an early symptom except in cancer high up in the bowel or in the large intestine, and even then it is uncommon. Other common symptoms are pain or discomfort in the sacrum and pain in the lower part of the abdomen. As regards the indication for operation, the author states that mere fixation of the growth does not always contraindicate removal. Extensive secondary glands, fixation by extension to other important organs, nodules in the liver, and the size or connections of the growth rendering it mechanically impossible to remove it, are, of course, contraindications.

Radiography in Intestinal Stasis.—A. C. Jordan states that intestinal stasis is a chronic disease due to the retention for too long a time of the intestinal contents and the toxic absorption resulting from this undue retention. The symptoms may be slight or severe, but they are very definite. They may be enumerated as follows: Abdominal pain, often severe; general depression and want of energy, which may be so extreme as to make life intolerable; poor appetite, with attacks of nausea or vomiting; a bad taste in the mouth; breath of an unpleasant odor; headache, backache, muscular pains, and aching in the joints; cold hands and feet and other signs of a poor circulation. Constipation is usually a marked symptom; often it persists in spite of all treatment, the patient being compelled to rely on purgative drugs and injections. Flatulence is always present and leads to attacks of abdominal distention. There is tenderness to pressure over the abdomen, especially in certain regions, of which the right iliac fossa is the most usual. The skin is stained, sometimes to a deep brown color; it feels unhealthy, as though wanting in elasticity; the sweat has a disagreeable odor. The breasts show changes such as are usually described as chronic mastitis; in more advanced cases cystic degeneration takes place, and the breasts are then in a condition in which a transition to cancer is very liable to occur. Similar changes are produced in other glands, and at operations on these patients chronic pancreatitis is found to exist; in many cases cholecystitis is present also and gallstones are very often found. Chronic intestinal stasis is frequently caused by kinks, in the diagnosis of which radiography is of the greatest assistance.

Ruptured Extrauterine Pregnancy.—I. B. Muirhead suggests that in a woman of childbearing age sudden severe pelvic pain, with pallor and collapse, is in itself sufficient to establish a diagnosis of rupture of an extrauterine pregnancy and to make immediate laparotomy imperative.

British Medical Journal.

December 30, 1912.

Varieties of Colitis and Their Diagnosis by Sigmoidoscopic Examination. P. Lockhart Mummery.
Vicious Circles Associated with Diseases of the Skin. J. B. Hurry.
Epidemic Poliomyelitis Occurring at Stowmarket. S. Hillier.
A Record of Some Cases of Epidemic Paralysis Occurring in Hampshire. G. F. England.
Epidemic Anterior Poliomyelitis in South Derbyshire. J. Hay Moir.
Retention of a Fetus in the Abdominal Cavity for Forty Years. E. Weatherhead.

Varieties of Colitis.—P. Lockhart Mummery states that colitis is at the present time a name which is very loosely used to describe a number of quite distinct conditions. Ulcerative colitis is a definite disease, characterized by severe and intractable diarrhea, profuse hemorrhage, and high temperature, and seriously threatens life. Follicular colitis appears to be a complication of other diseases, such as cancer and stricture of the colon. Tuberculous colitis is generally a late compliation of phthisis. Pericolitis, which causes a tight tubular stricture in some part of the colon, results from a slow fibrous change in the bowel wall. There are also a number of specific types, peculiar to tropical climates. Chronic mucomembranous colitis is not, as usually described, a clinical entity, but, on the other hand, is a collection of symptoms which, owing to want of better knowledge as to the pathology and physiology of the colon, have been placed together and labeled as a disease; whereas, in fact, these symptoms may result from a large number of entirely distinct pathological lesions, as follows: Kinking and partial obstruction of the colon from adhesions or pericolitis; dilatation of the colon and visceroptosis; chronic appendicitis; inflammation or displacement of the uterus or appendages; previous operations upon the abdomen resulting in adhesions; cancer of the colon; fibrous stricture of the colon; aneurysm of the abdominal aorta; and floating kidney. In about 45 per cent. of the cases there is a definite chronic inflammatory condition of the mucosa of the colon. There are three types of inflammation of the mucosa; the hypertrophic, the granular, and a third variety, in which the visible mucosa looks as if it had been sandpapered. A rare form of colitis is hemorrhagic colitis. A form of ulcerative colitis is often described as chronic dysentery. Another rare form is that caused by the bilharzia parasite. The author emphasizes the fact that chronic mucomembranous colitis should be considered not as a diseases, but as a symptom.

Vicious Circles in Diseases of the Skin.—J. B. Hurry enumerates these as follows: (1) Circles associated with inflammatory disorders; (2) circles associated with parasitic disorders; (3) circles associated with neuroses; and (4) circles associated with the appendages of the skin—hair, nails, sweat, and sebaceous glands. Examples of these vicious circles are seen in the following: Eczema

causes itching, which leads to scratching, which aggravates the eczema. Edema of the skin produces a loss of elastin, which diminishes the recoil of the skin, which increases the edema. In acne rosacea the increased pustulation causes an increase of the fibrous tissue, which leads to a retention of sebum, which increases the pustulation.

Poliomyelitis.—S. Hillier reports an epidemic of twenty-five cases of this disease occurring in Stowmarket, Suffolk, during the late summer of 1911.

Epidemic Paralysis.—G. F. England reports seven cases of this condition occurring in Hampshire during the fall of 1911. The cases were largely characterized by the predominance of meningeal symptoms.

Poliomyelitis.—J. Hay Moir reviews an epidemic of twenty-five cases of this disease that occurred in South Derbyshire during the summer of 1911.

Retention of Fetus.—E. Weatherhead reports the case of a woman 74 years of age who had been bedridden for many years. The abdomen was prominent, and a hard mass could be felt in the hypogastric region, rising up out of the pelvis. Part of the mass appeared on palpation to be of bony hardness and suggested a fetal head. It appeared to be tender to pressure. The patient complained of a good deal of pain at times, but her general health was fairly good for her age. Four years later she began to suffer from diarrhea with raised temperature and gradually sank, dying about three weeks later. A post-mortem examination disclosed the following: The tumor consisted of a nearly full-term fetus lying in the bag of membranes, which were more or less completely calcified. It formed an ovoid mass, which filled up the greater part of the pelvic cavity, the broader end of the ovoid being uppermost. The adjacent coils of intestine were intimately adherent to the sac and had to be peeled off, and the parietal peritoneum on the lower part of the anterior abdominal wall was also adherent. The uterus, flattened out by the tumor and atrophied, could be recognized lying in front of the lower part of the mass, with the inner ends of the Fallopian tubes and part of the broad ligament

Berliner klinische Wochenschrift.

December 25, 1911.

Antianaphylactic Properties of Leucocytes.—Massone combined leucocytes with anaphylactic toxin and showed that the latter was thereby disintoxicated. The toxin was prepared by Friedberger's method, which consists of cultivating the *B. prodigiosus* on agar for two days, washing the culture in normal saline solution, and combining it in decreasing amounts with definite quantities of guinea pig serum, which were allowed to stand for twenty hours in the ice box and afterward centrifugized, the supernatant fluid containing the toxin. The leucocytes were obtained in the usual manner from the peritoneal cavity of the guinea pig. When the combination was injected into the veins of the animals, it was shown that the anaphylatoxin had been either partially or completely neutralized. Leucocytes are therefore more than bactericidal. They are also antitoxic.

Power of Salvarsan Over the Wassermann Reaction.—Emanuel made the discovery that in the rabbit intravenous injection of salvarsan caused the Wassermann reaction to disappear for the time being. The normal rabbit, as is well known, reacts positively to the test. No lesson can be deduced from this result concerning the salvarsan treatment of human syphilis, but some light may be thrown on the nature of the reaction itself. The disappearance of the latter in man under salvarsan injections cannot be set down straightway to the curative effects of the drug, but rather to some power of the drug over the reaction. It has already been shown that both Hg and KI can cause the momentary disappearance or weakening of the normal rabbit positive Wassermann. In addition to rabbits, healthy goats react positively to the latter.

Successful Ligation of the Pulmonary Vein of the Left Lower Lobe for Shot Wound.—Heile reports the second case of this type, the first having occurred in von Eiselsberg's practice several years ago. The natural termination of these cases is death, rapidly ensuing. The patient was a boy who attempted suicide with a revolver discharged toward his heart. The first diagnosis was wound of the heart. The third and fourth ribs were immediately resected and the seat of the injury revealed. Suture seemed out of the question because of the inaccessibility of the lesion. In von Eiselsberg's case, however, it had been possible to close the wound directly. The author first succeeded in clamping the bleeding vessel, after which he placed upon it a double ligature. Aside from the threatening heart failure, the chest symptoms were out of all proportion to the severity of the case, being almost absent.

Treatment of Cervix Gonorrhea.—Wagner applies hot water to the cervix, using a special apparatus and technique. The water is maintained constantly at 45° C. and as much as 25 litres are allowed to irigate it under gentle pressure. A special speculum is used which distends the vagina. The patients are kept in bed during the treatment, which is administered daily, except during menstruation. Every eighth day the cervical mucus is examined for gonococci, and when the patient has remained free for a week she is not discharged as cured, but the treatment is continued until three consecutive negative weekly reports have been obtained. In a very large percentage of cases the patients are free from gonococci after four weeks of treatment. The latter is intended for recent cases only and largely as a prophylactic against endometritis.

Idiosyncracy to Röntgen Rays.—Schmidt mentions several examples of idiosyncrasy and supersensitiveness of the normal integument to the *x*-ray. This is manifested in several ways—erythema, burns of the first and even the second degree—which do not differ from the effects of an overdose in individuals not supersensitive When phenomena of this sort are noted, we cannot always be certain that an overdose is not at fault. Personally the author believes less in an individual over-susceptibility than in a natural variability in the resistance of any skin, in virtue of which there are certain days or times in which the skin is much more sensitive than at others.

Münchener medizinische Wochenschrift.

December 19 and 26, 1911.

Diagnosis of Perforating Aneurysm of the Cerebral Arteries.—Wichern cites the figures of Beadle published in 1907, which covered 555 cases, of which 411 were reported in the literature, while the balance were anatomical preparations from English hospitals and museums. Beadle wished to ascertain the likelihood of making a correct diagnosis during life and came to the conclusion that only rarely was this possible. Wichern therefore took up the problem, and his studies, chemical and other, led him to the following conclusions: Most of these aneurysms cause both general and focal cerebral symptoms, but in some cases show evidence which differs from that afforded by tumors in the narrower sense. Presumption of aneurysm increases with the existence of such etiological possibilities as arteriosclerosis, syphilis, and embolism. Especially suggestive of aneurysm is the recurrent or exacerbatory character of the symptoms, due to successive perforations. Lumbar punction is a differential diagnostiic resource of importance under certain conditions. If there is evidence

of repeated meningeal hemorrhages the diagnosis may be made outright, provided that this find is backed up by others.

Skiagraphy of the Digestive Tract.—Best and Cohnheim have sought to learn to what extent skiagraphy may be made to throw light on the digestion of certain foods. For some of the latter the research appears to furnish no data worth while. For example, in the digestion of meat it is impossible to learn when the stomach has become empty or when the chyme reaches the colon. Bismuth exerts a special activity in the small intestine which delays the progress of both solids and fluids and also induces reflex disturbance which prolongs the interval of emptying the stomach. It seems that barium sulphate does not possess these disadvantages. The röntgen investigation of digestion is of use in comparative work of any sort, but as an individual test would probably prove very untrustworthy.

Obstetrical Experience with Pituitrin.—Vogt of Professor Kehrer's clinic has tested pituitrin on an unusually large material. His conclusions, which in the main agree with those of contemporary clinics, are as follows: Pituitrin acts promptly and with certainty in the expulsive period. It serves to hasten normal labor and to antagonize secondary weakness of labor pains, both in normal and contracted pelves. Its action during the period of dilatation is inconstant, but may be efficacious in the individual case. Thus far it has not been shown that it aids in the expulsioin of the placenta. Pituitrin comes nearer being an ideal oxytocic than any remedy thus far known.

Conservative Management of Anthrax.—Wolff and Wiewiorowski report a number of cases in which good results were secured by simple conservative measures made up chiefly of antiseptic dressings. In some instances Bier's hyperemia was added, but in only one was there any use of knife, curette, or cautery. When we bear in mind that anthrax has as a rule been treated with the most heroic measures, justified as being life-saving, the new movement toward conservatism must be regarded as a notable advance. The patients were men who had come in contact with infected beeves or horses or with their hair. The diagnosis was always made through the discovery of the bacillus, as a rule strengthened with inoculation experiments. In one fatal case death was due to intestinal anthrax. It may have been a coincidence, but this seems to have been the only case in which the external lesion had been incised before the patient sought the clinic. The antiseptic dressings were of the simplest character—iodoform, boric acid ointment, moist compresses. In the sole case treated surgically the lesions were multiple and were excised. The patient, hitherto afebrile, developed high fever and delirium, but made a good recovery. Of thirteen cases treated seven would be classed as mild in type and six as severe. In ten cases the treatment was so conservative as to amount to a noninterference. The two worst pustules healed under boric acid.

Conjunctivitis and Rosacea.—Axmann refers to recent allusions to this clinical association, which seems to receive little attention in standard works. Unna mentions it and in some cases at least the two lessons do not represent a mere coincidence, for treatment directed solely to the rosacea appears to cause recovery from the conjunctivitis. It is, of course, possible that owing to the close proximity of the skin of the nose to the eyelids local treatment directed to the rosacea may make itself felt in the eyelids, while general measures intended to relieve the congestion of the nose would also favorably affect the conjunctiva. The author has found that the uviol rays directed to the nose exert at the same time a favorable effect on the eyelids, the nutrition of the latter being stimulated.

Deutsche medizinische Wochenschrift.

December 14, 1911.

Cancer of the Ovary at Five Years of Age.—Rosanoff of Moscow reports a case of this almost unique incidence. The child was attacked with pains in the abdomen, and a mass as large as the head of a newly-born infant was palpable to the right, between the pelvis and level of the umbilicus. The rapid growth of the tumor suggested malignancy. Laparotomy incision. The tumor was felt to have a pedicle, to wit, the right adnexa. It was extirpated and found to be a medullary carcinoma. The nearest approximation to this case is one of bilateral cancer of the ovary in a 14-year-old subject. Sarcoma of the organ in very young children is encountered in rare instances. The subsequent history of the case is not given and the report is much too sketchy for so rare an event.

Traumatic Appendicitis.—Sprengel, whose great work on appendicitis is a standard for reference, repeats here his disbelief in a traumatic type of the affection. A history of trauma is obtainable in a very small percentage of cases, such as could be set down properly to coincidence or mistaken diagnosis. Two cases are related which before operation appeared to be clean cut appendicitis of a traumatic etiology. One supervened twenty hours and the other thirty-six hours after a kick from a horse. Both were operated on radically at once. The first was found to be a rupture of the intestine requiring extensive resection. The perforation occurred near the cecum. In the second case the same diagnosis was made—abdominal contusion from a horse kick with possibility of traumatic appendicitis. Patient was found to have typical appendicitis, due to a fecal concrement with beginning peritonitis. There were no anatomical alterations which could be set down to trauma.

Peripheral Neurosis Due to Tobacco.—Von Frankl-Hochwart first mentions cases of neuralgia, due evidently to excessive smoking. He has notes of thirty-one cases of sciatica and twenty-two of brachial neuralgia. Diffuse pains, not restricted to individual nerve areas, were represented by 110 cases. The nature of these latter is obscure, as in some cases an arthopathy seemed to be present. In regard to a nicotine polyneuritis one must be noncommittal. The author has seen four cases in heavy smokers which could not have been due to alcohol or lues. A few cases have been reported by others. The condition termed by Erb *dyskinesia intermittens angiosclerotica* is abundantly recognized by its sponsor as occurring much more frequently in heavy smokers than in any other class of people. It is very largely a tobacco angioneurosis. The tremor and fibrillary twitching due to tobacco are well known. The nervous visceral affections due to nicotine comprise first of all cardiac irregularities of all kinds—palpitation, arrhythmia, pseudoangina pectoris. Respiratory phenomena of the same origin include dyspnea and Cheyne-Stokes breathing. There is possibly such an affection as pseudoexophthalmic goiter due to tobacco poisoning. The dyspepsia, loose bowels, and constipation due to tobacco are nervous in type. Tobacco is known to favor nocturnal pollutions and premature ejaculation, while many heavy smokers are more or less impotent.

Inhalations of Oxygen on the Elimination of Nitrogen and Sulphur by the Urine in Gout.—Carnevale Arolla Angelo has experimented on the value of inhalations of oxygen in the treatment of gout. The author concludes that the increased oxidation caused by the inhalations is explained by the increase of urinary nitrogen and the diminution of the non-ureic nitrogen, with a diminution of the nitrogen of the amido-acids. There is a slight increase of the uric acid. The inhalations exert a beneficial effect on the metabolism of the albumins.—*Rivista Critica di Clinica Medica.*

Insurance Medicine.

IRREGULAR EXAMINATIONS.

EXAMINERS, as well as physicians not regularly appointed by the company, have experienced a feeling of irritation at times at what seemed to them an unwarranted implication on the part of the company that they were incapable or unreliable, judging from the reluctance or even refusal to accept their examination when they have been party to what is termed an "irregular examination." The object of these few lines is to explain the situation in such cases so that the reader will have a better understanding of the matter and realize that in the great majority of cases the inquiries on the part of the company, or its request for a re-examination by the regular examiner, does not signify any reflection or criticism upon the value of the services which have been rendered.

A regular examination is one made by an examiner in good standing authorized to represent the company in the town where the applicant resides or does business. Irregular examinations may be divided into three classes as follows:

A.—Examinations in a place where the company has no medical representative and the agent is compelled to secure the services of the nearest available examiner, or of some local physician. In the latter case an inquiry is instituted to satisfy the home office that the physician is properly qualified and in good standing. In this class there is no alternative.

B.—Examinations made at some place other than the applicant's residence or place of business by an examiner regularly appointed for the former locality, although the company has an examiner at one or both of the latter points. An explanation is usually requested for irregularities in this class, and in most instances it is found that the applicant was visiting the place of examination on business or pleasure.

C.—Examinations made by an examiner outside of his own territory, or else by some physician not an appointed examiner, in a place where there is a regularly appointed examiner. The companies have strong objections to irregular examinations of this class and use all possible efforts towards preventing them.

Irregular examinations may be considered from three points of view:

First.—Life insurance companies will usually do their best, as they should, to keep the position of medical examiner as desirable and lucrative as the circumstances permit by cutting down the number of irregular examinations as well as by limiting the number of examiners. In Class A there is little or no choice in the matter, and most of the irregular examinations in class B are also unavoidable. In class C, however, there is small excuse for the irregular procedure, though it does occasionally happen that the regular examiner is positively unavailable through sickness, absence or the fulfillment of other urgent duties.

Second.—Irregular examinations in classes B and C may be the means resorted to by an agent, if he happens to be unscrupulous, of having an applicant with a certain impairment, such as a defective personal or family history, some physical weakness or bad habits, looked over by an examiner who is a stranger to the applicant and ignorant of the existence of anything detrimental to the risk, with the hope that the impairment will not be discovered; or, as will happen occasionally, even in the medical profession, the examiner may be known by the agent to be lax and careless in his work or willing to overlook the defect and is selected for this reason. An examiner should, therefore, always be on his guard and adopt extra careful measures when making an irregular examination in class B or C.

Third.—An irregular examination entails additional expense and correspondence, with a consequent delay of business, in order that the irregularity may be satisfactorily explained and the standing and ability of the physician, if not a regularly appointed examiner, properly established.

The irregular examinations under class C require further inquiry than those of the other two classes. In order to protect the interests of both the examiner and the company, it is a good practice in these cases, in addition to requesting an explanation from the agent, to communicate with the examiner regularly accredited to the place in which the examination was made, asking whether he was available at the time of the examination, whether the physician who made the examination, if not an appointed examiner, is competent, and whether he, the regular examiner, has knowledge of anything detrimental to the particular risk.

If, in such a case, the regular examiner has a clear recollection of the circumstances, and declares that he could have made the examination promptly, a re-examination executed in the regular way is requested unless the agent gives a satisfactory explanation of the transaction, in which case the irregular examination may be allowed to stand with an admonition, however, to the agent to confine his appointments to the regular examiner in the future.

Accident and Angina Pectoris.—One of the difficult questions as to what constitutes an accident under the Workmen's Compensation Act has just been decided in court with the assistance of a medical referee. A man let down a bucket of water into a sewer, which was carried by the current to the next manhole, about 80 yards away. Then, with the assistance of a winch, he pulled back the bucket against the current. Before beginning this work he complained of pains in his chest. After working for some time he stopped, again complaining of pain. His comrades saw that he looked very ill and placed him on some sacks, where he died. The doctor who made the post-mortem examination found that except for fatty degeneration of the heart the man was healthy. He concluded that death was due to angina pectoris and that there was no reasonable doubt but that there was a connection between the effort exerted in his work and the man's death. Evidence was given as to the severe nature of the work, and two physicians stated that there was no doubt that the strain accelerated death. But it was admitted that the man had had two attacks of angina before starting work, when there was no exertion to account for them. Evidence was given by a consultant that it was impossible to say whether the strain did or did not excite the attack, but in view of the fact that the man had had two previous attacks within a short time, independent of exertion, and that many attacks of angina had proved fatal apart from exertion, he thought that the fatal attack in this case was independent of strain. The opinion of the medical referee was against the applicant. In giving judgment against the applicant the judge laid stress on the fact that before starting work the man had had two other attacks, one in bed and the other while going to work.—London correspondence in the *Journal of the American Medical Association*, December 30, 1911

Book Reviews.

TRAITÉ PRATIQUE DES MALADIES DU COEUR ET DE L'AORTE. Par ERNEST BARIÉ, médecin de l'hôpital Laennec. Troisième édition entièrement refondue. Preface par le Professeur POTAIN, Membre de l'Institut. Prix 20 fr. Paris: Vigot Frères, 1912.

THIS volume is a complete treatise on the diseases of the heart and of the aorta, both functional and organic. It is divided into nine parts, the first dealing with the various methods of examining the heart and vessels, the latest methods, such as polygraphic tracings, electric cardiograms, blood-presure apparatus, etc., being discussed. This section occupies over 175 pages. The next 75 pages are devoted to diseases of the pericardium, and then affections of the endocardium, of the myocardium, complications of cardiac disease, functional disturbances of heart action, angina pectoris, diseases of the aorta, and, finally, therapeutics of cardiovascular disease, are fully considered. Yet with all this wealth of subject matter the volume remains a practical textbook, for discussions of debatable subjects are avoided and our knowledge of cardiovascular disease is classified as much as possible. Many divisions are discussed at length that in other similar books find but scanty mention. Among such discussions we note chapters on the heart in diabetes, in gout, in chronic renal affections, in tabes, etc. Of course, French authorities are quoted for the most part, but German investigators are not forgotten by the author and such pathfinders among English clinicians as Mackenzie are given due credit. A very useful innovation is a complete topical review of the subject matter which ends each chapter. The book is well printed and is illustrated mostly by semidiagrammatic line drawings, which are much clearer than, though perhaps not so imposing as, the usual half-tone reproductions of American textbooks. We think its perusal should prove very profitable to the American physician, whose medical education usually accentuates German writings and research to the neglect of the French.

ANORMALE KINDER. Von Dr. Med. L. SCHOLZ, Direktor der provinzial-Irren und Idiotenanstalt in Koster (Prov. Posen). Price 10 marks. Berlin: Verlag von S. Karger, 1911.

WITH characteristic German thoroughness the author presents in this volume a study of the atypical child. This is intended for parents and educators, and for directors and teachers in schools for defective children, reformatories, and other corrective institutions. This treatise contains a description of the various forms of mental deficiency in the young, with their diagnosis and treatment.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. Herausgegeben von Dr. L. KATZ, Spezialarzt für Ohren-, Nasen-, und Halskrankheiten in Kaiserslautern; Dr. H. PREYSING, Prof. der Ohrenheilkunde, Ord. Mitglied der Akad. für Prakt. Medizin zu Köln a. Rh.; und Dr. F. BLUMENFELD, Spezialarzt für Nasen-, Hals-, und Lungenkrankheiten im Wiesbaden. 1 Bd., 1 Hälfte, Lief. 7 and 8. Price 9 marks. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

PREVIOUS parts of this work have already been reviewed in the MEDICAL RECORD. The present number contains the following topics: the topographical anatomy of the pharynx, neck, and mediastinum, by J. Sobotta; the lymphatic apparatus of the head and neck, by August Most; and the beginning of the article on the elements of general anesthesia, by R. Haecker. As in the previous numbers, this installment is profusely illustrated with plates and photographic cuts that represent the best work that has been accomplished in this field.

THE REPORT OF THE PHILADELPHIA MILK SHOW. Its Organization and Management, and a Description of the Exhibits. Edited by ARTHUR EDWIN POST, Bureau of Municipal Research; Executive Secretary Philadelphia Milk Show. Illustrated. Published by the Executive Committee, 1911.

THIS report, profusely illustrated with photographs of exhibits, charts, programs, posters, invitations, advertisements, etc., presents a complete description of the Milk Show which was recently held in Philadelphia and which demonstrated, like the Child Welfare Exhibits held in New York and Chicago, that this means of educating the community has passed the experimental stage. This report is meant to save future promoters of similar undertakings the necessity of passing through the same stage by experimentation in solving the problems of organization.

JUCKENDE HAUTLEIDEN. Von SANITÄTSRAT Dr. S. JESSNER, Königsberg i. Pr. Vierte umgearbeitete Auflage. Price 2 marks. Würzburg: Curt Kabitzsch, 1911.

PRURITUS as a symptom is one for the relief of which the dermatologist is more frequently called upon to prescribe than for anything else. In this pamphlet the author treats exhaustively of the subject of pruritus and presents many prescriptions available for its different forms. For most of his ointments he uses a base known as "unitin" which is a superfatted emulsion containing a substance similar in composition to blood serum.

ORTHOPEDIC SURGERY. By EDWARD H. BRADFORD, M.D., Surgeon to the Boston Children's Hospital; Consulting Surgeon to the Boston City Hospital; Professor of Orthopedic Surgery, Harvard Medical School; and ROBERT W. LOVETT, M.D., Associate Surgeon to the Boston Children's Hospital; Surgeon to the Infants' Hospital, the Peabody Home for Crippled Children, and the Massachusetts Hospital School for Cripples; Assistant Professor of Orthopedic Surgery, Harvard Medical School. Price $3.50. New York: William Wood & Company, 1911.

THE subject of orthopedic surgery is one that touches closely the work of the general surgeon, the general practitioner, and the pediatrist. It is a subject, moreover, in which, perhaps more than in any other branch of medicine, there is required an exact knowledge of anatomy and pathology, as well as an appreciation of mechanical laws and their application. No branch of the medical art has reached a higher stage of development than has that of orthopedic surgery, and no men have contributed more to this advancement than have Bradford and Lovett, whose writings have received worldwide recognition as authoritative utterances. It is a pleasure, therefore, to welcome a new book from the hands of these authors. The present volume is an entirely new work, supplying a demand for a condensed handbook for the use of students and practitioners. Controversial matter is omitted, and only the accepted opinions as to the nature and treatment of various orthopedic affections are presented. This work is eminently a practical one, embodying the results of thirty years of clinical work in the Boston Children's Hospital. Among the many excellent chapters in this work may be mentioned the one describing the orthopedic treatment of infantile paralysis, a subject that has acquired, in view of recent widespread epidemics, considerable importance. The art of photographic illustration has reached its climax in the manner in which it has contributed to the value of this work. In clearness and in elegance the numerous illustrations which supplement and elucidate the text leave nothing to be desired. These, together with the excellence of typography, paper, and binding, combine to make this volume an example of consummate workmanship.

MEINE PRÄPARATIONSMETHODE DES OPERATIONSFELDES MITTELS JODTINKTUR. (Disinfection of the Operative Field with Tincture of Iodine.) By Dr. ANTONIO GROSSICH, Head Surgeon of the Ospedale Civico in Fiume, Austria. Price 75 cents. Berlin: Urban & Schwarzenberg; New York: Rebman Co., 1911.

THE feeling of general contentment which followed the apparent success attending the various methods of skin sterilization that have been developed during the past few decades seems to be shattered in part by the claims made by those advocating the so-called iodine method of preparation before operations. One of the names most intimately associated with the development of this procedure is that of the author of the above booklet, who is so sufficiently impressed by the worth of this method that he has employed it exclusively in almost every surgical condition. Thus he states that in a series of 3,759 cases the iodine method was used to the exclusion of every other method of disinfection, including preliminary washing with soap and water or other methods. The writer does not believe that the use of the ordinary 10 per cent. tincture of iodine is followed by irritating or other deleterious effects and makes the very bald statement that his personal clinical experiences have shown that tincture of iodine used on the dry skin properly shaved, but not washed, prevents every possibility of infection from the wound. The booklet herewith noted contains the author's papers on the subject of iodine disinfection, which have appeared in the medical journals and also a bibliography of all the references by other writers. Notwithstanding the claims made for the procedure it will probably be a long time before surgeons will entirely disregard the lessons and good results of the past with the already accepted methods of skin disinfection, but we must grant that the results thus far achieved are certainly worthy of close attention.

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL (MAYO CLINIC) FOR 1910. Price, cloth, $5.50 net. Philadelphia and London: W. B. Saunders Company, 1911.

CLINICAL and scientific papers from the Mayo clinic at Rochester are always received with pleasure, for the reader is sure to find therein the results of deep thought, vast experience, and able, logical reasoning. The present volume is a collection of papers by the staff of St. Mary's Hospital, Mayo clinic. These contributions have been previously published in various journals, and they are so full of valuable knowledge that it is indeed fortunate to have them so easily and readily accessible. It is difficult in this short review to enter into the merits of the various papers. Especially important are those dealing with the chronic types of appendicitis, diverticulitis of the lower bowel, intestinal obstruction, pyelograph, goiter, and the notes on Italian surgery.

A RADIOGRAPHIC ATLAS OF PATHOLOGIC CONDITIONS OF BONES AND JOINTS. By AMEDÉE GRANGER, M.D. Price $6.00. New York: The A. L. Chatterton Co., 1911.

THE knowledge of abnormal conditions of bones and joints afforded by the Röntgen ray is truly enormous and we are becoming more and more dependent upon it in making diagnoses of diseased states of these organs. To get the full value of this method of examination it is absolutely necessary that the radiogram should be taken and interpreted by an expert. The former presupposes skill and experience in operating the *x*-ray machine, the latter a keen eye and immense experience with the pictures of normal and abnormal conditions.

A radiographic atlas is designed to aid the less expert in interpreting the radiogram, and this the present work succeeds in doing in a limited way. The introductory remarks of the author, as well as the chapter on skiagraphy, are excellent and full of valuable suggestions. The plates show the normal and diseased conditions of bones and joints quite well and their reproduction is good. The atlas, however, can scarcely be called a complete one, for only advanced states of disease are pictured. Thus the early changes in the epiphyseal ends of bones in tuberculosis are not at all given, and yet these are most important in the early diagnosis of such disease. Again, in the very important subject of osteomyelitis, the author makes no mention of the changes in bone structure occurring in the acute stages of this disease.

Altogether the atlas is a good one; it affords excellent pictures of the normal, diseased, and injured bones and joints and should be of value to the physician and the surgeon.

DIE ERÖFFNUNG DER SCHADELHÖHLE UND FREILEGUNG DES GEHIRNS VON DER NEBENHÖHLEN DER NASE AUS. By Professor Dr. A. ONODI, Director of the Königl. Universitätsklinik für Nasen- und Kehlopfkrankheiten, in Budapesth. With 134 Illustrations in the Text and 89 Plates. Price, 8 marks. Würzburg: Curt Kabitzsch, 1911.

THE above is a reprint from the *Zeitschrift für Laryngologie, Rhinologie, und ihre Grenzgebiete*, and presents in a most complete form the methods of exposing the cranial cavity and the brain through the medium of the accessory sinuses of the nose. The text, itself, is mainly in explanation of a series of 89 excellent plates which present the anatomical landmarks and dissections of this region. The book must be of undoubted value to those directly interested in this field of surgery, which has recently become so largely developed.

THE OPHTHALMIC YEAR BOOK, VOLUME VIII. By EDWARD JACKSON, M.D., Professor of Ophthalmology in the University of Colorado; THEODORE B. SCHNEIDEMAN, M.D., Professor of Ophthalmology in the Philadelphia Polyclinic; WILLIAM ZENTMAYER, M.D., Attending Surgeon to the Wills Eye Hospital, Philadelphia. Illustrated. Denver, Col.: The Herrick Book and Stationery Company, 1911.

THIS number of the Year Book is a decided improvement on its predecessor, corresponding with the improvement noted in each volume of this work as it has appeared. This volume is considerably larger than that of 1910. Its 455 pages are replete with accessible information of value to all who are engaged in the practice of ophthalmology. One marked improvement is the printing of the names of authors in bold type in the body of the text. In the preface the author states that "up to the present time the subscribers to the Ophthalmic Year Book have not paid the cost of printing and distributing it. While it is no unusual manifestation of enthusiasm for the originator of such an undertaking to do all he can to make it a success this cannot be relied on for a permanent basis of support." Giving as it does a terse, succinct, and complete review of all that is of value in the current literature of ophthalmology and a complete yearly bibliography, English-speaking ophthalmologists cannot afford to permit the publication to lapse. The reviewer would counsel its substantial support by all who are interested in this branch of medicine.

A SYSTEM OF MEDICINE. By Many Writers. Edited by Sir CLIFFORD ALLBUTT, K.C.B., M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Caius College, and HUMPHRY DAVY ROLLESTON, M.A., M.D., F.R.C.P., Senior Physician, St. George's Hospital, Physician to the Victoria Hospital for Children; some time Fellow of St. John's College, Cambridge. Vol. VIII. Disease of the Brain and Mental Diseases. Price, $6.00. New York: The Macmillan Company, 1911.

THIS volume continues the description of the diseases of the nervous system. In its arrangement it differs from the corresponding volume of the first edition in that it does not contain the diseases of the skin, but is concerned entirely with the diseases of the brain and mental disease. Dr. Batten has contributed a new article on meningitis, but does not deal with the tuberculous form, and has also written a new article on acute polioencephalitis. Other new articles are by Prof. J. Michell Clarke on recurrent paralysis, by Dr. James Collier on apraxia and agnosia, and by Dr. Head on occupation neuroses. The article on neurasthenia by Sir Clifford Allbutt has been largely rewritten and expanded. The volume opens with an able article on the experimental pathology of the cerebral circulation by Mr. Leonard Hill, in which, among other valuable facts, the following of practical interest to those who use chloroform for anesthetic purposes is noteworthy: If the heart be weakened by some poison, such as asphyxial blood or chloroform, the sudden dilatation of the right ventricle produced by the assumption of the feet-up position, or by pressure on the abdomen may throw the heart into paralytic dilatation. The veteran authority on nervous diseases, Sir William Gowers, contributes an illuminating article on epilepsy, and Dr. Risien Russell is responsible for several papers. One of the clearest and best articles of the book is that by Sir Clifford Allbutt, who combines in an eminent degree accurate knowledge and the faculty of expressing himself with a highly distinctive literary style. Dr. Head discusses the occupation neuroses and his paper is perhaps the best brief presentation of the subject in the English language. Dr. Mercier, another writer with a wide command of the English language and a master of apt phraseology, deals with vice, crime, and insanity. The author believes that, while as a rule the criminal is not like the poet, born and not made, as so many European writers insist, yet that there are some criminals born with a congenital inability to become moral, just as others are born with a congenital inability to grow to adult stature, or to develop a complete palate or lip or spinal canal. In his chapter on epochal insanities Dr. Houston objects to the term dementia precox invented in Germany and used there and in this country as covering a considerable part of the "adolescent insanity." He recognizes that the term represents a clinical type, but brings several objections against its employment, one of which is that many of the cases placed under the head of dementia precox are described as curable, and in the opinion of Houston the word "dementia" should never be used to indicate a form of mental disease that can be recovered from. This book maintains the high standard of the preceding volumes and affords an excellent exposition of the rational and somewhat conservative views of the most prominent British alienists.

LOVE AND LETTERS. By FREDERICK ROWLAND MARVIN. Price, $1.50. Boston: Sherman, French & Co., 1911.

DR. MARVIN, whose varied career has included law and theology, as well as medicine, has given us in this book a series of random essays upon topics which are of general interest and yet which are not in any definite sense related to each other. The titles of these essays are: Love and Letters, from which the book derives its name; the Good Neighbor, Silence, Noble Deeds of Humble Men, The College and Business Life, Old Age and Culture. The essays are all remarkable for the amount of culture and erudition which they show, and are really records of a gifted man's excursions among books, for the thorough study and digestion of which the author has fortunately had sufficient leisure.

Transactions of the American Gynecological Society. Volume 36, for the year 1911. Philadelphia, 1911.

This volume records the minutes of the proceedings at the thirty-sixth annual meeting of the American Gynecological Society, which was held at Atlantic City in May, 1911. As practically all of these papers have appeared in the periodical literature they have, in greater part, been reviewed; but in addition the volume also contains the discussion of the papers by the members at the time of the meeting. During the three days' session a total of thirty-five papers was read, noteworthy among which were the following: Vaginal cesarean section in the treatment of eclampsia. The treatment of placenta previa. A study of the blood supply of uterine myomata, Renal decapsulation in eclampsia, and a number of studies on the surgery of the ovary.

A Text-Book of Meat Hygiene, with special consideration of ante-mortem and post-mortem inspection of food-producing animals. By Richard Edelmann, Ph.D., Medical Counselor, Royal State Veterinarian of Saxony, Professor at the Royal Veterinary High School in Dresden. Authorized translation revised for America by John R. Mohler, A.M., V.M.D., Chief Pathological Division U. S. Bureau of Animal Industry, and Adolph Eichorn, D.V.S. Senior Bacteriologist, Pathological Division, U. S. Bureau of Animal Industry. Second Edition. Price $4.50 net. Philadelphia and New York: Lea & Febiger, 1911.

The vital importance of healthy meat as wholesome food, the great size of the industry concerned in its preparation, and the strict enforcement of our comprehensive laws on the subject have created a demand which has called forth a second edition of Edelmann's authoritative work. The methods of production, preparation, and conservation of meat, the United States Regulations governing meat inspection, and the various diseases discoverable in meat are all fully covered. The book can be considered as an official guide, and, while a necessity to inspectors, will be found of great interest to physicians and veterinarians. It is excellently printed and bound, and contains numerous illustrations.

Microbiology for Agricultural and Domestic Science Students. By Many Contributors. Edited by Charles E. Marshall, Professor of Bacteriology and Hygiene, Michigan Agricultural College. Price $2.50 net. Philadelphia: P. Blakiston's Son & Co., 1911.

This volume contains such an immense amount of material that any adequate review in the space permitted is well-nigh impossible. Following a very complete and detailed consideration of the Morphology, Culture, and Physiology of Microorganisms, the main body of the book is devoted to Applied Microbiology. Here the organisms peculiar to air, water, sewage, soil, milk, and milk products are carefully considered and the way is pointed out by which proper use is to be made of this knowledge. The Microbiology of Special Industries forms another division and the remainder of the book is devoted to the microbial diseases of plants, man, and animals. As can be appreciated, the ground covered is enormous, and the task of editing the work of the nineteen authors covering it has been difficult. This task, however, has been well accomplished and the slight lack of unity is fully compensated for by the value of the material offered. The practical man in Agriculture and Domestic Science will find in it a formulation of the basic principles upon which he must complete that amalgamation of practice and science, already begun, which is necessary for his proper and logical development. There is also much information of value for the physician, the sanitarian, and the veterinarian. The book can be freely recommended as containing a comprehensive and able consideration of the subject.

Anæsthesia and Analgesia. By J. D. Mortimer, M.B. (Lond.), F.R.C.S. (Eng.) Anesthetist, Royal Waterloo Hospital, Throat Hospital Golden Square, St. Peter's Hospital for Stone, etc. Instructor Medical Graduates' College. Price $2.00. London: University of London Press, 1911.

The difference between medical practice in this country and in England is well illustrated in this volume, an addition to an already long list of textbooks on a well-treated subject. The results from the use of ether, either alone or preceded by chloroform or nitrous oxide, have proved so satisfactory to the great bulk of the medical profession in the United States that they will not heed the author's strong advocacy of chloroform. The chloroform-ether mixture they are almost wholly unacquainted with, and are not liable to adopt. All history and pharmacology have been omitted, but the preparation and after-treatment of the patient, the selection of the anesthetic, and the difficulties peculiar to certain operations have been rather fully considered. The author fails to condemn the elicitation of the corneal reflex, which is a rather important point if the patient is to escape sore eyes. Also he cannot be conversant with recent work in obstetrics when he does not advise against the use of chloroform in eclampsia. The pathology of delayed chloroform poisoning is very inadequately presented. On the other hand, most of the operations are well considered and there is a good chapter on the medico-legal position of the anesthetist.

Diseases of the Stomach. A Textbook for Practitioners and Students. By Max Einhorn, M.D., Professor of Clinical Medicine at the New York Post Graduate Medical School and Hospital; Visiting Physician to the German Hospital. Fifth revised edition. Price $3.50. New York: William Wood and Company, 1911.

Dr. Einhorn's textbook on diseases of the stomach is perhaps the most favorably known volume on the subject in the English language. Its preeminence is due to the fact that it is written by a man with absolutely first-hand knowledge of the subject, whose many contributions to the periodical medical literature have greatly increased our knowledge of gastric functions in health and disease.

The present edition of the book is especially full in descriptions of the methods and apparatus used in examining the digestive functions. Much of the apparatus has been originated or first systematically used by Dr. Einhorn himself; the duodenal pump is one of the latest of these and we predict that much light will be thrown upon the digestive processes by the results obtained with this instrument in the next few years. Radiography is given a more prominent place in this edition in accordance with the rapid strides made by this method of examination of the stomach. The clinical pictures of gastric disease are very clearly defined, but the therapeutic indications and methods are especially fully treated. We like the moderate conservativeness of the author especially in the consideration of such subjects as splanchnoptosis, movable kidney, etc.; to Einhorn surgical treatment in such and similar conditions is the last resort, as it should be, and not the first therapeutic measure.

A good textbook is a *sine qua non* of success in diagnosis and treatment of gastric disease and we heartily recommend Einhorn's work to students of medicine and to physicians looking for such a book.

Reproduction in the Human Female. The Uterine Mucosa in the Resting, Menstrual, and Pregnant States, and the Function of the Decidua. Incorporating an Account of an Early Human Ovum. By James Young, M.D., F.R.C.S. (Edin.); Physician to the Lauriston Prematernity Home; Gynecologist to the St. Savior's Dispensary, and late Tutor in Clinical Surgery, Royal Infirmary, Edinburgh. Price 21 shillings. Edinburgh and London: William Green & Sons, 1911.

This work is the product of original investigation. It presents an account of the structure of the uterine mucosa and of its changes during menstruation and pregnancy. Many erroneous views on this subject are laid bare, and for the first time it is shown that the structure and modifications of the uterine mucous membrane are adapted to the functions of menstruation and of fetal nutrition. Thus the author demonstrates that the vessels are so constructed as to permit a ready opening up of their walls, and that the stroma is of such structure and consistency as to be readily displaced by fluid or blood. The scope of this work is indicated by the following chapter headings: structure of the uterine mucous membrane; menstruation; mode of action of fetal structures on the maternal tissues, twofold action of chorion, pregnant tube; placental fragments and chorionepithelioma; description of very early human ovum, explanation of the uterine changes in pregnancy; extrachorionic and intrachorionic action of the fetal cells; and structure and function of the decidua. There is an appendix on edema and a bibliography. Of the above topics special mention may be made of the very early human ova, described by Peters and others, including one first described by the author. The text is elucidated by means of twenty full-page colored plates and sixty-eight photographic illustrations. These are all collected in the back of the volume and constitute, in their clearness and beauty, one of the important features of this work. By virtue of its originality this represents a valuable contribution to the sciences of obstetrics and gynecology.

Society Reports.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-fourth Annual Meeting, Held in Washington, D. C., December 12, 13, and 14, 1911.

THE PRESIDENT, DR. RUDOLPH MATAS, OF NEW ORLEANS, LA., IN THE CHAIR.

(*Concluded from page 99.*)

Postoperative Gastric Dilatation.—Dr. T. C. WITHERSPOON of Butte, Montana, stated that in three of his cases a marked dilatation of the stomach existed without obstruction. No portion of the intestinal tract was similarly dilated. There was no infection of the surgical field and visceral union was perfect. Unlike the case reported in his former paper, there was good union in the parietal wounds of the last two. Neither of these patients suffered pain without the epigastrium, as did the first patient. He was impressed with the idea that in the former the segmental trophic disturbance manifested itself in both visceral and somatic nerves, while in the latter case in the visceral nerve distribution alone. In all three cases the paralysis of the stomach, the freedom from mechanical interference with movements of and emptying of the organ, the purely local nature of the dilatation, the lack of any demonstrable wound infection and the distinct segmental character of the trophic disturbance seen in the first patient seemed to point distinctly to a central paralysis. Twice in the last two years he had had an opportunity to demonstrate the distinctly protective value of colon bacillus vaccination before operating. The two patients had had abdominal operations performed, and each suffered seriously from vomiting and gastric dilatation, which necessitated lavage, and they both suffered likewise from urine shut off for twenty-four or forty-eight hours. Both feared a second operation, and especially as the nature of the procedure was to be more serious. He thought it wise to at least immunize against the common source of bowel intoxication and, therefore, vaccinated against the colon bacillus until two hundred million caused no reaction. The result was a recovery after operation, without nausea or meteorism in any part of the intestinal tract. While the two instances demonstrated nothing of scientific value, they nevertheless pointed a way and opened a field for inquiry.

Postoperative Dilatation.—Dr. GEORGE A. HENDON of Louisville, after reporting two cases of postoperative gastric dilatation, drew the following conclusions: 1. The essentials in the pathology were not known. 2. The most plausible theories were (a) kinking of the lower duodenum under the mesentery, causing a mechanical obstruction, and, as a result, hypersecretion and the paralysis of overdistension; (b) some unfamiliar toxins caused paralysis of the muscular walls and resultant hypersecretion and retention. This caused the organ to become heavy and to sag down, thus producing the duodenal kink. 3. There was a deadly toxin generated, either as the cause or the result of the dilatations, which had a peculiar and powerful depressing effect upon the vital organs. 4. That in the treatment we should not wait for vomiting to appear before becoming active. 5. The stomach tube was the only reliable means for relief. 6. That obscure and alarming symptoms affecting the abdomen after surgical operations should be investigated through the stomach tube.

Lymphatic Edema and Elephantiasis.—Dr. ALBERT VANDER VEER of Albany reported a case of lymphatic edema, which was possibly congenital in character, in a woman, forty years of age. Careful attention was given to her general health, as much rest as possible advised, and pressure, by means of bandages, was applied from the toes up to the groin. This afforded relief, but when removed the general edema would return. Operative intervention was not attempted at any time. Since observing this patient he had seen a few cases of distinct lymphatic edema of the lower extremities, each one complicated with enlargement of the scrotum and vulva, several arm cases following removal of the breast in a female, and one in a young woman without tumor or operation. The second case was one of elephantiasis in a woman, seventy-two years of age. Case three was one of marked lymphatic edema of the left arm extending from the finger tips to the shoulder, following an operation for the removal of the left breast. Case four was one of lymphatic edema of the right leg. Ligation of the femoral artery in Scarpa's space was performed. The patient did well, but there was not much diminution in the size of the leg or permanent improvement. A year later ulcers appeared, and amputation was done to the middle third of the thigh. The patient convalesced nicely and was very much more comfortable afterwards, but ligation of the artery did not bring the desired relief. Other cases were reported by Dr. Vander Veer, with comments.

Indications for Abdominal Cesarean Section in Eclampsia.—Dr. JOHN F. MORAN of Washington, D. C., reported four cases of eclampsia which occurred in two patients he saw in consultation, in which cesarean section was performed, saving both mothers and all of the children. The first patient, a primipara, eight months gestation, frequent convulsions, cervix intact, was operated upon by Dr. I. S. Stone, and the second was operated upon at term under like conditions, in three successive labors, by Dr. W. P. Carr. Kellitz, in 1897, collected 28 cases of eclampsia operated upon by cesarean section with a maternal mortality of 50 per cent., and an infantile mortality of 62 per cent. Streckeisen, in 1903, collected 28 cases; 12 mothers died and 9 infants were dead, or died shortly after birth. Hillman, in 1809, collected 39 cases and reported one of his own, giving a mortality of 50.5 per cent. for the mothers and 43.2 per cent. for the infants. All but seven of these cases were previously reported by Kelly or Streckeisen. The speaker had collected 53 cases, including the four herein reported, operated upon from 1901 up to the present time. Seventeen mothers died, a mortality of 32.32 per cent. Forty-five infants were born alive, seven were stillborn and four were not mentioned. Altogether, 116 cases had been reported, with a maternal mortality of 40 per cent. While the statistics of the last decade showed a marked improvement over the previous one, the mortality still was far above the general death rate of eclampsia. A careful analysis of the cases, however, showed that many of the patients had been subjected to other methods of treatment and were moribund at the time of operation. Abdominal and vaginal cesarean section were not proposed as substitutes for the other methods of intervention in eclampsia, but the claim was made that they had a well defined field of application in certain cases of eclampsia. If they were to have an established place in the treatment of this complication, the indications for which they were urged must be met by prompt elective action, for to delay until the patient was *in extremis* and all other treatment had failed was to invite disaster.

The Indications for and the Limitations of the Lane Operation.—Dr. JOHN YOUNG BROWN of St. Louis said that during the last three years he had operated on sixteen carefully selected cases of this type. In all of these cases a diagnosis had been arrived at by a process of exclusion, and in each intestinal stasis had been demonstrated by means of the bismuth meal prior to operation. A long incision through the right rectus sufficient for

general exploratory purposes had been made. The ileum had been divided six inches above the ileocecal valve, and both proximal and distal ends closed, a lateral anastomosis then being made between the ileum and sigmoid. Prior to this, a general exploration of the abdomen had been made and such work done as the individual pathology would indicate. Of the sixteen cases operated on, fourteen presented well defined pericolic membranes, and in all there was present kinking of the ileum. In two of the cases the condition found at operation was undoubtedly due to primary involvement of the appendix. In nine of these cases the constipation and the symptoms of intestinal toxemia had been entirely relieved, the patients gaining in weight and showing marked general improvement. In five of the fourteen cases, while the improvement had been satisfactory, much annoyance had resulted from gaseous distention and pain in the excluded cecum and colon. These were the type of cases in which Mr. Lane advocated a secondary operation, which operation should consist of the removal of the colon down to the sigmoid. It could not be too strongly emphasized that neither the Lane operation nor any of the suspension operations should be undertaken unless there were well defined demonstrable pathological lesions justifying their performance. All so-called atonic and neurasthenic types of enteroptosis would yield far better results if given proper rest, hygienic and dietetic treatment.

Parathyroids and Their Surgical Relation to Goiter.—Dr. CHARLES H. MAYO and Dr. BERNARD F. MCGRATH of Rochester, Minn., said it was known that the parathyroids were concerned in the metabolism of the body, but definite knowledge of their physiological function and pathological importance was yet very limited. Many diseases had been attributed to these glands without having had their etiological relationship supported by scientific investigations. Experimentation and clinical and histological examinations had shown a connection between the parathyroids and tetany. Recent investigations had proven that pathological processes in the thyroidal tissue produced hyperplasia with resultant hypofunction, especially in the presence of a contributing factor, as, for example, gastrointestinal disease. Hemorrhages, which probably occurred in the glands during labor, were given as one of the causes of the pathological processes. It was stated that tetany did not take place at the time of bleeding because the brain of the newborn was not sensitive, owing to the larger content of calcium. The attacks rarely occurred before the third month. Defective calcium metabolism had been noted in experimental tetany. Histological examinations had shown a relationship between the parathyroids and tetania gravidarum. Cases of tetany associated with congenital syphilis, in which the parathyroidal tissue was hypoplastic, had been cited. Some authorities held a morphological similarity and interrelation of function between the parathyroids and the thyroid gland. In operations on the thyroid, the variable size, location, appearance, and condition of these little bodies should be kept in mind. If such a mass be accidentally removed, it should at once be implanted beneath some part of the capsule. Parathyroidal tissue was sometimes present within the thyroid, in which case it could be injured in a simple operation on this gland. It had a large factor of safety. Postoperative tetany was rare. In 3,203 operations on the thyroid gland in St. Mary's Hospital, but one case was observed, and that was doubtful. There was no dependable treatment for tetany. To compensate for glandular deficiency, transplanting parathyroids from other individuals, feeding with animal glands, the use of serum, or the extract of parathyroidal tissue were indicated. To restore the balance in calcium metabolism, calcium salts, acetate or lactate, in four to five per cent. solution should be administered either intravenously, subcutaneously, by stomach, or by rectal enemata. To avoid those factors contributing to the attacks by increasing the toxic metabolic factor, the patient's general condition, especially the gastrointestinal tract, should be given careful attention.

The End Results of Operations in Graves' Disease.—Dr. GEORGE W. CRILE of Cleveland said that in studying the end results of his cases, he had made several generalizations. No patient had died of the disease after leaving the hospital; no patient was made worse by the operation. Every patient was either benefited or cured. Among the factors that influenced the end results were the environment of the patient, the freedom from shock, the means at hand for diversion, as well as the avoidance of strain. The elimination of all nervous shock at the time of operation had proven a good clinical asset. The improvement began usually the next day after the operation and continued for from six months to two years. He regarded patients as cured when they were able to withstand nervous shocks, such as fright, disappointment, worry, etc., in a normal manner. He had found that the time required for a complete cure was dependent upon the environment of the patient. Automobiling, travel, yachting, nature study, a happy turn in the tide of life, were the ideals that facilitated these cures. He knew of no class of patients who were so profoundly grateful, who became such militant partisan advocates of the operative treatment of this disease as the cured cases. There might be hesitation on the part of practitioners to recommend surgical treatment for Graves' disease, but the cured patients shared no such doubt. They were stronger advocates of operation than the most surgical surgeon. The immediate operative risk was approaching that of operations for acute appendicitis. All operative recoveries were either improved or cured. The extent of the cure depended largely on the environment and medical direction during the year following the operation. He knew of no class of patients whose relief was so deeply fundamental as those patients tortured by an ever present pathological emotional state.

Omentopexy in Cirrhosis of the Liver.—Dr. H. H. GRANT of Louisville collected a total of 144 cases from the literature, of which 17, or about 11 per cent., died of the operation; 17, or 11 per cent., were reported as cured; 64, or about 44 per cent., improved, and 32, or 22 per cent., were unimproved. He reported three cases of his own and then drew the following conclusions: 1. That, even in the condition of advanced degeneration of the liver and general toxemia, with resulting ascites, over ten per cent. of symptomatic cures were obtained, and over fifty per cent., at least, were improved, and helped to many months and years of life. 2. That, as this advanced condition was often preceded by a year or more of latency, during which suspicious symptoms had been declared to be the cause, early diagnosis of the lesion would surely lead to the grave unless operation was undertaken; therefore, exploration and repair were justified, with a far better promise than could be hoped for later on. 3. That, as it was not possible to be certain of the character of a cirrhotic lesion before exploration, the surgeon needed not be deterred from the step by any uncertainty as to its applicability, as all forms of cirrhosis were fatal under the expectant plan of treatment.

Primary Sarcoma of the Gall Bladder.—Dr. R. S. CATHCART of Charleston, S. C., said that on June 6, 1908, a case was referred to him for operation with a probable diagnosis of gallstones. The man was forty-five years of age, fairly developed, but had a slight cachectic or septic look. Operation revealed the case to be one of primary sarcoma of the gall-bladder. Its surgical interest was only that the patient was alive and in good health, doubtless due to operation at an early stage.

Dr. RANDOLPH WINSLOW of Baltimore reported a case of congenital gangrene of the right forearm, with successful amputation, in an infant five days old. The points of interest in this case were the early age at which amputation was done and the etiology of the disease. As to the first item, he had not made any search of the literature in order to discover if there were earlier cases of amputation than the one reported, but he was not aware of any. The ability of a frail child of that age to undergo such a mutilating operation, without an anesthetic, was also noteworthy. It was possible that an anesthetic might have been well borne, but he feared to attempt it. As to the etiology of the condition, he was in entire ignorance. He was well aware that intrauterine amputations had been observed, and were attributed to the constriction of the limb by encircling amniotic bands. Sometimes more than one limb was amputated in this manner. Playfair in his "Midwifery," published in 1880, figured a case in which all four limbs had been amputated *in utero*. In the case he had just reported the attending physician specifically stated that no pressure by the cord or by bands was present. There might have been a thrombosis or embolism of the vessels of the arm, but what would have caused such a condition? The gangrene was not of the dry or anemic type, but was more of the obstructive type. The forearm and hand were swollen, discolored, and offensive.

Wherein the Diagnosis of Pellagra Is of Surgical Importance.—Dr. LE GRAND GUERRY of Columbia, S. C., after discussing the digestive disturbances, the pupillary symptoms, the psychic phenomena, and the skin eruptions of pellagra, reported three cases, one of which was sent for operation on account of digestive and intestinal symptoms, but this case was finally diagnosed as pellagra and was not operated on. The patient died several weeks later. Case II was a young, vigorous child, who was taken suddenly ill with an acute abdominal pain, with general abdominal tenderness, and rigidity, but most marked over McBurney's point. The temperature was 102°; pulse, 120. Two pellagra experts saw this case and advised operation. On opening the abdomen the appendix was found slightly inflamed, but entirely inadequate to explain the severity of the constitutional symptoms. Five days later, when the eruptions appeared, the real cause of the trouble was revealed. This case recovered. Case III was a middle aged man who gave a history of chronic abdominal trouble for several years. Although the appendix was removed and the gall-bladder drained, this did not explain the trouble. He was kept in the hospital for a long time under operation, and while there developed a very mild pellagrous rash on the back of his hands, which settled the question of the diagnosis.

Codivilla's Method of Lengthening the Lower Extremity.—Dr. ALBERT H. FREIBERG of Cincinnati said that the fundamental feature of Codivilla's method was the application of the distracting force directly to the skeleton by a rod driven through the os calcis, the elongation being held by a plaster dressing and two steel ferrules. The method differed from Steinmann's, which was proposed later in choosing the os calcis always for the application of force, and in the use of the plaster dressing rather than the weight and pulley. Steinmann's method had a place in the treatment of fresh fractures with unusual shortening or displacement, whereas Codivilla's was proposed for cases in which structural shortening of the soft tissues might be presumed to have taken place. After describing the method and apparatus, as modified for the sake of portability, the author drew the following conclusions: (1) Codivilla's method constituted a valuable addition to our methods of overcoming shortening of the lower extremity. (2) It enabled the surgeon to use great degrees of tractive force painlessly and furnished great ease in handling the patient. (3) It furnished an efficient splint at the site of the break. (4) It was not necessary or even the best method in managing most fresh fractures, even with much shortening. (5) When indicated, it was superior to any method of using adhesive plaster for traction. (6) Used with care, it was free from danger.

The Matas Operation in the Treatment of Traumatic Aneurysm.—Dr. WALTER C. G. KIRSCHNER of St. Louis after reviewing briefly the subject of aneurysm and the principles of the Matas operation, reported four cases of his own of aneurysm of traumatic origin. In the first case the aneurysm resulted from a gun-shot wound of the brachial artery, and was of the fusiform type. Instead of employing obliterative endoaneurysmorrhaphy, after extirpation of the sac, a bi-terminal vein transplantation was performed with a satisfactory result. In the second and third cases large sacciform aneurysms resulted from stab injuries of the brachial artery. The cases were well adapted to the Matas operation, and in each instance good functional use of the extremity was obtained. The fourth case, a sacciform aneurysm of the femoral artery, was interesting on account of the location of the aneurysm below Poupart's ligament, its great size, and the fact that the sac contained a broken knife-blade two inches long. A restorative operation was performed, after preliminary retroperitoneal clamping of the external iliac arteries. The patient made a good recovery. The speaker commended the Matas operation, especially in sacciform aneurysms of traumatic origin.

The Wiring of Inoperable Aneurysms of the Aorta, with Report of Cases.—Dr. J. M. T. FINNEY of Baltimore dealt with the operation of wiring otherwise inoperable aneurysms devised by Moore and modified by Corrado. He dealt with the insertion of from ten to fifteen feet of wire into the interior of an aneurysmal sac through a hollow needle which had been thrust through the aneurysmal wall. After the wire had been inserted an electric current of from ten to fifty milliampères was passed through the aneurysm by attaching the positive pole to the wire and placing the negative pole at the patient's back. After referring to the work which had been done by American surgeons in the development of the technique of this operation, Dr. Finney reported his own list of twenty-three cases treated by this method, including eighteen heretofore unreported. After describing the technique of the operation, which should be carried out with great care, he also referred to the necessity of proper selection of cases for this operation. He called attention to the fact that only aneurysms of the sacculated variety were suitable for this operation. Attention was called to the great value of the fluoroscope in diagnosis of thoracic aneurysms. The risks, both immediate and remote, attending the operation were enumerated. They consisted chiefly in the possibility of the loop of wire sliding along the wall of the aorta and interfering with the action of the heart valves, from emboli or sepsis or charring of the aneurysmal sac with too strong an electric current. Attention was called to the beneficial effects of the operation, which were chiefly the relief of pain and dyspnea and the lessening of pulsation in the aneurysm. These might come on very quickly and afford the patient much relief. The results of the operation, when one considered the conditions one was dealing with, were fairly satisfactory. In a small percentage no benefit was derived. In a large percentage of cases the symptoms were much relieved. In a few death was hastened. Only now and then a case seemed to be cured, but in an otherwise hopeless condition the cure of a single case would render the operation justifiable. Rest after the operation of wiring for a long period was absolutely essential to secure the best results.

Crile's Shock Researches: Clinical Facts Confirming His Conclusions.—Dr. W. P. Carr of Washington, D. C., said that there were three great dangers of surgery, and these were hemorrhage, sepsis, and shock. Ambroise Paré opened the way for preventing hemorrhage, Pasteur, Koch, and others for preventing infection, and now Crile has done the same thing for shock. He had cleared up the mystery surrounding the subject, put shock upon an anatomical basis, and had given it a definite entity. He had discovered the chief causes of preoperative and operative shock and had prevented it in animals. Finally, he had been able to operate upon the most susceptible class of cases in human beings with almost no shock. He had shown that shock was the exhaustion of part of the protoplasm of brain cells, the shrinking of the nucleus and the dissipation of Nissl's granules, from powerful or repeated discharges of nerve impulses, and that these impulses were discharged automatically and involuntarily under the stimulus of afferent impulses received by special peripheral nerve terminals or special sense organs, and transmitted to the brain through afferent nerves. There were no receptors in the brain for such impressand transmitted to the brain through afferent nerves. These afferent impulses causing shock were suggestive of great evil to the organism through previous experiences or through phylogenetic association, and were noxious or noci impulses, causing powerful discharges of brain cells regulating the muscular mechanism of defense or escape from the suggested evil. There were no noci impulses in the brain. These noci associations or suggestions might be conscious or subconscious in character and were not inhibited by chloroform or ether anesthesia. The inhibition of muscular response by the will or by anesthesia did not prevent discharge of the brain cells and the same amount of exhaustion of these cells occurred as if the muscular action of escape or defense were fully carried out. Nitrous oxide anesthesia did prevent shock to a marked extent, however, and was highly recommended for this reason. Cutting the afferent nerves or blocking them with cocaine prevented shock from trauma. Fear was a powerful factor in producing shock. Crile's anoci-association operation was designed to prevent fear and all noci-associations and impulses from reaching the brain, and had been brilliantly successful in practice. The author afforded clinical facts showing that when anoci-association operations were done accidentally there was no shock, and even when the plan was incompletely carried out there was much less shock than similar operations usually caused. He cited high forceps delivery as a typical anoci-association operation because the brain itself had no receptors for noci-associations, and the infant no mechanism sufficiently developed to receive or transmit them, consequently his brain might be compressed, mashed out of shape, even lacerated, without it making a single impulse for defense or escape, and he arrived strong and vigorous and without the slightest shock. All these things strongly tended to confirm the conclusion that Crile's observations had led to, namely, that fear in some form was the chief factor in producing shock, and that the impulses of fear or dread acting upon the brain cells previous to operation were often more potent than the subconscious associations and suggestions during the actual operating.

President's Address: The Cinematograph as an Aid to Medical Education and Research.—Dr. Rudolph Matas of New Orleans stated that as an agent in imparting sanitary and hygienic knowledge of great importance to the masses the cinematograph was playing a most effective part. For instance, in impressing upon the public mind the dangers which lurked about the house fly as a transmitter of disease and of the importance of eradicating this pest, the moving picture was far superior to any lecturer's ability in its power to depict the evil. The picture machine has been applied in France to analyzing the gait of the ataxic, paraplegic, or hemiplegic, and other pathological types of locomotion. Recently Paul Sainton had also made a profitable study of the convulsive ties with moving pictures. With the ordinary cinematograph the photographic film moved discontinuously, being arrested at the moment of each exposure. While this was simple enough at moderate speed, it would be quite impossible when the exposures were made at the rate of two thousand a second, and the mean speed of the film four thousand centimeters a second. These were the figures that were necessary for the study of insect flight, and these were attained on the new instrument. With such a speed, the movement of the film must be continuous and a sharp image was possible only if the exposure did not exceed one million four hundred-thousandth of a second, and for this the electric spark gave a light of sufficiently short duration. In order to study the movement represented on the films, it was merely necessary to pass them through the ordinary cinematograph, making some fifteen exposures a second, instead of the fifteen hundred or two thousand a second employed in the taking of photographs, and then the movements one hundred or more times as slow would be seen and, in many instances, easily followed. Undoubtedly the greatest triumph that had marked the recent advances of the new science of radiocinematography had been obtained by Commandon and Lomon of Paris, who had succeeded in projecting and making perfectly practical the permanent moving reproductions of intensified fluoroscopic images of the skeleton and other organs which thus far had been available only by ocular inspection or by single plate exposures. To show what had been accomplished by the cinematograph in recording surgical operations, Dr. Matas projected upon the screen several of the Doyen films, which he obtained from the Eclipse Company while in Paris this last summer. He regretted that none of the colon films were available, but these would suffice to show what could be done with an ordinary instantaneous film, and he expressed the hope that it would encourage our enterprising teachers and operators in America to adopt this method of recording the most difficult operations. The Edison Company announced that it expected to have very shortly a home kinetoscope which was both a motion picture and stereopticon apparatus, projecting pictures of different sizes. A notable feature of this machine was that it used a film which contained three rows of pictures, which enabled the operator to exhibit on barely eighty feet of film the equivalent of one thousand feet of the regular professional film. As the new film would sell for sixteen cents per foot, making the cost of the eighty-foot film twelve dollars, as against approximately one hundred, or for the equivalent in professional film, one would realize that the cost had been greatly reduced and the kinetoscope made very much more available to the general public. This new instrument would, it was announced, be listed at about fifty dollars, making it comparatively cheap and also available to the individual teacher. The purpose of the company in issuing these new machines and films was to make them especially useful and available for educational work in schools, churches, and all kinds of organizations. By this means the time would rapidly approach when the surgical specialist or teacher of surgery might keep a cinematographic record of his own operations, and thus establish the basis of a mutually cooperative and interchangeable cinematographic surgical clinic in which all the interested workers could participate.

What Can Surgery Do for Gastroenteroptosis?—Dr. Joseph Ransohoff of Cincinnati said (1) that every case of gastroenteroptosis should be studied individually and should not be treated in a routine way, whether by medi-

cine or operation. (2) If, after the removal of a normal or nearly normal appendix, the patient continued to suffer, he should not be lightly classed among the hopeless neurotics. Rather was it the duty of the surgeon to see whether he had not overlooked some visceral displacement or torsion which was the cause of the suffering. A small incision in abdominal work had some disadvantages. (4) The conclusion of the internists, based on laboratory findings, as, for example, after injection of a test meal, could not be made the basis of the functional capacity of the stomach under every-day conditions. (5) In many seemingly hopeless cases of gastroenteroptosis with marked neurasthenic symptoms operation promised relief. If this was the result of suggestion, it was none the less valuable if the relief was permanent. (6) Whereas, of course, internal treatment, abdominal support, and postural treatment should be tried, operative interference should not be unnecessarily delayed, lest the habitus nervosus became too deeply rooted to be eradicated. (7) No gastroptotic patients should be operated on unless some actual functional disturbance could be demonstrated. To relieve this must be the aim of the operation. Given a gastroptosis in which one could demonstrate distinct functional incompetence or deviation, the existence of nervous phenomena did not militate against operation, but might be the chief reason for performing it.

The Essential Factor for the Cure of Hernia in the Male.—Dr. HENRY O. MARCY of Boston spoke of the cure of inguinal hernia by the reconstruction of the inguinal canal to its normal length and obliquity, which was rendered possible only by the use of buried sutures. This method was too well known to require description. It was, of course, dependent upon free dissection, a careful coaptation of the weakened structures posterior to the cord with a firm reconstruction of the inguinal ring; a replacement of the cord, a careful closure of the superficial structures, and sealing of the wound with iodoform collodion without drainage. For many reasons Dr. Marcy thought kangaroo tendon the preferable suture material. His contribution was especially offered as a criticism of a late article published by Lieutenant-Colonel Ruotte of Paris in the *Military Surgeon*, who considered the especial factor for the cure of inguinal hernia to consist of the suturing and resection of the peritoneal sac. Dr. Marcy demonstrated that the special value of Colonel Ruotte's operation must only consist in the closure of the internal ring, which thereby necessarily elevated the cord in its passage through the abdominal structures. Whatever reenforcement might result to the structures posterior to the canal was altogether accidental, and, as a consequence, the so-called French method was unscientific and the results must often be uncertain and unsatisfactory.

Interstitial Ectopic Pregnancy.—Dr. CHARLES R. ROBINS of Richmond, Va., stated that in 1324 cases of ectopic pregnancy collected from the literature by Rosenthal there were less than 3 per cent. of the interstitial variety. The specimen which he presented furnished a very beautiful example and was the only case which had occurred in his own practice. The patient was 27 years of age, colored, threepara, one miscarriage. Her last menstruation occurred in June, since which time there had been no bloody discharge. In the early part of July she was taken with sharp pains in the lower abdomen, worse in the right iliac region. After this for a while she would have a severe attack of abdominal pain at night, felt on both sides and radiating to the shoulder on the right side. She later would have recurring attacks and a few days after an attack could feel a mass in the right side. She was confined to bed for five weeks and then got up for four or five days, when she had another severe attack and was forced to return to bed. Her pains were severe all over the body; she was covered in a cold sweat and had a chill. At this time the pain settled in the right side and had remained there constantly ever since. She had suffered from marked constipation for four months. Urination was frequent and burning. At the time of the examination she had a temperature of 101°. The patient was quite fat, but a tumor could be made out in the lower abdomen half way to the umbilicus. The recti muscles were somewhat rigid, and there was marked tenderness over the right iliac area. On bimanual examination the uterus was made out, although not sharply defined, the enlargement being greater on the right side. The size of the uterus corresponded to about a three months' pregnancy. There was no bloody discharge and the patient said that she had had none since June. A diagnosis of ectopic pregnancy had been made by his associate, Dr. Dorsline, but the possibility of an appendicitis complicating pregnancy was considered. There was a leucocytosis of seventeen thousand, but no differential count was made. On September 7 an exploratory McBurney incision was made and the abdomen found full of fluid blood. A medium incision was then made, the clots cleaned out of the pelvis, and the uterus delivered. The right side was found enlarged with several points of rupture, and with the membranes showing through. The uterus was removed by a supravaginal hysterectomy. Section of the specimen showed an unruptured sac with hemorrhage between the membranes and the walls of the gestation cavity, the chorionic villi well developed, and a perfectly formed embryo. The tube on the right side and the cavity of the uterus were both intact, the latter containing a well developed decidua.

The following papers were also read: "Benign Lesions of the Sigmoid Colon: Ptosis, Mesenteritis; Diverticulitis, and Volvulus: Second Report," by Dr. Joseph C. Bloodgood, Baltimore; "A Plastic Operation for Prolapsus Uteri Without the Necessity for Abdominal Section or for Distortion of Anatomical Relations," by Dr. Barton Cooke Hirst, Philadelphia; "The Principles Underlying the Surgical Treatment of Gastrointestinal Stasis, Due to Causes Other Than Strictural and Ulcerative Conditions," by Dr. R. C. Coffey, Portland, Ore.; "Remarks Upon the Diagnosis and Treatment of Diseases of the Biliary Tract, with Special Reference to the Difficulties and Dangers," by Dr. Maurice H. Richardson, Boston; "Intestinal Obstruction Due to Gallstones with Report of Cases," by Dr. Frank Martin, Baltimore, Md.; "The Limitations of Bone Regeneration and Joint Reconstruction," by Dr. John B. Murphy, Chicago; "Experimental Study of the Arteries in Shock," by Dr. Willard Bartlett, St. Louis; "A Suggestion in Rhinoplasty," by Dr. E. Denegre Martin, New Orleans; "An Artistic and Mathematically Accurate Method of Repairing the Defect in Cases of Harelip," by Dr. James E. Thompson, Galveston, Tex.; "The Fee-Splitting Evil," by Dr. Charles A. L. Reed, Cincinnati; "The Treatment of Vesical and Diverticular Calculus," by Dr. Hugh H. Young, Baltimore; "Treatment of Pyelitis," by Dr. Guy Leroy Hunner, Baltimore; "Additional Cases of Nephroureterectomy," with remarks relative to removal of large suppurating kidneys, by Dr. George H. Noble, Atlanta, Ga.; "Emergency Operation for Cerebellar Tumor Under Artificial Respiration," by Dr. Harvey Cushing, Boston; "A Review of a Series of Operations for All Forms of Appendicitis," by Dr. Edward G. Jones, Atlanta, Ga.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. J. M. T. Finney of Baltimore, Md.; *First Vice-President*, Dr. James E. Thompson of Galveston, Tex.; *Second Vice-President*, Dr. W. P. Carr of Washington, D. C.; *Secretary*, Dr. William D. Haggard of Nashville, Tenn.; *Treasurer*, Dr. William S. Goldsmith of Atlanta, Ga.

Old Point Comfort, Va., was selected as the place for holding the next annual meeting in 1912.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held December 27, 1911.

THE PRESIDENT, DR. JAMES F. MCKERNON, IN THE CHAIR.

Endorsement of Dr. Doty.—A resolution was voted, on motion of Dr. F. R. Sturgis, disapproving of the manner of investigation of quarantine last summer and protesting against endangering the health of the community by making the quarantine office an object of political reward.

The Relief of Prostatic Obstruction.—DR. J. BENTLY SQUIER read this paper. He said that the question of the method to be used for the relief of prostatic obstruction in each patient resolved itself into a decision between catheter life or operative removal of the prostate. When one considered that catheter life in the hands of the patient carried with it 100 per cent. mortality, and that the average expectation of life after such a method of relief was instituted was about three years, operation was really the conservative procedure when once the necessity of catheter life became the other alternative. The operative mortality would average between 6 and 10 per cent. in unselected cases, while many surgeons had a mortality far below this. To secure completeness of operative cure these patients must be given the benefit of operation early in the course of the disease, and therefore an early recognition of the condition was imperative. Patients often succumbed to the sequelæ of the disease before the primary cause had been appreciated. To emphasize this point Dr. Squier showed a specimen of bladder diverticulum which illustrated the end results inflicted upon the bladder by an unremoved prostatic obstruction. The patient died of suppurative nephritis. The specimen showed an obstructing prostate, multiple diverticula of the bladder, some of which contained calculi, the ravages of chronic inflammation in the bladder wall, dilatation of the ureters, etc. An important fact to be remembered was that the degree of prostatic enlargement might be no indication as to the degree of the urinary obstruction. If, as was the custom with many physicians, reliance was placed on rectal examination to show the presence of prostatic obstruction many cases would remain undiscovered and would be considered ones in which urinary symptoms were secondary to kidney disease or spinal cord lesion. If the time for operation was in the incipiency of the disorder, a large percentage of patients would require operation while they were still sexually vigorous and the question arose as to the effect they might expect the removal of the prostate to have upon the sexual function. The physiology of the prostate in the light of recent research showed that the prostate was a secreting gland and supplied the ingredient of the semen which excited the spermatozoa to motility and made it possible for them to live when in contact with the uterine mucosa. Serralach and Pares, from experimental excision of the prostate in dogs and other animals, had concluded that the prostate and seminal vesicles had similar functions, that one could supplant the other and that either or both of them secreted some substance which rendered the testes active, and that in the absence of these organs the tests ceased to functionate and became small and soft. Walker, in commenting on these results, said that it was most difficult to remove the prostate without taking away the ejaculatory ducts and that in order to justify their conclusions they should have operated upon animals from which the gland could be excised without damage to other structures. Walker removed the prostates from 78 white rats, of which 52 remained fertile and 26 became sterile. He concluded that excision of the vesicles alone, of the prostate alone, or the vesicles and prostate, did not appear to have any effect on the sexual capacity or on the structure and function of the testes. Reports after prostatic removal in men justified them in expecting the power to copulate to remain and in many instances to be improved, with a diminution or absence of the ability to procreate. The possibility of procreation depended upon the patency of the ejaculatory ducts following operation and the ability of the patient to force the seminal fluid out of the urethra during coitus. Dr. Squier said that he mentioned this point because he had a number of patients under observation following prostatic removal who were able to perform coitus successfully, in whom no ejaculation took place during coitus, but who discharged seminal fluid subsequently. In these instances, the support of the prostatic urethra and the resistance of the internal sphincter of the bladder having been removed, the semen would run back into the bladder rather than accumulate in the urethra and be forced out during coitus. The pathological changes which produced prostatic hypertrophy were such as to probably so materially alter, diminish, or stop the secretion of normal prostatic fluid that by the time operation was indicated the semen had already lost this essential element. The patency of the ejaculatory ducts should be preserved during prostatic removal as atrophy of the testes with associated impotence probably took place if the ducts became occluded. The probability of the preservation of the ejaculatory ducts was largely dependent upon the type of operation employed for prostatic removal. Legueu and Papin concluded: 1st, that the ejaculatory ducts in prostatic hypertrophy were always situated behind the enlargement; and 2nd, that after suprapubic removal of the gland they should remain intact. To appreciate this the conception of the prostate as composed of two lobes would have to be given up and replaced by picturing the prostate as divided into four lobes according to the zones of glandular distribution. This view was supported by the embryology of the prostate. The ducts of these various lobes opened into the prostatic urethra posterior to the verumontanum and accounted for the urethra being adherent to the prostate in this situation. The ducts of the anterior lobe emptied into the prostatic urethra on its anterior wall opposite to the verumontanum, the ducts of the posterior and lateral lobes on the sides and floor. The middle lobe lay between the urethra and the ejaculatory ducts, and this lobe was the starting point of prostatic hypertrophy. To better understand the mechanics of urinary obstruction the various lobes of glandular tissue seeming to compose the prostate might be considered as enclosed in a cone the sides of which were formed of dense, unyielding vesicorectal fascia, the apex by the external sphincter muscle, and the base by the internal sphincter muscle. If hypertrophy now took place on one or more of these lobes the cone would contain the enlarged prostate up to a certain point when the hypertrophied glandular tissue would force its way out and follow the line of least resistance. This would be into the bladder through the internal sphincter. The internal sphincter was forced outside the prostate as the enlarging lobe insinuated itself into the bladder between it and the bladder mucous membrane. Remembering that the middle lobe was the commencing point of hypertrophy, it would readily be seen that but little increase in the size of the lobe would effectually close the bladder outlet to the outflow of urine. Assuming that all obstructions to urination occurring in the course of true prostatic hypertrophy were due to the enlargement of the glandular zones which lay between the urethra and ejaculatory ducts and above the verumontanum, they might expect to find the ejaculatory ducts pushed downward by the hypertrophy. As the lobes increased in size a false capsule was produced to the lobes composed of compressed glandular tissue and therefore some prostatic tissue remained unremoved. What was probably accomplished was the removal of an adenoma or fibroadenoma from within the gland. Such being the case, the removal of these hypertrophies should have no

effect upon that secretion which rendered the testes active. This might be explained by its analogy to the ovaries or thyroid. It was therefore reasonable to suppose that, in the event of the removal of the prostate, the function of the testes would remain unimpaired with an absence or diminution of the motility of the spermatozoa. Three factors should be considered when choosing the particular operation to be employed for the relief of prostatic obstruction: 1st, the removal of the obstruction; 2nd, an absolute certainty that the patient would be able to control the bladder and not suffer from postoperative urinary incontinence; 3rd, the preservation of the ejaculatory ducts and sexual capacity. The suprapubic route offered advantages not possessed by the perineal and in addition gave a better opportunity to deal with vesical complications of prostatic obstruction should they be found to exist. There was less danger from a prostatic removal through lateral capsular incision than through median urethral incision; this was the point above all others which should dissuade surgeons from employing the so-called median perineal operation for prostatic removal. If a surgeon had seen a few cases of postoperative urinary incontinence it was difficult to see how he could continue to perform an operation which carried with it so great a chance of such a possibility. In making a choice of operation this factor was almost as important as the rate of mortality. In performing median perineal removal the ejaculatory ducts were regularly damaged; their preservation could be more definitely assured by the suprapubic route.

Dr. WILLY MEYER said the fact that so many papers were still read on prostatic obstruction and drawing large audiences proved that this subject was not lacking in interest. The radical operations upon the prostate had been discussed for fourteen or fifteen years. It was but natural that, due largely to these frequent discussions, the indication for the various operations became more and more refined. It was a pleasure to him to hear Dr. Squier's paper. Dr. Meyer also advised against catheter life as a permissible manner of treatment. But if the patient was opposed to *any* operative interference, he should resort to catheter life. He had seen well-to-do patients who had the leisure to attend to the necessary details exist for many years. In speaking of the pathology of the condition he referred to the work of Tandler and Zuckerhandl of Vienna, and also to what appeared in a recent issue of *Surgery, Gynecology, and Obstetrics*, by Wilson and McGrath, of the Mayo clinic in Rochester, Minn. Regarding operative relief, the Bottini operation and suprapubic and perineal prostatectomy came into consideration. Bottini's operation was here first performed in 1897 by Dr. Meyer and he made it his object to find out by personal experience whether the procedure deserved a place in operative surgery. He did the operation for five years and he found, as he had so long maintained, that if patients were absolutely opposed to operation with the knife, or if there were contraindications, or if the condition of the prostate was carcinomatous, and inoperable radically, these patients should not be relegated to catheter life but have the Bottini operation performed. The result often brought great comfort to the patient and there was such an improvement after the operation that patients were glad it was done. The danger attending this operation was the same as in prostatectomy. With regard to prostatectomy, they had all watched how the pendulum had swung toward the suprapubic route. The latter gave the easiest access to the bladder in case of large calculi, it avoided the possibility of perforation of the rectum, it gave more assurance for the preservation of sexual function; it also was a great aid to the surgeon if he wanted to do the operation in two stages. The two stage operation should be resorted to if the patient was in a septic condition and unable to withstand the one-stage operation. However, to carry a patient through with one operation was an advantage and, in a great many instances, it could be done. Do the radical operation if possible at one sitting! Dr. Meyer reported an interesting case. The patient was a man eighty-two years old who came to him at midnight with a pronounced hematuria and total retention of urine. The two-stage operation, which he advised, was refused and he was compelled to remove the prostate at one sitting. The patient made a wonderful recovery. It was also more humane not to carry the two-stage operation too far. Regarding aftertreatment, he considered it a wise procedure to introduce a catheter through the urethra and leave it in place eight or ten, sometimes twelve, days, with temporary tamponade of the prostatic bed. He had thus seen the suprapubic wound close in twelve days. Carcinoma of the prostate occurred more frequently than was generally supposed. When this condition was met with the entire prostate should, of course, be removed. He believed that the future of this operation would be the complete removal of the gland, the radical operation, but in the sense that surgeons would take no regard for the bladder. Implant the ureters "physiologically" into the sigmoid flexure if the disease had advanced and involved the trigone; treat the tumor then as one would treat carcinoma of other organs. Also give these patients the best chance possible to be cured.

Dr. JOHN F. ERDMANN said he wished to endorse all that Dr. Willy Meyer had stated in regard to the two-stage operation in these cases.

Dr. HOWARD LILIENTHAL wished to emphasize one important point in the technique, the high incision; this would result in a better and a quicker recovery. The method of shelling out the prostate described he had not tried, but he said he would try it because it appealed to him. The tremendously large openings in the bladder should be avoided. It was his practice to take a pair of closed scissors, plunge the points in and then separate the plades, and he thus obtained the opening he wished for. This should, of course, be done carefully and not too rapidly. He called attention to the kind of prostate that would puzzle many, the so-called aberrant prostate, a congenital anomaly; here the prostatic tissue was where it should not be. He told of an instance which was of interest, a friend of his who took longer to urinate than the rest of the boys; he did not have much power in his stream of urine. The boy grew up, married, and was the father of several children. He always took twice as long as anyone else to urinate. He went on a hunting trip and had complete retention of urine, and the catheter was introduced. This was before the days of urotropin. He then came to Dr. Lilienthal for relief. It was soon decided that something should be done and a suprapubic cystotomy was performed to find out what was the trouble. He found only a miserable little projection from the prostate, about as large as a pea, which he removed. He also burned the part with the Bottini instrument. The pathologist reported it to be an aberrant prostate. The patient was completely and permanently cured. He reported a similar case that was now in the hospital. Cancer of the prostate was more common than usually supposed. Whatever else was done they should bear in mind that the first thing was to keep their patients alive; every patient operated upon should have a functional recovery, but they wanted to save life. It was the one hundredth man they were after and not the ninety-ninth who could be saved by the two-stage operation. If necessary do the one-half operation which will give relief; when the time came the patient could be given a little anesthesia and the procedure completed.

Dr. AYRES said he wished to corroborate all that had been said in favor of prostatectomy, but there were certain cases that could be much benefited by treatment. Many men of forty-five to sixty-five years of age with so-called

prostatism with a certain amount of irritation, who were compelled to get up at night to urinate several times, and with general symptoms of irritation from the prostate, could be markedly soothed by massage and the use of the high-frequency current. This would often check the progress of the disease, but would not reduce at all the size of an enlarged prostate. Patients whose business interests would not allow an immediate operation could be rendered quite comfortable over a period of six months to a year. Dr. Ayres said that aftertreatment was very important. Sounds should be passed regularly over a period of three months or more to insure against contracture of the scar at the neck of the bladder. The two-stage operation was a distinct advantage in some cases. He reported a case of a man, 72 years old, with a very bad heart, whose bladder capacity was only two ounces. Under local anesthesia the bladder was opened after twenty-five minutes' work and drainage was established. Four days later the prostate was removed in seven minutes under general anesthesia. The patient recovered, but there is little doubt he would have succumbed had the preliminary operation not been done.

Dr. Raymond C. Coburn said that one thought in mind in these serious operations was the preservation of the patient's life. There were, in these cases, two causes of death which stood out prominently, shock and infection. Dr. Crile of Cleveland had demonstrated that the administration of ether as an anesthetic produced certain pathological changes in the brain cells; that a patient under gas anesthesia suffered only one-fourth the shock that one did under ether anesthesia. Following up the work of Henderson it was found that shock following operations was more often due to the anesthetic administered than to the operation itself. In the class of cases under discussion this was a very important point. Further, the use of ether lowered the patient's resistance against infection; this same effect was reported some time ago by a French investigator as regards cocaine and its derivatives. Again it should be remembered that ether exerted an irritating influence upon the genitourinary tract. They should use nitrous oxide-oxygen and help get these patients well; they then would save that one man out of a hundred.

Dr. Martin W. Ware thought the members of this Society should be very thankful to Dr. Squier for having so clearly pointed out the newer investigations of the French school bearing upon the true nature of prostatic hypertrophy. It was a turning in the lane they had come to in accepting the teaching that the enlargement they encountered was not of the prostate but an hypertrophy of such paraglandular structures lying immediately back of the prostate gland and around the urethral orifice (periurethral). Hence the enlargement was posterior to the ducts. This observation originated in Albarran's clinic, being the work of the pathologists, Motz, Perreanan, and subsequently Cuneo, and was also confirmed by the Vienna school. Clinically there were facts that fitted in with this discovery. Albarran prompted an inquiry as to what per cent. of cases operated upon by him by the perineal route were sterile. The reply was that all but one were afflicted with *impotentia coeundi*. For this reason he mainly abandoned the perineal for the suprapubic route. In the next place, it was a matter of common observation that what corresponded to the dimension and location of a normal prostate was perceptible in the vast majority of cases examined per rectum after much of the tumor mass was removed. Like Dr. Squier, he had for some time effected the enucleation of the gland by introducing the index finger into the introitus vesicæ and with a little pressure readily got into the line of cleavage. As for aftertreatment, he no longer used any irrigation if the tube drained well and only in the later days did he introduce an indwelling catheter in order to help the suprapubic opening to heal rapidly.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held December 21, 1911.

The President, William K. Polk, in the Chair.

This meeting was held under the auspices of the Section on Orthopedic Surgery.

A Preliminary Report of Bone Transplantation and Osteoplasty in Pott's Disease of the Spine.—Dr. Fred H. Albee read this paper, which was accompanied by a lantern slide demonstration and summarized as follows: (1) It was needless to discuss the inefficiency of all means of ambulatory treatment of dorsal Pott's disease. This was especially emphasized in the tracings of the first four cases, in which the kyphosis continued to increase in spite of all efforts and under the most favorable surroundings, namely; in a well-regulated seaside hospital, where the children were under the constant observation of nurses and surgeons trained in the work, and where they were in the most propitious environment that could be supplied for the cure of tuberculosis. (2) It had become a well-recognized fact that whenever bone fixation of a tuberculous joint occurred the tuberculous process immediately subsided. Now as the physiology and pathology of bone tissue were the same wherever it was they were justified in expecting that if they got the same bone fixation in the spine the effect would be the same. This was best accomplished by a firm cortical bone graft with union to the vertebræ involved and the healthy ones on either side, which assured not only the prevention of further deformity in two mechanical ways, as stated (leverage and splint action), but should also cause the disappearance of the tuberculous process. The leverage action arose from the two lateral facets, acting as a broad fulcrum in the case of each vertebra, and the bone graft furnished a means of holding the long arms of the levers or the spinous processes together, thus separating or preventing the crushing of the tuberculous vertebral bodies. It should be noted that the nearer this bridge of bone was to the tips of the processes the greater the leverage. The spinous processes were split as near the center as possible, and in such a way as not to result in a green-stick fracture of the larger portion; therefore, the recent objection that the operation was asymmetrical did not hold. (3) The above described bone-grafting procedure was believed to be preferable to any in which breaking or cutting of the spinous processes destroyed entirely (or until union took place) the natural as well as the acquired support and leverage of the spinous processes. Again, it furnished a continuous bridge of bone spanning the entire number of vertebræ which it was desired to immobilize, and therefore should be under Wolff's law, and should become stronger by the influence of undue stress or motion, which bent it. Or, in other words, it was an imitation of nature's success, as had been pointed out by Brackett, whereas it had been feared that these same conditions of motion would prevent bony union, and favor a fibrous union or pseudoarthrosis in the case described as osteoplasty. (4) If bone union of graft to spinous process should not occur the same mechanical effect of leverage in a large degree would still be obtained from the union of the embodied bone splint to the surrounding dense ligamentous structures at the tips of the spinous processes as well as the splint support. (5) Perfect immobilization and support of the few involved vertebræ in the respiratory area of the spine were secured, which was an impossibility by any external mechanical device or treatment. The recumbent treatment on a Bradford frame was not excepted on account of the constant respiratory movement of the ribs and attached vertebræ. (6) Fortunately on account of the anatomy of the part it was not necessary to enter the focus of the disease; therefore, primary union of the

soft tissues with immediate bone union could be expected. (7) The normal supports of the spine were not interfered with, as the ligaments and muscles were not cut or separated from the vertebræ. (8) The operation was by no means a formidable one. The technique was very simple, in one case the total operating time was but fifteen minutes. (9) When possible a recession of a kyphosis by a long recumbency on a reversely bent Bradford frame should be secured. This method offered great promise of holding the correction obtained; whereas, without this artificial support there was a great tendency of a relapse when ambulatory treatment was resumed on account of the inhibition by the tubercle bacilli of the new formation of bone. (10) A bone graft was far superior to an internal metal splint because, by following Wolff's law, it would become thicker and stronger if necessary to hold weight or strain brought to bear on it; whereas no dependence could be placed on an internal metal splint, suture, or screw, applied to the bone, to hold continued weight or strain because of the bone atrophy and absorption which took place directly around the metal. This occurred when no strain was present. Silver wire and screws, which had been placed through bone only a few months before, had been found in the soft tissues where they had fallen through or out of the bone without being influenced by strain. For this reason and because of the ever-present danger of sepsis about buried metal, it would seem that bone grafting would prove preferable to the internal metal splint of Lane.

Operation for Progressive Spinal Deformities.—Dr. Russell A. Hibbs read this paper and illustrated it by lantern slides. He said that operative measures for attacking the disease in the vertebræ directly had not been successful; neither had specific treatment for the tuberculous process proper given much help. The only method which had proved to be of distinct value was that of securing rest of the diseased joint by immobilization, and in those regions of the spine where the most perfect immobilization could be secured the best results were obtained in the shortest time and with the least amount of deformity. The writer some years ago perfected a method of treating the knee joint by removing the patella from its periosteum and mortising it into the joint after a space was freshened to receive it. The periosteum was then stitched above to the periosteum of the femur, and below to that of the tibia. In these cases the patella bridged the space between the two bones and the periosteum produced new bone sufficient to make a bony bridge between the two bones, and to secure a safe bony ankylosis. This operation led to the conception of the procedure applied to Pott's disease. After experimenting for a time on the cadaver he was encouraged to attempt the operation on a living subject. His first patient was a boy nine years of age who entered the Orthopedic Hospital with a lumbar Pott's disease and a moderate kyphosis involving the last dorsal and the four upper lumbar vertebræ. He was admitted to the ward because of the activity of his disease as evidenced by the characteristic protective gait, abdominal pain, etc. He was selected for operation because his disease was in a region where it would be possible to secure good *x*-ray pictures, which would demonstrate whether or not the bridge was produced. An incision was made in the median line of the back from the twelfth dorsal to the last lumbar vertebra and down to the tips of the spinous processes; the ligament was divided longitudinally in the center, and the periosteum split over the tips of the spinous processes and over their upper and lower borders. It was stripped down to their base and from the lamina to the articulation of the neural arches. The last dorsal and three upper lumbar spinous processes were thus denuded. The periosteum was removed and retracted with great care so as not to tear or puncture it. Then the respective spinous processes were fractured by means of a small chisel, as close to their bases as possible, without opening the canal. These processes were then placed so that the base of the process removed made contact with the base from which it was removed, and its tip was placed in contact with the base of the next spinous process removed below it. In like manner they were all so placed as to form a continuous bone bridge. The reflected periosteum was brought together laterally and in the median line over the processes with a continuous catgut suture, reinforced by three interrupted silk sutures. The skin wound was closed with silk. The wound was dressed and a plaster dressing applied from the knees to the axilla with the spine in a position of slight overextension. During the first forty-eight hours the patient suffered a great deal of pain and it was impossible to relieve it. Two weeks later the plaster was removed and a brace applied with the uprights separated so that it would not press on the wound. In all other cases braces had been applied instead of plaster. On the tenth day the wound was perfectly healed. Four months after the operation *x*-ray pictures were taken which demonstrated unmistakably that the bone bridge had been formed and was of considerable size and strength; the braces were then removed. Since that time the boy had lived an unrestrained life and there seemed to be an absolute obliteration of motion over the operative field. He had had no symptoms of disease since the operation and no increase of deformity up to the present time, eleven months after the operation. Since that time twenty patients had been operated on at the Orthopedic Hospital, ranging in age from four to twenty-five years. Two had the disease in the lumbar region, eleven in the dorsolumbar, and eight in the dorsal. Three of them had discharging sinuses and four had abscesses which had not been opened. In none of these patients had there been the slightest reaction from the operation, or any complication whatever. No attempt had been made to correct the deformity in these patients by means of force. The exercise of force under an anesthetic in the correction of deformity in Pott's disease was unwise. In all of the cases the deformity had been considerably diminished by this operation. Ten of the patients had been without support for periods ranging from three to twelve months, and none of them had shown any increase of the kyphosis or any other symptoms which would suggest that there was not sufficient support over the diseased area. In determining in a given case the number of vertebræ to be fused, Dr. Hibbs had been guided in most instances by the kyphosis, by *x*-ray pictures, and, in cases without deformity, by the extent of the rigidity of the spine. He had always been careful to make the brace sufficiently long, even making it longer than seemed necessary. The stiffening of a small segment of the spine did not seem a serious matter in view of the fact that the remaining healthy joints would compensate for the loss of function in a few. With regard to the question of age, it had been thought at first that it was doubtful if under the fifth or sixth year it would be possible to produce such a bone bridge, but he had done this successfully in a child of four years. While it was impossible at this time to reach final conclusions as to the value of this operation, it might be fairly stated that it was an operation which subjected the patient to very small risks and that it complicated in no way the application of ordinary methods of treatment. It also seemed to be proved that a fusion of the posterior aspect of the vertebræ did take place and that the bridge might be produced, as had been shown in a sufficient number of *x*-ray pictures. The operation should be done before deformity occurred in any region of the spine where the disease existed.

Dr. Eugene Wilson Caldwell presented a plate that had

been taken by the late Dr. A. M. Phelps in 1896, showing an ununited fracture of the radius. The plate, however, was a poor one, judging by present-day standards.

Dr. CHARLES F. PAINTER of Boston, Mass., said he had had very little experience in bone grafting, and what he wished to say regarding the subject was in a general way. They all knew of the enthusiasm with which this subject was taken up. Only a few years ago in France there was advocated the forcible correction of the spine; then men in America followed out this forcible correction of the spine and recorded failures. In the same way osteoplasty had a limited field. It was only a short time ago that everybody undertook to treat and cure neurasthenia by suturing kidneys, operating for enteroptosis, or some other ptosis, but eventually it was noted that these were not the proper procedures for the cure of neurasthenia. Now there had been a revival of interest in this subject but men had been trying to explain these functional disturbances of the nervous system as an autointoxication, the result of some visceral ptosis. He said it was rather interesting, and yet provoking, when one approached the subject of bone grafting, and when one looked over the subject in the literature, to learn for what purposes it had been resorted to, for defects in bone, the result of congenital disturbances, pathological defects of osteomyelitis, replacement of bone that had been destroyed as the result of malignant disease, or destroyed as the result of Pott's disease, and so on; all these conditions had been sought to be remedied by osteoplasty. Some of these procedures appealed to them and some did not. He thought it was time to orient oneself and not to get too enthusiastic about osteoplasty. One should carefully inquire whether or not it was feasible to resort to osteoplasty in any given case. There was no doubt in his mind that when the technique was perfected everything that was transplanted would stay. Yet they should at present consider if eventually the results were going to be better, or whether the patients operated upon would be well off, or not so well off afterward. The experimental stage of this procedure was, of course, necessary. This was not a new procedure and it had a definite field in properly selected cases. Experimentally it had been proven that transplanted bone did not remain as such very long. It seemed to him that they should approach the subject of oseoplasty in a reasonable frame of mind; there was no doubt but that they could secure good results in a restricted class of cases. Dr. Painter said he had had experience in osteoplasty in two cases only, both young children, three and a half and four years of age, respectively. Dr. Albee's method was used. The grafts evidently were going to stay just where they were placed. The question arose, however, would any growth of the graft keep pace with the growth of these children; was there going to result an opisthotonos? It had been shown that such grafts did not grow very much in length when transplanted, although some believed that they did grow to some extent.

Dr. HOWARD LILIENTHAL said a few words from the standpoint of the surgeon, and not from that of the orthopedist. First regarding the feasibility of this procedure for purposes of immobilizing the spine, while listening to the papers he had no doubt in his mind but that the ordinary stiffening of the spine by surgical operations was an advance over all other methods of treatment. They all knew that an unmixed tuberculosis was not a malignant infection and that with absolute rest, building up the patient's resistance, the condition would gradually subside, calcification take place, and a practical cure follow. This was so with tuberculosis anywhere in the body. Of course, if there was a mixed infection, where there was a tuberculous infection with another infection present on top of it, that was another question. But these spinal cases seemed to be a pure tuberculous infection and not a mixed infection. Under the employment of proper hygienic measures, combined with absolute rest, the results had shown that possibly the disease was a curable one. The question then came up, how should this rest be obtained? Anyone who had looked at a fracture of a bone through the window in the splint must be struck by the fact that there was motion between the fragments. It was because of this that Lane of London had devised his method of bone plating, and had given them an enormous advance over the old-fashioned methods of treating fractures. The bone plate method was one that now had come to stay. When it came to the question of bone immobilization it then came to the question of operating upon the bone itself. Dr. Lilienthal thought that this disease would becomes more or less an operative one, and he believed in the employment of apparatus, but at the right time.

Dr. T. HALSTED MEYERS said that the cure of tuberculosis was effected by surrounding the tuberculous area with new connective tissue. He wished to emphasize the point made by Dr. Hibbs that too much force should not be exerted in correcting those deformities which already existed; of course, such deformities might be diminished by cutting off parts of the spines. What interested him very much was the statement made regarding the operative procedure wherein the periosteum was removed; the periosteum should be left whenever possible, for it served to aid in the increase of bone and, therefore, an increase in the solidity of the parts. Many of these deformities should be reduced as much as possible before operation was resorted to. The procedure appealed to him.

Dr. HENRY LING-TAYLOR said he had had the opportunity of observing Dr. Albee's work in this class of cases and he wished to confirm the statement made that the operation itself was not a formidable one, nor was it a long one. The operative results were very good. The treatment of diseases of the spine had not improved a bit in thirty years; the treatment as practised now in this country was essentially the treatment of Davis, Sayre, C. F. Taylor, and others, based on immobilization, fresh air, long-continued rest in bed, with counterirritation by setons, and so forth. During thirty years they had seen arise two or three so-called panaceas. One was the tuberculin test, which practically was of no use in Pott's disease of the spine; another was the forcible correction of the deformity, which was also without effect. However, in spite of these carefully devised operations, practical gains had not resulted in the management of their cases.

Dr. H. J. BOGARDUS said that the operation of Dr. Hibbs was sufficient to produce the effects desired and without the introduction of bone or other foreign material. The periosteum should be preserved; there should be a complete building up of the sheath of the periosteum throughout the length of the diseased process. This was, in his opinion, the keynote of the success of the operation. When the operation was first suggested by Dr. Hibbs more than a year ago he was fearful that, because of its close proximity to the active bone tuberculosis, the resulting traumatism might light up a more virulent type of the disease, but this had not so far occurred. The reverse seemed to be true. The operation seemed to act as a stimulus to Nature's reparative process. It seemed to him that they had made a long stride in advance in solving the difficulties which accompanied the serious problems confronting them.

Dr. A. JACOBI said he was pleased with the historical review that Dr. Painter had given them because it showed that methods used in the past were such that there was left much to be desired. Bone tuberculosis of the spine was confined to the bodies and not to the arches and processes. The process in the bodies would result finally in fearful abscesses which generally killed the patients. He

could not imagine any operation which would do more than steady the spinal column. He wished to congratulate the gentlemen who had suggested an operation which pointed to the accomplishment of such a result, but he feared there would be ill successes. When operations were done they did not reach the seat of the tuberculous process at all, and could not possibly do so. Dr. Jacobi said he had treated many cases of tuberculosis of the spinal column, and particularly of the small bones of the hands and feet, and a large number of these cases had died. They had been told that in thirty years there had been no gain in the treatment of these cases, and he was almost of the same opinion. They needed, however, in the treatment of this disease not only the hygienic treatment but internal constitutional treatment. He had not treated bone disease, or inflammatory disease of bones, or other diseases of bones without using phosphorus internally, phosphorus and not phosphates. He recommended it early in rickets. He said he had given phosphorus (not the phosphates) internally in cases of tuberculosis of small bones for many years as a routine measure. Again there was no better bone builder than arsenic, and this was a metal he gave in every case of bone tuberculosis, the same as he gave it in all other forms of tuberculosis. If they combined this internal treatment with their surgical treatment there would result, in his opinion, many successes, and they would do better.

Dr. JOHN JOSEPH NUTT said that three years ago he experimented on eight dogs in the laboratory, attempting to immobilize the spines by transplantation of parts of ribs; these pieces were placed in the angle between the processes and the bases of the spine. All the work was done in the dorsal region, and none of them became ankylosed. He did not believé they could by any operation immobilize the dorsal vertebræ; the respiratory movements had much to do in its prevention.

Dr. FRED H. ALBEE said that Dr. Nutt's cases were normal ones and should not be compared with those that were diseased. He emphasized the importance of certain features of his operation, and among these were shortness of time in operating and the fixation of the spine by the bone splint. He called attention to the large number of *x*-ray pictures taken for Dr. John B. Murphy of Chicago of bone grafts, a large number of cases taken for a large number of purposes. He called attention to one in particular where one-third of the upper part of the humerus had been bone grafted, and the pictures taken showed the rapid development of the bone which supported the upper arm.

PHILADELPHIA NEUROLOGICAL SOCIETY.

AT a stated meeting held December 22 Dr. GEORGE E. PRICE reported "A Case of Spastic Paraplegia, Presenting Loss of the Senses of Pain and Temperature on the Entire Right Side, with Ataxia and Increased Reflexes." The patient was a man, 37 years old, with a history of gonorrhea, syphilis, and alcoholic excess, who had been subjected to several operations on the left mastoid bone for the relief of an aural discharge. The symptoms were attributed to multiple syphilitic lesions. Dr. CHARLES K. MILLS made a preliminary report on "A Case of Ataxia of the Left Upper Extremity, with Paralysis of Emotional Expression on the Right and Loss of the Senses of Pain, Heat, and Cold on the Entire Right Side." On post-mortem examination evidences were found of interference with the cerebellar blood supply on the right side. Dr. THEODORE H. WEISENBURG exhibited a series of moving pictures illustrating athetoid movements in cases of spastic diplegia, the tremor and gait of paralysis agitans, the incoordination of multiple cerebrospinal sclerosis, and the peculiar motor anomaly observed in the case of Dr. Mills. Dr. J. W. MCCONNELL demonstrated "A Case of Muscular Dystrophy." The patient was a man, 38 years old, who was not known to have presented any abnormality up to the age of four years, when he fell from a third story window. Thereafter there developed weakness and wasting of the thighs and buttocks, with a peculiar waddling gait. The knee-jerks were preserved though enfeebled, as were also the electrical reactions though with qualitative diminution, but not with qualitative change. There was no fibrillary contraction, and sensibility was unaltered. The calves were not enlarged or indurated, and the scapulæ were not flaring. The patient climbed up his lower extremities in rising from the floor. Dr. CHARLES K. MILLS reported an instance of "Thumb-clonus in a case of Hemiplegia and Hemianesthesia." Dr. FRANCIS X. DERCUM presented "A Case of Adiposis Dolorosa with Joint Changes." The patient was a woman who, in addition to painful masses of fat about the arms and thighs, presented tenderness and want of mobility of the knee joints presumably due to deposition of fat. Dr. Dercum presented also a woman who exhibited multiple painful lipomata, and he considered this case likewise one of adiposis dolorosa. Dr. H. MAXWELL LANGDON presented a communication entitled "Report of a Case of Acute Encephalitis Superior of Wernicke." The patient was a man who in the sequence of an attack of influenza exhibited difficulty in the use of the lips, interference with the actions of the muscles of the eyes, and impairment of vision. Improvement to the point of practical recovery ensued under treatment with mercurials, sweats, and other forms of derivation.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

AT a stated meeting held January 3 Dr. JAMES TYSON read "A Memoir of the Late Dr. A. O. J. Kelly." Drs. GEORGE W. NORRIS and GEORGE FETTEROLF presented a communication entitled "The Anatomical Explanation of the Relatively High-Pitched and Less Resonant Percussion-Note Normally Found at the Right Pulmonary Apex." A study of frozen sections showed that the apex of the right lung is rather conical in shape, while that of the left lung is somewhat dome-shaped; also that the trachea lies in close proximity to the apex of the right lung anteriorly, while the descending aorta occupies a similar position posteriorly on the left; further, that the innominate, with its divisions, the right subclavian and the right carotid, is in more intimate relation with the right apex than are corresponding vessels on the left side with the left apex. The conditions described were found equally in left-handed and right-handed persons, and control examination of left-handed individuals showed that the physical signs are in general identical with those in right-handed persons.

Expressions of regret on the untimely death of Dr. Arthur V. Meigs, a former president of the college, were made by the president, Dr. G. E. de Schweinitz, by Dr. S. Weir Mitchell, and by the vice-president, Dr. J. C. Wilson. On behalf of the donors, Dr. A. P. C. Ashhurst and Mr. John Ashhurst, Dr. Richard H. Harte presented a portrait of the late Dr. John Ashhurst, Jr., a former president of the college. Dr. Hare read an account of Dr. Ashhurst's literary activity.

Announcement was made that Mr. Eckley B. Coxe, Jr., had proffered the ground rent on the lot to the south of the college building, on condition that it be reserved as a memorial to the late Dr. Wharton Sinkler. The lot itself had already been presented by the donor.

The annual election for officers resulted as follows: *President*, Dr. G. E. de Schweinitz (reelected); *Vice-President*, Dr. J. C. Wilson (reelected); *Secretary*, Dr. Thomas R. Neilson (reelected); *Treasurer*, Dr. Richard H. Harte (reelected); *Honorary Librarian*, Dr. Frederick P. Henry (reelected).

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. By Dr. L. KATZ, H. PREYSING, and F. BLUMENFELD. 382 pages; paper; price 3 M. Curt Kabitzsch, Publisher, Wurzburg.

OM MEDFODT HALSFISTLER OG ENDEL MED DISSE BESLEGTEDE ANOMALIER. By FRITHJOF LEEGAARD. 147 pages; illustrated; paper. Steen'ske Bogtrykkeri, Publisher, Kristiania.

ÄRZTLICHE STANDESPFLICHTEN UND STANDESFRAGEN. By DR. L. FISCHER. 189 pages; paper; price 4 M. Wilhelm Braumuller, Publisher, Leipzig.

TEXTBOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By JOHN J. REESE, M.D. Eighth Edition. Revised by D. J. McCARTHY, A.B., M.D. 660 pages; cloth; price $3.00 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

CLINICAL DIAGNOSIS. By JAMES CAMPBELL TODD, Ph.B., M.D. Second Edition. 460 pages; illustrated; cloth; price $2.25 net. W. B. Saunders Company, Publishers, Philadelphia.

DISEASES OF THE SKIN AND THE ERUPTIVE FEVERS. Second Edition, Revised. By JAY FRANK SCHAMBERG, M.D. 573 pages; with 235 illustrations; cloth; price $3.00 net. W. B. Saunders Company, Publishers, Philadelphia.

PHYSICAL DIAGNOSIS. Second Edition, Revised. By JOHN C. DACOSTA, JR., M.D. 557 pages; with 225 original illustrations; cloth; price $3.50 net. W. B. Saunders Company, Publishers, Philadelphia.

FOURTH REPORT OF THE WELLCOME TROPICAL RESEARCH LABORATORIES AT THE GORDON MEMORIAL COLLEGE, KHARTOUM, with Prospectus. Vol. A-Medical. ANDREW BALFOUR, M.D., Director. 404 pages; illustrated; cloth; price $5.00 net. Toga Publishing Co., Publishers, New York.

RETINOSCOPY. By JAMES THORINGTON, A.M., M.D. Sixth Edition. Revised and Enlarged. 71 pages; illustrated; cloth; price $1.00 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

PROCEEDINGS OF FIRST ANNUAL MEETING OF THE MEDICAL SECTION OF THE AMERICAN LIFE CONVENTION. Held in the City of Pittsburgh, Pa., September 20, 1911. 110 pages; paper.

FURTHER RESEARCHES INTO INDUCED CELL-REPRODUCTION AND CANCER. By H. C. ROSS. 63 pages; illustrated; cloth; price $1.00 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

REPORT OF THE SURGEON-GENERAL U. S. ARMY TO THE SECRETARY OF WAR. 1911. 253 pages; illustrated; paper. Annual Reports, War Department, Publishers.

PROGRESSIVE MEDICINE. By HOBART AMORY HARE, M.D., and LEIGHTON F. APPLEMAN, M.D. Vol. IV. 326 pages; illustrated; paper; price $0.00 per annum. Lea & Febiger, Publishers, Philadelphia and New York.

MANUAL OF OPERATIVE SURGERY. Fifth Edition. By JOHN FAIRBAIRN BINNIE, A.M., C.M. 1,153 pages; with 1,365 illustrations; cloth; price $7.00. P. Blakiston's Son & Co., Publishers, Philadelphia.

FORTY-SECOND ANNUAL REPORT OF THE STATE BOARD OF HEALTH OF MASSACHUSETTS. 630 pages; cloth. Wright & Potter Ptg. Co., Publishers, Boston.

MODERN SURGERY. By JOHN CHALMERS DA COSTA, M.D. Sixth Edition. 1,502 pages; with 960 illustrations; paper. W. B. Saunders Company, Publishers, Philadelphia.

HEREDITY IN RELATION TO EUGENICS. By CHAS. B. DAVENPORT. 208 pages; with 175 illustrations; cloth; price $2.00 net. Henry Holt & Co., Publishers, New York.

NEPHRITIS. By Dr. MARTIN H. FISCHER. 203 pages; illustrated; cloth; price $2.50 net. John Wiley & Sons, Publishers, New York.

THE CONTROL AND ERADICATION OF TUBERCULOSIS. By H. G. SUTHERLAND, M.D. 451 pages; illustrated; cloth. William Green & Sons, Publishers, Edinburgh and London.

A REPORT ON HEMOGLOBINURIC FEVER IN THE CANAL ZONE. By W. E. DEEKS, M.A., M.D., and W. M. JAMES, M.D. 177 pages; paper. Isthmian Canal Commission, Publishers.

SOZIALE PATHOLOGIE. By DR. ALFRED GROTJAHN. 601 pages; paper; price 18 M. August Hirschwald, Publisher, Berlin.

INTERNATIONAL CLINICS. Vol. IV. 21st Series. By HENRY W. CATTELL, A.M., M.D. 322 pages; cloth; price $2.00. J. B. Lippincott Company, Publishers, Philadelphia.

Medical Items.

Treatment of Acute Suppurative Peritonitis.—Marquis and Lafon report a mortality of only 30 per cent in 158 cases treated according to Murphy's method.—*Archives Générales de Chirurgie.*

Treatment of Cardiopathies.—Nobecourt says that in the presence of arrhythmia in a child one must not at once think of giving heart stimulants, but should seek out the cause of the arrhythmia, which may be due to changes in metabolism. Arrhythmia and tachycardia may be due not to heart disease but to nervous, orthostatic, or functional causes. They may result from anemia, dilatation of the stomach, constipation or diarrhea. If these troubles are first attended to one will find it unnecessary to give digitalis. There are true physiological arrhythmias occasioned by modifications of respiratory rhythm and nervous influences. Alimentary hygiene, hydrotherapeutic measures, physical treatment, and massage will relieve all of these troubles. All the infectious diseases affect the rhythm of the heart, and this is not always due to a true myocarditis. Applications of ice over the heart act as a tonic to the cardiac muscle. Subcutaneous injections of strychnine and sparteine are useful at the same time. The infectious diseases also cause a nephritis which brings about heart lesions. In cases of mitral insufficiency, as long as compensation is good, medication is useless, even harmful. Exercises should be neither too severe nor too slight. Rapid asystole may result from gastric troubles. Repeated acute attacks of rheumatism cause cardiopathies. Here respiratory gymnastics and graduated exercises of the arms and legs are valuable.—*Annales de Médecine et Chirurgie Infantiles.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended January 12, 1912.

Places	Date	Cases	Deaths
CHOLERA			
Austria Hungary: Croatia and Slavonia			
Total Oct 22–Dec 3: Cases, 31			
Sriem	Oct 22–Dec. 3.	31	.
Hungary			
Total Nov 19–Dec 9: Cases 16			
Torontal	Nov 19–Dec 9	16	2
Italy			
Dec 3–9; Cases, 27; deaths, 14			
Provinces: Caltanisetta	Dec 3–9.	3	3
" Girgenti	Dec. 3–9	24	11
Malta	Dec. 3–10	2	2
Montenegro	Nov 4–11.	9	5
Tunis Regency			
Total Nov 25–Dec 7: Cases 169, deaths, 210			
Beja district	Nov 25–Dec. 7.	30	35
Bizerta district	Nov 25–Dec. 5.	9	15
Turkey in Asia: Kharput	Nov 19–Dec 9.	29	22
Mersine	Dec. 1–7.	1	1
Turkey in Europe: Constantinople	Oct 24–30.	5	1
Saloniki vilayet	Nov 6–19	4	3
In Serres			
YELLOW FEVER			
Brazil: Para	Dec 9–16	1	1
Ecuador: Duran	Dec 1–15	3	2
Guayaquil	Dec 1–15	12	7
Milagroro	Dec. 1–15	7	1
Venezuela: Sabana Grande	Dec 12	.	.
Epidemic			
PLAGUE			
Brazil: Rio de Janeiro	Nov 26–Dec 2	1	1
Ecuador: Guayaquil	Dec 1–15	56	23
Russian Empire: Astrakhan, government	Nov 28–Dec 20	87	84
SMALLPOX			
Argentina: Buenos Aires	Oct 1–31		6
Rosario	Oct 1–31		25
Austria Hungary: Trieste	Dec. 3–9	1	.
Brazil: Bahia	July 1–31	.	1
Pernambuco	Oct. 16–Nov. 15.	.	179
Report for Oct. 1–15 not received			
Rio de Janeiro	Nov 26–Dec 2	1	1
Canada: British Columbia—Nelson	Dec 24–30	1	.
Ontario: Sarnia	Oct 17–23	1	.
Chile: Talcahuano	Nov 26–Dec 9	7	2
Valparaiso	Dec 3–9	43	.
China: Chungking	Nov. 18		Present
Hongkong	Nov 19–25.	7	4
Cuba: Habana	Dec. 19	1	
From German s. s. *Frankenwald* from Spain and Canary Islands			
Italy: Naples	Dec 9–16	8	
Palermo	Dec. 9–16.	371	103
Mexico: Aguascalientes	Dec 18–24	.	1
Coahuila, State	Oct 1–30		16
Mexico	Nov 26–Dec 9	4	2
Russia: Moscow	Nov 26–Dec. 9	2	2
Odessa	Dec 3–16	5	
St. Petersburg	Nov 26–Dec. 9	13	5
Spain: Valencia	Dec 9–16.	10	1
Switzerland: Zurich, Canton	Dec 3–9	1	
From the Orient			
Teneriffe: Santa Cruz	Dec 9–16		4
Turkey in Asia: Beirut	Dec 9–16	10	3
Constantinople	Dec. 18–24		4
Uruguay: Montevideo	Sept 1–30	6	2
Montevideo	Oct 1–31	13	1

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Original Articles.

SEXUAL DISORDERS IN THE MALE CLINICALLY CONSIDERED.*

By EUGENE FULLER, M.D.,

NEW YORK.

LOOKING back to the time when I was a medical student, an incident occurred which impressed me considerably. As a feature of the curriculum, I was assigned to a clinic, a part of my duty being to take the clinical history of a patient previous to his coming before the instructor for his diagnosis and comments. In the course of this work a man was assigned me whose chief symptoms were of a sexual nature. The man struck me as a severe sufferer. After noting carefully his symptoms, I brought the case before the instructor and commenced to detail my clinical notes. Hardly had I begun to do this, and as soon as it became evident that the case related to a sexual disorder, the instructor frowned upon the patient, gave him a sharp reprimand for allowing his mind to dwell on the subject, and waved him aside and out. My confidence in the instructor was shaken. I thought him ignorant as far as that patient's condition was concerned, as well as narrow minded. Further experience, however, showed me that this particular instructor had handled the case in what was then considered the approved, stereotyped manner. As far as I could see the only apparently congenial surroundings for sufferers of this class seeking medical advice were furnished by quacks or, at best, by off-color members of the profession. Conditions existing in those days have not changed much, as far as the rank and file of the profession is concerned, in this particular branch of medicine. One sees this often in the course of clinical lectures bearing on this subject. When questions relating to the sexual function are being asked of a patient, many in the audience laugh or snicker, while others await seemingly in the expectation that the professor has some lewd joke or purpose in mind as a reason for making such inquiries.

Genitourinary surgery is at present a well recognized department of medicine, and has assigned to it numerous skilled workers. Still, if one studies the work now being accomplished in this department, he will find that 95 per cent. of it is devoted to the urinary portion of this combined field of medicine, the genital end being largely ignored. So palpable is this discrepancy that I have often been led to remark in the course of my clinical teaching that genitourinary specialist is a wrong and misleading term when applied to many, the substitute term urinary specialist being really the proper one. As an illustration of this, some time ago I received an English cable from a patient of mine, asking me to cable back the name of a London specialist, which I did. This patient had an old seminal vesiculitis, which required from time to time some treatment to keep him comfortable. The patient has now returned, having been wholly unrelieved of the relapsing symptoms due to his seminal vesiculitis. I found the London authority had never questioned the patient at all regarding his sexual status and had never made a digital examination per rectum, but had explored most carefully the urethra, bladder, and kidneys, had found them in order, and had then simply expressed surprise at the persisting symptoms, which he stated he was wholly unable to account for. It is a queer and interesting matter of record that the American Urological Association, in its articles of incorporation, expressly prohibited the consideration or discussion of all genital or sexual topics in its proceedings. My attention was first called to this several years ago, when its secretary regretfully declined to receive a paper, which I offered to read before an annual meeting, because it bore on the forbidden topic. I am glad to say this curious restriction has recently been eliminated.

Now that so many neurasthenic, mental, and rheumatic conditions, formerly wholly dissociated in the popular as well as in the professional mind with sexual disorders, have been found to be dependent on lesions of the seminal vesicles, any lurking hesitancy against a study of the subject from reasons of prudishness ought to disappear.

In diagnosticating a genitourinary case, it is well to have some definite system, without which there is always special danger of error. The routine I follow in this connection is (1) the voluntary recital by the patient of his clinical symptoms, (2) the putting of questions to the patient bearing on the urinary function, (3) the putting of questions bearing on the sexual function, (4) questions relating to general physical and mental conditions, and among these are included those relating to family history. After this come the physical and special examination. The order here observed is (1) an external inspection and general examination, (2) observation of the act of urination and of the first portion of urine voided, (3) digital palpation per rectum of the prostate, seminal vesicles, and vesical floor, followed by the voidance of the remaining portion of the urine, (4) urethral examination and examination, if required, of the upper urinary tract. In carrying out this régime, the genital and the urinary conditions are equally and impartially considered.

I often find the clinical histories of my hospital cases very deficient as regards the sexual status, and, on calling the attention of the house staff to the fact, discover that, never having received any medical instruction on the subject in their undergraduate course, they really do not know the normal from the abnormal, and so are not able to ask intelligent questions bearing on the subject.

*Read before the New York Society of the American Urological Association, December 6, 1911.

Although I cannot in this short paper go fully into this particular, still a little should be said in the way of illustration. Suppose, for instance, a man reports, complaining of impotency. The clinical history as regards prognosis is of the greatest moment. If the clinical history shows that the impotency is an acquired condition, potency having previously existed, a very important fact is recorded. The fact that the normal function previously existed of itself rules out diagnostically the presence of numerous conditions. In arrested or nondevelopment of the sexual organs, in certain neurotic states, and in connection with primary mental defects, there would be no history of a lost function, the impotency being a primary condition. If the impotency is found to be an acquired condition many questions should be asked, the answers to which will aid not only in making an exact differential diagnosis but also and especially in determining the etiology and prognosis. If there has been self-abuse, the age at which it was initiated, the period covered by it, the frequency of its indulgence, and the nervous or reactive symptoms, if any coexisting, should be determined. The age at which sexual intercourse was initiated and the frequency of its practice subsequently should be asked. If intercourse was commenced at an early age, it should be determined whether a matured woman played the part of seducer or whether the act was practised with girls of a corresponding age. The importance of this point lies in the fact that a matured woman so getting control of a boy is usually of the nymphomaniac type, who so taxes the undeveloped organs of the boy as to frequently implant thereon crippling lesions of a very severe grade. If gonorrhea has existed, the patient's age at the time of the first attack should be noted, as well as the number and dates of subsequent attacks, together with the clinical history of the attacks, especially as to involvement of the epididymes and as to the coexistence of symptoms of sexual excitation such as priapisms, exacerbation of sexual desire, and painful or disturbing emissions. The comparison of the sexual function subsequent to gonorrhea with that previously existing should be determined. If none of the preceding factors are found to have existed, and a perfectly exemplary life void of all coitus has apparently been led in a man approaching middle age and unmarried, questions are apt to reveal the fact that for years, probably well up toward thirty, strong and apparently natural sexual desires existed, which through the exertion of a strong will, aided by moral convictions, he was able to suppress and control. Then followed a period in which control was an easy matter, the erections becoming few and feeble. Finally, around forty, the question of marriage being entertained, it was found that erections no longer occurred under normally exciting conditions and that the desire had fled. In another case, closely resembling the preceding one but in which more disturbing mental and nervous factors are usually present, there will be in the early history a record of much sexual teasing through caressing and fondling amorously inclined women, such actions not being associated with sexual intercourse. In this latter class it is unusual not to find a coexisting history of artificial relief through masturbation. In another class, the majority of these being married men, there will, before the time of the existing impotency, be a history of a long period, during which the sexual act had been practised in an irregular manner in order to avoid conception, the object being to withdraw the penis just previous to ejaculation. In getting the history of such sufferers, it will usually be found that for a period previous to the development of sexual weakness, there was one in which there seemed to be an unusual degree of strength, there being at that time developed a great ability to prolong unduly the period of coitus before the sensation of impending ejaculation became imperative and so served to terminate the act. In one extreme instance, illustrative of this condition, a record of continuous sexual connection for four hours was recorded, while a record of half an hour to an hour is not unusual. In these latter extreme instances, however, it may be, and not infrequently it is found, that, although priapism persists, it is no longer possible for the individual to excite his sexual center sufficiently to cause ejaculation to occur. In this connection it is well to emphasize the fact that questions in many cases should be asked bearing directly on the function of ejaculation itself. It may be found to be associated with pain, perhaps very acute or with local or more or less general discomfort or disturbance. Then again the emissions themselves may have at times been bloody or so stained. Emissions described as profuse in volume are more apt to be normal than otherwise, but ejaculations followed by a scant or by no discharge are a pathological phenomenon of importance, indicative of a crippling of the expulsive function.

Inquiry as to the previous existence of syphilis should be made, and, if there is any evidence pointing toward ataxia or the existence of a spinal lesion as a cause for the sexual disability, that should be recorded. The previous existence of perineal traumatism, septic conditions, typhoid, or other debilitating illness or dyscrasia should be noted.

With reference to the physical and special examinations to be made after the clinical history has been obtained, the evidence derived from the sense of touch in connection with the digital examination per rectum is of the greatest importance. In fact, unless a surgeon has such a trained touch, his diagnoses in the great majority of these cases are so inaccurate as to be little better than guesswork. Guyon used to say that a genitourinary surgeon should be able to see with his fingers, a truth so manifest that it should be classed as an axiom. Still, as far as the rectal touch is concerned, very few seem at all skilled or accurate in its use. I make this statement from my experience as a postgraduate teacher and also as a teacher of those just graduated, who occupy the positions under me of hospital internes. Very few indeed seem to be able to differentiate what they feel at all intelligently or accurately. Most class everything felt as simply prostate. Very few claim to be able to feel the seminal vesicles at all in any case. In the absence of practically all such skill, there is little use in expecting that a differential diagnosis could be drawn in case a lesion should exist in connection with any organ coming within the range of the feel. In order to develop accuracy in this particular, one's finger should first of all have some degree of pliancy. Next, the technique of the feel should be mastered in order that the tip of the finger may be able to attain the maximum degree of reach and of rotation. Then it is absurd to suppose that the finger tip can diagnosticate pathological conditions before it has become thoroughly acquainted with the varying degrees of feel associated with normal conditions.

In teaching I find that few among the uninitiated ever even think it worth while to digitally examine any cases except those in which they are told marked lesions exist. My advice, however, is to first practise the touch on as many normal cases as possible, and not to try to examine the pathological ones until the examiner has attained to some degree of proficiency in the technique, and until the feel of normal conditions is thoroughly recognized.

All the large group of sexual disorders which depend for their existence on a pathological condition of the seminal vesicles have to be diagnosticated by the feel presented to the finger tip introduced per rectum. The skilled finger does much more than simply diagnosticate the existence of a lesion. It is able to differentiate between the forms of lesions as well as the grade and the chronicity of a given form. Nor does the function of the skilled touch terminate here with the completion of the diagnosis. It has to be called upon further in connection with prognosis, and, most important of all, it plays the major rôle in both the palliative and the radical or operative forms of surgical treatment.

Stripping and massage of the seminal vesicles, the treatment I introduced to the profession eighteen years ago, is now so well established as to require no special mention. My operation of seminal vesiculotomy, a detailed summary of which appeared in an article in the MEDICAL RECORD, October 30, 1909, has proved itself at my hands to be a most satisfactory and radical operation in dealing with very severe and advanced lesions, for the cure of which the more palliative non-operative treatment of stripping and massage is not adapted. I feel warranted in making the preceding statement as to the great value of seminal vesiculotomy because of my wide experience with the procedure, having to date operated upon 224 cases without any mortality. In 95 per cent. of these cases the results have been satisfactory, both to myself and to the patients operated upon. In the small minority of cases the results have not been bad but negative, that is, the operation has not accomplished enough to have made it worth while. In most of these latter cases it has been subsequently discovered that some unrecognized dyscrasia coexisted sufficient to account for the negative results. Although the profession has shown much interest in this operation, comparatively few have made a trial of it, and most of those who have done so have been students of mine, who had previously had much experience in a close observation of the procedure. The reason for this is because the operation is in great measure performed under the guidance of the sense of touch, rather than that of sight, and very few surgeons have trained their sense of touch sufficiently to allow their trusting to its guidance in the performance of seminal vesiculotomy, or in fact of any other operation.

It is this same reason which has prevented and always will prevent the general adoption of litholapaxy as the operation of choice in the vast majority of uncomplicated cases of vesical calculus. The surgical rank and file stand for cutting into the bladder, on the ground of seeing both the stone and what they are doing, while the few skilled in the sense of touch get radically curative results with little danger or discomfort to their patients through a simple crushing of stone and washing out of the débris.

252 LEXINGTON AVE.

A LATENT HYPERNEPHROMA WITH A SOLITARY METASTASIS IN THE SPINE.

BY A. E. GARROW, M.D.,

AND

C. B. KEENAN, D.S.O., M.D.,

MONTREAL,

ASSISTANT SURGEONS, ROYAL VICTORIA HOSPITAL.

THE patient, J. W., aged 49 years, entered the Royal Victoria Hospital on September 23, 1904, under the care of Dr. Hamilton, complaining of pain in the dorsolumbar region of the spine with complete paralysis of his legs, and gave of his illness the following history: In October, 1903, he commenced to suffer from slight pain in the right upper quadrant of the abdomen which was often accompanied by gastric distress or even vomiting. In January, 1904, while under treatment by an osteopath, the pain came to be felt more in the umbilical region, and he then noted a loss of power over his rectum. In June, 1904, paresis of his legs commenced which rapidly increased to complete paralysis of the same.

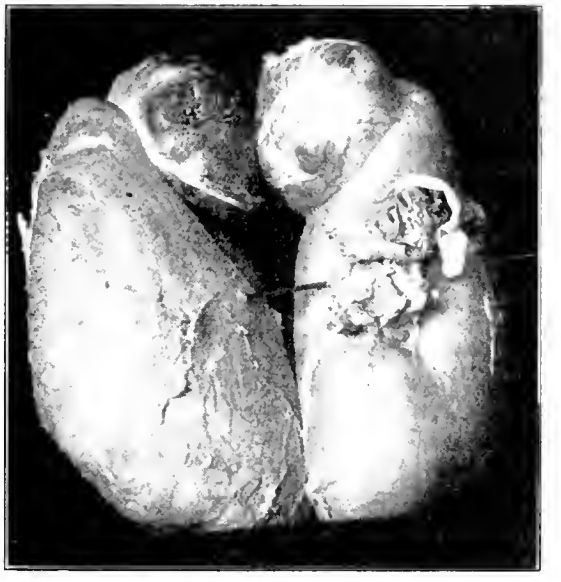

Fig. 1.—Photograph of the kidney as seen from without, showing small tumor mass in the upper pole

Examination of the patient on his admission to the hospital showed no other symptom of disease save the paraplegia above described and as this clearly was caused by pressure on the spinal cord in the lower dorsal region an exploratory operation was performed by Dr. Garrow on September 30, 1904. This revealed a tumor of the bodies of the tenth and eleventh dorsal vertebræ which projected into the spinal canal, compressing the cord. As the complete removal of the tumor with the infiltrated vertebræ was not feasible a small portion was removed for investigation by the pathologist, who later described the minute structure of the growth and termed it a sarcoma.

From the operation onward the patient became gradually weaker and died on February 27, 1905. The urine during the last two months of the patient's life showed a small amount of albumin but never any red blood cells.

Autopsy showed acute parenchymatous nephritis of both kidneys and an empyema on the left side. The tumor of the spine already diagnosed was found to be associated with a second mass, 5 cm. in diameter, on the upper pole of the right kidney, but care-

ful search failed to reveal a third tumor. The discovery of the growth in the kidney was of particular interest and necessitated an investigation of the relationship between the two growths, since the previous diagnosis of "primary sarcoma of the spine" appeared to be erroneous.

The position and the appearance of the second growth are clearly shown in the accompanying

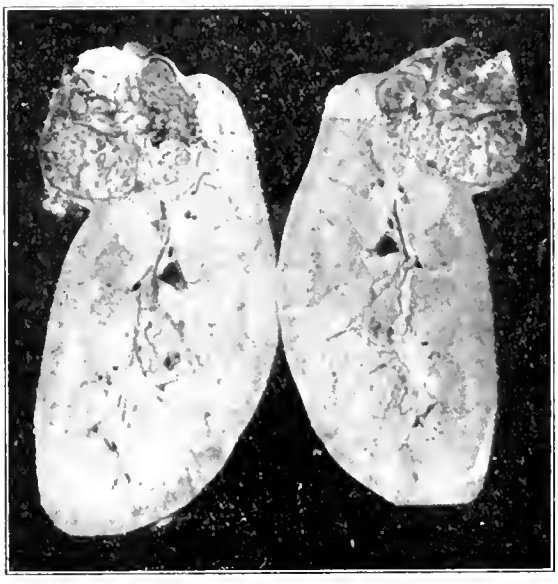

Fig. 2.—Photograph of the cut surface of the kidney

photographs (Figs. 1 and 2). The tumor lay partially embedded in the posterior-superior part of the kidney and the kidney capsule was found to be continuous with the tumor capsule. An endeavor to distinguish between the two microscopically by finding muscle cells proved unsuccessful. The tumor was of soft consistence, varied in color from a dull yellow to a brownish red, and the adjacent kidney tissue showed only such changes as are met with in acute nephritis.

As regards the growth in the spine, this was found to infiltrate the bodies of the lower dorsal vertebræ and form a mass projecting into the spinal canal so as to diminish its caliber though not infiltrating the dura. The accompanying photograph (Fig. 3) shows this plainly.

Investigation of the microscopical structure showed the two tumors to be the same; it will consequently suffice to present a detailed description of the kidney growth alone. The absence of bony trabeculæ in the latter allowed more easy study. The tumor possessed a complete fibrous capsule from which bands passed into the interior and formed a stroma. These bands frequently contained cells resembling those of unstriped muscle and were accompanied by vessels. Toward the center of the tumor the fibrous component was lessened to such a degree that only endothelial-clad vessels occurred. The stroma meshes were of varying size and shape, being sometimes circular and sometimes pillar-like, presumably varying with the plane of the section. Frozen sections demonstrated that almost all the cells were full of fat globules of varying size. A few of the kidney tumor cells did not show this fatty deposit, and it was absent in a considerable proportion of the cells in the spinal tumor. Both intra- and extracellular glycogen globules were found.

The tumor cells themselves were large and clear, having a well defined outline and a rather small round nucleus which was usually central in position. Some of the nuclei stained evenly and deeply, while others were markedly vesicular and contained a nucleolus. The cells were often longer than broad and stood perpendicularly on the fibrous stroma or on the thin-walled vessel to which they were related. In some places the free ends of opposing cells came to touch one another and thus produced a pillar-like

Fig. 3.—Photograph of the tumor in the spine. The latter has been divided by a mesial vertical cut.

arrangement identical with that seen in sections of the adrenal cortex (see Fig. 4). When the free ends did not come in contact the space so left appeared as if surrounded by columnar or cubical

Fig. 4.—The microscopic characters of the portion of kidney tumor which shows the columnar arrangement of cells. X 700.

cells and simulated the lumen of a tubular gland (see Fig. 5) or, in the larger examples, simulated cyst formation (see Fig. 6). Intermediate sizes were also seen. Some of these spaces were empty while others contained leucocytes or normal or disorganized blood. Occasionally inward projections

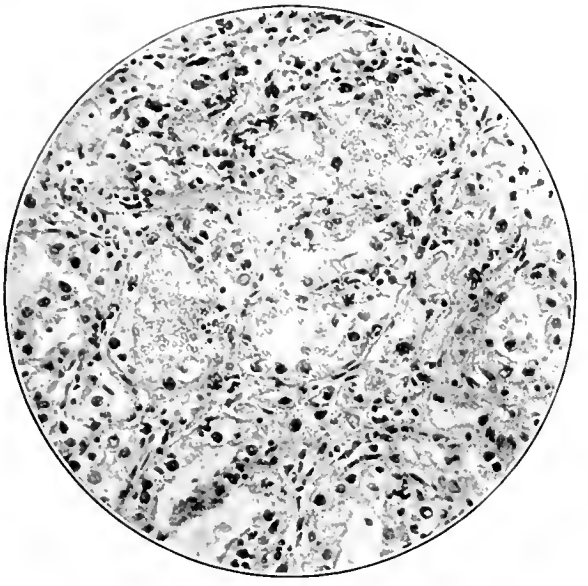

Fig. 5.—Portion of tumor showing acinous arrangement. X 350.

of the cyst walls were seen, and produced the appearance of a papillary cyst-adenoma (Fig. 6). In other places there were large irregularly shaped areas of cells lying edge to edge. Occasionally the cells were isolated, more deeply staining, cubical in shape, and surrounded by a rather hyaline looking stroma. The spinal tumor showed less marked grouping of the cells into columns and there was less fatty metamorphosis, especially toward the periphery of the growth. The cells varied more in size and shape and the nuclei were more variable in appearance.

The two special points of interest lie in the cor-

Fig. 6.—Portion of tumor showing vascular spaces. X 250.

rect classification of the tumor and the relationship between the two. For two tumors of almost identical histological structure to occur in such remote tissues without any other deposits must be very rare.

We judge the kidney tumor to be the primary growth because its structure is more typical and because urinary symptoms were insignificant. The diagnosis would therefore be one of "hypernephroma" as this is the commonest form of primary tumor in the kidney. As pointed out by Hildebrand,[10] and later by Hansemann,[9] endotheliomata and occasionally peritheliomata may occur in the kidney, but these forms are much more rare.

Tumor tissue of the form presented by our case may be derived from three sources—either from the cells of the adrenal cortex, or from endothelial cells of the lymph or blood spaces, or from overgrowth of the lining cells of the kidney tubules. The latter view was first offered by Sudeck[23] and was restated more recently by Stoerck,[22], but has been so ably refuted by Hildebrand[10] that it is only necessary to refer to this very thorough discussion of the subject. The second view—that the source of the tumor is endothelial—was first suggested by De Paoli[5] and Driessen,[6] the latter finding an almost identical tumor in the humerus from a patient who had no kidney disease—at any rate within fourteen months after the operation on the arm. The first view—that the tumor rises from adrenal cells—is substantiated by Loewenhardt,[13] Albrecht,[1] von Bergman,[25] Israel,[11] and Kuster,[12] who showed that a hypernephroma can give rise to a metastases without producing any other sign or symptom.

In 1894 Hildebrand reported three kidney tumors which were very like those of De Paoli and Driessen, but he classed them as peritheliomata because he regarded them as having arisen in the cells lining the perivascular lymph spaces. A careful study of the normal adrenal convinced him that it is built up in the same way; he found a pericellular reticulum both in the tumors and in the adrenal, just as had been noted by Arnold[2] and Flint.[7] He also found that the adrenal cells may present a gland-like lumen. This finding was confirmed by Pfaundler,[18] Marchand,[15] and Stilling,[21] who investigated not only the human adrenal, but also the the adrenal of the horse and dog. Stilling endeavored to prove that this gland-like lumen was a lymph sac. Hildebrand, in agreement with Rauber,[19] noted that the adrenal may contain capillaries clothed by two layers of endothelium, the outermost layer consisting of cells which would simulate peritheliomatous change if they proliferated. This close relation of the adrenal cells to the blood-vessels and the fact that the cortex develops as a perithelioma were pointed out by Brunns,[24] and verified by Braun[3] and Gottschau.[8] Hildebrand points out that this conception of the adrenal and of the hypernephroma is not vitiated by the view that the adrenal cells are mesothelial in origin (mesoblastic), as expressed by Janosik and Pfaundler[18] and accepted by Minot.[16] In other words, we would expect tumors arising from adrenal cells to present the structure of a perithelioma, just as do the tumors arising in the carotid gland (Paltauf[17]).

Hansemann[9] also considers that many of the so-called Grawitz tumors are endotheliomata, and refers to the minute hemangiomata and lymphangiomata which are occasionally found in the kidneys at autopsy in support of his view. Lubarsch,[14] on the other hand, strongly criticises Hansemann's conclusions, bringing forward all the evidence which supports the views already mentioned.

More recently the discussion was centralized on the problem of the genetic relations between hypernephromas and adrenal tissue, and a recent contribution by L. B. Wilson and B. C. Wilson[26] deals mainly with the idea that the Grawitz hypothesis is

as unsatisfactory as the Stoerck theory. Attention is drawn to the heterogeneous tissue-types which go together to form the complex known as hypernephroma, and the deduction is drawn that a renal tubule origin is inadmissible on that ground alone. The developmental sequence of the kidney and adrenal is demonstrated to be associated with the opposite sides of the Wolffian body, so that the adrenal cortex is not likely to become included in the kidney from anatomical grounds. On the other hand, islands of Wolffian body may be seen to come into close connection with the permanent kidney. Further, there is the fact that the normal adrenal never shows tubule or papillary formation, whereas the hypernephroma does. Wilson concludes that the adrenal rest is of Wolffian origin, and that the hypernephroma arises from islands of nephrogenic tissue (primitive renal blastema) and has no connection with an adrenal rest at all.

Davis[4] reported a case which he considered as endotheliomatous histologically and probably mesotheliomatous in origin. In discussing the question of adrenal cell origin he inclines to favor the view that the observations of Steinke on hypernephroma in the adrenal glands of horses and cattle form the only real objection to Stoerk's hypothesis.

Sisson,[20] arguing from the chemical nature of the fat contained in the hypernephromata of cattle and of the Grawitz tumors in man, does not agree with Steinke in considering that there is any parallelism between the two, and does not consider that such observations in veterinary pathology supply a decisive argument one way or another. He further points out that there is no very definite chemical difference between the fats of a degenerating kidney and the fats of an adrenal tumor, although he finds that the presence of doubly refractive crystals uniformly distributed through areas in a section is much more characteristic in adrenal adenomas than it is in a Grawitz tumor.

The conclusions to be drawn from the discussion presented by the literature seem to be that hypernephromata and endotheliomata (*i. e.* hemangio-endotheliomata and lymphangio-endotheliomata) do occur in the kidneys as tumors of varying size and malignancy; that peritheliomata cannot be differentiated from hypernephromata by their morphology, and that endotheliomata may present all stages from flattened endothelium to columnar cells, in single or in multiple layers, with lumina invariably present. The site of the tumor, the amount of degeneration, of fatty metamorphosis, of glycogen infiltration, are all points of minor importance.

In the tumors of the present case the resemblance to adrenal cortex is evident, and the lumina which are present here and there are presumably of the nature of lymph spaces. Where blood is present this seems to be the result of accidental extravasation. The growing edge of the spinal tumor shows a more sarcomatous appearance.

The clinical history shows that tumors of this kind may give rise to metastases before they make their presence suspected either by local pain or by hematuria.

REFERENCES.

1. Albrecht: *Centralblatt f. Chirurg.*, 1905, V. 32, p. 122.
2. Arnold: *Arch. f. path. Anat.*, 1860, V. 34, S. 64.
3. Braun: *Archiv f. Anat. u. Entwicklungsgesch.*, Leipzig, 1833, p. 412.
4. Davis: *Archives of Internal Medicine*, 1911, p. 60.
5. De Paoli: *Ziegler's Beitr. f. path. Anat.*, Bd. 8, 1890, p. 140.
6. Driessen: *Id.*, Bd. 12, 1892, p. 65.
7. Flint: "Contributions to the Science of Medicine" (Welsh Festschrift), Baltimore, 1900.
8. Gottschau: *Archiv f. Anat. u. Entwicklungsgesch.*, Leipzig, 1883, p. 412.
9. Hansemann: *Zeitschr. f. klin. Med.*, 1902, Bd. 44, p. 1.
10. Hildebrand: *Arch. f. klin. Chirurg.*, Bd. 47.
11. Israel: *Arch. f. klin. Chir.*, Bd. 47.
12. Kuster: *Deutsche Chirurg.*, 1896-1902.
13. Loewenhardt: *Deutsches Zeitschr. f. Chirurg.*, Bd. 28, 1888.
14. Lubarsch: *Zeitschr. f. klin. Med.*, Bd. 44, 1902, p. 491.
15. Marchand: "Festschrift für Virchow," 1899, Bd. 1.
16. Minot: "Human Embryology," 1892.
17. Paultauf: "Zeigler's Beitrage," Bd. XI.
18. Pfaundler: Sitzungsberichte d. kaiser. Akadem. der Wissenschaft in Wien, Bd. 101, 3 Nov., 1892.
19. Rauber: "Zur feinere Structure der Nebenniere, Dissert. Rostock."
20. Sisson: "Beitr. z. path. Anat." (Ziegler), Bd. 49, 1910, p. 476.
21. Stilling: *Archiv f. klin. Med.*, Bd. 109, 1887, p. 324.
22. Stoerck: "Zeigler's Beitr. z. path. Anat.," Bd. 43, p. 393.
23. Sudeck: "Virchow's Arch. für path. Anat.," Bd. 133, p. 1.
24. Brunns, V.: *Arch. für mikros. Anat.*, Bd. 8, p. 620.
25. von Bergmann: Verhand. des 16 Congress. der deut. Gesell. f. Chir., 1887.
26. Wilson: Collected papers, Mayo Clinic, 1910, p. 419.

PERNICIOUS ANEMIA CAUSING SPINAL CORD CHANGES AND A MENTAL STATE RESEMBLING PARESIS.*

By CARL D. CAMP, M.D.,

ANN ARBOR, MICH.

CLINICAL PROFESSOR OF DISEASES OF THE NERVOUS SYSTEM AT THE UNIVERSITY OF MICHIGAN.

J. E. M., age 46; German; married; occupation, a merchant; was admitted to the Hospital of the University of Michigan, on November 14, 1911, and the following history was obtained from him and his physician, Dr. Bassett of Grand Rapids. His father died of apoplexy and his mother died of pneumonia. His brothers and sisters are well, and there is no history of any insanity or nervous affection in his family. His wife and all his children are well. The patient had typhoid fever in 1885, but no other serious illness in his lifetime. He particularly denied having had any venereal disease and there was no reason to suspect that he had had. He used no alcohol or tobacco and was never addicted to drugs. About three years before coming to the hospital he rather suddenly began having some difficulty in walking of about the same character as he had on his admission. This had not increased or diminished in that period. Aside from this he complained only of some indigestion and constipation and, at times, of cramp in the muscles of the legs. His physician stated that at times he has had attacks of ill temper in which he broke furniture and which frightened his family. He explained these attacks by saying that after the typhoid fever he developed a violent and uncontrollable temper. He said that he had but little trouble in his home, however, until a physician told his family that he was dangerous, after which they took elaborate precautions, bolting doors carrying revolvers, etc., which irritated him.

On his admission to the hospital he appeared somewhat emaciated and nervous, but mentally normal. His memory was good and he seemed intelligent, good natured, and had no hallucinations or delusions. He walked with a spastic, ataxic gait which was made much worse by closing the eyes. He could stand well with his eyes opened, but swayed

*Read before the Detroit Society of Neurology and Psychiatry, December 7, 1911.

and would fall with his eyes closed. There was no paralysis anywhere, but flexion of the thighs on the abdomen was weak. The pupils reacted normally to light and in accommodation. There was no extraocular palsy and no nystagmus. There was no paralysis of the face or tongue. The masseters contracted normally. The supraorbital reflexes were present. The special senses were apparently normal. Deglutition was normal. The speech was somewhat slurring in character, but this might have been due to a German accent or to the ill-fitting false teeth that he had. The biceps and triceps jerks were normal and equal on the two sides. There was no ataxia or intention tremor in the finger-to-nose test and there were no forced movements. All forms of sensation were normal in the upper extremities. The knee jerks were diminished and the Achilles jerks were not obtained on either side. Tactile and pain sensibility was normal in the feet, but there was a complete loss of sense of motion and position in the toes on both sides. Plantar irritation caused a dorsal movement of the toes on both sides. There was normal tenderness of the tendo Achillis on pressure. No atrophy or deformity of the hands or feet was observed and there was no deformity or tenderness of the spine. The nerve trunks were not tender to pressure. A general physical examination made at this time showed the thoracic and abdominal organs to be normal. The blood pressure was 120. The examination of the urine showed no abnormal constituents. The blood examination showed red blood cells 2,900,000 per cmm., leucocytes 7,300, hemoglobin 80 per cent. The differential leucocyte count showed polynuclear 42 per cent., large lymphocytes 17 per cent., small lymphocytes 12 per cent., eosinphiles 6 per cent., mast cells 2, transitionals 3, degenerate type 18 per cent. The Wassermann reaction was reported negative by Dr. Ide, from the State Psychopathic Hospital. He was given Fowler's solution 5 minims t.i.d. and Blaud's pill, 5 grains t.i.d.

A lumbar puncture was done October 31, 1911, and 15 c. c. of cerebrospinal fluid withdrawn. It was under a low pressure and was clear and colorless. Lymphocytes were four per cmm., counted in a counting chamber immediately after withdrawal. The Noguchi butyric-acid reaction was negative; also both phases of the Nonne-Apelt reaction. The carbolic acid test of Pandy was negative. Reducing substance was present in slightly greater amount than usual (1 c. c. Fehling's solution completely reduced by 9 c. c. cerebrospinal fluid). Acetone was absent. The Wassermann reaction was negative.

November 2, 1911. He complained during the night of severe pain in both sides of his abdomen, but none in the center. It lasted from midnight until 5 A. M. There was no nausea or vomiting. An examination similar to the one above detailed showed no changes in his condition.

November 3, 1911. The patient much excited. He says that: he "has discovered the key to his condition," he "can be cured," "Christian science is wrong and the doctor is right," he has "ataxia," "ataxia is something that is all over," "he can show the doctor how to build hospitals and cure everybody." He is much exalted and it is impossible to fix his attention on anything outside of himself. His speech is clear. He pronounces test words "truly" "rural" well, but repeats "third riding artillery brigade" as "third riding artillery parade" and gets the last word wrong on repeated attempts, although he can pronounce the word "brigade," by itself, normally. He is perfectly oriented and knows the day of the week and the date, and can give a fairly good account of being in the clinic the day previous.

November 5, 1911. The blood examination showed the same condition as at previous examination.

November 6, 1911. The patient says that "he has a new theory of disease that will revolutionize the world." He believes that he has "the key to the diseases." He is very positive of this. Looking at a chair near the bed, he states, "As sure as this chair stands there; and this chair was built according to the same theory by which I expect to revolutionize the world." He believes that through this theory he is going to become great. He says that he is not as yet ready to reveal this theory, but some day when the medical staff of this hospital can get together he will give them the secret. He is very cheerful and talkative, recognizing all the doctors by name and calling them to him to express his ideas. In addition, he writes long statements of his ideas to be sent to them and to the newspapers.

From the 7th of November on he frequently refused to take his medicine, saying that it was poison, but gave no reason why any one should want to poison him. He was discharged from the hospital November 14, 1911, having continued in about the same mental and physical condition during the previous week except that for one day he was depressed and sullen because he was refused permission to lecture to the other patients. His treatment with arsenic and iron was kept up during his stay in the hospital. Before leaving he was examined by Dr. Hewlett, Professor of Medicine at the University, whose blood findings were 3,700,000 red blood cells, 5,500 white blood cells, hemoglobin 87 per cent. Differential leucocyte count: polynuclears 63 per cent., lymphocytes 26 per cent., transitionals 1.2 per cent., eosinophiles 3 per cent., basophilos 6 per cent., degenerate 5 per cent., many platelets, marked poikilocytosis, and some polychromasia. Dr. Hewlett's conclusion was, "Pernicious anemia, probably in the stage of remission."

The examination in the above case pointed to lesions in both the posterior and lateral columns of the spinal cord; the former shown by the ataxia, Rombergism, sensory changes, and lost Achilles reflexes, and the latter by the spasticity and the positive Babinski reflex. The positive Babinski and spasticity would preclude the diagnosis of uncomplicated tabes, as would also the absence of any change in the pupillary reflexes, and the absence of any characteristic crises, lightning pains, and bladder disturbance. If a tabo-paralysis were thought of we would still have to account for the absence of the Argyll-Robertson pupil and the negative Wassermann reaction. The negative findings in the cerebrospinal fluid are almost conclusively against the diagnosis of paresis or any syphilitic or parasyphilitic disease of the brain or spinal cord. There was no history obtainable of any toxic factor, such as lead or alcohol, as a cause of the spinal cord changes.

That pernicious anemia can cause changes in the central nervous system, and especially in the posterolateral columns of the spinal cord, is well known through the writing of Putnam, Burr,[1] Collier,[2] Russell, Clark,[3] Lloyd,[4] Nonne,[5] Henneberg,[6] Crouzon,[7] E. Miller,[8] and many others of all

nationalities. Fewer authors, however, have called attention to the mental symptoms, though Addison and Zichen have mentioned some mental changes in describing pernicious anemia.

Marcus,[9] in 1903, described a case so similar to the one reported here that I present an abstract of the important features: The patient was thirty-seven years old, with no history of syphilis or alcoholism. He rather suddenly developed delusions of grandeur, wanted finer lodgings and bought large quantities of merchandise for which he could not pay. His examination showed the pupils equal and reacting to light and in accommodation. There was no speech defect. I quote: "He was difficult to keep quiet in bed. Always wanted to see the doctors to talk over his condition and gave long, mixed-up, quasiscientific explanations of his condition, his circumstances, and his plans for the future. When the doctors were tired of listening and went away he would write out his ideas and send them. He had some signs of affection of the spinal cord, but when asked he complained of nothing, but said he had been smoking too much and only needed rest. He was well oriented for time and place and had no hallucinations or illusions." He was treated with arsenic and completely recovered.

The author speaks of the resemblance of the condition to paresis, but rules out such a diagnosis by the absence of a specific history, the sudden onset and the favorable termination. He concludes by saying, "It is of great importance to know that a condition so closely resembling general paralysis can be caused by pernicious anemia." In the following year, Pickett[10] published a paper on the "Mental Symptoms Associated with Pernicious Anemia" in which he mentions five cases, but only describes the mental state in one of them. In this case the patient became suddenly delusional, said that his wife had tried to poison him, that the nurses and doctors were in a conspiracy against him, his hands exuded poison, etc. Pickett states that "the patient was not disoriented and could talk clearly of other matters." He tries to classify it as a case of Meyment's amentia of the symptomatic type.

Recently Siemerling[11] has recorded another case of spinal cord changes and psychosis occurring in pernicious anemia, of especial importance because the necropsy findings and also the histological examination of the brain and spinal cord confirmed the clinical diagnosis. The symptoms in this case are very similar to those in the case reported in this paper. In Siemerling's case the patient was thirty-nine years old. He had had syphilis ten years before and had used alcoholics up to six years before his illness. There were signs of posterolateral sclerosis, due apparently to the anemia, which was of the pernicious type. The red blood cells were 2,800,000, with megaloblasts and marked poikilocytosis. The first mental symptom noted was causeless fits of bad temper. Later he became fretful and somewhat sad because he thought his wife would not understand and forgive his attacks. After his admission to a hospital he would not take his medicine one day "because the doctors were trying to poison him." The next day he told his brother that he would not take his medicine when he was not sick; he was only sick in his imagination and no doctor could help him. "His wife was good to him, but could not forget his fits of temper." When his brother asked him if he was being poisoned he replied evasively by an epigram. He knew his location, the date of the month, day of the week, etc., and his doctor's name. He answered questions, said that he felt good, had no pain. He believed that he knew what was the matter with him better than his physicians, for he said that "the stiffness was due to having glass inside him." He gradually grew worse and died.

The spinal cord showed degenerative changes in the posterolateral tracts typical of pernicious anemia. The brain showed no atrophy, no degeneration, and no changes in the blood vessels. Siemerling would ascribe some of the mental symptoms in this case to alcohol, but there were none of the symptoms commonly alcoholic in origin, such as tremor-hallucinations, disorientation or fabrication, and the patient had stopped using alcohol six years before his illness. The patient had had lues ten years before, but the diagnosis of paresis was in this case entirely ruled out by the negative autopsy findings.

It would seem that the mental symptoms shown by these patients were very similar in each case: attacks of anger usher in the cases, but accompanied by some feelings of regret after they have passed. Delusions of being poisoned are frequent, but the delusions are entirely unsystematized. Mental exaltation is present with grandiose ideas, especially with respect to his own condition. There is no disorientation for time or place, no memory defect, no hallucination or fabrication such as seen in Korsakoff's syndrome. The mental state most closely resembles paresis, though there hardly seems to be as much intellectual disturbance as is usual in any case of dementia and the anger and suspicions are rather foreign to the usual paretic type of case.

In the case reported and in those quoted there were no pupillary signs, optic atrophy, or convulsive seizures. According to Van Wart,[12] these phenomena may also be caused by pernicious anemia so that there may be cases in which these symptoms might be combined with the above-described mental state and so lead to even greater difficulties in diagnosis. It seems to be of scientific interest as well as the greatest practical importance to know that pernicious anemia can be the cause of a syndrome of nervous and mental symptoms that so closely resembles paresis that a clinical differentiation between them cannot be made with certainty without the examination of the blood and cerebrospinal fluid.

REFERENCES.

1. Burr: *University Medical Magazine*, April, 1895.
2. Collier: *Brain*, 1900, page 30.
3. Clark: *Brain*, 1904, page 441.
4. Lloyd: *Journal of Nervous and Mental Diseases*, 1896, page 225.
5. Nonne: *Archiv f. Psych.*, Bd. 25, S. 241.
6. Henneberg: *Archiv f. Psych.*, Bd. 40.
7. Crouzon: "Nouvelle Iconographie de la Salpêtrière," 1904.
8. E. Miller: *Zeitschrift f. Nervenheilk.*, Bd. 29.
9. Marcus: "Psychose bei perniciöser Anämie," *Neurolog. Centralbl.*, Bd. 22, S. 453, 1903.
10. Pickett: "Mental Symptoms Associated with Pernicious Anemia," *American Journal of the Medical Sciences*, Vol. 127, page 132, 1904.
11. E. Siemerling: "Rückenmark-erkrankung und Psychose bei perniciöser Anämie," *Archiv f. Psych.*, Bd. 45, S. 567, 1909.
12. Van Wart: *Medical News*, Vol. 86, page 56.

924 Baldwin Avenue

DIAGNOSIS OF OBSCURE CONDITIONS OF THE COLON WITH THE AID OF THE RONTGEN RAYS.*

By FRANK C. YEOMANS, M.D.,

NEW YORK,

SURGEON, PENITENTIARY HOSPITAL; ASSISTANT SURGEON N. . POLYCLINIC HOSPITAL.

RONTGENOLOGY has greatly enriched our knowledge of the physiology and pathology of the digestive canal. In recent years the rays have been applied in the domain of diagnosis of obscure intestinal lesions where it is on a par with and, indeed, often exceeds in value the exploratory laparotomy without incurring the risks of the latter. The Röntgen rays are absorbed by the tissues of the body in proportion to their density. The denser the object the darker is the shadow in the print, which serves to outline or differentiate one organ or tissue from another. Evidently, then, a radiograph of the abdomen without previous preparation of the patient would be worthless as it would not differentiate, or at best would only show here and there a light area (collections of gas) or rarely a dense tumor.

Various agents have been used to bring the hollow viscera out in contrast. At first sounds as of rubber or lead were tried but discarded as impractical except for the ureters. Next came in favor distention with air, *e.g.* inflating the stomach by a Politzer bulb attached to a stomach tube *in situ*, or the colon by air introduced through the rectal tube. The disadvantages of this method are that the definition of the shadows made by air is not clear and that the distention distorts the normal relations of the organs. Still, inflation has its uses, though limited, in the diagnosis of tumors of the colon, particularly to differentiate intra- from extra-intestinal growths.

Cannon[1] was the first to conduct *x*-ray experiments on live animals (cats) during normal digestion, using bismuth as the insoluble medium, opaque to the rays. He gave a meal in which bismuth was mixed and thus observed the filling and emptying of the stomach. Later he and many others[2], both here and abroad, extended the experiments with bismuth and other insoluble media, observing the progress of the ingesta through the entire digestive tract of both animals and man. Thereby the topography, relations, physiology, and pathology of these organs have been established on a basis far more scientific than was hitherto possible.

Apart from the duodenum and terminal segment of the ileum, the radiograph adds little to our knowledge of the small intestine. Its greatest value lies in observations upon the esophagus, stomach, and colon and it is to the colon especially to which I wish to call attention.

There are two ways of filling the colon with bismuth: by ingestion (bismuth meal) and by clyster. To employ bismuth by mouth for pictures of the colon is tedious, entails infinite patience and cooperation on the part of both radiographer and patient, and besides is usually unnecessary as will be shown later. A series of plates must be taken and even in normal individuals the best one can do is to strike an average as to the period of time that must elapse from the ingestion of the bismuth till its appearance at conventional points in the intestinal tract.

*Read before the Harlem Medical Association, January 3, 1912

If the bismuth clyster should fail to establish the diagnosis, the meal should be insisted upon as it is invaluable for locating obstructive lesions above the cecum, particularly in the terminal ileum and pylorus.

Fortunately this will rarely be necessary, as experience teaches that the vast majority of intestinal conditions for the diagnosis of which the *x*-rays are indicated are located in the colon. The method of choice, then, is first to employ the clyster, which is simple in technique, requires little time, and demonstrates at once the abnormal point or points, if any, in the colon. The writer has reached this conclusion not on theoretical grounds alone, but from an experience based on a large number of observations.

The technique, briefly, is as follows: The preparation of the patient is of prime importance. Its purpose is to secure an empty colon. Feces, especially scybala, obstruct the passage of the bismuth and render good radiographs impossible. The patient is placed on a light diet for forty-eight hours. Castor oil, 1 ounce, is given each night and a full dose of salts, magnesium sulphate ½ ounce, or magnesium citrate 6 ounces, the following morning. No enemas are necessary. Ten to fifteen minutes before the exposure a clyster of bismuth subcarbonate suspension is administered slowly from a fountain syringe through a short nozzle, the patient being preferably in the Sims' posture, though the knee-chest or lithotomy positions may be used in certain cases. The bismuth clyster always traverses the colon to the cecum unless prevented by a real mechanical obstruction—kink, stricture, growth, or feces. The exposure is made with the patient lying prone on the plate. Another radiograph should be taken at once in the vertical position. Should these not prove satisfactory the examination should be repeated at a later date, using the clyster alone or the bismuth breakfast and later the enema if the ingested bismuth is markedly delayed at any point

In any case the order of the examination is:

A. Clinical, including an accurate history; inspection, palpation and percussion of the abdomen; direct inspection of the rectum and sigmoid by the pneumatic, electrically lighted sigmoidoscope; examination of stool after a test diet; discharge for ameba and tubercle bacilli; a Wassermann test of the blood if there is a history of lues or if stricture is present, and a urinalysis of a twenty-four-hour specimen. In the vast majority of cases some one or a combination of several of the above procedures will establish the diagnosis. For example, the colonoscope, when it can be passed, and it usually can, will detect any lesion in the segment of bowel below the apex of the sigmoid and fortunately most diseases of the large intestine are located here.

B. Radiographic. Because of the inconvenience and necessary expense, the physician will resort to the Röntgen rays in obscure cases only; those that still baffle us after exhausting all the routine methods. The radiograph, then, will often be invaluable, a revelation indeed.

The symptoms and signs calling for a Röntgenological examination, after failure of the usual clinical methods, are: (*a*) Pain—in addition to that often present in the epigastrium and common to many an abdominal irritation—colicky or distensive in character, in close association with and dependent upon the particular part of the colon involved (*b*) Constipation—with or without symptoms of

chronic autotoxemia; the higher the obstruction in the colon the greater the toxemia. (*c*) Tumor—palpable or suspected. (*d*)—Abnormal constituents of stools—mucus, pus, or blood.

C. In the presence of an abdominal tumor inflation of air may enable one to determine whether the growth is intra- or extracolonic.

D. Examination under general narcosis or with the patient submerged in a hot bath. Bimanual examination under general anesthesia is carried out by inserting the two first fingers into the rectum, making counter pressure above the pubes with the other hand. With two fingers the examiner can reach about one inch higher than with one finger and growths in the lower limb or sigmoid can be felt through the anterior rectal wall. By changing the position of the patient, as from back to side, a wider area can be palpated as in the search for movable tumors.

E. Finally, in cases of sufficient severity, the exploratory incision must be resorted to, with consent on the part of the patient and preparation by the surgeon to carry out any operative procedure that may be indicated.

Interpretation of the plate.—It is axiomatic that the Röntgenologist establishes facts which the clinician must interpret. The experienced Röntgenologist does not desire and in practice I have found it best not to give him a detailed history of the patient, but simply to call attention to the salient features, as previous operations, etc., and to the particular part one wishes emphasized. Then interpretation of the plate is without bias. The physician, with the advantage of the knowledge of his own clinical findings, confirms and corrects the radiographic diagnosis. It is not surprising that the latter is sometimes incomplete. This, however, does not detract essentially from the value of the picture to the clinician. The radiograph almost invariably shows the site of the lesion and its character—kink, growth, etc.,—and the physician must gain accuracy in determining its nature—tuberculosis, syphilis, carcinoma, etc.—by experience in harmonizing subjective symptoms and clinical findings with the radiographic facts and observations at operation. In proof of the fact that accuracy of diagnosis can be developed to an almost infallible degree, I need only to cite the recent work of Drs. Clairmont and Handk of Jena in which there was not a single error in one hundred consecutive cases of stomach lesions as proved at operation.

In cases requiring surgical intervention this is invaluable, for it enables one to plan his operation in advance and to attack directly the diseased part, thereby saving much time and needless handling of viscera, which spell shock. Moreover, the radiograph will often give a cue of a lesion, particularly bands or adhesions so common about the colon, which, without its aid, might be readily overlooked even at operation.

Our knowledge of the pathology of the colon will also be invaluable in this connection. Knowledge of the possibilities will suggest the probabilities. For instance, angulations of the colon may be due to bands or adhesions from inflammatory processes, as sigmoid to tube or ovary, or two segments of bowel may adhere to each other; or, again, there may occur ptoses of any part or of the entire colon (and flexures), which may be tremendously lengthened and assume many forms roughly classified according to the fancy of the observer, as V-shaped, M-shaped, etc.

Exaggeration of the angles at the hepatic and splenic flexures may be apparent only as the shadow of the ptosed transverse colon may coincide with those of the upper ends of the ascending and the descending colon. To avoid error one has only to remember, however, that the transverse colon is on a more anterior plane. If possible determine the length of the sigmoid, bearing in mind that a long obstructive sigmoid may be associated with a normal colon.

A tumor may occlude the bowel in part and cast a narrow shadow like a stricture; or, crater-like, give a characteristic worm-eaten appearance. If a tumor is suspected, but not demonstrable by the bismuth clyster or palpable, a bismuth meal will be helpful.

Strictures usually begin in the rectum. When their calibre is so narrow that a small tube cannot be passed through them to inspect and define their upper limits, a radiograph must be taken immediately after administering a bismuth enema. This is imperative in anticipating rational surgical intervention.

Illustrative Cases.—The appended cases selected from a large number illustrate the value of radiographs as an aid to diagnosis of obscure conditions of the colon. These cases are suggestive only and are presented in the hope that they will stimulate others to employ the *x*-rays to clear up the diagnosis in that large and pitiable group of patients that goes from hospital to hospital and from one physician to another without obtaining relief. Experience, judgment, and skill are requisite on the part of the Röntgenologist to secure good results, especially in obese subjects. All of the radiographs were made by Dr. Lewis Gregory Cole, to whom I am greatly indebted for his kind cooperation.

Case I.—Mrs. C., widow, no children, aged 40 years, was referred to me in March, 1908. Chief complaint constipation, discharge of blood and pus from rectum, and pain over right iliac fossa. No history of lues. Examination showed a stricture two and a half inches above anus which would not admit tip of finger. This stricture had been cut five years before and again three years later, but as after-treatment was neglected it had recurred. By means of gradual dilatation with Wales' bougies the stricture was enlarged till a No. 8 could pass. The proctoscope now showed the stricture to be two and a half inches in length, the mucosa above this point being healthy. With an occasional laxative the bowels became regular, the discharge diminished, and the patient gained weight, but the pain persisted in the right side and simulated chronic appendicitis.

December 1, 1910, a radiograph was made (Fig. 4). Radiographic diagnosis: "Cecum is normal, there is apparently no ascending colon, transverse colon traverses abdomen from crest of ilium to a point on left side about opposite third lumbar ver-

Explanation of Plate.

Fig. 1.—Normal colon; C, cecum, the largest diameter of any part of the colon; H, hepatic flecture; T, transverse colon; B, splenic flexure; D, descending colon; I, iliac sigmoid; S, pelvic sigmoid. There is no obstruction at the splenic flexure, for the ascending limb of the transverse colon is on a more anterior plane than the descending colon.

Fig. 2.—Normal sigmoid and rectum. I, iliac sigmoid; S, pelvis sigmoid; R, rectum.

Fig. 3.—Normal rectum (R).

Fig. 4 (Case 1).—C, cecum; T, transverse colon; T, L, loop of transverse colon overlying descending colon; B, splenic flexure; S, sigmoid; X, bismuth in small intestine.

Fig. 5 (Case 2).—H, hepatic flexure; B, splenic flexure; S, sigmoid, long loop; R, rectum; X, absence of bismuth between sigmoid and rectum.

Fig. 6 (Case 3).—C, cecum; H, hepatic; B, splenic flexure; S, sigmoid; R, rectum; A, adhesions (?) between sigmoid and cecum (none found at operation); X, loop of small intestine.

Fig. 1.

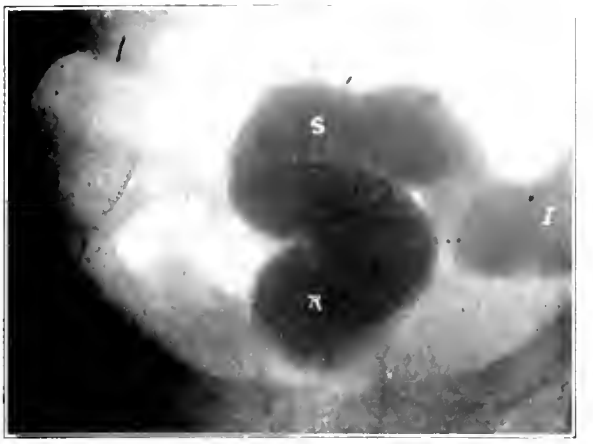

Fig. 2.

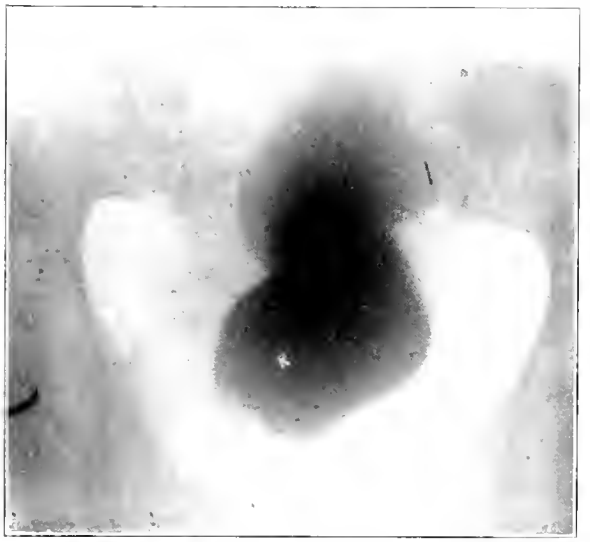

Fig. 3.

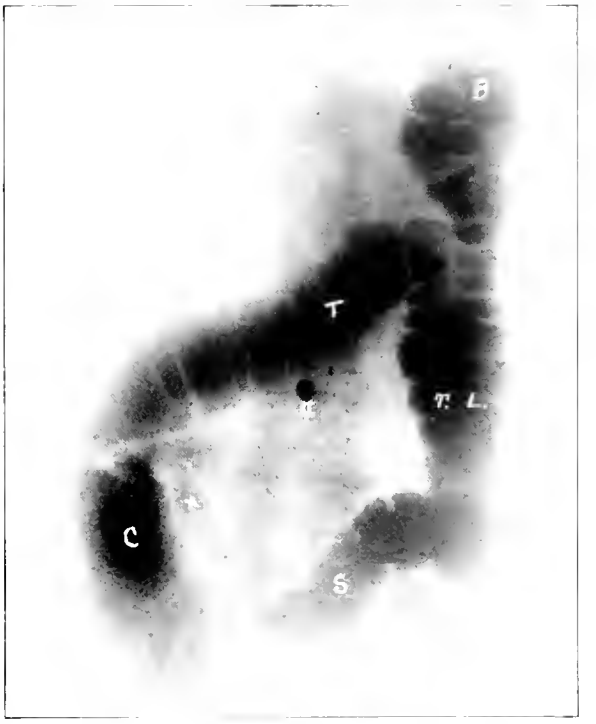

Fig. 4.

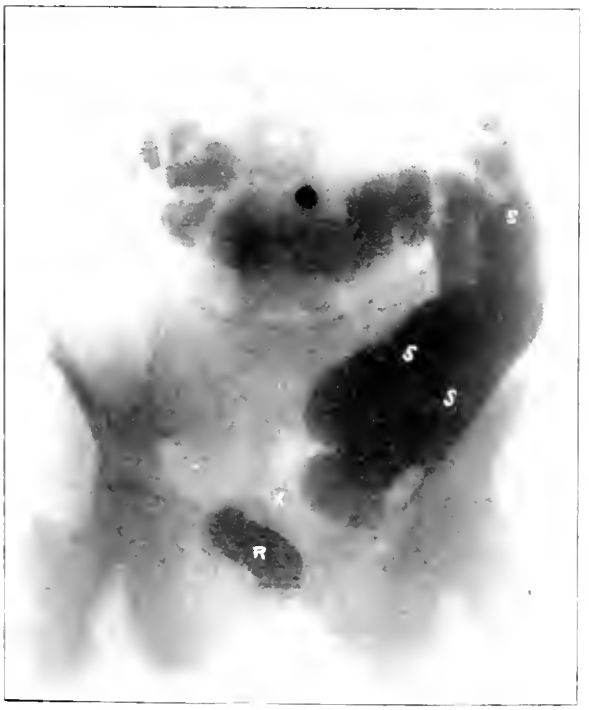

Fig. 5.

Fig. 6.

Fig. 9.

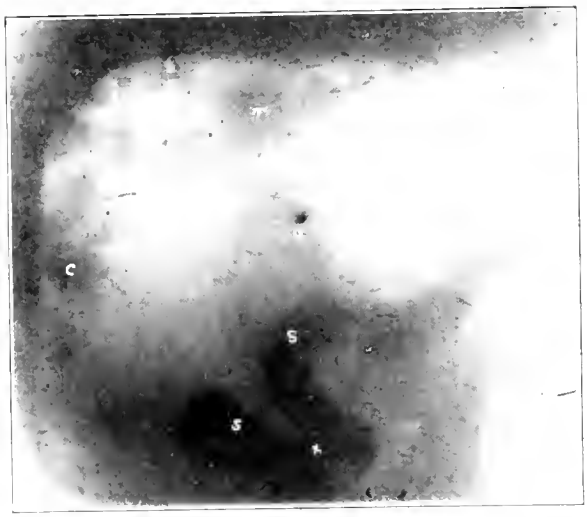

Fig. 11.

Fig. 12.

tebra, where it turns acutely down to crest of ilium, then up to splenic flexure, which is held well up in position. Descending colon then goes down behind this loop of transverse colon to the sigmoid. The bismuth has passed freely through ileocecal valve into the small intestine."

The prolapse of the hepatic flexure and consequent angulations demonstrate graphically the cause of the stasis and fermentation in the cecum and explain the cause of the pain fully as well, if not better, than would an exploratory laparotomy.

Case II.—Mrs. R., aged 42 years, mother of several children. Health always good, but has suffered from severe constipation of several years' standing, which is now relieved only by enemata. X-ray findings, February 2, 1911 (Fig. 5). "Bismuth suspension has passed as far as hepatic flexure (H). This was a dispensary patient and she probably did not properly follow directions to empty the colon. Transverse colon traverses abdomen just below umbilicus to a point about two inches above crest of ilium, then turns up to splenic flexure, where it turns on itself and passes down into the pelvis, where the sigmoid turns in extremely long loops almost up to splenic flexure then, turning upon itself again, passes down toward the rectum. This gives three loops on the left side, each overlapping the other. There is absence of bismuth between the rectum and sigmoid."

The proctoscope was passed with some difficulty into the lower sigmoid and so excluded any abnormality in this space beyond a sharp angulation at the recto-sigmoidal junction. The unusually long sigmoid, probably adherent at one or more points, and the fact that the delay was probably low down, as the bowels moved only with enemata, would justify a diagnosis of obstruction in the sigmoid. Unfortunately the patient passed from observation before the diagnosis could be verified by operation.

Case III.—Mr. H., aged 46 years, first consulted me in July, 1910. Always well except for double inguinal hernia and constipation for the past three years. In October, 1909, sigmoidopexy was done for "prolapse of sigmoid." Relief was temporary and three months later he developed "peritonitis." The same surgeon operated again, freed sigmoid and other extensive intestinal adhesions, divided terminal ileum, inverting its aboral end and implanting oral end into rectum by the method of Kelly. Owing to the poor condition of the patient the operation was ended hastily, abdominal wound being closed by adhesive plaster. This opened a few days later and now he has a large ventral hernia. This operation gave prompt relief to the constipation, but now it has recurred in obstinate form with symptoms of severe autotoxemia added. Strong cathartics, enemata, and much straining yield five to six mushy stools containing mucus, but no pus or blood. Proctoscope passed easily twelve inches and showed nothing abnormal, nor the orifice of the ileorectostomy, though diligent search was made for the same.

Explanation of Plate.

Fig. 7 (Case 4).—B, splenic flexure (faint); D, descending colon; S, sigmoid; X, constriction in descending colon opposite umbilicus (U).

Fig. 8 (Case 4).—T, transverse colon; D, descending colon; S, sigmoid, transversely in pelvis; X, constricted area in descending colon.

Fig. 9 (Case 5).—C, cecum; T, transverse colon; D, descending colon; S, sigmoid; X, kink in sigmoid [adhesions (?)]; U, umbilicus.

Fig. 10 (Case 6).—H, hepatic; B, splenic flexure; D, descending colon; S, sigmoid, long loop.

Fig. 11 (Case 6).—D, descending colon; S, sigmoid; R, rectum.

Fig. 12 (Case 7).—D, descending colon; S, sigmoid; X, irregular worm-eaten area.

November 10, 1910.—Radiographic diagnosis (Fig. 6).—"No evidence of a new growth obstructing colon. There are very marked adhesions between the sigmoid and cecum (?) which might readily account for the obstinate constipation of which this patient complains. I am completely at a loss to explain the peculiar loop at the hepatic flexure unless it is a result of operative procedure. The bismuth emulsion has passed to the cecum, giving the outline of the colon for its entire length." Concluding that the obstruction was in the sigmoid, I did an appendicostomy December 16, 1910. Irrigations through the appendix gave prompt relief. The patient resumed work and gained weight, but three and a half months later constipation and toxemia returned. He requested an exploratory operation, which I did March 14, 1911. Omentum was adherent to scar. Terminal ileum was buried in a dense mass of pelvic adhesions. No attempt was made to separate it. Just above the adhesions the free ileum was united to the free sigmoid by broad lateral anastomosis with a double row of continuous sutures. Parietes were closed in layers. Patient reacted well, but developed double pneumonia the next day, to which he succumbed five days later. Urine was suppressed the last twenty-four hours. Bowels moved the second day after operation and thereafter three to four times a day. There were no signs of abdominal infection. Autopsy showed no evidences of peritonitis. Specimen removed consisted of the portion of ileum and sigmoid operated upon intact. The new lateral anastomosis was firmly united. The opening of the old ileorectostomy was so contracted that it would admit a 16 F. catheter with difficulty, and explained the constipation and toxemia. The radiograph was of great value for it showed patent colon. Had the Röntgenologist known the nature of the operation previously performed, he would readily have recognized "the peculiar loop at the hepatic flexure" as bismuth in the ileum, which had passed through the ileorectostomy, and so have located precisely the site of the lesion in a difficult and extraordinary case. In the presence of severe constipation and autotoxemia with a patent colon, the diagnosis of obstruction at some point in the intestinal tract above the colon was simple on clinical grounds alone.

Case IV.—Mrs. R., aged 48 years, consulted me in January, 1911. Had pneumonia thirteen years ago. Birth of her first child twenty-one years ago was followed by "peritonitis," "uremia," and constipation. The latter has persisted to date and has been very severe the past five years, now requiring three cathartic pills at night and an enema in the morning to secure a movement. Hemorrhoids and fissure were operated upon three years ago.

Radiograph, January 26, 1911 (Fig. VII). Findings.—"Bismuth suspension passes up to a point on a level with the umbilicus. There is a long, tortuous loop of colon which passes up to a level with first dorsal vertebra and then turns downward on a line with the umbilicus, where there is apparently a marked constriction. There is a suggestion of the bismuth passing through the constricted area and slight indication of a descending colon and splenic flexure behind the distended loop."

Diagnosis.—"Strong evidence of a constriction of the descending colon on a level with and about two and a half inches to the left of umbilicus. The long, distended loop is sigmoid."

Confirmatory radiograph, January 31, 1911 (Fig. VIII). Diagnosis.—"Bismuth has only passed into the transverse colon. The long, tortuous loop which passed up to splenic flexure in the original plates now traverses the pelvis to the right side. There is partial obstruction of the descending colon near splenic flexure. From the lack of worm-eaten appearance one would be suspicious of adhesions rather than new growth."

Operation, February 10, 1911. As the patient was very stout (180 pounds) it was difficult to see the region of apparent obstruction. Adhesions may have been present, causing obstruction but no growth, bands, or adhesions could be felt. Sigmoid, about three inches in diameter and twenty-four inches long, suggested that this might be the offending part. Accordingly it was united to the upper colon by a broad lateral anastomosis with a double row of sutures. Relief was prompt and the patient's bowels have acted daily since without cathartics.

Case V.—Mrs. G., aged 64 years, very corpulent, first visited me in April, 1911. Twelve years ago panhysterectomy was performed upon her; one year later perineorrhapy, and hemorrhoids were removed five years ago. During the past two years she has suffered from colicky pains, rolling sensations and distention (gas) over left iliac fossa, and severe constipation and autotoxemia. The proctoscope passes easily ten inches and shows mucus in excess and a pale mucosa.

Radiograph, June 16, 1911 (Fig. IX).—Shows entire colon distinctly and quite normal, except in the central part of sigmoid, where there is a kink and absence of bismuth for about one-fourth inch. I am confident that this is the obstructive point, though the patient's age and general condition preclude operation. This view is supported by the fact that forcing oil high in the colon through the pneumatic sigmoidoscope always gives temporary relief and keeps the patient comfortable.

Case VI.—Miss S., aged 23 years, single, delicate, and of enteroptotic habit, but never ill. Constipated since puberty. When cathartics are taken bowel movements are accompanied by severe pains. Enemata return slowly in sections with poor result. Kidneys and spleen not palpable. Iliac regions not tender. Vaginal examination negative. Proctoscopic examination unsatisfactory, as the tube could be passed only to the rectosigmoidal juncture.

Radiographs, February 25, 1911.—Colon appeared normal (Fig. 10), except a long loop of sigmoid, which passes nearly up to the umbilicus. The posterior plate (Fig. 11) shows sigmoid very long, tortuous, and distended and so matted together that it is difficult to differentiate the loops accurately. Radiographically this would explain the symptoms. Operation on March 14, 1911, confirmed the radiographic findings of adhesions, which proved sufficient to cause the constipation.

Case VII.—Mrs. C., aged 52 years, married. When nineteen years of age she miscarried at the second month, became infected, had local peritonitis, and was curetted. Otherwise here health has always been good apart from intestinal troubles. In 1907 she was operated upon for "ulcers of the rectum." In 1908 anterior sigmoidopexy was performed. When she consulted me in October, 1910, she complained of the same symptoms that began in 1907, viz., several morning stools containing mucus; bearing down pains, increased by standing; also a feeling "as if the bowel was compressed down into the rectum." Vaginal examination was negative. Proctoroscopic examination showed a pale, succulent mucosa with marked excess of mucus. Hot enemata of various solutions and of oil gave temporary relief only.

Radiograph, June 1, 1911.—A series of three plates were taken. One of these clearly showed the upper colon to be normal. The other two plates (Fig. 12), with the patient prone, "show an irregular worm-eaten area where the sigmoid joins the descending colon. There is evidence of some lesion at this point, but whether adhesions or growth cannot be stated."

June 16, 1911, I did an exploratory operation. Great omentum was adherent to the scar of the former operation and it covered descending colon and sigmoid, fixing the latter firmly in the iliac fossa. These adhesions were all freed and the raw surfaces inverted as far as possible. Recovery was uneventful and all symptoms disappeared while the patient remained in bed. Later there was some recurrence of pain, but after three months in the country she reports at this writing that she has gained twelve pounds in weight, bowels move once or twice a day with very little mucus, takes no enemata or cathartics, and that the pain is now bearable and only slight in comparison with what it formerly was.

Conclusions.—1. Establish the diagnosis of obscure conditions of the colon, if possible, by the routine clinical methods.

2. The trouble and expense should not prevent the use of the Röntgen rays when indicated.

3. Their use is without risk to the patient.

4. Abnormalities in size, position, angulations, and constrictions (tumor or stricture) are made as manifest as at operation.

5. If operation is necessary it is planned in advance and much valuable time and manipulation saved, which lessen shock.

6. They reduce the number of unnecessary (exploratory) operations; and by establishing an early diagnosis enable the surgeon to perform necessary operations at the most favorable time.

REFERENCES.

[1]Cannon, W. B.: "The Movements of the Stomach Studied by Means of the Röntgen Rays," *Am. Jour. Physiol.*, 1898, p. 362.

[2]For complete bibliography see Lehmann's "Medizinische Atlanten," Band VII, "Atlas u. Grundriss der Röntgendiagnostik in der inneren Medizin," Franz M. Groedel, 1909, p. 302-304.

46 West Forty-eighth Street.

A STUDY OF CARDIOVASCULAR DISEASE IN ITS RELATION TO LESIONS OF THE ABDOMINAL VISCERA.*

By JOHN DUDLEY DUNHAM, A.B., M.D.

COLUMBUS, OHIO.

MEMBER AMERICAN GASTROENTEROLOGICAL ASSOCIATION.

The selection of this title for a discussion was suggested to my mind by the observation of quite a number of patients in whom acute or chronic abdominal symptoms could not be explained during operations performed for their relief.

Not all patients who have acute attacks of pain in the right hypochondrium, over the pylorus, or at McBurney's point are suffering from gallstones, gastric ulcer, or appendicitis. Arteriosclerosis or

*Read before the Columbus Academy of Medicine November 27, 1911.

increased arterial tension, as a result of syphilitic infection, is often responsible for abdominal colic and indefinite distress simulating nervous dyspepsia.

My interest in the subject was first aroused by a patient seen seven years ago. A man of about fifty years was brought into the hospital in a comatose state with a rapid, full, bounding pulse and evident high tension and a distended abdomen. From his family rather an intelligent history of indigestion covering a period of years was obtained. He had complained of pain after food and of waking in the night with abdominal pain, which was relieved by the ingestion of food or soda and by belching. A diagnosis of ruptured duodenal ulcer was made without further investigation and an operation was performed. Thorough and painstaking search of the stomach, intestines, gall-bladder, ducts, etc., failed to show any pathological condition. The patient died at the end of twenty-four hours from cerebral endarteritis.

There is no question that in this case the disturbances ascribed to indigestion resulted from splanchnic irritation and abdominal arteriosclerosis. Cases have frequently been reported in which tortuous sclerosed temporal or radial arteries are found unassociated with abdominal arteriosclerosis. In like manner we may have angina abdominis with abdominal arteriosclerosis without evidences in the arteries accessible to palpation or capable of measurement with instruments. Diagnosis is certain when improvement is obtained by proper medication or when a generally increased arterial pressure or possibly angina pectoris occurs. Fortunately, very few cases belong to this group, so difficult to differentiate. The majority of patients who suffer from abdominal arteriosclerosis have indications which may be easily recognized in other parts of the body.

Many times abdominal pain is the urgent symptom, hence careful study is not directed to the condition of the cardiovascular system. The urine should be carefully studied in cases associated with high pressure. The routine test for albumin is not sufficient, for many times one finds a few red blood cells and many hyaline casts, even when albumin is temporarily absent. When casts, with or without albumin, are found in the presence of acute abdominal pain, a hasty diagnosis of appendicitis or a similar lesion should not be made.

In cases of apparent appendicitis or gallstones with atypical symptoms the physician should hesitate to advise operative interference in the presence of tube-casts and high pressure. Objection is often raised to ascribing any importance to blood-pressure findings because of the variability of results in the use of apparatus and the possibility that the hypertension is only a localized one.

However, any physician may easily learn to estimate the pressure very accurately by palpating accessible arteries in various parts of the body. Palpation of the femoral artery furnishes the most reliable information from which to make deductions in these cases of arteriosclerotic colic. A concrete instance may make more definite this idea.

Case I.—A man of thirty-one years, bartender, married, whose family history was negative, was referred to me May 10, 1910, by his physician for a corroboration, before operation, of his diagnosis of gallstone colic. The patient was strong until eight years ago. He has never used alcohol excessively. Six years ago he was infected with syphilis. One year later he began to have attacks of mildly acute abdominal pain. An appendectomy was performed and a slightly inflamed appendix was found, but his abdominal pain did not cease. Three years ago he had typhoid fever with a complication of pneumonia. For six months he has suffered intermittently with severe abdominal colic. Belching and a sensation of a lump under the upper third of the sternum are experienced during the attacks. Morphine and other analgesics give very little relief and latterly have had no effect. During his last attack his attending physician administered morphine sulphate hypodermically in one-and-one-half grain doses without benefit. The attacks continue from five to twelve hours.

Examination following an attack the previous night showed an hypertrophied heart, the apex displaced one inch to the left of its normal position, cardiac dullness increased to the right. At the second right interspace the second sound is accentuated and the sounds here are irregular. From the second to the fourth ribs on the right side a thrill is felt. Pain is elicited on pressure at the end of the sternum.

There is no increase of pain on pressure under the right costal margin, nor is the pain increased at this point at the height of inspiration. The inguinal lymphatics are enlarged. Palpation over the femoral artery shows a high tension estimated at 210 m.m. The instrument of Faught shows a pressure of 235 m.m.

After an Ewald test meal the contents of the stomach show a hydrochloric acidity of 40 and a total acidity of 60, and no occult blood. The stomach on inflation with air is normally situated, with no dilatation. A diagnosis of aortitis, arteriosclerosis, and angina abdominis from high pressure was made.

Trinitrin relieved his subsequent attacks, while mercurial inunctions and potassium iodide were given for many weeks. As a result he suffered only one mild attack during the last year.

Another case may be noted of a patient about to be operated upon for cholelithiasis, in whom high pressure with acidosis accounted for the colic.

Case II.—A married woman, aged sixty-four years, seen in consultation with her physician and surgeon. The family history is negative. There has been no serious previous illness. Six years ago she had an attack of palpitation of the heart without pain in the arm. Six weeks ago she had angina pectoris with severe pain in the region of the gall-bladder. Two days ago she had angina pectoris with severe abdominal pain, tenderness over the gall-bladder, and uncontrollable vomiting. There is no pain on pressure under the right costal margin. The radial and femoral arteries are full and bounding, and evidently much sclerosed. The diagnosis of the physician and surgeon rests between neurasthenia and gallstones. The urine has not been examined, and upon investigation is found to contain diacetic acid, acetone, and glucose. Lavage shows no food or blood in the stomach. The systolic pressure is 195 mm. Within twenty-four hours this patient suffered an attack of hemiplegia with aphonia and died five months later from cerebral hemorrhage.

The first of these two cases explains the failure to secure recovery after some cases of appendectomy. The cardiovascular disease, which was evidently responsible for the abdominal pain, could not be cured by an appendectomy.

The second patient would no doubt have died after an operation for gallstones, as the arterial pressure was very high and the acidosis marked. No necropsy was secured in this case, but even if one grants the presence of gallstones, operation was contraindicated, and the patient could not have been cured by their removal.

A few years ago, as a result of the work of Crile and others, much attention was given to careful observation of blood pressure before operations. But, unfortunately, the routine examination of the cardiovascular system is not given enough consideration at the present time.

No doubt arterial hypertension and the associated disturbance of the splanchnic nerve account for many failures to cure patients whose appendices and gallstones are removed. Probably unrecognized cardiovascular disease explains some of the unaccountable sudden deaths following operations upon the upper abdomen.

Rosengart* of Frankfurt A. M. has shown that abdominal arteriosclerosis is liable to induce annoying flatulence, painful distention, especially in the right hypochondrium, and occasional colic and eructations, the latter sometimes bringing relief. The patients are irritable and sleep is broken and fitful. Sometimes the condition in the night is improved if the patient eats something. The appetite is good, with a tendency to constipation. The stomach digestion is generally good, with occasionally a little hyperchlorhydria.

Some patients in this class have proctitis with considerable secretion, eczema of the anus, and hemorrhoids, and slight albuminuria may also be observed. Gradually the pulse rate increases and a systolic murmur becomes audible with accentuation of the second aortic sound. The blood pressure rises, and the diagnosis of arteriosclerotic disturbances may be rendered certain by an attack of angina pectoris. Some of these conditions may exist for years and deceptively simulate nervous dyspepsia. The patients are generally men who tell of overwork or high living. Many also complain of dizziness, headache, and weakness of memory.

One striking symptom has been observed in that patients who could formerly take alcoholic drinks develop an intolerance for them. These patients are usually said to have neurasthenia or nervous dyspepsia. Let me add that this symptom-complex is far from an unusual occurrence. The diagnosis of gastric or general neurasthenia is entirely too frequent. Before we are content with neurasthenia as an explanation, we must exclude cardiovascular disease and the intestinal crises of syphilis.

There is another group of cases in which patients have symptoms very suggestive of duodenal ulcer. Nervous symptoms are marked. There is pain after food or there may be pain only in the night. There may be also vomiting and hematemesis and violent colics. In these cases there is abdominal arteriosclerosis with thrombosis of some of the finer arteries.

The presence of occult blood in the stomach contents or feces is at times misleading, as arteriosclerotic colic is often associated with alimentary bleeding. Two cases in my own practice are illustrative.

Case III.—A prominent business man, aged about fifty-one years, consulted me for indigestion. His family history is good. His position involved much anxiety and constant attention to work. He has been perfectly well until the last six months. During this time he has found that regardless of the kind of food ingested he has some distress three to four hours after meals. He wakens every night at 2.30 or 3 o'clock with pain. Food or soda taken at this time does not mitigate the pain. He at times vomits in the night and twice has vomited blood. He is nervous, irritable, and does not remember details as formerly. He had no injurious habits. The abdomen reveals no tender spots and there is no tender spot in the back. The blood examination shows hemoglobin 75 per cent., and slightly irregular erythrocytes. The urine is normal. The stool shows occult blood. The systolic pressure is 165 mm. A tube could not be passed into the stomach on account of a spasm at the cardia.

A diagnosis of duodenal ulcer was made. The patient was treated at a sanatorium in another city for five weeks and returned home with as much pain as before the treatment. My diagnosis was then changed to abdominal arteriosclerosis. Treatment upon this basis has greatly improved his condition, although he has not made a complete recovery.

The history of another patient illustrates the danger of error in making a diagnosis of neurasthenia when the patient has a beginning arteriosclerosis with abdominal symptoms.

Case IV.—In April, 1910, a woman of forty-eight years, whose life had been spent very actively in society and charitable work, consulted me after a diagnosis of neurasthenia had been made by her attending physician. Her father died at eighty years of paralysis; her mother is living at the age of eighty-six and has been an invalid all her life. One sister died during childbirth and one brother committed suicide. She passed the menopause five years ago. The patient never had serious illness except a left-sided paralysis of the face ten years ago, from which she recovered within six weeks. Pain occasionally occurs in the cardiac region, but there has been no angina. There is a history of constipation and hemorrhoids. Pain is experienced in the bowels during and for a short time after meals. She suffers greatly from hemicrania. The examination shows normal reflexes, a blood pressure of 140 mm., hemoglobin 90 per cent. Hyperchlorhydria is shown by examination of a test breakfast. The urine shows a faint trace of albumin, but no casts. The second aortic sound is slightly accentuated; there is tenderness in the right upper quadrant of the abdomen. A right nephroptosis of the first degree is present. A diagnosis of neurasthenia was made and a more simple life advised. Recently she has again consulted me largely on account of increasing nervousness and headache. This second examination after a lapse of eighteen months shows the blood pressure increased to 165 mm. Many hyaline and granular tube casts are found in the urine, but no albumin. There is now pain four to five hours after meals and in the night. The heart has become hypertrophied and the second aortic sound is much more pronounced than upon the first examination. A diagnosis of cardiovascular disease with abdominal symptoms has now been made.

Two remarks are worthy of mention in this case. 1. Neurasthenia is a cloak for many diagnostic errors and should never be considered until every other possible diagnosis is excluded. 2. The sediment of every urine tested should be examined microscopically regardless of the presence or absence of albumin.

*Münchener med. Wochens., No. 20, May 15, 1906.

Interest in this subject will be stimulated if cardiovascular disease with angina abdominis is considered as a possible explanation of obscure disturbances in the abdomen.

Hemorrhoids, proctitis, indefinite pains in the abdomen, the presence of occult blood in the stools are conditions which may at times be explained by increased arterial tension with its associated pathological changes. Many cases of apparent gastric or duodenal ulcer which are not cured by the usual methods are merely cases of arteriosclerotic colic due to a chronic arteritis.

In closing let me emphasize, first, the importance of a microscopic examination of the urine and the estimation of the blood pressure in every patient under observation, and, secondly, the necessity for a broad view in each case, placing every symptom and laboratory finding in its proper position.

151 East Broad Street.

PEDIATRIC MEMORANDA.

BILATERAL ANOPHTHALMOS. AMAUROTIC FAMILY IDIOCY.*

By HERMAN B. SHEFFIELD, M.D.,

NEW YORK.

Anophthalmos.—The eight-months-old baby was admitted to my hospital service for severe gastroenteritis. I understood it was abandoned by the parents in an out-of-town home for the blind, and no detailed personal or family history could be ob-

Fig. 1.—Anophthalmos.

tained. Contrary to our expectations or wishes, the patient recovered promptly from the intestinal trouble on suitable change of feeding—it was apparently put in this world to stay. As can be noted from the accompanying illustration (see Fig. 1), the eyelids were normal in development except for their closer proximity. On separation of the lids, instead of eyeballs, a thick, pale membrane was discernible, which yielded to pressure sufficiently to prove the absence behind it of even rudimentary

Fig. 2.—Amaurotic family idiocy

soft visual structures. It was dreadful to watch the infant staring vaguely into distance. It never smiled and its sad and somber facial expression inspired awe and pity. Entirely unaware of its surroundings it would instinctively grope about with its long emaciated fingers for its only friends in creation—the bottle or nipple. We were obliged to pad the frame of its crib to protect the hapless infant against knocks and bruises that it was so prone to receive during its indefatigable search for something to gratify its voracious appetite. After a few weeks' stay at the hospital, the child was returned to its old home.

Fortunately bilateral anophthalmia is an exceedingly rare congenital anomaly—only about one hundred cases having thus far been recorded.

Amaurotic Family Idiocy.—The type of blindness I am about to describe is not quite as dreadful as the aforgmentioned one, since the child afflicted with amaurotic idiocy never lives beyond infancy.* Furthermore, with the gradual degeneration of the cerebral gray substance and ganglion cells, and the progressive development of idiocy, the child is not cognizant of its existence, hence is entirely free from mental or physical pain. This was surely the case with the eleven-months-old baby under observation (see Fig. 2). The patient was the youngest of three children of Austrian Hebrew parents. The older brother and sister are both normal in development. The infant was normal at birth, was breast fed, and grew nicely physically as well as mentally up to about six months of age, when it weighed twelve and a half pounds. It was able to hold its head erect firmly and sat up with ease when slightly supported. Soon after, however, the parents noticed that the child was slowly but surely losing ground. It grew pale, flabby, and less active. When put on the lap, the upper body would fall either forward or backward. Furthermore, the baby lost interest in its surroundings, it rarely smiled, and did so only after special inducements; bright objects no longer attracted its attention, and, as time passed on, it rarely showed inclination even to feed. As usually

*Recently a late form of the disease has been described, especially by Dr. Vogt.

"teething" was primarily blamed for the extraordinary change, particularly since it manifested a tendency to protrude its tongue, and the saliva was profusely flowing from the half-closed mouth. The family physician, noting that the child snored noisily, suggested the removal of adenoids—which was done without the slightest improvement in that direction; and another physician thought that the baby was suffering from rachitis owing to paucity of the mother's milk and put the patient on a liberal artificial diet. It came under my care when nine and a half months old. The aforementioned clinical picture was then more typically expressed. Sure enough, the child did present several symptoms of rickets, such as a widely open anterior fontanelle, prominence of the ribs and the epiphyses, but the deadly stillness of eyes; the grayish white discoloration in the region of the macula, later with the cherry-red spot in the center; the extreme gravity of the countenance, and the pronounced insensibility and muscular atony, eloquently told the woeful tale—another case of amaurotic family idiocy, the sixth under my own observation in a period of ten years! At that time the child was still able to follow a bright light and its hearing seemed but slightly affected. As the father of the baby once served in the Austrian army and was fond of "life" in his younger days, I deemed it my duty to put the child on antisyphilitic treatment, but to no avail. From week to week the clinical features, especially the amaurosis, the defective hearing, and the idiocy, progressively grew worse. The patient finally contracted the grip, which rapidly led to hypostatic pneumonia and terminated fatally within a few hours.

127 West Eighty-Seventh Street.

CHRONIC POSTERIOR URETHRITIS, VESICULITIS, AND EPIDIDYMITIS IN MEN BEYOND MIDDLE LIFE.

By MILTON R. PARKER, M.S., M.D.,

CHICAGO.

It is not infrequent that these three conditions exist at the same time in the same patient. The class to which we refer in this paper are honorable, upright men who have homes and families and upon whom no suspicion of immorality rests and from whose history none can be gained. These patients do not belong to the tuberculous class, and gonorrhea is not the etiological factor. In my work I have divided these sufferers into three classes, according to etiology: the tuberculous, gonorrheal, and hyperemic classes. The last, in my experience, is by far the largest class. We shall in this paper deal only with the hyperemic class.

The universal history of these sufferers is about as follows: The patients married some time in the twenties and had normal marital relations for from fifteen to twenty-five years. They had no physical troubles during this period, and their sexual desires were satisfied. At about forty years of age the wife's sexual desires began to wane and in from one to five years completely failed. Since that time the patient's sexual hunger has been totally unsatisfied. Sometimes the history reveals nocturnal erections and emissions and sometimes the mentality has suffered from the constant and persistent demands of an unsatisfied sexual system which, until recently, had been satisfied.

The normal sexual cycle in the male has its initiative in an impulse conveyed to the central nervous system. This impulse may be psychical, as a socalled impure thought, or it may be physical, as some irritation of the sexual organs. Following the impulse, hyperemia of the sexual organs takes place and the cycle terminates with copulation. The intervals between these sexual cycles vary in length in healthful persons, according to their sexual vigor. In all, however, there is a period of complete rest for the sexual organs following each normal cycle, and the condition of hyperemia completely subsides.

For the purposes of this paper an abnormal sexual cycle consists of a cycle not completed by copulation. The initiative is the same as in a normal cycle, though in this class of cases, in a vast majority of instances, the provocative impulse is beyond the control of the patient. In these abnormal cycles the sexual organs are hyperemic, the same as though the cycle has been completed. The cycle not being completed, however, the hyperemia continues, and there is as time goes on no rest for the sexual organs, which are continuously in a stage of hyperemia.

The most constant result of this condition of hyperemic irritation is a posterior urethritis and an increased cell growth, resulting in an hypertrophied prostate. Some cases, however (and these are the cases under consideration in this paper), do not terminate in hypertrophy of the prostate. The posterior urethritis extends by continuity of tissue

Fig 1. Fig 2. Fig 3. Fig 4.

to the seminal vesicles and to the epididymis. These patients give the marital history above mentioned, and the subsequent history of unsatisfied sexual craving followed by the symptoms of posterior urethritis and later those of epididymitis. An examination reveals a chronic posterior urethritis, pus in either one or both of the vesicles, and an enlarged and tender globus major, though some other part of the epididymis may be involved.

So frequently and constantly has the above sequence existed in this class of cases in my experience it would require much stronger evidence than any that now exists to satisfy me that repeated abnormal sexual cycles are not the chief etiological factors in the production of hypertrophied prostates and the conditions especially referred to in this paper.

The treatment of chronic posterior urethritis, vesiculitis, and epididymitis in this class of cases is the well-known treatment for these conditions which has been in vogue for years. But in spite of such treatments, well directed and faithfully executed, a certain number of these cases do badly. The epididymitis will apparently recover, and when the surgeon thinks he has at last conquered the conditions the urethritis will again become active and pus will again appear in the vesicle; treatment is directed to these, and as the surgeon begins to feel that he has the condition under control the epididymitis again lights up and the fat is all in the

fire. A vicious circle has been established, and in spite of the best that can be done with the recognized therapeutic measures and local treatments, some of these patients become wall flowers in the doctor's office, much to his chagrin and their disgust.

In 1903 Cheatwood* of Baltimore reported ten cases of this condition treated by vasectomy. All of these cases promptly recovered and remained well. I have now operated upon eleven cases for this condition with the happiest results in every case. Vasectomy will promptly and permanently cure all of these left-over cases. I do not leave these cases now so long unoperated upon. The patients are always more than satisfied with the results, and as one side, only, is usually involved, only one vas is operated upon; hence the patient is not rendered sterile, and the only objection to the operation is overcome. The reason why vasectomy cures these cases is that a vicious circle is set up; the chronic diseased process is conveyed by continuity of tissue along the vas to each of the organs involved. A vasectomy destroys the vicious circle and the case recovers.

In doing vasectomy I have developed a technique unlike any other of which I am aware. After recognizing the vas and bringing it close to the skin of the scrotum about an inch from the raphæ, the thumb and the index finger of the left hand are pinched together beneath it and a stitch is passed through the skin of the scrotum beneath the vas and very close to it and tied tight in a bowknot. The vas is a very slippery organ and eludes one when one least expects it. This stitch perfectly controls the vas (Fig. 1). A small incision is now made through the skin of the scrotum down to the vas. The stitch prevents bleeding and the vas is readily recognized by its white, silvery color. A ligature carrier is now worked beneath the vas and the latter is brought out through the incision (Fig. 2). Two ligatures are now placed on the vas, and the piece of vas between them is cut away. Usually an inch and a half of the vas is removed (Fig. 3.). The stumps of the vas are now pushed back into the scrotum, the bowknot is untied, and the stitch is tightened, closing the incision in the scrotum: the stitch is then tied in a square knot. A collodion dressing completes the operation. The patient should remain in bed two or three days.

When these cases run their usual course and an hypertrophied prostate results, the removal of the prostate does not always cure the posterior urethritis. In June, 1910, I removed the prostate from a man seventy-three years old who belonged to this hyperemic class. He had suffered many years with symptoms of posterior urethritis. The prostate was removed because, during the latter part of his history, dysuria and incontinence were so preying upon his general health that his life was in jeopardy. He promptly recovered from all the above conditions and resumed his business. The comparatively slight troubles due to the old urethritis he still maintained, but because of their comparative insignificance paid little attention to them. In July, 1911, this patient returned to me for treatment. He had passed a year of energetic business life and with no trouble save the slight discomfort due to his urethritis. About a week before coming to me the second time, upon rising in the morning he could not pass a drop of urine, though he had the usual desire. He went about his business and remained thus employed until 3 o'clock P.M., during which time he had made many unsuccessful attempts to pass his urine. At this time the pain from the pressure of the urine had become so severe that he went home and called a physician. After many useless attempts to empty the bladder the physician took the patient to a hospital, where several other attempts were made without avail to empty the bladder until an anesthetic was given, when the bladder was emptied. From this until the patient came to me a wek later he had no control of the urinary flow. The urine dribbled away all the time. A careful examination revealed a contraction of the neck of the bladder or, in other words, an hypertrophy of the sphincter vesicæ, which was responsible for his urinary troubles. It also revealed a posterior urethritis, pus in the left seminal vesicle, and an enlarged and tender globus major. With the patient under an anesthetic I cut the hypertrophied sphincter, directing the knife with the index finger of the left hand placed against the sphincter through a perineal urethrotomy incision. The sphincter was not completely severed, but was cut sufficiently to allow the index finger to enter the bladder. The finger was then withdrawn and a rubber tube wrapped with gauze until it was the size of the finger was inserted and retained by a stitch. The perineal wound was packed tightly beneath the drain to prevent hemorrhage. If this is carefully done hemorrhage need not be feared. The tube was left in position for ten days, causing the wound in the sphincter to heal by granulation. At the same sitting I did a vasectomy as above described. The patient made a prompt recovery, has remained well since, and has had no more symptoms of his posterior urethritis. This is a case in which the posterior urethritis was followed in the usual way by an hypertrophied prostate. The prostrate was successfully removed. This did not cure the old urethritis, which was followed a year later by an hypertrophied sphincter vesicæ and by vesiculitis and epididymitis.

*Keyes: "Genitourinary Diseases," 1903.

ABSCESS OF THE NASAL SEPTUM.

By IRVING WILSON VOORHEES, M.S., M.D.,

NEW YORK.

Abscess of the nasal septum occurs as the result of local processes, excoriations, after operations, etc., or as a complication of infectious diseases. One may differentiate a traumatic from a non-traumatic form. The traumatic form frequently causes a hematoma which becomes directly infected through blowing the nose, or the infection enters by way of the blood or lymph vessels. Non-traumatic abscess may come from infection by continuity, such as in erysipelas and diphtheria, or as a metastatic process.

By far the most frequent cause of septal abscess is an injury to the external nose. After a punch or blow there is almost always a fracture of the septum with the formation of a hematoma between the perichondrium and septum. Pyogenic bacteria enter either through a tear in the mucous membrane or by way of the blood or lymph paths and infect the blood-filled sac. In other cases, especially after infectious diseases, there may have been no previous hematoma present. After submucous resection a hematoma sometimes arises, which may become infected, and which should be treated after the manner about to be described.

Septal hematoma and abscess are both usually bilateral. If non-traumatic perichonditis occurs on

one side first, it soon perforates the cartilage and establishes itself on both sides of the septum.

The clinical findings are quite characteristic. By lifting the point of the nose one sees on both sides of the septum a mucous-membrane sac which is distinctly fluctuating. Constitutional symptoms in

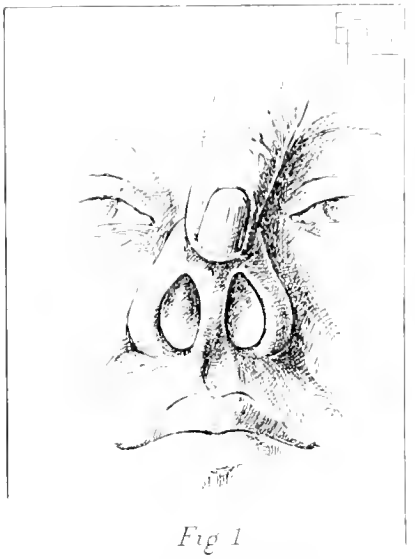

Fig 1

Fig. 1.—The pus-filled sac on each side of the septum causes complete occlusion of the nose.

both traumatic and non-traumatic types are sometimes quite severe. Slight pains and fever only may be present with nasal insufficiency and its results, such as headache, as the chief complaint; but

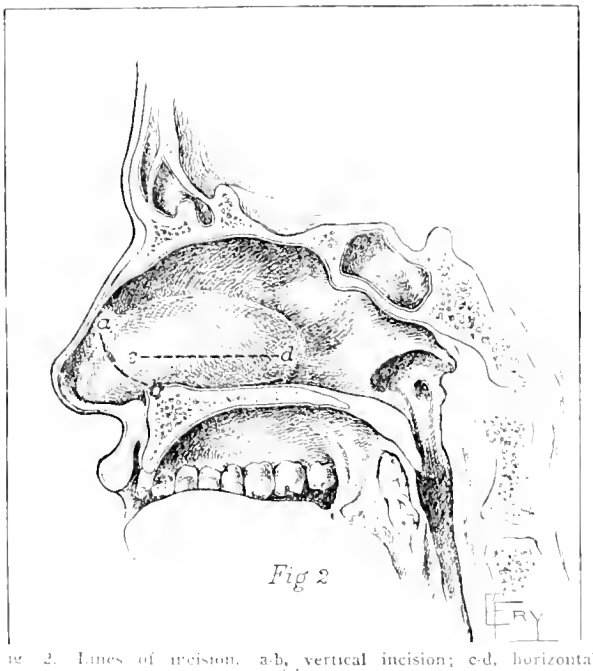

Fig 2

Fig. 2. Lines of incision. a-b, vertical incision; c-d, horizontal incisions.

in the course of infectious diseases, especially in influenza and erysipelas, severe constitutional symptoms are the rule. There is an initial chill. The temperature is high, rising even to 104° F., the patient experiences localized pains in the head and body, and in a short time there is complete nasal stenosis, which frequently, but not always, produces a reddening and swelling of the external nose. Meningitis or abscess in the anterior fossa of the skull may result by way of the anterior and posterior ethmoidal vessels.

Hematoma and abscess are quite similar in their external appearance, but the constitutional symptoms already mentioned always point to abscess. The differential diagnosis is, however, not very important, since the treatment is essentially the same, namely, prompt incision and drainage of the sac.

Treatment.—I have found the following method of treatment serviceable: A vertical incision is made on the left side of the septum at the junction of mucous membrane and skin and is carried directly across the floor of the nose. This is the same incision which I use in submucous resection of the septum. A second incision running near to and parallel with the floor of the nose is carried forward from the middle point of the vomer until it almost but not quite meets the first incision. The object of not joining the incisions is to prevent retraction of the flaps and a large amount of resultant scar tissue. The mucoperichondrium is then reflected and the entire abscess cavity is carefully curetted with flexible curettes until all pyogenic membrane and detritus are removed. The cavity is now irrigated with a dilute peroxide solution, followed by normal saline, and two drains are introduced. For this purpose I prefer wick gauze, which has been saturated in a 0.2 per cent. solution of formaldehyde in boric acid. The first drain is passed through the horizontal incision and is pushed far upward into the pocket. The second drain is introduced through the anterior incision to meet the first drain, but tight packing should be avoided. Finally a small strip of plain gauze is placed on each side of the septum for support.

There is absolutely no need of making an incision on each side of the septum. Moreover, retraction of the edges of the wound and the formation of granulations may result in perforation. Deformity of the external nose follows only when the entire bridge of cartilage along the internal dorsal aspect of the nose is also destroyed. The so-called "sinking in" of the tip of the nose, whether after operations or after injuries, will not take place if a strip of cartilage one-fourth inch wide remains still intact as a bisector of the angle between the two sides of the external nose. In an extremely late stage of the disease if the abscess has spontaneously ruptured, if the sac has collapsed, and if granulations have formed about the margin of the wound, the differential diagnosis between residual abscess, tuberculosis, and syphilis may be somewhat difficult. In such cases histological examination of the granulations and bacteriological examination of the secretions make the diagnosis clear. While abscess of the septum is not an unusual surgical condition, no mention is made of it in several of our best American books on diseases of the nose and throat. This method of treatment is, I believe, thoroughly surgical and will give very satisfactory results in all cases.

14 Central Park West.

Goodwill of Physician's Practice Is Property.—While some doubt has been expressed as to whether the matter of good will, as a property asset, can be applied to the practice of a physician or other professional man, the weight of authority is that the good will of a physician or other professional man is a property asset, subject to disposal, within the limits prescribed, and in the same manner as the good will of any other business, and a breach of the same incurs the same liabilities.—Maxwell vs. Sherman, Alabama Supreme Court, 55 So. 520.

MEDICAL RECORD.

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MORE SLEEP!

ADVANCE in our knowledge of the metabolism of the brain, the cord, and the autonomic system makes ever more easy of understanding the far-reaching injury that comes to us from having too little sleep. Dolley's work, for example, on the osmotic relations of the nuclei and cytoplasm of nerve-cells, research concerned with the supply of the fatty-protein chromatin, and the more recent definition of the interdependence of euphoria, malaise, blood pressure, pulse rate, epinephrin, thyroidin, and the pituitary extract tend to make the reason for this harmful lack of sleep more plain, and so to appear more important. It rapidly becomes obvious that these relations between blood-chemistry and brain-metabolism are of the most fundamental kind. The whole world knows that fat people are most often good-natured above thin people; it remains for some "neuro-chemo-histologist" actually to prove that the brain-cells of the fat man contain a larger proportion of the lipoid protein on which the most perfect nutrition of the grey-matter depends, both in the brain and in the sympathetic. Book's well-known research on the development of motor skill has shown us recently with renewed assurance that progress in skill can take place only when the learner "feels good," and not at all on "off days" when the circulatory metabolism is probably in some way a little out of order.

The other, the external, aspect of this matter comes to us even more insistently from the statistics of the lunacy commissions and from reports of nerve-sanatoria. More nerve cells than is proper are somehow in default and the results reach far afield. One is inclined to think that even the divorce courts would be less overcrowded were these unrested brain-cells returned to their primitive, natural vigor. No homily on the pace that kills, however, nor eulogy on the simple life (though great the universal need of both) is contemplated here, but only a simple physiological enumeration of the conditions that keep too many of us Americans, thoughtlessly or by compulsion, from sleeping our proper physiological allowance. It is not so much a matter of life and death, although every physician must realize how very many lives are shortened by needless nerve-fatigue, not so much a quantitative affair or mortality statistics, as one of quality—the *satisfaction in living*. No moral philosopher can get behind or beneath this as the *summum bonum* of our mortal existence—we all seek it, and can by no hook nor crook help seeking it, as the forest trees seek the open sunlight above. That one, and perhaps the chief, cause of this qualitative defect, not measurable but none the less immeasurable, is too little sleep, the deficiency accumulating slowly year by year, becomes more and more obvious to those who best understand the delicacy and the complexity of the underlying bodily conditions.

Civilized man has lost his natural indicator for the need of sleep, namely, abundant muscular exercise pure and simple, unmarred by accompanying nerve-fatigue. We are apt eternally to forget that our brains were evolved as organs of motor coordination, and that, lacking this kind of exercise, their metabolism may be deranged. We are apt to call Towser and Tabby lazy animals, but no physiologist doubts that they live more hygienically in respect of sleep than do their human masters or mistresses, although many of these domestic pets, too, that are city-livers, get only a small fraction of the exercise they really require. But, like their wild brothers in the forest and on the plains, they sleep much and often. In the cities well-to-do multitudes live and die without experience of the "pure delight" of unadulterated muscle-fatigue and of the sudden and deep sleep that normally follows a day of purely muscular work. Here, then, is one reason why we sleep too little and too ill, save when, perhaps, in camp on our vacations in the wild. Should not these experiences teach us something?

Perhaps the second most efficient reason why we sleep too little is the general use of grey-matter stimulants—coffee, tea, cocoa, tobacco, alcohol, all or one or more in a day. Largely because at times they have enjoyed good sleep immediately after taking these, many unmedical persons are firmly convinced that they are not kept awake by these stimulants, when, in reality, as a rule they are. Of course, at times one may sleep in spite of them, for reasons that no one can as yet explain. More active bodily catabolism would rid the body more promptly of the alkaloids, etc., and so minimize their harm. As it is, throngs of sedentary people are kept from feeling normally sleepy at the proper time by these stimulants to the insistent association of ideas. Thus the physiological bedtime is ignored in favor of an artificial hour dictated by drugs more or less injurious, somnolently speaking.

A third reason obviously is the evening-entertainment habit, despite the necessity of early rising for work. How numerous are the theater-mad and the opera-mad and the bridge-mad in our day and generation needs no emphasis, and they unduly waste the sleep-time.

A last reason that may be recalled for our sleep deficiency is the vicious circle of nerve-cell exhaustion that makes sleep scanty and incomplete. The causes of this are both too trite and too numerous for proper discussion here, but among them are some that are underestimated. For example, the almost continual light- and sound-stimulation (rhythmic electric signs, milkmen, auto-horns, etc., etc.) to which dwellers of the large towns are now, day and night, subjected would wear out the strong-

est mechanism, while certainly the neurones are the most delicate of all known organs—unless it be the ear and the eye. Here we are victims of a negligence of physiological health which a later age will look back upon as only just removed by a few years from the renaissance of common sense.

Proper coordination by the nervous system underlies every other essential thing in the body and in the mind, if not in the spirit; its vigor, therefore, is of preeminent importance; its rest is conditioned by its sleep, adequate in quantity and in quality—and withal not unhappy.

THE PROFESSIONAL SECRET AND THE REPORTING OF VENEREAL DISEASES.

From its priestly origins before the dawn of recorded history, the obligation of secrecy has been handed down as one of the most sacred traditions of the medical profession. The utterances of Hippocrates and Charaka crystallized the sentiment of preceding centuries, and he who took the oath of keeping inviolably secret that which he might "see or hear amid the lives of men which ought not to be noised abroad" became amenable for the infraction of this oath, not only to the opprobrium of his colleagues but also to the penalty of the law of the land. But the obligation of secrecy has not remained an inflexible one; the complexities of modern life and the demands of public polity have, through the agency of legislative enactments and judicial interpretation, distinctly limited the extent and scope of this obligation. One of the momentous problems awaiting solution is that of reconciling the rights of the patient and those of the public in the modern warfare against venereal disease.

One of the recommendations made by the committee on the control of venereal diseases in its report to the section of Preventive Medicine at the 1911 meeting of the American Medical Association was that a law should be enacted requiring the reporting of all cases of venereal disease by physicians. In fact, California had already passed such a law. The city of Cleveland had also made venereal diseases reportable, and, although it was admitted that the strict enforcement of this statute was not possible, nevertheless the public health authorities had the power to order to a hospital anyone who was discovered with venereal disease and whose occupation rendered him or her a distinct menace to the public. In Chicago dispensaries and hospitals had been required to report all cases of venereal disease under treatment. In Detroit the Department of Health placarded houses of prostitution in which cases of venereal disease were discovered, and the diseased inmates were removed to a public hospital. If, however, the victim voluntarily reported herself, she was given the alternative of going to the hospital of her own accord, in which case the house was not quarantined. In a paper on the reportability of syphilis and gonorrhea, read by F. M. Greene at the above meeting, it was pointed out that Norway was the first European country to enact laws for the control of venereal disease; State care of the victims was provided for as early as 1774, but it was not until 1901 that the most stringent laws for this purpose were enacted. Sweden, Denmark, and Prussia at various times passed similar laws, in all of which it was left to the discretion of the private physician to report to the public authorities the names of individuals who neglected to take the proper precautions or to submit to proper treatment for venereal disease.

The one stumbling-block in the way of State control of this peril is the inviolability of the professional secret. The European nations that have undertaken the solution of this problem have recognized this difficulty and have met it half way by regarding the venereally diseased victim as waiving his privilege to the protection of this secrecy if he neglects to apply for proper treatment or to follow the instructions of his physician. In other words, the enlightened modern attitude with regard to the physician's obligation to his patient and the public is a rational one: the physician is bound to secrecy provided this does not militate against the welfare of the public. It would seem unwise, therefore, to enact inflexible laws compelling the notification of all cases of venereal disease. These laws would defeat their purpose for two reasons: physicians would fail to report their cases, which has been the experience in Cleveland, and the victims of venereal disease, fearing public exposure, would hesitate to apply for proper treatment.

That this problem is not a new one is shown in an excellent historical analysis of the respective obligations of the medical profession with regard to the preservation of secrecy and to the notification to public authorities of diseases menacing the public health. This analysis forms part of a volume that has recently appeared under the title "Professional Duties and Professional Questions, an Historical Study,"* by I. Fischer, Director of the Charité Gynecological Institute of Vienna. In discussing the evolution of the duties of medical practitioners with reference to the reporting of infectious diseases, this writer notes that the question of reporting venereal diseases arose as early as the end of the sixteenth century, when, in the city of Geneva, the followers of Calvin endeavored to make the capital of the Protestant world a model of order and morality. In 1590 the Consistory informed the municipal council that the surgeons of the city were treating cases of syphilis, which was accounted a public menace. The council commanded the surgeons to submit the names of these patients. To protest against this request, the surgeons appointed a committee of three, who appeared before the council and pointed out the obligations connected with the professional secret and the dire consequences, not only to the afflicted but also to their families, that would result from its violation. The council, apparently satisfied with this response, transmitted it to the Consistory. But eighteen years later a similar demand was made. The first physician who refused to obey this edict was thrown into prison. Frightened by this zeal of the public authorities, the remaining members of the profession at once sent in the names of their syphilitic patients. An amusing incident of this surrender

*"Aerztliche Standespflichten und Standesfragen, eine historische Studie," von Dr. I. Fischer. Price 4 marks. Vienna and Leipzig: Wilhelm Braumüller, 1912.

was the fact that one of these names was that of an individual who, both as a physician and as a municipal councillor, had taken part in this discussion. When, for the third time, in 1621, a repetition of the same demand for public notification was threatened, the practitioners of Geneva arose in one vehement protest: First, there was the oath of secrecy which they had taken on attaining their degree in medicine; Second, venereal patients, fearing public disgrace, would hide their affliction from medical men, which would be a greater public calamity than failure to report them to the authorities; Third, the disease in Geneva was not widespread, and there need not be any fear as to its dissemination.

It is the second of these arguments which may be advanced to-day with as much reason as it was nearly three hundred years ago.

CHILD NEUROPATHY AND THE FACIALIS PHENOMENON.

Child neurasthenia is now recognized as of common occurrence and of probably increasing incidence. Neurasthenia in adult life is often but a persistence of it. We also see in childhood evidences of marked neuropathy which may not have culminated in any overt symptom of actual neurasthenia. The latter state is chiefly recognized by the presence of night terrors, bed wetting, nervous anorexia migraine, nervous cough, etc.; but children may be intensely nervous, sensitive, excitable, irritable, restless, prone to habit spasms, and yet may show no actual evidences of nerve exhaustion. This type of child may perhaps be said to suffer rather from disorders of personality or disposition than from actual neurasthenia, and certain neurologists are at present in favor of separating anomalies of personality from all other psychoneuroses, if for no other reason than the relative impotence of therapeutic measures in this class. It is best, perhaps, to limit the expression child neurasthenia to the more objective phenomena, and it is quite conceivable that such neurasthenics need not present marked alterations in disposition.

At a recent meeting of the Royal Imperial Society of Physicians of Vienna (*Berliner klinische Wochenschrift*, November 6) Hochsinger reported the results of an attempt at finding a simple criterion of the neuropathic constitution. He tested one hundred and seventeen children for Chvostek's sign, and obtained it in one hundred and one. Aside from children with the evidences of neurasthenia indicated above, the material included epilepsy, hereditary syphilis, Mongolian idiots, myxedematous children, and excitable idiots. The age limits were four and twelve years. The symptom in question was comprehended as a sudden twitching of the lip and cheek muscles upon percussion over branches of the facial nerve. This symptom was present in a very large percentage of each type of child investigated, although in but three out of eight epileptics. It was found that many of these children had been under treatment during the nursling period for eclampsia or other evidences of spasmophilia, and that Chvostek's sign had also been obtained at this period. Hochsinger was also able to test many of the mothers and obtained the sign in 60 per cent. of these. He also found that while in male children the phenomenon could not as a rule be induced after the age of fifteen, it persisted indefinitely in girls, sometimes even to the menopause. The fathers of these children seldom showed evidences of neuropathy. He differs with Chvostek as to the thyroid or parathyroid origin of the phenomenon.

Typhoid Fever in the Philippines.

Major Weston P. Chamberlain, United States Army Medical Corps, discusses in the *Philippine Journal of Science*, October, 1911, typhoid fever in the Philippine Islands. In the first instance, this comprehensive article shows that typhoid fever is a widely scatered and common disease in the Philippines; its incidence in Manila is above the average rate for the United States, and is exceeded only by a few American cities. The average admission rate among American soldiers in the Philippines exceeds that for troops serving in the United States, while medical officers from many regions report the frequent occurrence of typhoid fever among the Filipinos. Statistics from the latter, however, show a much lower typhoid rate than among white troops, possibly due to failure to diagnose the atypical cases. Many epidemics have occurred among soldiers in the Philippines, and three outbreaks among natives have been studied. Only one typhoid bacillus carrier, so far as the author is aware, has been found in the Philippines. It is even more curious to have to record on the authority of Chamberlain that paratyphoid fever is seldom met with in the Philippines, so rarely indeed that it is stated that only two or three undoubted cases of paratyphoid infections have been encountered. In India, on the other hand, in which, in parts at least, the conditions resemble those of the Philippines, paratyphoid fever is, according to officers of the British Army Medical Service, by no means uncommon. In fact, recently several army medical officers in India have reported many cases of infection by *Bacillus typhosus A*. Although the morbidity is so high, the mortality for white troops in the Philippine Islands during the past five years has been no higher than at home. It appears somewhat higher for Filipinos, but this may be due to failure to diagnose all the mild cases. More than a third of the cases of enteric fever, whether among Americans or Filipinos, are entirely atypical and cannot be diagnosed without laboratory methods. Very valuable work is being done in different parts of the world in regard to typhoid fever, and especially with respect to the differentiation of the paratyphoid infections. This question is looming somewhat large, and therefore all investigations bearing on the subject are instructive and valuable, and in this light it is interesting to learn that such infections appear to be rare in the Philippines.

Starvation of Cancerous Tissue by Adrenalin Injections.

The starvation principle in the management of cancer, chiefly of the inoperable type, is an old resource as an accessory or palliative, and has been employed by Dawbarn and others with some success as the principal treatment of cancer of the head and face by ligating or occluding the main arterial branches leading to the growth area.

Parenchymatous injections of adrenalin for cancer were attempted originally by Reicher. At a recent meeting of the Laryngological Society of Berlin (*Berliner klinische Wochenschrift*, November 20) there was a demonstration by Holscher of a patient with an inoperable cancer of the tongue which had progressed so far as to demand tracheotomy—in which the Reicher method had produced brilliant results. The cancerous lymphatic metastases had previously been extirpated. The effect of the injections was the prompt production of necrosis. Tissue came away in pieces of any size up to that of a hazel nut. The ultimate result was a necrosis of the entire tumor mass *in loco*. With the fear of hemorrhage no longer present the author did not wait for the remainder of the mass to slough, but extirpated it with the cold snare. The injections were not discontinued, but were made from time to time in the cicatricial area. The patient's health improved notably. At present there is evidence that small recurrent nodules are undergoing necrosis. Schoetz stated that he had had a similar case in which Reicher's method was used without benefit and with probable injury; since the suppuration of the cancerous mass could be attributed to it. Gräffner saw benefit follow a single injection, evidently made as a test. Rosenberg was obliged to discontinue adrenalin injections because of the pain caused. Hölscher, in response to inquiries as to technique, stated that he began by giving four or five drops of adrenalin in a local anesthetic solution, increasing the dose of adrenalin gradually and diminishing the bulk of the fluid at the same rate. He had never seen pain follow, or any other unwished for symptom. The injections should be deep. In his case fragments were coughed out or dislodged by the aid of swallowing. The snare went through the necrotic tissue like butter. Hemorrhage never occurred.

Biochemical Rationale of Menstruation.

At the present time biochemistry is made to account for a vast number of normal and pathological phenomena, often no doubt to the unjust exclusion of other elements—although biophysics may perhaps be included under what we term biochemistry for the sake of simplicity. There would then remain unclassified and unknown biological phenomena hitherto conceivable under vital processes—a term now become so obscure as to be seldom employed outside of controversies. At a recent meeting of the Munich Gynecological Society (*Münchener medizinische Wochenschrift*, November 21) Klein advanced the following biochemical doctrine of the nature of menstruation. Three inner secretions of the ovary—folliculin, ovulin, lutein—which jointly make up oophorin, render the uterine mucosa capable of transforming the circulating maternal blood into trophema or nutrient blood, intended for the reception of the expected impregnated ovum. Should the latter not arrive the blood escapes as menstrual blood. Both trophema and menstrual blood refuse to coagulate. Dysmenorrhea membranacea may be explained as the result of an autolysis of the spongy layer of the uterine mucosa. Painful menstruation may be accounted for as due to the failure of the ovarian hormone to produce noncoagulability of the blood, which, clotting *in utero*, requires expulsion. The same insufficiency of hormone production may explain scanty menstruation. Conversely, menorrhagia may be explained by overaction of the ovary. The explanation of the menopause and of the results of castration is sufficiently obvious.

News of the Week.

Dr. Doty Awarded Medal for Health Work.—The American Museum of Safety at its annual exercises in the Engineering Societies Building on January 18 awarded three gold medals for the greatest achievements of the last year in safeguarding life and limb in American Industries and promoting safety and sanitation in daily and industrial life. The *Scientific American* gave the first medal for the most efficient safety device invented in the last three years. This was awarded to the Norton Company of Worcester, Mass., for safety devices employed in its manufacture of grinding machinery and emery wheels. The Travelers' Insurance Company of Hartford, Conn., presented the second gold medal for the employer who did most for the protection of the lives and limbs of his employees by means of safety devices, which was awarded to the Pennsylvania Railroad. The third gold medal was presented by Dr. Louis Livingston Seaman "for progress and achievement in the promotion of hygiene and sanitation, and the mitigation of occupational diseases" and awarded to Dr. Alvah H. Doty. Prof. F. R. Hutton, who made the presentation, said that the award was made to Dr. Doty as the man who had achieved more than any other in securing the public health and preventing disease and providing safety for us, our industries, our homes, and our children. In the absence of Dr. Doty the medal was accepted for him by Dr. John W. Brannan. The American Museum of Safety proposes to erect a new building at a cost of $1,000,000, for which an appeal will soon be made to the city and State government.

The Meningitis Situation in Texas.—Dr. Ralph Steiner, president of the State Board of Health, expresses the opinion that the epidemic of meningitis in that State is well in hand. At a meeting of the State Board of Health on January 10 resolutions were passed by that body advising the closing of public schools, discouraging public gatherings, and advising the closing of places of amusement upon the appearance of meningitis in any community, at the discretion of the local authorities. A resolution was also passed complimenting the Dallas Board of Health on the manner in which the epidemic was handled in that city. It was also resolved that the president of the State Board of Health be authorized to use every effort to secure a supply of the approved New York Board of Health serum for distribution throughout the State. Owing to the prevalence of the disease among the colored population, local health authorities were advised to endeavor to secure the cooperation of colored physicians. It was urged upon county attorneys that, owing to the importance of early diagnosis and immediate use of the serum, it was their duty to prosecute all unauthorized persons prescribing for sick people and those delaying a proper diagnosis and treatment, as such delays tended to spread the disease and to increase its fatality. Dr. Sophian of the Health Department of New York City, who went to Dallas to assist in controlling the epidemic, expects to remain as long as his services are so urgently needed. The quarantine against Texas, which was put into effect by the Mayor of Shreveport, La., was abolished by

the Board of Health of that city, having been informed by Dr. Dowling, president of the Louisiana State Board of Health, that the right to enforce quarantine rested with the City Council and not with the Mayor. Dr. Dowling appointed a physician to register and record all Texans who entered Shreveport until further developments in the epidemic.

Yellow Fever on the "Yorktown."—According to a cablegram received at the Navy Department, Commander Levi C. Bertolette, commanding the American gunboat *Yorktown*, which has been protecting American interests in Equador, has died from yellow fever.

The Death Rate in New Orleans.—The death rate of New Orleans for the year 1911, with non-residents excluded, was 13.88 per 1,000 population for the whites and 24.50 for the negroes, making the average rate 16.78. The reporting of whooping-cough has been made compulsory owing to the unusually high death rate from that affection, there having been 112 deaths caused by it in 1911 against 17 for the previous year. The total number of deaths from all causes was 195 less than in 1910.

Death Among Doctors.—During the year 1911 there were 2,145 deaths among physicians in the United States and Canada, or, reckoning on an estimate of 140,000 physicians, the rate was 15.32 per 1,000. For the nine previous years the death rates were as follows: 1910, 16.96; 1909, 16.2; 1908, 17.39; 1907, 16.01; 1906, 17.0; 1905, 16.36; 1904, 17.14; 1903, 13.7, and 1902, 14.74. The average annual mortality was 16.11 per 1,000. The age of death varied from 23 to 99, with an average of 59 years and 10 months. The chief causes of death in the order named were: Cerebral hemorrhage, "heart disease," senility, pneumonia, external causes, and kidney disease.

Physical Conditions at the Quarantine Station.—The annual report of Dr. Alvah H. Doty, Health Officer of the Port of New York, points out that the buildings on Hoffman Island and part of the buildings on Swinburne Island have been built for many years and are badly in need of reconstruction. He suggests that a legislative committee be appointed to inspect the quarantine establishment with the view of ascertaining the appropriation required. The report states that the big work of examining all immigrants from cholera infected ports has resulted in an increase of at least 100 per cent. in the efficiency of the laboratory, but the report states that the condition of the laboratory is very cramped and should be brought to the attention of the Legislature.

To Isolate Pupils Having Trachoma.—It is admitted by the health authorities in New York that grappling with trachoma in clinics and dispensaries has failed to limit the spread of this disease and consequently a new plan is to be tried. At the suggestion of Dr. William H. Park, pupils having trachoma will be in one room in a building separate from the public school, if possible. The plan is to be tried at Public School No. 21, which is located in a district composed largely of those who have lately arrived in this country. A room has also been set apart in this school where children suffering from this affection will be treated by an ophthalmologist from the Health Department. It is said that there are no more children now with sore eyes than there have been for many years, but it is thought that the disease can be stamped out if proper measures are adopted.

To Open More Milk Stations.—It is announced that the Health Department of New York City will open twenty-eight additional milk stations and that all will be in operation by February 1. The Health Department will then have fifty-five stations in the different boroughs.

High Record for Operations.—It is reported that a young woman, twenty years of age, has just been discharged from the Medico-Chirurgical Hospital of Philadelphia after having undergone thirty-two surgical operations in seven years. She entered the hospital to have a deformity of the leg corrected which took six operations; when about to leave the hospital she was attacked with appendicitis and it required twenty-five operations to correct aftermaths of this first appendicitis operation.

The Vaccination Fight in East Orange, N. J.—Trouble between the Board of Education of East Orange and the anti-vaccinationists began about a year ago when an order was issued requiring all children attending the public schools to be vaccinated. In order to evade the order of the Board of Education scars were made in some instances by applying a fluid preparation and in others old scars were shown until recently when these ruses were discovered. On January 18 notices were sent to parents announcing that children who were out of school because their parents would not permit them to be vaccinated would be treated like ordinary truants. The anti-vaccinationists are well organized and provided with funds with which to fight the school board.

Medical Examiners Sever Reciprocal Relations.—The Iowa Board of Medical Examiners at their meeting on January 12 severed reciprocal relations with Illinois and hereafter will refuse to recognize the certificates granted by Illinois.

Urges State License for Physical Culturists.—Dr. E. W. White, physical instructor in the Illinois Athletic Club, who believes that physical training under the direction of an incompetent instructor often does more harm than good, is endeavoring to have a law passed requiring this class of instructors to pass an examination by a civic board in order to obtain a license before being permitted to follow their profession.

A Tax for Physicians.—A bill is pending in the Mississippi Legislature which imposes a privilege tax of $10 on practising physicians.

Dr. Wiley.—The Congressional committee appointed to investigate the charges against Dr. Wiley has found that the accusation of conspiracy has not been established, but that the accused officials were actuated solely by a desire to procure for the Bureau of Chemistry an efficient assistant in the person of Dr. H. H. Rusby, under terms and conditions which these officials believe to be in entire accord with the law. The report declares that Dr. Wiley and his associates communicated the fact of Dr. Rusby's employment to Secretary Wilson. It holds, however, that the contract is technically illegal and recommends that Congress make specific provision for the employment of experts in the Department of Agriculture.

How the Country was Saved from an Invasion of Cholera.—In the recently issued monthly bulletin of the New York State Department of Health there is a brief history in the form of a report of "How Cholera Was Kept Out of New York State." It tells of the fight waged by Dr. Alvah H. Doty and the State Department of Health from July 20 to November 10, when the

special work at Quarantine closed. In the four months seventy-seven steamships arrived from affected ports with 26,455 passengers who were examined to determine whether or not they were cholera bacilli carriers. Of these 150 were detained for further examination and of these twenty-six were proved to have cholera or to be carriers. No cases of cholera were discovered after August 18. All the time the Health Officer with his efficient staff was working day and night to ward off the threatening invasion of cholera, the Governor of the State, through his agent from Oswego, Mr. Bulger, was persecuting him and accusing him of incompetence and worse. The Governor is finding it very difficult to get a competent man to replace Dr. Doty.

Dr. Frederick Cheever Shattuck of Boston, Mass., has tendered his resignation as professor of Clinical Medicine in the Harvard Medical School, to take effect September 1, 1912. Dr. Shattuck has been made Professor Emeritus, in the chair which he has held since 1888. He has been an instructor in the school for over thirty-two years.

Dr. P. H. Eijkman, Chairman of the Rontgen Ray Society of the Netherlands, arrived in New York on January 17. The object of his visit to this country is to promote "internationalism," by which term he means international organization with regard to scientific bodies.

Prof. J. George Adami has decided not to accept the chair offered him at the Northwestern University, Chicago, and will remain at McGill University.

Dr. Richard C. Cabot was elected president of the Mount Sinai Hospital, Boston, on January 11.

Dr. Edward H. Bradford has sent in his resignation as surgeon to the Children's Hospital of Boston, to take effect on June 1.

Fire Destroys Hospital.—The main building of the Maternity Hospital of the New England Reform Society, located at Jamaica Plains, Mass., was destroyed by fire on January 17. The building was new and the loss is estimated at $25,000.

New Device for Mount Sinai Hospital.—The Directors of Mount Sinai Hospital have decided to install refrigerating apparatus for the purpose of cooling certain wards during the summer months. While this plan has been tried in army hospitals and in the Philippines in the treatment of tropical diseases, it is new in general hospital work. As the work is experimental, only small wards will be cooled where heart and intestinal diseases will be treated.

Hospital for Cedar Falls, Ia.—Plans have been adopted for the construction of an emergency hospital to cost $5,000, in connection with the State Teacher's College at Cedar Falls.

Hospital for Santa Rosa, Cal.—The Providence Sisters plan to build a $75,000 hospital which will serve to minister not only to the people of Santa Rosa but to the surrounding counties. The city will present the site for the hospital building.

For Charity.—At the meeting of the directors of the Tuberculosis Preventorium for Children at Farmingdale, N. J., on January 16, it was announced that $115,000 of the $150,000 endowment fund which it is proposed to raise was in hand. It was then announced that John D. Rockefeller and Andrew Carnegie had each promised $10,000, leaving only $15,000 to be raised. It was suggested that churches and other organizations be asked to complete this sum. With the buildings made possible by this fund 172 children can be cared for at one time, or about 600 a year. The will of Henry Batterman of Brooklyn leaves the income of $20,000 to the Bushwick and East Brooklyn Dispensaries and to the following institutions $5,000 each; The Brooklyn Home for Consumptives, the Brooklyn Association for Improving the Condition of the Poor, the German Hospital, and the Brooklyn Hospital. By the will of Mrs. Emily Howe Hitchcock the Hitchcock Memorial Hospital, at Hanover, N. H., which bears the name of the testatrix, receives $20,000. The will of Mrs. Clara E. Wellman of Brookline, Mass., bequeaths to the following charities $1,000 each: Vincent Memorial Hospital, Boston Nursery for Blind Babies, Home for Crippled Children, and the Massachusetts Homeopathic Hospital.

New Medical College for Hungary.—The Minister of Education has laid before the Hungarian Parliament a bill stipulating the erection of two new universities in Hungary in the cities of Pressburg and Debreczin. Only the Pressburg institution will include a medical school. Owing to its large hospital, children's hospital, school for midwives, this city is especially suitable for a medical school and the government will grant $400,000 annually for the next ten years for the development of this institution.

Bill to Stop Gifts to State Medical Examiners.—An act to prevent medical examiners from accepting gifts from public service corporations, manufacturing concerns, and accident insurance companies has been introduced into the Rhode Island House of Representatives. The act provides a penalty of $100 for any violation of its provisions, and also provides for the removal of any medical examiner from his office who may be found guilty of accepting such gifts.

Utah State Board to Enforce Medical Laws.—At its meeting on January 4 the Utah Board of Medical Examiners adopted measures whereby every violator of the medical laws of the State is to be brought to account and either convicted or driven from the State. Arrangements were also completed at this meeting with the Idaho Board of Examiners for reciprocal relations between the two States whereby the granting and honoring of licenses will be placed on a uniform basis.

A New Boston Hospital.—It is announced that the new hospital for children and the nurses' home are about completed and the formal opening will be held on February 7, when Dr. Abraham Jacobi of New York and President A. Lawrence Lowell of Harvard will be the principal speakers.

The New Haven (Conn.) Medical Association at the annual meeting, January 18, 1912, elected the following officers: *President*, Dr. Norton R. Hotchkiss; *First Vice-President*, Dr. Stephen J. Maher; *Second Vice-President*, Dr. William F. Verdi; *Secretary*, Dr. Robert G. Tracy; *Treasurer*, Dr. Thomas V. Hynes; *Executive Committee*, Drs. Ralph A. McDonnell, John F. Luby, and the president; *Library Committee*, Drs. Gustavus Eliot, Wilder Tileston, and the second vice-president; *Finance Committee*, Drs. Frank H. Wheeler, Robert E. Peck, and the treasurer; *Literary Committee*, Dr. Charles D. Phelps, the first vice-president, and the secretary. The association has 137 members, 5 associate members, and 16 non-resident members. During the year twenty meetings were held, with an average attendance of forty-two. The building fund in the hands of the finance committee amounts to $15,000, including a legacy of $3,000 recently received from

the estate of Dr. Samuel D. Gilbert. The library contains 1,000 bound volumes of periodicals and about 5,000 books.

The New York Physicians' Mutual Aid Association held its forty-fifth annual meeting on January 10 at the Academy of Medicine, and elected the following officers: *President*, Dr. William F. Muttendorf; *Vice-Presidents*, Drs. Wendell C. Phillips and James W. Ingalls; *Recording Secretary*, Dr. A. Edward Davis; *Assistant Secretary*, Dr. Edward S. Peck; *Corresponding Secretary*, Dr. W. B. Jennings; *Treasurer*, Dr. Daniel Lewis; *Directors*, to serve from 1912-1915, Drs. W. H. Katzenbach, H. J. Boldt, and W. B. Hoag. The mutual Aid Association is in a successful condition. It carries an insurance of $1,000, at an annual expense of from $16 to $20. The president's report stated that the capital fund is $78,000; and the membership comprises more than 2,100 physicians.

Philadelphia County Medical Society.—At the annual meeting held January 17 the following officers were elected for the ensuing year: *President*, Dr. Levi J. Hammond; *Vice-President*, Dr. J. Torrance Rugh; *Associate Vice-Presidents*, Drs. Wilmer Krusen, Stewart C. Runkle, George H. Nofer, S. A. Lowenburg, and I. Pearson Willits; *Secretary*, Dr. Wm. S. Wray; *Assistant Secretary*, Dr. Howard Childs Carpenter; *Trasurer*, Dr. Collier L. Bower; *Censor*, Dr. C. A. E. Codman; *Directors*, Drs. Wm. S. Newcomet, J. Torrance Rugh, and Wm. Duffield Robinson.

Continuance of Training Schools for Nurses.—At a meeting of the executive committee of the Hospital Conference of the City of New York, held January 12, the following resolution was adopted: "That the president be authorized to appoint a committee of five who shall act with the president to secure (*a*) either such modification of the Nurse Practice Act or of the regulations adopted by the Education Department under the said act; or (*b*) such interpretation by the Education Department of the existing regulations as shall render it possible for the hospitals of the city to continue the training of nurses in sufficient numbers to meet the public demand for trained nursing service. The president appointed the following named committee: Dr. C. Irving Fisher, Dr. Thomas Howell, Dr. S. S. Coldwater, Rev. A. S. Kavanagh, Dr. F. A. Brush, Rev. Geo. F. Clover.

Anatomist Wanted in Army Medical Museum.—The United States Civil Service Commission announces that an examination will be held on February 20, 1912, to secure eligibles from which to fill a vacancy in the position of anatomist in the Army Medical Museum. Information regarding applications and places of examination may be had by writing to the United States Civil Service Commission, Washington, D. C.

The Cost of Public Health.—Dr. William E. Park, Commissioner of Health of Rockford, Ill., has been gathering statistics to ascertain what it costs to promote health in various American cities. He finds that some of our cities spend only 5 cents per person on health, while others spend as much as 93 cents per inhabitant. The average for cities having more than 300,000 population is 32.8 cents per capita. He finds that the death rate is not always in keeping with the amount spent. This means that the money is not always efficiently spent. He believes that cities of over 300,000 population should spend at least a dollar per capita, while those of less than 50,000 should spend at least 50 cents per inhabitant. He also finds that European cities spend more money per capita on health than we do, and that they invariably find that it pays.

Physicians Refuse Contract Work.—The physicians of Westfield, Mass., met on December 29 and formed an organization to be known as the Westfield Medical Society. They agreed that no members should perform lodge or contract work, except as town physician or school inspector. The Lee County Medical Society of Louisiana has also passed resolutions expressing disapproval of lodge and contract work.

Destroy $80,000 Worth of Opium.—Under the direction of the Collector of Customs of San Francisco, 3,000 five-tael tins of opium, valued at $80,000, have been seized and destroyed since June, 1911. It is estimated that, while the International agreements are being satisfied, the United States Government is losing $2,000,000 in revenue annually.

Obituary Notes.—Dr. Perry Hall Dudley died in Philadelphia on January 17 at the age of 42 years. He was graduated from the Hahnemann Medical College of Philadelphia in 1892. He was at one time resident physician in the Children's Homeopathic Hospital and later of the West Philadelphia Homeopathic Hospital.

Dr. I. H. Nichols of Stamford, Vt., a graduate of Albany Medical College, died at his home December 30, at the age of 68.

Dr. John F. Davis of Brooklyn, N. Y., a graduate of Bellevue Hospital Medical College, New York, in 1874, died at his home December 31, at the age of 60 years. He was a member of the King's County Medical Society.

Dr. James Allen of Ogden, Utah, a graduate of Washington University, Medical Department, St. Louis, Mo., in 1867, died at his home December 27. He was 81 years old. He was a Thirty-Second Degree Mason and served in the Union Army. He was medical director of the G. A. R. and at one time post commander.

Dr. Samuel Green Sewall of New York City, a graduate of Dartmouth in 1844, a retired physician, died at his home December 29, at the age of 88 years.

Dr. Hugh P. Roden of Newark, N. J., a graduate of the Missouri Medical College, St. Louis, died of pneumonia at his home December 31, at the age of 67 years.

Dr. William Constantine Pise Boone of Plainfield, N. J., a graduate of the University of Maryland, School of Medicine, in 1872, died at the Johns Hopkins Hospital, Baltimore, Md., December 30, at the age of 67 years.

Dr. Edward Hubbard Welch of Winsted, Conn., a graduate of Yale Medical School, New Haven, Conn., died of paralysis at his home December 28, at the age of 60 years.

Dr. Henry Lewin of New York City, a graduate of the New York Electric College in 1896, died at his home December 28.

Dr. Chauncey C. Turner died of cerebral hemorrhage at Wilkesbarre, Pa., on December 30. He was graduated from Jefferson Medical College in the class of 1909. He was for six months resident physician in the Children's Hospital of Philadelphia.

Dr. William H. Senderling died at Philadelphia on December 30, at the age of 64 years. He was graduated from Jefferson Medical College in the class of 1869.

Correspondence.

CHRISTIAN SCIENCE IN THE PANAMA ZONE.

To the Editor of the Medical Record:

Sir:—By decree of the President of the United States the Christian Science healer is made a doctor of medicine, if not "in name," certainly and what is far better for these sanctimonious seekers after the shekels, "in game." The following regulation has been issued for the medical government of the Canal Zone: "Any person shall be regarded as practising medicine within the meaning of this order who shall prescribe for, operate on, or in any wise attempt to heal, cure, or alleviate, or shall in any wise treat any disease or any physical or mental ailment of another, provided that nothing in this order shall be construed to prohibit the practice of religious tenets of any church in the ministration to the sick or suffering by mental or spiritual means without the use of any drug or material remedy, whether gratuitonsly or for compensation, provided that sanitary laws, orders, rules, and regulations as are now or hereafter may be in force in the Canal Zone are complied with." Is not this order a glaring example of the saying, "Republics are ungrateful"? Is it not an insult to the medical profession, members of which have sacrificed their lives to make the Canal Zone habitable and without whose aid Panama would have remained a tropical den of death? Was there ever such utter disregard of justice and propriety? That the administration deeply feels the criticism made upon it on this subject in the New York *Sun* of the 14th instant is evident from the fact that the Secretary of War himself has replied to it. Since I am the author of this criticism, I beg to call the attention of my colleagues whom the matter may have escaped to the facts here stated and to urge upon them to start a movement to induce the Canal Zone administration to rescind this disgraceful order.

In that criticism I wrote: "It is not my purpose to discuss the merits of this latest medical cult; the history of medicine abounds in the rise and fall of factions. Most of the latter may be reconciled on the ground that, as the great Hufeland has said, 'nature, not the doctor, cures.' Every individual who has been properly educated in anatomy, physiology, and pathology is cognizant of the truth that the physician is but the intelligent utilizer of the healing powers of nature—the *vis medicatrix naturæ*—which the father of medicine, Hippocrates, discovered and taught 2,200 years ago. . . . A man may in theory and even in practice be an allopath, a homeopath, or an osteopath; if he has satisfied the authorities of the State that he is entitled to a license to practise no one may gainsay it." How does the great lawyer and Secretary of War answer my query whether "the public should not at least be protected against contagion and infection from unreported and unguarded diseases?" "Most decidedly," he writes, "and the order of the President carefully secures such protection. Obedience to sanitary rules is exacted at the pain of criminal prosecution of every practitioner, whether medical or Christian Science." Was there ever a more flagrant *reductio ad absurdum?* How the Science healer is to make a diagnosis of a disease which he does not recognize as an entity does not trouble the honorable Secretary of War. How, even if he were by reason of profit willing to stultify himself, he is to know the difference between smallpox and acne, between diphtheria and tonsillitis, between scarlatina and erythema, does not seem to occur to him. And last, but not least, how the healer is to report a case of contagious disease which he does not see at all when he gives "absent treatment" does not seem to cause the great lawyer one single qualm. He, in fact, offers a premium for deceit and hypocrisy to those healers who are mercenary and to their credit be it said I believe that the Christian Scientists are not all in that category.

Pardonable as the War Secretary may be for having overlooked these trifles, he cannot escape criticism when he states in defense of his extraordinary legalization of Christian Science practice that "the recent order, which in effect exempted reputable Christian Science practitioners from the necessity of being licensed, merely followed the legislation of a large and important number of States." I am informed by Dr. Wisner R. Townsend, secretary of the Medical Society of the State of New York, that this "large number" consists of Connecticut, Maine, New Hampshire, South Dakota, and Tennessee, viz., five out of forty-eight States. The "importance" of these five States in population admits of discussion when comparison is made with the remaining States. Since I have not access to the census figures I can only say that I cannot subscribe to the view that they are either a large or an important number. The United States Government has always been conspicuous in the requirement of high ability, thorough training, and character of its appointees in the medical service, with the result that the achievements of the medical officers of this Government have redounded to its fame at home and abroad. The marvelous work of Dr. Gorgas in the Canal Zone is a shining example. What would the Canal Zone be to-day without his intelligent application of the principles which Lazear and Carroll died to establish?

By this "order" for the medical control of the Zone the United States Government has brought discredit upon itself because it confers with the stroke of a pen upon any man or woman who professes "Christian Science" all the rights and privileges of the physician, rights which are strictly guarded elsewhere by our Government with examination into the fitness of appointees and which all governments sedulously guard in the same manner. Why this enlargement of the privileges of this cult, why this addition to the laws of New York, 1910, chapter 659, section 173, which says, "this article shall not be construed to affect . . . the practice of the religious tenets of any church." I am informed that this section was inserted in order to protect the men practising circumcision as a religious rite against prosecution. Now comes the Canal Government and distinctly and specifically *adds* to the words religious tenets "*in the ministration of the sick and suffering by mental or spiritual means whether gratuitously or for compensation.*" In the New York law the last words are not found. A case is now on appeal in which a judge decided very properly that "the Christian Scientist has the right to believe that he can heal by prayer, but if he carries and puts this belief into practice for hire then he exceeds his rights." It remained for the Canal Zone Government to gratify the Christian Science people by absolving them even of "following the meek and lowly Jesus" who "went about doing good" without "compensation," and to place these

faithless followers of Christ on the same footing with physicians who have spent years in preparation for their calling. Will medical men supinely tolerate such encroachment upon their rights and upon the rights of the sick which it is their solemn duty to guard?

In conclusion I want to exonerate myself from the charge of disrespect to the government of the Canal Zone, for I have the deepest sense of obligation to and the highest regard for a President who stands out to-day amid the turmoil and contention of politics—*chevalier sans peur et sans reproche*—a man against whose integrity and patriotism no man dare breathe a suspicion. The above is written under a deep sense of injury to a calling to which I have devoted my whole life and from which I expect neither favor nor financial reward.

SIMON BARUCH, M.D.

51 WEST SEVENTIETH STREET, NEW YORK.

MULTIPLE HEREDITARY TELANGIECTASIS OF THE TONGUE, TURBINATES, AND SEPTUM WITH RECURRING HEMORRHAGES.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Since the publication of my communication with the above title in the issue of January 20, 1912, I have been advised by Dr. Frederic M. Hanes, Department of Pathology, Columbia University, of his contribution to this subject, which appeared in The Johns Hopkins Bulletin, Vol. XX, No. 216, 1909. Having supposed Osler's paper in the *Quarterly Journal of Medicine*, 1907-08, to be the most recent résumé of this subject, I must confess to a certain laxity in my examination of the more recent literature. Hence the omission of Dr. Hanes' report of "Two Unrelated Families." Apology is herewith made for the omission of this and any other references which may possibly have escaped my notice.

CORNELIUS DOREMUS VAN WAGENER, M.D.

NEW YORK.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE AND THE MEDICAL PROFESSION—TUBERCULOSIS NOTIFIABLE—OSTEOARTHRITIS—TYPHOID OUTBREAKS—NEW YEAR HONORS—OBITUARY.

LONDON, January 5, 1912.

INSURANCE, in some aspect or other, is the absorbing topic of the day in all classes. Whatever may be the subject of conversation, this is sure to intrude, and the new act gives rise to a degree of excitement greater than that aroused when it was only a bill. The politicians are, as usual, divided, but the rampant socialism preached by its author in Wales this week has shocked not a few of his supporters and the extreme radical press is annoyed at the admissions he made. In the profession the differences of opinion have been somewhat more emphasized, but on the whole there remains greater unanimity in our ranks than our oldest members can recall.

The position of the B. M. A.'s Council remains rather equivocal. The great majority of them have been elected for other than political views, and, if they resigned, would no doubt be re-elected should they be willing to serve. It is the inner clique which gives dissatisfaction. Unhappily, the Association has for years been guided and controlled by an inner clique and the constitution seems almost as if contrived to facilitate this. But it must be said that the apathy or want of consideration of the other members contributes to the result—and something like it is to be seen in innumerable committees and journeying bodies of various corporations.

Sir James Barr, who is president-elect, has been opposed to the bill from its first proposal, regarding it as a fraud on the public, and has stated his reasons at length in the *Times* and other papers. But he has been reluctant, perhaps, until obliged to put himself, as it were, in opposition to the Council. On the question of resignation he said to our interviewer he meant to stick to his post until he had made the annual meeting in Liverpool a success—a very natural resolution in his peculiar position, for the arrangements must be already advanced. He admitted at the same time that if a vote of want of confidence were passed he supposed members of the Council would go to their constituents. Like many others of consultant rank, Sir James has no personal interest, but is concerned for the future of the profession and asks wiseacres to determine how that can be benefited by the act. Some of the radical papers, instead of attempting to meet his arguments, reprove him for speaking contemptuously of the Chancellor and his policy, but in doing so they use far stronger language to express their own opinions. Sir James Barr in some of his communications discourses on the importance of insurance of various kinds to the public, and shows the difference as to sick insurance between "selected" lives and those of the general population. But I can only refer to medical points. He shows that the Act as it stands "spells ruin" to numerous practitioners, and he denounces other evils which his Council do not appear to have foreseen.

Dr. Edwin Smith, who is a barrister-at-law as well as M.D., has shed much light on the doings of the inner clique and stated that the Council appeared to hold a brief for the Government.

The *Times*, which has published several articles appreciative of the profession, printed on Wednesday a most important letter from Sir Clifford Allbutt on the public interest in the present crisis and how that has been ignored by the Act, while history and reason demand as the solution "no contract but payment for work done on a standard tariff."

The London mass meeting organized by Dr. Fred. J. Smith has led to the formation of a "reform committee" of the B. M. A., which is to have its sub-committees in the branches. To-day circulars are going round accompanied by reprints of Dr. Smith's letter in the *Times* and calling meetings to push the scheme. It is not to destroy the Association but to reform it. "Stick to it," he says, as "our only powerful organization, which in firm hands may see us through the trouble." Set up a strong executive that "will not wabble." It will be exceedingly difficult to work within the constitution, but it is possible, and to show the "reform committee" is in deadly earnest, there is to be a meeting of West London practitioners next Tuesday, at which Dr. Fred. J. Smith will take the chair and resolutions be proposed which, if carried, will be followed by proceedings such as are possible within the terms of the "cast iron constitution." Thus, whether the Council resign or not, the inner circle will have no chance of evading a plain issue. Few now venture to deny that this

inner circle did prefer to sacrifice the profession rather than risk a defeat of the author of the bill.

It was the conviction of the assembly at the Queens Hall that they had been "sold" to save a socialistic government that made them refuse to hear Sir Victor Horsley. His somewhat domineering manners has previously rendered him unpopular, and it was well known he would defend the Council.

It has been rumored during the week that the Council were consulting lawyers as to the necessity of calling a general meeting. Innocent people thought a request from nearly 600 members would be imperative—law or no law. But I hear the articles are designed expressly to prevent any discussion of policy at a general meeting, and counsel's advice is that only a meeting of "the representative body" can do so. Formalities have been fulfilled to get such a meeting. Whether they resign or not the executive might not do amiss, if he doubt the feeling of their members, to summon both bodies and ask their opinions.

From the 1st inst. consumption has become notifiable in all cases, completing the policy inaugurated in 1908, when notification was made compulsory in Poor Law Institutions. In March, 1911, the system was extended to hospitals. The Local Government Board justifies the new order on the ground of the success that has attended the previous efforts to control the disease, the death rate from pulmonary tuberculosis having fallen from 18.25 per 10,000 in 1881 to 10.93 in 1909. The regulations lay down that nothing shall be done under them to subject a patient to any liability, restriction, prohibition, or disability affecting himself or employment or means of livelihood, and this policy is indicated in other ways. The register is to be a private document. Patients are to be told that if properly treated they may cease to be dangerous to others, and local authorities are authorized on the advice of their M. O. H. to circulate handbills, leaflets, etc., concerning the disease and the prevention of its spread.

The surgical treatment of osteoarthritis was illustrated at the Clinical Section (R. S. M.) by Messrs. Gordon Watson and Morriston Davies. The former showed a case affecting the hip on which he performed subtrochanteric osteotomy of the femur, which had alleviated the patient's pain. Mr. Davies showed a woman who has suffered for many years from dislocation of the patella and osteoarthritis of the knee joint. In May, 1910, the patella could only be partially replaced and she could not lift the leg from the bed. He opened the joint, removed a good deal of both surfaces of ge external condyle; then divided the extensor quadriceps on the outer side, freed the tendons of the gracilis and semitendinosus from their insertions into the tibia, and stitched their cut ends to the inner side of the patella. Longitudinal pleating of the capsule to tighten it on the inner side of the joint completed the operation, which was so successful that the patient celebrated the first anniversary of its performance by going to a dancing party and dancing hard.

Typhoid fever prevailed in Leicester during the past month, during which more cases were admitted to the isolation hospital than throughout the previous eleven months. The M. O. H. has prepared a special report on the epidemic, from which it appears that the consumption of raw mussels seems a likely cause, for his inquiries show that nearly all the patients had eaten some in the uncooked state. An outbreak at Sheffield is said to have been definitely traced to the same cause, all the cases having partaken of a parcel of mussels sent from the Southwest coast.

The Finsbury outbreak in September was investigated by Dr. Hamer, who found the most probable cause to be fried fish, which has been considered responsible for several other outbreaks in London. The report shows that ice cream was suspected at first in the neighborhood, but the investigation proved that less than half the sufferers (21 out of 56) had partaken of the suspected cream, but no less than 52 of the 56 had eaten of the suspected fish. Obviously, two or three cases might be considered as representative of the average number of sporadic cases and unconnected with the epidemic. Dr. Hamer finds support for the fried fish hypothesis in his study of the age incidence, topographical distribution, social condition, and other influences affecting individuals or family groups.

At Croydon and Wandsworth some cases occurred recently and watercress, being rather largely cultivated in the district, became suspected. The local authorities determined to investigate the probability of contamination of the long, narrow beds in which the plant is cultivated, as well as the water which is kept continually flowing along them and the mud of the bottom in which the cress grows. Planting out begins in February. The sprigs are generally obtained from a distance, as in this way an earlier crop is secured than from the soil. The river Wandle, from which the water is directed over the beds, receives sewage higher up and, though it has undergone purification, there has been a suggestion that some danger may be in that direction. The rain water from the roads drains into the river and may be a source of pollution. Another risk is from the pickers. Planks are thrown across the beds for their convenience and moved downward from time to time as necessary. A picker with ambulatory typhoid is a further possible danger.

In the list of honors usually conferred at the New Year half a dozen doctors are included. A knighthood is given to Dr. Benson, president of the Royal College of Physicians in Ireland; Dr. Collie, medical examiner to the London County Council and the Water Board; Dr. J. M. Davidson of the *x*-ray department, Charing Cross Hospital; Dr. G. H. Savage, consulting physician to Guy's Hospital and Earlswood Asylum; Dr. C. K. MacKellar, a Glasgow graduate in medicine, member of the New South Wales Legislative Council, and Dr. Windle, Pro-V.C. of the National University of Ireland. Dr. Newsholme of the Local Government Board, gets a C.B.

As if to show that the Government attaches little value to the order or to the profession, the same rank is given to the proprietor of Beecham's Pills! so successfully advertised as "worth a guinea a box" that the papers say his history from an humble position constitutes "a romance of trade."

Dr. Trevelyon's death is a great loss to Leeds, where he was Professor of Therapeutics in the University, Physician to the Infirmary, and held other offices. He was a distinguished graduate of the London University, M.D. with honors in several branches, and a degree in science also (1885-7). In 1901 he was elected F.R.C.P. and gave the Bradshaw lecture in 1903, taking for his subject tuber-

culosis and the nervous system. He edited for some time Braithwaite's Retrospect of Medicine, and contributed to *Brain* and other reviews and journals. A very learned man, he was called a "walking cyclopedia" among the students, who found him always able and willing to clear up their difficulties.

The death occurred on December 30 of Dr. J. F. Sutherland, F. R. S. Ed., Senior Deputy Commissioner in Lunacy for Scotland, at the age of 57. He was an Edinburgh graduate, M.B., C.M., 1878; M.D. with gold medal, 1880. He had been medical officer to Glasgow prison and later a consulting officer to the Barlinnie prison. He was secretary of the Commission on Habitual Offenders in 1894, and took part in the International Medical Congress at Moscow, Paris, and Madrid. He wrote a work on "Hospitals and Their Construction" and also on the "Insane in Private Dwellings," and an "ambulance *vade mecum*." He also contributed largely on insanity and criminology and similar subjects to societies, congresses, and journals.

Progress of Medical Science.

Boston Medical and Surgical Journal.

January 11, 1912.

A Few Notes Upon Operative Measures for Tuberculous Knee Affections. H. W. Marshall.
Two Cases of Intracranial Cerebral Hemorrhage in the Newborn Relieved by Operation. C. C. Simmons.
Infant Feeding *au Naturel*. S. Delano.
A Case of Mild Anterior Poliomyelitis. W. N. Bullard.
Two Cases of Poliomyelitis Mistaken for Neuritis. T. A. Williams.

Surgery in Tuberculosis of the Knee Joint.—H. W. Marshall states that resections in adults are beneficial in a large percentage of cases, the final results depending upon the following factors: the patient's powers of resistance, skill in the performance of the operation, and the degree of postoperative care. Resections should be made as simple as possible. Diseased tuberculous bone should be cut away without attempting to remove it entirely, yet without leaving an overwhelming amount of necrotic material for physiological reparative processes to take care of when the disease is extensive. The vitality of the tissues should not be impaired by unnecessary mechanical injury, cauterization, or strong solutions, because tubercle bacilli cannot be eradicated by such applications, and because severe treatment produces necrosis that delays healing and retards union of the bones. The patella should be removed, the wound washed with normal salt solution, the capsule of the joint sutured, and a plaster cast applied. Special conditions often exist that demand special measures, as, for example, the use of bone plates. The question of drainage or tight closure can be decided only by the surgeon, for each individual patient, at the time of operation. Successful healing of wounds depends upon a proper degree of rest and freedom from mechanical movements and irritations; upon proper regulation of the blood and lymph supply; and upon favorable external physical and chemical stimuli.

Intracranial Hemorrhage in the Newborn.—C. C. Simmons reports two cases of this condition successfully operated upon. Both infants were born after instrumental labors; the first case presented symptoms of stupor, vomiting, and twitching of the limbs; the second case presented symptoms of dyspnea, cyanosis, and general convulsions. In both cases the operation performed was a short incision along the coronal suture, and through the latter and the dura underlying it, which incision was followed by the escape of a small amount of blood. The best treatment of any case of cerebral hemorrhage is an operation that removes all the clot, such as that described by Cushing, as there is the possibility of organization of any clot not removed, with the formation of adhesions and consequent irritative symptoms later in life. On the other hand, if the hemorrhage is large and extends below the tentorium, no operation yet devised will remove it all, and, if bilateral, a double or secondary operation must be done. Some infants bear the severe osteoplastic operation well, as is shown by the fact that Cushing did a double operation in one case with recovery, while in two other cases he performed secondary operations. It is, nevertheless, a much more serious operation than the evacuation of the blood through the suture. The operation done in these two cases was simple, rapid, and easy of execution and apparently warranted by the result.

Infant Feeding.—S. Delano makes a plea for a simpler and more natural method of feeding infants on cow's milk that has not been diluted to the extent that the stomach rejects it for want of a sufficient volume of curd to work upon. The stomach needs curds—a magma to get its grip upon—so that the organ may act like an efficient churn. Whole milk supplies this want. Some of the most general principles of infant feeding are not to lean too heavily on the tables of physiological chemistry, and to avoid the fallacy that because a baby's stomach rejects its food it is a weak stomach.

Mild Poliomyelitis.—W. N. Bullard reports the case of a girl eight years old, who had been thoroughly exposed to contagion from her brother, ill with anterior poliomyelitis. The patient developed an illness exactly one week later than her brother. Her illness, although the high temperature lasted but a short time, was a severe one, weakening the patient, who was a vigorous child,, and at the time of the attack and for some time previously had been in perfect health, so that she was in bed fourteen days and was still weak at the end of three weeks. There was in this attack no important gastrointestinal disturbance. The patient was for two days unwilling to eat and there was constipation. Once when pressed to eat she vomited, but this was evidently due to a temporary condition, and was a secondary symptom. The general hypersensitiveness of the nervous system was very marked. The absence of paralysis was a significant feature. The author is not certain whether or not the preliminary administration for three days of urotropin and the use for the same time of a gargle of peroxide of hydrogen had any influence in checking the severity of the ensuing illness.

Poliomyelitis Mistaken for Neuritis.—T. A. Williams reports two cases: one of paralysis of the legs, and the other paralysis of the serratus magnus, both of which were cases of poliomyelitis mistaken for neuritis.

New York Medical Journal.

January 13, 1912.

The Effect of Tuberculin Treatment upon the Leucocyte Picture. M. Solis-Cohen and A. Strickler.
The Evolution of the Operating Table; Additional Data. W. S. Bainbridge.
A Case of Thoracic Tumor and Aneurysm of the Descending Thoracic Aorta, Treated with Salvarsan. G. R. Satterlee.
A New Muscle Resection Operation for Squint. R. G. Reese.
Rheumatism and an Unquestionable Remedy. L. Ott.
A Combination of Autopsy Tray and Warming Stage to Facilitate the Bleeding of Rabbits from the Postauricular Vein. G. A. Rueck.
The Present Status of Gonococcus Infection. R. M. Rawls.
The Ocular Manifestations Associated with Some Forms of Chronic Cyanosis. T. B. Holloway.
Periamygdalar Suppuration. N. Settel.
Deep Penetration of the Thigh by a Crochet Needle. F. Griffith.

Tuberculin and the Leucocytes in Tuberculosis.—M. Solis-Cohen and A. Strickler state that improvement in pulmonary tuberculosis is associated with an increase in the proportion of lymphocytes in the blood at the expense of the polymorphonuclear cells. As the patient gets worse the proportion of multinuclear cells increases at the expense of the lymphocytes. None of the other cells is affected by either process. As a rule, in consequence, the percentage of lymphocytes will be less and the percentage of multinuclears will be greater the more ad-

vanced the disease and the greater the amount of lung tissue involved. As a patient begins to improve there is usually an increase in the proportion of multinuclear cells containing one and two nuclei, the increase being often maintained for several weeks, but not indefinitely. Uninuclear, transitional, and eosinophile cells are unaffected by the stage, extent, or progress of the disease. The leucocytic picture in pulmonary tuberculosis corresponds with the patient's resistance to disease, rather than with the extent of the lesion. By means of the leucocytic picture it is often possible to estimate the resistive power and to obtain a fairly accurate estimate as to the chances for recovery. In all the author's cases there was an increase in the proportion of multinuclear cells with one and two nuclei during tuberculin treatment; in two cases, however, being preceded by a fall. In four of the six cases the lymphocytes were increased during tuberculin treatment, a slight intermediate fall, however, occurring in one after three months on the same dosage. Tuberculin given by the mouth in very small does, very gradually increased, apparently produces an alteration in the proportion of the different forms of leucocytes.

Evolution of the Operating Table.—W. S. Bainbridge presents additional data in support of his belief that the operating table he has devised contains original and improved features.

Thoracic Tumor and Aortic Aneurysm Treated with Salvarsan.—By G. R. Satterlee. (See MEDICAL RECORD, Vol. 80, page 993.)

Operation for Squint.—R. G. Reese describes a new muscle-resection operation for squint, the essential features of which are as follows: The line of incision is six millimeters from the circumcorneal vascular zone, thereby avoiding any marked reaction. The free dissection of the muscle from all tissues of the globe makes the operation a myectomy. The sutures are put in the scleral stump, avoiding traumatism by not sewing the sclera proper. The manner of placing the middle suture precludes the possibility of its pulling out. The "bridle" seen in advancements is avoided, motility is not limited, and a better cosmetic effect is given. The muscle is sutured to its original insertion and not to the corneal margin. The same result is eventually obtained in advancements, as the belly of the muscle becomes attached to the original insertion. The motility is increased in every case. The manner of placing the forceps insures the holding of all the fibers and the groove on its blade indicates the middle of the muscle.

Treatment of Rheumatism.—L. Ott reports favorable results in the treatment of rheumatism with acetylmethylenedisalicylic acid.

Autopsy Tray and Warming Stage.—G. A. Rueck describes a combination of these two forms of apparatus.

Gonococcus Infection.—R. M. Rawls discusses the various aspects of this subject.

Ocular Manifestations of Chronic Cyanosis.—T. B. Holloway cites from the literature, including his own cases, a total of twenty-seven cases of cyanosis retinæ that have been observed among the numerous reported cases of congenital heart disease. Ocular changes have also been observed in the absence of general cyanosis. In the majority of cases the discs were hyperemic and the disc margins blurred in varying degrees. In the two primary types of polycythemia, namely, polycythemia rubra megalosplenica and polycythemia hypertonica, in the secondary types of polycythemia, and in true polycythemia the fundus changes were of the mild type; that is, the discs were dusky red with hazy margins, and the veins were moderately distended and dark in color.

Peritonsillar Suppuration.—N. Settel discusses the symptomatology and treatment of this condition.

Penetration of Thigh by Crochet Needle.—F. Griffith reports the case of a woman whose thigh had been penetrated for a distance of three inches and a half by a large crochet needle which was removed intact without any resulting bleeding.

The Journal of the American Medical Association.

January 13, 1912.

The Nursing Infant.—H. Koplik states that the neglect of breast-feeding and the premature weaning of infants are prevalent evils. Mixed feeding does not seem to occur to the mind of the physician. The author notes the recent improvement in the higher education of the physician in regard to the diseases and hygiene of infants.

Cystitis Caused by Hexamethylenamine.—W. D. Fullerton reports a case in which a very pronounced cystitis was produced by the administration of hexamethylenamine and hexamethylenamine methylene citrate.

Cesarean Section.—By T. M. Burns. (See MEDICAL RECORD, vol. 80, page 106.)

Training Camp Method in Treatment of the Functional Neuroses.—T. J. Orbison has tried in thirty cases during the past ten years to apply the training methods used by athletes. The results have been uniformly good. The motto of every training camp is "obedience." Every necessary psychotherapeutic method is tried, according to the case, but it is rarely necessary to attempt any of the extraordinary methods of psychoanalysis.

Chloroform Fatalities.—P. W. Monroe reports six cases of fatalities within the past fifteen months from the use of chloroform as an anesthetic. Chloroform seems to be the anesthetic of choice in Mexico. In the first three cases the unfavorable symptoms supervened thirty-two to fifty-eight hours after the operation. In the last three death occurred early during the operation. Cessation of respiration was the first symptom noted in each case.

Abdominal Incisions in Pelvic Surgery.—C. G. Child describes what he considers an improvement on the Pfannenstiel incision in pelvic surgery.

Intravenous Injection of Salvarsan.—W. B. Dakin describes a new apparatus that he has devised for this purpose.

Fungous Tracheobronchitis.—G. H. Hoxie and F. C. Lamar report two cases of bronchitis in which careful examination of the sputum revealed the presence of fungous stalks as the only causative organism. Attempts to grow the fungi failed and their identity was not established.

Convulsive Movements of the Face.—A. Gordon states that there are three types of convulsive movements of the face: tic, facial spasm, and epileptic twitchings. As regards the last, they are usually associated with generalized epilepsy or with focal epilepsy of the same side. In some cases they may be confused with tic and facial spasm, but the most important differentiating feature is in the successive and progressive contraction of the different facial muscles instead of a simultaneous contraction of an entire half of the face seen in facial spasm of non-cortical nature. Facial tic is characterized by a sudden abrupt contraction of one or several muscles, always the same, but not corresponding to a well-defined nerve region. It has a tendency to spread and invade other functions, and can be controlled to a certain extent by the patient's will. It is largely a habit neurosis, and its chief characteristic feature lies in exaggeration or disfigurement of physiological gestures or mimicry. In true facial spasm, on the other hand, there is no tendency to reproduce physiological acts and the convulsive movements are limited to the well-defined areas of nerves. While in the majority of cases the spasmodic contraction of the face is caused by peripheral irritation, organic lesions higher up may be possible factors, as some of the clinical observations indicate.

Postoperative Psychoses.—H. P. Cole emphasizes the importance of the preventive psychic treatment by judicious management before operation and during its performance and during convalescence. Care taken to relieve discomfort and pain, and the use of alcohol rubs or, at most, a mild sedative, will usually eliminate insomnia, which is an important factor. The non-use of morphine, the early and frequent use of the rectal tube to remove tympanites, and the substitution of a soft diet soon after operation, with a rapid return to the normal preoperative diet, are not only measures of excellent physiological therapeutics, but also tend to distract the patient's mind.

Phenol Gangrene.—F. Buckmaster reports a case of an extensive gangrenous ulcer of the leg caused by the application of a phenolated ointment.

Hemiatrophy of the Tongue.—E. W. Scripture reports a case of this condition associated with defective speech in a girl fifteen years of age.

Tetanus Prophylaxis.—O. Berghausen and C. E. Howard state that the treatment of punctured, lacerated, and penetrating wounds, especially these from giant crackers and blank cartridges, should include thorough cleansing and removal of foreign matter, application to the wound of a 5 per cent. phenol-hydrochloric acid solution, enlarging the opening if necessary and using a general anesthetic if called for, then packing the wound lightly with gauze soaked in the phenol-hydrochloric acid solution, dressing the wound, and changing the dressing daily. Immediately after the first dressing 1,500 units of antitetanic serum should be given subcutaneously.

Adiposis Pituitary Syndrome.—T. A. Williams and J. Dunlop report a case in which they diagnosed a neoplasm in or around the pituitary body, on the basis of the deep headaches, the heaviness and sleepiness, the hypertrophy of the fatty tissues, and the changes in the visual field.

Foreign Blood in the Treatment of Hemophilic Bleeding.—J. H. Sayer states that in a case of obstinate hemorrhage from a wound in a hemophilic patient the bleeding was stopped at once by a few drops of the author's own blood applied to the cleansed bleeding surface.

Recurring Adenoids in Children.—L. Fischer suggests the importance of looking for syphilis as a possible cause in recurring cases of adenoids.

Medical Examining Boards.—B. K. Hays describes the practical methods which are in use by the North Carolina board to supplement the written examination, including the use of the obstetric manikin, physical examinations, identification of surgical instruments, the use of drugs and of the microscope, and a few practical chemical tests. Reciprocity has been one of the most serious problems, and to meet it the board grants it on the merit of the individual, according conditional reciprocity to a few States but reserving the right to reject any applicant it thought best. The board will not register any physician through reciprocity until he has appeared before the board in person.

Visceral Lesions of Poliomyelitis.—S. Flexner, F. W. Peabody, and G. Draper state that in poliomyelitis the main injury appears to be inflicted on the nervous organs, next on the lymphatic organs, and last on the parenchymatous organs. Of the last, the focal necrotic lesions of the liver are especially prominent. Whether the organic lesions, exclusive of those of the nervous system, are to be attributed to parasitic action or to the action of toxic elements of parasitic origin is a matter of conjecture. But the polymorphonucleosis of epidemic poliomyelitis is caused not only by the lesions of the nervous system, but also by lesions of the lymphatic tissues and liver. This consideration will serve to explain certain discrepancies in the cell-findings in the cerebrospinal fluid and in the circulating blood.

Paroxysmal Tachycardia.—H. M. Rich reports a case of this condition.

Unnecessary Adenectomies.—C. B. Younger believes that there are cases in which the operation of adenectomy has been unnecessarily performed and that there is sometimes a tendency to careless diagnosis of these cases. There are other obstructions of breathing that will cause the adenoid facies, such as hypertrophic rhinitis, which is quite as prevalent in childhood as at any other time of life. A high arched palate and protruding front teeth, a very large hypertrophy of the faucial tonsils, or a slight anterior deviation of the spine protruding on the nasopharyngeal space have also been known to cause the symptom-complex of adenoids. Little or no disturbance of nasal breathing may occur from fair-sized adenoid growths in a spacious nasopharynx, and operation may hardly be required.

Aneurysm of Innominate.—J. F. Baldwin reports a of this condition which was successfully operated upon by synchronous ligation of the subclavian and carotid. The aneurysm extended about 1½ inches above the clavicle.

Intestinal Hemorrhage in Tuberculosis.—Le R. S. Peters and E. S. Bullock report five cases of marked hemorrhage from the bowel occurring in tuberculous patients. One of the hemorrhages resulted fatally.

Double Tubal Pregnancy.—E. T. Milligan reports a case of this condition successfully operated upon.

The Lancet.

January 6, 1912.

Sensory Disturbances from Cerebral Lesions.—H. Head and G. Holmes present a general conception of the mechanism underlying sensation, based upon a study of human beings in whom disease, accident, or surgical interference has produced some stationary lesion. They

conclude that the brain-stem between the nuclei of the posterior columns and the final termination of all sensory paths in the optic thalamus is the seat of the following changes. The impulses for pain, heat, and cold continue to run up in separate secondary paths on the opposite side of the nervous system to that by which they entered. They receive accessions from the regrouped afferent nerves of the head and upper part of the neck. Although these paths are frequently affected together they are independent of one another, and any one of the three qualities of sensation may be dissociated by disease. Lesions of the spinal cord tend to diminish simultaneously all forms of painful sensibility, but with disease of the brain-stem the gross forms of pain and discomfort may pass to consciousness, although the skin is analgesic. This applies not only to painful pressure but to the discomfort produced by excessive heat. The impulses concerned with postural recognition part company with those for spacial discrimination at the posterior column nuclei. Up to this point they have traveled together in the same column of the spinal cord, but as soon as they reach their first synaptic junction they separate. Above the point where they enter secondary paths the power of recognizing position and passive movement can be affected independently of the discrimination of two points and the appreciation of size, shape, and form. It would seem as if those elements which underlie the power of localizing the spot touched or pricked become separated from their associated tactile impulses before they have actually come to an end in the optic thalamus. The long connection of localization with the integrity of tactile sensibility is here broken for the first time. All these changes are preparatory to the great regrouping which takes place in the optic thalamus.

Surgical Treatment of Tuberculous Arthritis in Children.—H. H. Tubby states that the object of every form of treatment of tuberculous arthritis must be: (1) to eradicate the disease; (2) to preserve the functions of the part; and the question is whether these results are more frequently obtained by climatic and conservative measures or by so-called radical operations. It appears that the balance of experience gained in treatment during the last decade shows that conservative treatment is the better in childhood. Time is saved, the resultant deformity is diminished, and there is less risk of generalized tuberculosis when the treatment is non-operative.

Erythremia.—W. Hale White reports three cases of this disease, known also as Osler's disease, Vaquez's disease, and splenomegalic polycythemia. Each case shows features of interest. The cases do not in any way indicate why the blood should hypertrophy to the extraordinary extent that it does in this condition. In none of them could any cause for the polycythemia be discovered, and it was clear from the history of the first patient that the disease had begun only three years before the author saw him, and then the patient's attention had been called to it by his becoming dusky; in the other two the diagnosis was only reached by a routine examination of the blood of patients whose spleens were enlarged, for neither of them was cyanotic, and thus they illustrate that the disease should not be called "splenomegalic polycythemia with cyanosis," as is sometimes done.

Diagnosis and Treatment of Chronic Duodenal Ulcer.—B. G. A. Moynihan states that the diagnosis of duodenal ulcer depends first and foremost (indeed almost exclusively) upon the anamnesis. The history enables a diagnosis to be made with a risk of error which, when tested by the operation, is found to be extremely small. The second point in the diagnosis is the discovery during the stage of active ulceration, during the "attacks," of an increased secretion of free HCl. Thirdly, there is a striking and possibly characteristic picture given upon *x*-ray examination after a bismuth meal. The stomach, in the presence of active ulceration in the duodenum, seems to have an enhanced activity in respect to both its secretory and its motor functions. Fourthly, the diagnosis depends upon the discovery of occult blood in the feces during the stage of active ulceration, if daily examinations of the feces are made. In the later stages, of course, the appearances due to slight or severe stenosis may be presented. The physical signs elicited upon an examination of the abdomen are only of the slightest value until such obstruction has developed. The only operation appropriate for the great majority of the cases is gastroenterostomy. In nine out of ten cases operated upon the author has examined and removed the appendix. In eight out of ten cases in which the appendix was removed this organ gave evidences of long-standing and advanced disease.

Foreign Bodies.—R. Parker reports a series of twelve cases in which foreign bodies of various kinds were removed from different parts of the body.

Fungi in Tropical Bronchomycosis.—A. Castellani notes that the fungi so far observed in Ceylon in cases of bronchomycosis are 12 different species of endomyces, the commonest being *Endomyces tropicalis, Saccharomyces krusei,* various strains of actinomyces and streptothrix, fungi of the genera aspergillus and penicillium, and several other fungi which so far the author has not determined.

Treatment of Glaucoma.—J. H. Parsons states that the formation of a filtering cicatrix holds out the best hope of alleviating chronic glaucoma.

Lymphatic Varicocele.—F. C. Madden reports three cases presenting the usual clinical signs and symptoms of varicocele, but in which the swelling was due to the presence of tortuous coils of very thin-walled, dilated lymphatics in the substance of the spermatic cord. This condition, the author believes, is a manifestation of filariasis, though he has not succeeded in finding filarial embryos in the blood.

Prevention of Tuberculosis.—J. Sim Wallace alludes to the importance of increasing the resistance of the individual and of preventing the entrance of the tubercle bacilli through carious teeth, and diseased tonsils and adenoids.

Counting Leucocytes.—R. A. P. Hill describes a new method by means of which a total and differential count of leucocytes may be done simultaneously.

Cerebral Malaria.—W. T. Quaife reports the case of a boy aged 18 years in whom malaria manifested itself by deep unconsciousness lasting for 48 hours. Recovery followed the use of bihydrochloride of quinine administered in 30-grain doses per rectum.

Pulque and Pulque Drinking in Mexico.—J. Bland Sutton describes the national drink of Mexico, pulque, which is an alcoholic beverage obtained from the fermentation of the sap of the maquey (*Agave mexicana*).

British Medical Journal.

January 6, 1912.

Jejunal and Gastrojejunal Ulcers. A. W. Mayo-Robson.
Urethral Calculi, with Special Reference to Encysted Calculi of the Prostatic Urethra. K. W. Monsarrat.
A Case of Calculi of the Prostatic Urethra. R. L. Spittel.
An Unusual Urinary Deposit of Calcium Carbonate. W. H. Brown.
A New Cell Proliferant; Its Clinical Application in the Treatment of Ulcers. C. J. Macalister.
The New Cell Proliferant; A Note on the *Symphytum Officinale* or Common Comfrey. W. Bramwell.
Treatment of Puerperal Septicemia by Vaccines. A. Hawkyard.
Salvarsan in Yaws. H. Alston.
An Examination of Abor Arrow Poison. F. N. Windsor.

Jejunal and Gastrojejunal Ulcers.—A. W. Mayo-Robson states that jejunal and gastrojejunal ulcers, which are more common than the profession is quite willing to acknowledge, probably never occur except as a complication of the operation of gastroenterostomy. The author believes that these ulcers are due to the fact that sufficient care is not exercised in dieting patients who

have undergone the operation of gastroenterostomy, and that hyperchlorhydria and sepsis combine to produce ulceration. The dangers of jejunal ulcer arise not only from painful indigestion (the pain simulating that of duodenal ulcer, only varying in position), but also from a recurrence of symptoms of ulcer often associated with hemorrhage, and not infrequently ending in perforation. If after a period of good health subsequent to the operation of gastroenterostomy a patient begins to complain of acidity, flatulence, and discomfort after meals; followed after a time by definite pain from an hour to two or three hours after food, and relieved temporarily by taking milk or some other light diet, or some form of alkali such as sodium carbonate; if the pain occurs on the left of the umbilicus, and is associated with marked tenderness and rigidity of the left rectus, the suspicion of ulcer of the jejunum will arise. The complication of hematemesis or melena, or even the presence of occult blood in the feces, will make the diagnosis fairly certain; but if, with all these symptoms, a swollen and tender loop of bowel can be felt in the region of the anastomosis, or below and to the left of the umbilicus, the surgeon can no longer be in doubt as to the nature of the disease. In extreme cases of this condition the author has found the operation of jejunostomy most safe and useful.

Urethral Calculi.—K. W. Monsarrat states that urethral calculi are either calculi which have been formed in the urinary passages above and have lodged in the urethra or calculi which are formed in the urethra itself, or in some cavity or channel communicating with it. The lodged or impacted calculi of the urethra are vesical or renal in origin. Encysted urethral calculi lie in pockets or diverticula communicating with the urethra.

Calculi of the Prostatic Urethra.—R. L. Spittel notes that the true prostatic calculi are formed in the substance of the prostate gland and are entirely distinct in origin and nature from urinary calculi.

Urinary Deposit of Calcium Carbonate.—W. H. Brown reports the case of a man aged sixty-five years who was presumably suffering from granular kidney, and whose illness began with headache, followed later by nausea and vomiting. He got progressively worse, gradually passed into a comatose state, and died three weeks after the onset of symptoms. The urine, which at no time contained more than a very small quantity of albumin, showed during the second week of illness a very large number of crystals of calcium carbonate.

Comfrey, a New Cell Proliferant.—C. J. Macalister states that from time immemorial the *Symphytum officinale* or common comfrey has been recommended as a dressing for sores and ulcers of various kinds. The root contains a crystalline solid which possesses the same empirical formula as allantoin. Solutions of this substance have been found by the author to possess the distinct property of stimulating the growth of epithelium on ulcerated surfaces. It may even be administered internally in the treatment of gastric and duodenal ulcers.

Comfrey, the Cell Proliferant.—W. Bramwell alludes to the efficacy of this substance in the treatment of ulcers. It is also of value when administered internally in gastralgia, and as an external application in pruritus ani.

Vaccines in Puerperal Septicemia.—A. Hawkyard reports four cases of puerperal septicemia, chiefly of streptococcus origin. The cases all recovered under the administration of autogenous vaccines.

Salvarsan in Yaws.—H. Alston concludes from his experience in the treatment of 500 cases that salvarsan is a specific for yaws and that there is no danger attending its use in this disease.

Abor Arrow Poison.—F. N. Windsor states that the arrow poison used by the Abors is a paste made by pounding the soft parts of *Croton tiglium* plant.

Berliner klinische Wochenschrift.

January 1, 1912.

Endogenous Depression.—Bonhoeffer applies this term to a condition which requires differentiation from neurasthenia. The latter he holds to be of rare occurrence, while the former is not only common, but divisible into several kinds. How are endogenous affections isolated? The hereditary element is the first to bear in mind, as manifested very early in life as a certain temperament. Especially important in this connection is the hypochondriac tendency, and next in order the periodicity, as expressed in many ways—insomnia, palpitation, nightmare, imperative concepts. More somatic in character are periodic dyspepsia, diarrhea, urticaria, asthma, etc. Certain affections which recur at long intervals become serial or cumulative, notably migraine and scintillating scotoma. From another side this pseudoneurasthenia is expressed by periodic depression such as underlies the supervention of manic-depressive insanity. In contradistinction from neurasthenia the symptoms of endogenous depression set in suddenly and sharply and disappear as sensationally. Since they are referred to particular organs, the patient may seek aid for gastric, cardiac, or other somatic disturbance. Three illustrative cases are cited. The first occurred in a cook who had suffered much for months from nausea, palpitation, anxiety, insomnia, bad dreams, vertigo, weakness, etc. Her symptoms were aggravated in the morning. Objective examination revealed nothing worth mentioning. There had been a similar experience four years before. There was a very palpable hereditary element, for both parents had been melancholic suicides. The patient rapidly improved, all the symptoms tending to disappear at the same time. The prognosis, however, is unfavorable. The second case was characterized to a much less extent by heredity and periodicity. Naturally cheerful and active, the temper changed to one of depression and diminished executive ability, so that the occupation of locomotive engineer had to be given up. Nothing was found objectively and the patient had been suspected by his superiors of shamming illness for some purpose. The third patient suffered from typical cyclothymia.

Sympathoma Embryonale.—Under this term Pick describes a typical malignant tumor of the sympathetic nervous system. It is characterized histologically by tissue exactly resembling the embryonal structure of the sympathetic ganglia. Such growths necessarily occur in the midst of other tissues and not in the continuity of nerves, the nearest approach to a pure localization being seen in case of tumor of the sacrococcygeal gland. In addition to the primary localization, metastases occur. By all odds the most common incidence is in the suprarenal glands. Some eighteen cases are to be isolated from the literature, including one herewith reported. The first one goes back to 1885, reported by Dalton as a lymphoma. In 1891 Marchand published the second case and recognized its possible character, but the tumor, seated in the right suprarenal body, showed no clinical malignancy. Succeeding cases were usually termed sarcoma or glioma, the latter when occurring in the nerve centers. French authors introduced the term "parasympathoma" in 1907. The very thorough monographic study will be continued in another number.

Salvarsan in Pernicious Anemia.—At a recent meeting of the Toronto Academy of Medicine, Dr. W. B. Thistle reported two cases of pernicious anemia which he had treated by injections of salvarsan. One of the patients had had a number of severe relapses. Four injections of salvarsan were given in the muscles. In the second case there were given also four injections. Both patients improved very decidedly.—*Canada Lancet.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

PERSONAL HISTORY.

HABITS.—The question of the habits of an applicant from a life insurance point of view is confined to the use of alcohol or drugs. The subject is one of the most important in the selection of risks, and there is none that involves so much trouble and uncertainty on account of the strong inclination to suppress and distort the truth, even among applicants whose statements in other respects may be relied upon. This may be illustrated in part by the experience of the writer who had a small degree of confidence at one time in a written statement signed by the applicant whose habits were questioned, in addition to the regular report, to the effect that his mode of life was all that could be desired. This faith was soon dissipated, however, when subsequent and reliable investigation revealed excessive indulgence by a good proportion of the individuals who had signed these declarations.

An examiner, then, should not rely too much on the assertions of those who are suspected of using drugs or consuming an immoderate amount of alcohol. It is, unfortunately, necessary to ask him at times to make further inquiry, even though he has made a favorable report, when the company has reason to believe from other sources that the habits of the applicant are not what they ought to be. The examiner should give all the facts acquired in his investigation and may rest assured that information furnished by him will be treated as strictly confidential. The company does not expect the examiner to act the part of a detective and he will, as a rule, be requested to investigate further only when he is personally acquainted with the applicant. Occasionally, however, even though the applicant is unknown to him, the examiner may be asked to make some inquiry if the community in which they reside is a small one where everyone is more or less familiar with the affairs of others. Service of this kind is included among the duties of the medical examiner, as he is depended upon to render all the assistance in his power toward guarding the interests of the company and excluding poor risks. An examiner may have known an applicant for a considerable length of time and not be cognizant of any bad habits on the part of the latter. In this event, inquiries conducted in a quiet, tactful way among mutual friends and business acquaintances will usually elicit the desired information.

Alcohol.—It is not commonly contended that the individual who uses alcoholic beverages in a *strictly* moderate way is to any appreciable extent a less desirable risk than the total abstainer. The tolerance of alcohol varies with the individual. One man may drink a glass or two of wine or spirits a day with impunity, while another can not indulge even to this extent without physical deterioration. It may be stated in a general way, however, that the total abstainer is less likely to become an intemperate user at a later date than the one who habitually drinks alcohol in moderation, for the former is less exposed to the temptations of the bar-room, club, or the private closet in his home. The question arises, what constitutes strictly moderate drinking? Some men who pride themselves on their moderation would feel hurt at the suggestion that they drink more than is good for them, and yet are in the habit of taking five or six, or even more, drinks a day. These men are apt to resent close questioning when the examiner tries to get some definite idea of the amount of alcohol consumed by them. Then, again, there are the individuals who go on several (three or four) short sprees a year and drink little or nothing in the intervening period. It may be accepted that, as a rule, those who continuously indulge to the extent of about five or six drinks a day without feeling any the worse for it are more likely, eventually, to suffer from ill effects of some kind than those who get drunk occasionally and leave alcohol alone in the interval.

Immoderate drinkers of all classes should be rejected, but, notwithstanding the great care taken by insurance companies to keep such applicants off the books, a number of them will succeed in securing policies owing to the difficulties already alluded to. The number of these undesirable risks can only be kept down by maintaining a high standard among the examiners and agents, and in securing reports from other reliable sources. Part of the difficulty may be laid to the failure of medical examiners to agree on the question as to what constitutes strictly moderate drinking. Medical men who take five or six drinks a day themselves are inclined to adopt a complacent attitude towards the habits of those who indulge to the same extent or even a little more, while the abstaining examiner may be too severe on those who are really moderate drinkers. The examiner should state, as far as possible, the actual daily quantity imbibed by the applicant, instead of using such ambiguous terms as "temperate" or "moderate."

The kind of beverage used seems to make little difference. Beer is popularly supposed to be less injurious, but this idea is poorly founded, and its fallacy is ably maintained in the following quotation from an article by the eminent actuary, Emory McClintock, the ultimate results of alcohol also being referred to in the remarks: "Yet the difference between those who drink beer and those who drink water is unmistakable, while the loss on beer drinkers has been almost the same as upon wine and spirit drinkers. Among wine and spirit drinkers a large part of the extra loss is upon actual drunkards, while the remainder must be ascribed to the injurious effects upon the constitution of supposedly moderate though really immoderate indulgence. Among beer drinkers pretty much the whole of the extra loss, it would seem, must be attributed to constitutional effects. It is the danger of falling into the habit of intoxication that makes spirit drinking the more formidable of the two; while undoubtedly the habit of drinking either beer or wine or spirits beyond a certain medical limit, not well defined because it cannot be the same for all constitutions and usually exceeded by those who drink at all, tends in many cases towards disease. Finally, it may be questioned very seriously whether the physicians should not fix their limit of safety for any individual at a lower point for beer, measuring by alcoholic contents, than for spirits; that is to say, whether there is not an injurious element in beer apart from the alcohol which it contains.

"There is no reason to distrust the general results of this investigation. It coincides with all previous reasonable belief and expectation. It does not show that those who drink only occasionally and not to intoxication, or those who drink habitually but lightly, are in any way injured. It does not show that all of those who drink heavily must, therefore,

necessarily die prematurely. It does show, however, that there is enough injury done to a sufficient number of individuals to make the death loss distinctly higher on the average. Again, it is admitted that death losses in excess among drinkers are not necessarily due always to drink. The coincidence between excessive drinking and lower vitality may be partly due to bad risks taking to drink, as well as to good risks becoming bad because of drink. On the whole, however, the teetotal habit, not only before but after middle age, must be counted as a favorable indication in judging of proposals for insurance from persons not known to be careful and moderate in the use of beverages."

The well-considered conclusions of Mr. McClintock are emphasized by the experience of certain companies which divide their policy holders into abstaining and non-abstaining classes on the ground that it is unfair for the former class to be penalized by paying the larger premium required to meet the greater mortality in the latter class. Dr. T. F. McMahon recently read an article (MEDICAL RECORD, Vol. 80, No. 23) on the comparative mortality in these classes in the company which he represents. The statistics presented by him are practically the same as those gained from the experience of the other companies working on similar lines, and are the more impressing because they deal with comparison between total abstainers and strictly moderate drinkers and exclude immoderate drinkers as far as possible. In a resumé of these statistics it is seen that during the 45 years from 1866 to 1910 the number of actual death claims in the total-abstainer class was 8,988, as against 12,754 expected; in the non-abstaining class the actual number of deaths was 14,711, as against 15,794 expected. In other words, the percentage of actual to expected deaths in the abstainers' class was 70.47, while in the non-abstaining section it was 93.14. The mortality saving in non-abstaining class was, therefore, 3,766 lives during the 45 years, while that in the non-abstaining class, with a larger business, was only 1,083 lives. If the loss ratio had been as high in the abstaining section as it was in the non-abstaining section the mortality saving would have been only 875 lives instead of 3,766. If the loss ratio in the non-abstaining section had been as low as in the abstainers' section, the mortality saving would have been 4,664 lives instead of only 1,083. This makes the mortality saving an average of 4.3 times as great in the abstaining class as in that of the non-abstaining. The examiner can readily understand how poor a figure a class of those would cut who habitually drink five to seven times a day, if compared with even the non-abstainers' class referred to in the above figures in which every effort is made to exclude those who are not strictly moderate in the use of alcohol.

If the applicant has resorted to some form of cure for alcoholism, this should be clearly reported, as well as any lapses or subsequent treatments. It is important to know, furthermore, whether the applicant has been a total abstainer at all times since the cure, as otherwise the risk should be rejected. Some Keeley graduates are insurable on an endowment plan if time enough has elapsed to indicate that there will be no lapse and the applicant has fully abstained from drink in the meantime.

In his efforts to procure information the examiner will have to use all his tact and diplomacy, for these applicants will often resent any inquiry or will prevaricate in regard to their drinking. The questioning should, therefore, be carried out in a good-natured way, as a brusque manner and a too-pointed cross-examination will often lead to the defeat of the examiner's efforts to obtain the facts. The same suggestion applies when the applicant's friends are approached, for if they become suspicious of the questioner's motives they are very apt to make light of the matter or refuse point blank to give any information. Before the authorities at the home office can act on these cases they must have in their possession a full knowledge of the number of drinks consumed daily by the applicant, the maximum amount taken in any one day, the number of times, if any, he has been intoxicated, and the date of last intoxication.

Drugs.—Detection of the drug habit is more difficult than in the case of the immoderate use of alcohol. A drug habitué will usually lie without the least compunction or hesitation in regard to his weakness, and the examiner must, therefore, depend largely in his conclusions upon the general appearance and behavior of the applicant and upon current gossip. These unfortunates are especially bad risks on account of the wretched condition which awaits them and because the possibility of any escape from or effectual resistance to the intense longing becomes more and more remote as the quantity of the drug is inevitably increased while the mental and physical forces weaken. For some time after the habit has fastened itself upon the victim, there is little or no outward sign. Sooner or later, however, symptoms begin to appear in the form of colorless, sometimes clammy, skin, averted looks, contracted pupils, nervous irritability, or mental and physical lassitude. The presence of one or more of these signs should arouse the suspicion of the examiner and inspire him to look further into the habits of applicant; also to inspect the shoulders and arms for the presence of scars from the use of the hypodermic syringe.

Why Physicians Who Are Good Business Men Are in Demand by Insurance Companies as Examiners.—Charles T. Cutting believes that he is expressing the sentiment of the greater number of physicians and surgeons throughout the country when he states that now, as never before, the members of the medical profession find that to be successful the practice of medicine must rest upon business principles, and that no man can give proper thought and time to the study of disease and its care if harrassed by financial difficulties. Dr. Cutting argues that especially do the insurance companies look out for a business man as an examiner. The business physician is appreciated more to-day by the accident and liability companies than by the life companies, for the reason that experience has shown the value of medical examinations in cases of claim, as well as for the underwriting department, and it has been demonstrated that some physicians make most valuable claim adjusters, when this business instinct has been developed, and once employed in this capacity and making good, a permanent position with the insurance company is certain. The writer proves to his own satisfaction that the career of an insurance examiner is more profitable than that of the average general practitioner and is likely to become even more so than at present. Dr. Cutting gives a list of ten necessary qualifications for success as an examiner for accident, health, and liability insurance companies and concludes with expressing the opinion that the better qualified candidate for such a position is the physician who has a practical knowledge of business rather than one who can see nothing but science and performs his work in a routine, though highly professional manner.—*Lancet-Clinic*, December 9, 1911.

Book Reviews.

Diseases of the Ear, Nose, and Throat, Medical and Surgical. By Wendell E. Phillips, M.D., New York City. Illustrated with 545 half-tone and other text engravings, including 31 full-page plates, some in colors. Philadelphia: F. A. Davis Co., 1911.

The only criticism we have to make on this book is that it is too ponderous for comfort. As is implied in the title it covers three special fields. The author's purpose has been "to write a practical, accurate, and concise treatise bearing the approval of personal experience." Part I, covering 28 chapters, 405 pages, is devoted to the ear; Part II, 4 chapters, 85 pages, to the influence of general diseases upon the ear, nose, and throat; Part III, to the nose and accessory sinuses, the pharynx and fauces, and the larynx respectively. There is an excellent chapter on tracheoscopy and bronchoscopy. The formulary of the Manhattan Eye and Ear Hospital is appended and an excellent index closes the volume. Dr. Phillips is to be congratulated on the results of his labors. He has not simply added one more to the long list of treatises, but has introduced many original illustrations. The chapters on the labyrinthine diseases are full and up to date. That on malignant neoplasms of the larynx is rather meager. In fact the portion devoted to the ear has not only the larger part of the space but seems to have had the major part of the author's attention.

Textbook of Embryology. By Frederick Randolph Bailey, A.M., M.D., formerly Adjunct Professor of Histology and Embryology, College of Physicians and Surgeons (Medical Department of Columbia University), and Adam Marion Miller, Instructor in Anatomy, College of Physicians and Surgeons (Medical Department of Columbia University). Second Edition. With five hundred and fifteen illustrations. Price $4.50. New York: William Wood and Company, 1911.

The popularity of this textbook is attested by the fact that a second edition has been called for within two years of its first appearance. The book consists of two parts, the first one being devoted to the questions of general development—the cell, the sexual elements in the formation of the organism, the maturation of ovum and spermatozoa, fertilization, segmentation, germ layers, and fetal membranes are the separate subdivisions treated. Organogenesis is considered in the second part of the book, the development of the various tissues, viscera, and organs of special sense being fully described. Each chapter is followed by practical suggestions for procuring and preparing material for class study. An appendix reviews general histological technique.

The book is decidedly a good textbook, clearly written and very amply illustrated. It should prove of much use in reading collateral with practical courses in embryology and forms a good introduction to the study of histology and gross anatomy.

Currents of High Potential, of High and Other Frequencies. By William Benham Snow, M.D., author of "A Manual of Electro-Static Modes of Application, Therapeutics, Radiography, and Radiotherapy," "Therapeutics of Radiant Light and Heat and Convective Heat"; editor of the Journal of Advanced Therapeutics, and late Instructor in Electro-Therapeutics in the New York Post-Graduate School, etc. Second edition. Price, $3.00 net. New York: Scientific Authors' Publishing Company, 1911.

In no other department of therapeutics is there greater diversity of opinion, methods, and apparatus than in that devoted to the medical application of electricity. Dr. Snow has brought out a second edition of a work in which, in addition to the consideration of the high frequency currents of great potential, he gives special attention to great potential in association with the lower rates of frequency. The high potential currents of lesser frequency, says the writer, "exert the most favorable effects upon acute and chronic inflammatory conditions, especially those in which no germs are present." The first edition of the book has been considerably enlarged and partly rewritten. The developments in methods and their application in the treatment of hypertension by the d'Arsonval current, as well as the employment of direct d'Arsonvalization in the treatment of infection, have received consideration in the new edition. The findings and standards adopted by the committee of the Electro-Therapeutic Association devoted to the standardization of physical therapeutic measures have, the writer states, been closely adhered to in the present edition. A scientific basis for the employment of electricity and other modalities cannot as yet be said to be established. It is a consummation devoutly to be wished. Meanwhile the enthusiastic and authoritative way in which the subject is presented by this author is more or less acceptable.

Case Histories in Neurology. A selection of histories setting forth the diagnosis, treatment, and post-mortem findings in nervous disease. By E. W. Taylor, A.M., M.D., Instructor in Neurology, Harvard Medical School; Assistant Physician, Department of Neurology, Massachusetts General Hospital; Visiting Neurologist, Long Island Hospital, Boston. Boston: W. M. Leonard, 1911.

This is the latest of the "Case History Series," issued by the same publisher. It serves a purpose in setting forth certain fundamental facts regarding the symptomatology, diagnosis, treatment, and pathological findings in the more frequent disorders of the nervous system. One hundred and fourteen actual cases are reported in illustration of definite disease processes. The subject matter is arranged, after the anatomical method of division, into peripheral, spinal cord, and brain diseases. These are followed by disorders for which a definite anatomical basis has not yet been found; and lastly by affections characterized by disorders of function, the neuroses. These main divisions are each preceded or followed by explanatory sections on principles of diagnosis and treatment. There are thirty-seven figure drawings in the book, all original and of practical value. The work should prove to be of greater value perhaps to the student and general practitioner than to the neurologist. The less frequent and obscurer conditions occasionally met with by the latter are eliminated. We are unable to find described or illustrated clinically some symptoms of diagnostic value in localizing certain cerebral lesions, for example, the Wernike hemiopic pupillary reflex, the Weber syndrome, etc. The case histories are presented on the principle developed for medicine by Prof. W. B. Cannon. The style is clear and concise, and the book is a welcome addition to clinical neurology.

An International System of Ophthalmic Practice. By Walter Pyle, A.M., M.D., Philadelphia, Member of the American Ophthalmic Society. Pathology and Bacteriology by E. Treacher Collins, F.R.C.S., Surgeon to the Royal London Ophthalmic Hospital and Ophthalmic Surgeon to the Charing Cross Hospital, etc., and M. Stephen Mayou, F.R.C.S., Surgeon and Pathologist to the Central London Ophthalmic Hospital, etc. With three colored plates and thirty-seven figures in the text. $4.00 net. Philadelphia: P. Blakiston's Son & Company, 1911.

This volume of 558 pages is well printed and fully illustrated. The names of the authors are a sufficient guarantee of the excellence of the work. Chapter I deals with Aberrations in Development. Those connected with the primary and secondary eye vesicles, the invaginating surface epiblast, the mesoblast, and the orbitonasal fissure are considered in detail. Neoplasms are discussed in Chapter II. In the chapter entitled "Derangements of the Circulatory Fluids of the Eye and of the Vessels in Which They Are Contained," glaucoma, as well as albuminuric retinitis, and arterial sclerosis, are quite fully considered. The subject of injuries occupies Chapter IV. Under the heading "Inflammation" are considered: (*a*) The changes common to all inflammatory processes, (*b*) the modifications they undergo in the various structures of the eye, (*c*) the method of infection of the ocular tissues. This chapter is embellished by some admirable colored plates. A chapter on "Parasitic Diseases Affecting the Eye," "Degeneration," and an appendix giving practical methods of obtaining, examining, and preserving specimens follow. The work is written in a masterful manner by men who are recognized authorities on the subjects treated. It forms a valuable number in the volumes that go to make up the system of which it forms a part. The reviewer most sincerely commends it to all ophthalmologists.

Die Differentialdiagnose zwischen Magengeschwür und Magenkrebs. Die pathologische Anatomie dieser Erkrankungen in Beziehung zu ihrer Darstellung im Röntgenbilde. Von Prof. Dr. V. Schmieden. Mit 42 Abbildungen im Text. Price 4 marks. Berlin: Verlag von August Hirschwald, 1911.

This monograph of ninety pages is a reprint of a paper in the *Archiv für klinische Chirurgie*. It consists of numerous clinical histories of gastric disease, with the laboratory findings and with retouched x-ray photographs. Schmieden's conclusion is that neither chemical analysis nor x-ray pictures alone should be held sufficient in attempting the diagnosis of gastric disease, especially of ulcer or cancer; both should be used in every case, as their results amplify and correct each other.

Diagnostik und Therapie der Magenkrankheiten. Von Prof. Dr. T. Boas. Sixth Edition. Price 17 marks. Leipzig: Georg Thieme, 1911.

The present book on diseases of the stomach appears in its sixth edition and is the work of one of the greatest specialists in this field, Professor Boas. As a textbook it stood the test of time for the last fifteen years and was found to be extremely practical and useful. In the present edition the value of occult blood in the diagnosis of digestive diseases, first described by Boas, naturally occupies a prominent position. The Rontgenology of the stomach and gastroscopy are also given prominent places. According to Boas, examinations of the stomach in the fasting condition are of great import. A normal stomach should be empty; if quantities of food, microscopically visible, are found there is some distinct disturbance with the motor function of the stomach. If there is no food, but gastric juice in considerable quantity present (over two ounces), we have to deal with hypersecretion. The latter may be of neurotic origin or due to an open ulcer near the pylorus. In the dietetic treatment of hyperchlorhydria the author lays much stress on the prescribing of fats in abundance. This group of nourishment, as is well known, tends to diminish gastric secretion and thus reduces the acidity. In malignant diseases of the stomach Boas advocates early operation, provided there is some hope of total resection of the tumor. Within the last three years there were among the total resections of the growths 18 per cent without recurrences. Boas' book needs no further recommendation. It will find a prominent place in every practitioner's library.

Die Gastroskopie. Von Dr. Hans Elsner. Price 8 marks. Leipzig: Georg Thieme, 1911.

This is a monograph on an entirely new subject, namely, "Gastroscopy." The author gives his experiences for five years with this new and important method of examination. Gastroscopic examination may only be done in patients with an empty stomach, since all stomach contents impair the transparency and purity of the prism or the objective. Lavage of the stomach even before gastroscopy is not desirable. The wash water, some of which always remains in the stomach, forms air bubbles when air is pumped into the stomach; this either obscures the view entirely or veils it more or less. In preparing a patient for gastroscopy Elsner makes use of anesthesia, both general and local. Twenty to thirty minutes before examination the patient is injected with gr. 1/6 or preferably gr. 1/3 of morphine muriate. Just as important as this general narcotic during the first gastroscopic examination is the local application of cocaine. A small swab of cotton attached to a Krause forceps is dipped into a 10 per cent. solution of cocaine. The cocainization takes place in three stages: First, the base of the tongue, the uvula, and the anterior pillars are touched; then the posterior pillars, pharynx, and sinus pyriformis are cocainized. Finally the lowest part of the pharynx and the entrance to the esophagus are cocainized in the following manner. The cotton swab is placed between the arytenoid cartilage and posterior pharyngeal wall and then, on deglutition, inserted into the esophagus as far as possible. Cocainization of the epiglottis, sinus pyriformis, and arytenoid cartilages with the assistance of the laryngoscope has been superfluous in most cases. In especially sensitive patients it is, however, advisable to use it. Cocainization should as a rule not take longer than four to five minutes. A few minutes later, after loosening the clothes, we can proceed to the examination. The position of the patient must be one in which the natural obstacles to the introduction of the straight gastroscope are overcome as much as possible. In other words, we must try by proper position of the patient to straighten out as much as possible the physiological bends of the esophageal tube in order to make the introduction of the gastroscope possible or easier. The lateral position, with face turned slightly downward, probably is the best for this purpose. In this position the muscles of the neck are relaxed and the lower part of the esophagus is sufficiently straightened out so that the instrument slides into the stomach without resistance. The lateral position with face turned downward also has the advantage that all saliva and mucus, which during the examination are often secreted in abundance, can easily flow out of the mouth. Coughing and swallowing caused by the mucus collected above the entrance to the larynx are less in this position or may be entirely absent. Further advantages of the lateral position are in the inspection of the stomach itself. The posterior wall, hard to see in the dorsal position, is usually easily inspected in the lateral position. The same may be said of the pylorus. As a rule, Elsner first introduces the gastroscope in the left lateral position. The left leg is kept extended and the right, bent at the knee, laid over it. The head of the patient lies in the hands of an assistant who bends it backward. The assistant must follow every motion of the examiner. Where an assistant is not at hand a cushion may support the head of the patient. Then with the left hand the head must be bent back while trying to make a straight path for the introduction of the tube. Elsner's work on gastroscopy is timely and can be recommended in the highest terms.

Electricity: Its Medical and Surgical Applications, Including Radiotherapy and Phototherapy. By Charles S. Potts, M.D., Professor of Neurology, Medico-Chirurgical College; formerly Instructor in Electrotherapeutics and Associate in Neurology, University of Pennsylvania Medical Department. With a Section on Electrophysics by Horace Clark Richards, Ph.D., Professor of Mathematical Physics in the University of Pennsylvania, and a Section on *X*-Rays by Henry K. Pancoast, M.D., Professor of Röntgenology in the University of Pennsylvania, Medical Department, Philadelphia. With 356 illustrations and 6 plates. Price $4.75 net. Philadelphia and New York: Lea & Febiger, 1911.

This is a remarkably comprehensive work dealing with medical and surgical electricity. As the author points out, for the intelligent use of electricity as a remedial agent a knowledge of the changes in the tissues and functions of the various organs of the body caused by its passage is essential. Therefore a knowledge of what is known as electrophysiology is most important. In treating this subject Dr. Potts has adopted an original plan which consists, instead of devoting one section exclusively to the constant current, another to the static current, and so on, in grouping these modalities according to the effects produced. This seems the most rational manner of presenting this subject. The matter and arrangement of the book are both excellent, while the large number of good illustrations is a great aid to the proper comprehension of the working of the currents. The work appears to be a thorough exposition of medical and surgical electricity, and as such may be recommended to medical students and practitioners. Electrophysics and the *x*-rays are ably discussed by Drs. Richards and Pancoast and, as said before, the work is a valuable textbook.

Diseases of Infancy and Childhood. Their Dietetic, Hygienic, and Medical Treatment. A Textbook Designed for Practitioners and Students in Medicine. By Louis Fischer, M.D., Attending Physician to the Willard Parker and Riverside Hospitals of New York City; Attending Physician to the Sydenham Hospital; former Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital, etc., etc.; Fellow of the New York Academy of Medicine. Fourth Edition. With 308 illustrations, several in colors, and 30 full-page half-tone and color plates. Price $6.50. Philadelphia: F. A. Davis Company, 1911.

If this volume is to be judged by its size it is indeed a "big" book. The author has succeeded in crowding into it a great deal of "pediatrics," including many case reports from his private and hospital practice. There is, however, lacking a proper homogeneity in the arrangement and disposition of the material. This is particularly evident in the chapters on infant feeding which, though they show many alternative methods, nevertheless in the very profusion of these methods are apt to bewilder the uninitiated reader. The author has brought the present edition strictly up to date by including such topics as casein-milk feeding, the etiology of poliomyelitis, the newer diagnostic importance in meningitis of examination of the cerebrospinal fluid, the use of the duodenal bucket, and experiences with salvarsan. The author uses the term "basilar meningitis" as synonymous with tuberculous meningitis, evidently unaware of the fact that chronic basilar meningitis has been shown by recent investigations in England to be due to a diplococcus, probably identical with that of Weichselbaum, although of less virulence, and that this form of meningitis is really a variety of cerebrospinal meningitis. In view of the widespread prevalence of poliomyelitis, the description of this disease as given in this book is too brief and unsatisfactory. The lack of proportion is exemplified in the inclusion of cyclops and the omission of arthritis deformans. The enumeration of these defects need not deter one from disregarding the many good points of this work. The infectious diseases, particularly diphtheria and scarlet fever, are fully and ably described. The illustrations are numerous and helpful. There are included in the text and appended in the back of the volume many suggestive prescriptions. The book is a practical one, original in many of its features, and shows evidence of considerable labor in its preparation.

Society Reports.

THE WESTERN SURGICAL ASSOCIATION.

Twenty-first Annual Meeting, Held at Kansas City, Missouri, December 18 and 19, 1911.

THE PRESIDENT, DR. AMOS W. ABBOTT, MINNEAPOLIS, MINNESOTA, IN THE CHAIR.

The Pathology that Remains after Nonsurgical Treatment of Inflammation within the Abdominal Cavity.—Dr. J. W. COKENOWER of Des Moines, Iowa, read a paper on this subject, in which he drew the following conclusions: (1) That pain in the abdomen is Nature's signal of distress and always means something, but should not be relieved to the extent that it will retard or prevent ascertaining the cause that produced it. (2) That infection in the abdominal cavity is not unlike infection in any other part of the body, and as soon as the diagnosis is cleared up the cause and pathology should be removed as far as possible in any way that will give the best results. (3) That the nonsurgical treatment of peritonitis is the cause of recurrent attacks of appendicitis, cholecystitis, salpingitis, and, in fact, nearly all recurrent inflammations in the abdominal cavity producing an infected pathology.

Cancer of the Hollow Viscera of the Abdomen with Special Reference to Diagnosis.—Dr. MILES F. PORTER of Fort Wayne, Indiana, reported three cases, and drew the following conclusions: (1) The symptoms commonly regarded as sufficient to warrant a diagnosis of cancer of the hollow viscera are such as are not manifest until the favorable time for surgical interference has passed. (2) Success in the treatment of cancer of the hollow viscera depends largely upon its early recognition. It is often unsafe and unwise to make a diagnosis between malignancy and benignancy without the aid of the microscope. (3) The way to improve our results in the surgical treatment of cancer of the hollow viscera lies in the direction of earlier celiotomy and immediate microscopical examination of the specimen.

DR. L. L. MCARTHUR of Chicago urged the use of the erect posture when a digital examination was being made in cases of suspected carcinoma of the rectum. He also urged the use of the sigmoidoscope, or the long rectal instrument with an electric light within its lumen at the deeper end, rather than the head mirror. The latter rarely gave an illumination that was satisfactory, whereas the little electric light within the sigmoidoscope did.

DR. JAMES E. MOORE of Minneapolis, stated that future progress must be had from making timely exploratory operations. He did not mean that these should be made by every family physician, but by men who knew pathology when they felt it and saw it. Speaking of the feeling of pathology, it was difficult sometimes to differentiate between benign and malignant growths when the surgeon had the tumor between his fingers. This was particularly true of the hollow viscera, yet he maintained that when a case was sufficiently grave to warrant exploration one was justified in taking out a piece of the growth, making a frozen section and establishing an absolute diagnosis at the time.

DR. AMOS W. ABBOTT of Minneapolis merely wished to call attention to an easy way of examining the rectum in cases of suspected carcinoma, and that was with the use of the ordinary Kelly cystoscope. One could get as good a view of the bowel with it as with the larger proctoscope under ordinary circumstances, and patients did not object to it.

DR. W. W. GRANT of Denver said the fact that the surgeon knew nothing of these cases, had not had the opportunity for any examination until the disease was far enough advanced to produce distinct clinical symptoms, often showed that it was too late even then to predict a good result from operative interference. As our instruments of scientific precision were at the present time indefinite and uncertain, we must get a closer study of the clinical history of these cases by the physician, and until that time came and we had better diagnosticians and better clinicians, we would perhaps not have earlier diagnoses and better results in the treatment of cancer of the hollow viscera.

DR. JAMES F. PERCY of Galesburg, Ill., said the essayist had suggested that if he could have recognized the ulcer that was bleeding and had done a posterior gastroenterostomy, he might have saved his patient. The speaker had had a similar experience to that reported by the essayist in which he resorted to posterior gastroenterostomy. The ulcer was in the pylorus. An attempt was made to close it up by adhesions to the liver. His patient did well for four or five days, and was apparently making a good recovery, when he had a profuse hemorrhage, vomited two or three basinsful of blood, and died. The speaker questioned whether gastroenterostomy was going to save many patients who had large ulcers.

DR. M. L. HARRIS of Chicago said that until some specific reaction was discovered, the diagnosis of cancer in all internal organs, those not subjected to direct investigation by the microscope in their inception, was entirely one of probability.

DR. PORTER, in closing, said that when one made an exploratory operation in cases of suspected cancer, as was done now in connection with the appendix, satisfactory results would be achieved.

The Early Removal of Gallstones, and the Preservation of the Gall-Bladder as a Preventive of Disease of This and Contiguous Organs.—Dr. ARTHUR E. BENJAMIN of Minneapolis, Minn., drew the following conclusions: (1) Gallstones are not normal residents of the gall-bladder. (2) They are the products of infection from the alimentary canal and a late complication of the microbic invasion of the gall-bladder. (3) Many of the severe gastrointestinal symptoms are due to the presence of gallstones lodged in the biliary tract. (4) Cholecystitis resulting in the production of gallstones will recover less rapidly when stones are present. (5) Whenever stones can be diagnosed an operation should be advised. (6) Gallstones often migrate from the gall-bladder to the cystic or common duct and later lodge there, causing destruction of tissue and obstruction of the ducts. The operative mortality is 3 per cent. when in the gall-bladder and 11 per cent. when in the common duct. (7) Inasmuch as an operation for gallstones is usually one of "terminal events," an operation should be performed if possible before they are found, namely, in the cholecystitis period. (8) The interdependence of the gall-bladder, stomach, liver, and pancreas is such that the gall-bladder should be preserved in all cases where it is not hopelessly diseased and unable to regain its function. (9) The frequency with which pancreatitis is associated with gallstones in the common duct makes the gall-bladder an essential organ to assist in the drainage of the biliary passages in pancreatitis, and should be saved. (10) The percentage of cancer associated with and following the irritation of gallstones in the biliary tract should urge all practitioners to recognize their responsibility in a case of postponed operation for gallstones.

Further Advances in the Therapeutic Utilization of the Bile Tracts.—Dr. LEWIS L. MCARTHUR of Chicago stated that in practically every operation for bile tract disease the operator established a temporary biliary fistula, either in the gallbladder or common duct, for the purpose of relieving the cholemia, the cholangitis, or cholecystitis, by continuous drainage, in much the same way as a urinary cystitis was relieved. While flushing such fis-

tulæ for the purpose of lavage of the gall-bladder, it was noted that the irrigating fluid frequently failed to return. This suggested the idea of utilizing these fistulæ for purposes of rapid hydration, of systemic medication, of feeding, and stimulation. The results were so startling and so gratifying that he felt justified in asking others to try it. With the refinements in technique proposed by Dr. Matas the procedure recommended was as follows: If through a tube draining the gall-bladder in an ordinary case of cholecystostomy we connected the tube of an irrigator containing, for example, sterile warm normal salt solution, the rate of flow being graduated so as not to exceed five or six drops per second, and the pressure to be no more than 20 inches elevation, a continuous flow in the duodenum could be established and maintained without discomfort to the patient. At that time he had refrained from using the irrigation through the tube introduced for drainage of the common duct until the second or third day; that was, till walled off from the general abdominal cavity for fear of leakage. Here was where Matas had shown an improved technique, as well as how safe and efficient was the introduction at the time of operation of a smaller rubber catheter (*à demeure*) into the duodenum by way of the common duct, letting it project there one-third or to one-half its length. Through this, with absolute confidence of its arriving safely within the duodenum, he could introduce any desired amount of any given fluid, food or medicament indicated. In fact, he had in this manner for a period of three weeks given diuretin, a beef preparation, strychnine, castor oil, and mineral waters in purgative doses to the great satisfaction of the patient and with no untoward results because of the method of introduction.

Dr. Van Buren Knott of Sioux City, Ia., said that, with reference to Dr. Benjamin's paper, he regarded the statistics of the percentage of cases of pancreatitis as complicating gallstones to be unreliable. Pancreatitis was a condition which we were not at all times able to determine. He had been much interested in Dr. McArthur's work on the gall-bladder. He had been following some of his suggestions with beneficial results, using the common duct as a means of furnishing fluids and nutriment to the patient.

Dr. Arthur T. Mann of Minneapolis said it was "up to" the surgeon to make an early diagnosis of gallstones. The diagnosis we made now was not one of the presence of gallstones, but a diagnosis based upon the complications of gallstones. The characteristic pain, nausea and vomiting, and inflammation around the gall-bladder were all late manifestations of gallstones, and not early ones, and he thought we had to direct our attention, as we did to appendicitis twenty years ago, in making a diagnosis of appendicitis when there was an abscess, when there was a peritonitis, and so on, and it was the same way with gallstones. We had to take a step in advance and make the diagnosis when the gallstones were forming. The symptoms of the early presence or early formation of gallstones were very obscure. This had to be worked out as was done with appendicitis. The symptoms were not in the gall-bladder, but in the stomach.

Some Phases of the Surgical Treatment of Gastric Ulcer.—Dr. W. D. Haines of Cincinnati, Ohio, said that one of the principal phases of the surgical treatment of gastric ulcer was the adoption of some plan which would effectively relieve the distress of the patient, free him from the handicap of ulcer symptoms in his wage-earning capacity, and diminish his chances of becoming a subject of cancer of the stomach. In a limited experience with the recurrence of symptoms after operation for gastric ulcer he was wholly unable to distinguish at the time of operation the type of ulcer which would be cured and remain cured by a gastrojejunostomy from the type to which this operation would afford but brief relief from ulcer symptoms. Removal of the ulcer-bearing area, as recommended by Rodman, while in many respects an ideal operation, carried a prohibitive mortality and had not been generally accepted by the profession as the best method for dealing with gastric ulcer. Excision of the individual ulcer in conjunction with gastroduodenostomy or gastrojejunostomy was an operation which was rapidly gaining favor with American surgeons. Excision had many commendable features—it was applicable to a solitary ulcer situated in any part of the stomach wall, it added very little to the risk, and the end results were more satisfactory. Due weight should be given the physical condition of the individual case before determining upon the type of operation to be performed. Some of these ulcer cases were much reduced in weight and their powers of resistance were greatly enfeebled in consequence of long physical suffering, poor nourishment, and mental depression. This class of cases taxed the ingenuity of the experienced and their successful management and contributed a large percentage to the death list in the surgical treatment of gastric ulcer. The rapidity with which some of these half-starved ulcer cases recuperated after efficient stomach drainage was established had enabled him to convert in a short space of time an almost helpless risk into a comparatively safe risk for a secondary or causal operation, excision—resection of the ulcer-bearing area. Rarely indeed had he seen a case of chronic gastric ulcer which did not show some degree of gall-bladder or pancreatic involvement. With a view of relieving this phase of gastric ulcer pathology Dr. S. H. Smith and he had for the past two and a half years been draining the gall-bladder in connection with the work on the stomach. The immediate results had been very gratifying, and the after history of those cases which they had been able to trace had derived permanent benefit from this additional procedure, such as to warrant further continuance of this practice.

Dr. James F. Percy of Galesburg said the essayist spoke about drainage operations in stomach surgery. Recent work had shown that none of these operations were drainage operations in the ordinary sense. If one made a hole in the bottom of the stomach and attached the bowel to it the mechanical processes of digestion would go on just the same. In other words, the organ did not empty itself until a certain number of minutes or hours after the food was put in there. One merely switched the pylorus, but it was not a drainage operation in the strict sense. One might relieve the so-called pyloric area from irritation and in that way produce benefit. But back of all of this was the great question, what caused gastric ulcer? None of our recent literature threw any light on that question. As the essayist had said, the gall-bladder might be back of a lot of these infections. Other men had told us that the appendix was the cause of these lesions, but we were not absolutely sure. One of the saddest chapters, if it were written, and perhaps never would be written, was the neurotic side of stomach surgery. If a case had a neurotic basis it was more important than anything else in determining operation unless there was some gross lesion that any practitioner could diagnose.

Dr. Van Buren Knott of Sioux City, Ia., said that a few years ago we were taught that the main indication in the treatment of gastric ulcer was to reestablish gastric drainage; that if the stomach was properly drained by gastroenterostomy, made at the lowest point of the stomach, the drainage being more or less perfect, the symptoms of distress incident to the ulcer would disappear. We now knew that this was fallacious. Drainage of the stomach at the lowest point did not necessarily relieve the condition of ulcer. It had been said that gastroenterostomy made proximal to the pylorus or ulcerated area would re-

heve the ulcer from the irritation due to or incident to the efforts of the stomach to carry on its part of digestion, but this was not true. If a gastroenterostomy was made the food would go to the pyloric end of the stomach, irritate the ulcer on the way back through the peristaltic waves, so it did not accomplish what was thought in removing the irritation from the diseased area. The treatment of ulcer of the stomach must be based on more logical grounds in the future than in the past. Ulcer of the stomach should be treated the same as a diseased area anywhere else, and that was by removal if possible.

Dr. L. L. McArthur of Chicago pointed out that internists had in the last four or five years led surgeons to disconnect some of the gastroenterostomies that had been done for stomach ulcer, in which cases the diagnosis was all right and the treatment apparently the recognized treatment, but there was a failure in results. For what reason? The motility of the stomach was perfect, or nearly so, and when a gastroenterostomy was made in the stomach in which the motility was normal, the food went out from the pylorus, and many observers, notably Dr. William J. Mayo, had found that the gastroenterostomy opening closed or became so narrow that function was interfered with, but as long as the pyloric opening was good and efficient, and the motility of the stomach was good, function went on. Therefore, before resorting to operation for gastric ulcer it was not only important to determine the acidity of the stomach and its capacity for the Ewald meal and the motor meal, but if the motility of the stomach was good a gastroenterostomy would be efficient.

Dr. Haines, in closing, stated that his paper was written merely for the purpose of driving home the argument that the test meal, as it was used to-day, was an artificial process pure and simple. In other words, the influence of the mind upon the secretion of the stomach was just the same as it was upon the secretion of the kidney or the mammary gland or any other glandular tissue in the body. We must seek the real cause of the symptoms. Surgeons had been operating upon the stomach when they should have been looking at the right tube or appendix, the right kidney, the duodenum, the gall-bladder, etc.

Fibrous Tuberculosis of the Peritoneum Involving Omentum, Intestine, and Uterus.—Dr. C. Lester Hall of Kansas City, Mo., stated that the interesting feature in connection with his case was the unusual size of the nodules, varying from that of a mustard seed to a small hazelnut, which were not simply implanted on the tissues, but were buried down in the omentum and mesentery, making it impossible to remove them without tearing into the bowel. Recovery from the operation was uneventful, and to-day, twelve months after the operation, the patient reported herself in fair health and physical condition.

End Results in Gallbladder Surgery.—Dr. B. B. Davis of Omaha said that by correspondence and by personal examinations and interviews he had been able to gain a fair knowledge of the postoperative condition of 234 cases for periods ranging from six months to twelve years following operations. Of this number there were 60 males and 174 females, or approximately 3 females to 1 male. Of the 234 gall-bladders of which a record was made, 150 contained stones, and 84 were cases of cholecystitis, acute or chronic, without stones. At the primary operation 176 were drained, and 58 were subjected to cholecystectomy. Only 1 of the 58 cases on whom cholecystectomy was done primarily had had enough postoperative trouble to require relief by secondary operation, and this was done to break up adhesions that were interfering with the emptying of the stomach. Relief was complete eighteen months after the operation. Of the 176 cases of primary drainage 11 had been such sufferers as to be willing to have another operation performed. The second operation in 10 of these cases was cholecystectomy with relief finally in all of them, but at least 2 of these continued to have considerable pain for several months. One of the cases operated upon a second time did not seem to show sufficient cause for cholecystectomy and a drainage operation was done. The relief was only partial. Aside from the 11 cases operated upon secondarily for unrelieved or recurrent symptoms, 5 had been readmitted to the hospital for medical and massage treatment without operation. Two of these patients were relieved by the hospital treatment and 2 received no benefit and were still suffering. The fifth case had been back twice and each time rest, hot packs, Carlsbad salts, careful diet and light massage had given relief. His last stay in the hospital was only three months ago, and it was agreed that if the symptoms returned he would come back for a cholecystectomy. Besides the 5 cases just mentioned that returned to the hospital for treatment, he had records of 12 other cases that complained greatly for a time, but as far as it had been possible to ascertain, most of them were better, and at least 7 were completely relieved. His records in regard to persistent fistulæ were incomplete, but several had not closed for from three months to six months after operation. One of these was still discharging, almost a year after he left the hospital, but as there was no pain and the general health was excellent, the woman would not consent to another operation. As nearly as it had been possible to learn from the postoperative history of his cases an encouragingly large number were practically relieved immediately and completely as soon as they recovered from the operation.

(*To be continued.*)

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, December 18, 1911

The President, Dr. Reynold Webb Wilcox, in the Chair

Presentation of a Patient on Whom Lipotomy Abdominis Was Performed.—Dr. Edward Wallace Lee presented this patient, a woman of 45, from whom he had removed, by operation, a large amount of abdominal fat. Previously, the accumulation of adipose tissue, he said, had been so enormous that she was unable to perform her ordinary household duties, the abdomen being pendulous and reaching half-way down to her knees. On May 3, 1911, he removed a large section by means of a semicircular incision, 36 inches long, extending across the abdomen; the fat thus withdrawn amounting to fifteen pounds. In addition, he removed some by curetting, and later between four and six pounds of liquid fat oozed away through drainage tubes which he had inserted. There was absolutely no suppuration or any evidence of sepsis, and the patient left the hospital at the end of three weeks. While she was still very stout, the operation had been successful in restoring her to a condition of complete comfort.

Amputation of the Thigh for Gangrene: Presentation of the Patient.—Dr. J. Herman Branth presented this patient, a sea-captain, 68 years old, in excellent health, stating that he was called to see the man in consultation on January 5, 1911, at Milford, Conn. He was suffering intense pain in the left foot, and on the upper surface of the second and third toes was a faint bluish discoloration. The foot and leg were cold, and no pulsation could be felt in the leg. The general temperature was 101° F., and the radial pulse rapid, soft, and intermittent. The diagnosis made by Dr. Branth was occlusion of vessels, with approaching gangrene. Senile gangrene was thought improbable, on account of the robust appearance of the patient, and careful urinary analyses excluded diabetes and renal disease, while there was no alcoholic habit. Frost-

bite was considered, but such a history was denied. Subsequently, however, the patient admitted that he had sat for a long time playing cards one cold night in a summer cottage, where the only heat was furnished by a kerosene stove. Before retiring he immersed his chilled feet in a vessel of hot water, and the sudden change of temperature from somewhere below freezing point to 120°, or more, no doubt caused coagulation of blood in the vessels. All that could be done for the time being was to stimulate the heart, improve nutrition, control pain with opiates, and await Nature's demarcation between the dead and living tissues. In this instance, however, the line of demarcation never became positively definite. The entire foot grew black, as well as the tibial region up to two inches below the attachment of the patellar ligament, and also the peroneal side of the leg. The calf looked white to half-way down the leg, and the soft tissues near the tibia and fibula were now liquefying. On February 20 the patient was taken to the Bridgeport Hospital for operation. The proximity of the lesion to the knee-joint (inflammation in which would no doubt have resulted fatally) suggested the propriety of a thigh amputation, which was performed on February 25. Femoral myelitis and aneurysm of the femoral and popliteal arteries were not suspected, but as these were discovered at the operation to be present (probably as the result of the conditions in the limb below), it was found necessary to make a second amputation several inches higher, at the junction of the upper and middle thirds, in order to get above the infected marrow and the femoral aneurysm. After the femur had been sawed off the second time the marrow was cleaned out with the finger for about an inch further up and a blood-cast, perhaps five inches in length, was removed from the femoral artery. Dr. Branth described his operation for amputation of the thigh as follows: The anterior flap is composed of the quadriceps extensor muscles and the posterior flap of the adductor and abductor muscles, and these are stitched together (anterior to posterior) over the bone stump. The fatty tissue and skin are sutured in a separate layer, all with the Pagenstecher ligature. The sciatic nerve is cut short, and the two small arteries in the nerve-sheath ligated, so that no blood-clot can surround and compress the nerve-end and form an organized clot to develop amputation neuralgia, a condition often giving rise to pain and cramps which are felt by the patient just as if the limb had not been removed. The aneurysms in the femoral and popliteal arteries were not composed of layers, and each had a channel for the blood current. The former was the size of a hen's egg and contained a clot resembling brown putty, and the popliteal aneurysm was fusiform in outline. The amputated limb was black, and with the foot withered. The anterior tibial and fibular regions were semi-liquid, and the muscular tissue, on section, was of a gelatinous consistence. The calf was a mere shell of skin, holding together the putrid mass. After the operation the patient suffered from shock, which was met by the usual remedies. He soon developed a good appetite, and by the end of the first week was allowed full diet. On March 5 the dressing was removed. The wound was dry and aseptic (with not even a stitch abscess), a result which spoke well for the high degree of asepsis maintained during the operation, and one due also, the speaker believed, to the fact that the saw was kept cool by means of a stream of water, so that the heat produced by friction could not injure the bone. In addition, the highly successful result was attributed to a considerable extent to the flushing of the wound surface with water at a temperature of 120°, poured from a pitcher, for the purpose of removing bone dust and any other loose particles. The stump was also thoroughly sponged off with the hot water before the application of the dressing. At the removal of the first dressing two drainage tubes, which had been employed, were taken out and a new dressing was then applied. On March 9 the patient was able to wheel himself in a wheel chair through the halls and into the smoking room. The remaining stitches were removed on March 12, and the recovery was rapid and without any interruption. In amputation of the thigh, Dr. Branth went on to say, the mortality, which ranged from 30 per cent. to 80 per cent., increased in proportion to the nearness of its site to the trunk. Age was a factor, and amputation for injury had a higher mortality than that for disease. Years ago there was brought to the hospital a young man of 22 whose leg had been run over by a locomotive and crushed from the condyles down. There was little hemorrhage until he was laid on the bed in the ward, when the popliteal artery began to spout. The patient was smiling and talkative, though somewhat dazed. Dr. Branth cut away the debris, sawed off the femur above the condyles, and secured the vessels, but before the dressing was completed the patient suddenly expired.

Dr. WILLIAM STEVENS said he had had the opportunity of being present at Dr. Branth's amputation of the thigh. Hot water (at 120°) was used very freely, and, in his opinion, the excellent result that had been met with was principally due to this fact. There was no pus and no discomfort to the patient.

Dr. MORRIS said he would like to inquire whether in the case of the young man who died suddenly the pulse could be felt. Usually in cases of this kind, although the patient might even be telling funny stories, the pulse could not be felt.

Dr. Branth again emphasized the value of hot water in amputation cases, saying that it tended to prevent sepsis and formed a sort of glue which facilitated primary union. In his case the leg-maker had assured him that the stump was well shaped for the employment of an artificial limb. In many instances this was not the case, but here the conditions were satisfactory, the posterior flap, which had to bear the brunt of the pressure, being thicker than the anterior. As to the case of sudden death, this occurred over thirty-five years ago, and he could not now speak positively as to the condition of the pulse. His attention naturally, was principally devoted to checking the hemorrhage.

Gastric Symptoms in Biliary Disease.—Dr. HOWARD LILIENTHAL said that in the treatment of several hundred cases of gall-bladder disease during the past nine years he had received the impression that about 80 per cent. of them had been treated for some form of gastric disturbance, and that the gall-bladder had not been suspected until a sudden obstruction or an acute invasion made the true character of the case clear. That there was an interdependence of symptoms between the two organs could not be doubted, and that in biliary disease the stomach was affected, both as to its motility and chemistry, was certainly observed very frequently. From his own observations he was pretty well convinced that digestion was more often disturbed by the presence of infection or calculi in the bile passages, rather than that as a rule the gastric disease antedated and was partly responsible for the biliary disturbance; and, indeed, he was inclined to agree with Dickinson, who had suggested that the constant pouring of infection into the portal system from a chronically diseased appendix would account for much gall-bladder disease. Roughly speaking, the cases of the latter coming to operation might be divided into the chronic and the acute. In the chronic, even though an acute cholecystitis occurred, it was very frequently not diagnosed as such, or, if recognized, was thought to be a new development; and not until the suffering dyspeptic was permanently relieved, as the result of an operation upon the gall-bladder, was the truth suspected.

Case I.—This was illustrated in the case of a married woman, 35 years old, who had been treated for many years for dyspepsia. Dr. Lilienthal was called to see her by two physicians, in consequence of an acute febrile attack, with the sudden appearance of a tender mass in the right hypochondrium, extending below the level of the umbilicus. Although there was no jaundice, the history of the case, together with the feel and shape of the tumor, made it seem as typical a case of cholecystitis as could be found. He assumed that both gentlemen were aware of the probable diagnosis, and advised an immediate operation, but to his astonishment this seemed to come to them as a complete surprise. He had no doubt, however, that had this patient come to either of them as a new case, a prompt and correct diagnosis would have been made. The patient was operated on the same day and relieved of a large, tense, suppurating gall-bladder.

Case II. was that of a woman 60 years of age, who had been treated by an eminent specialist for indigestion due to a perversion of gastric secretion. After some weeks she began to be more acutely ill, vomiting several times a day. Finally, the vomitus having become brownish and with a foul odor, and the abdomen having become somewhat distended, another physician was called in, who, recognizing a surgical disease, summoned Dr. Lilienthal. Intestinal obstruction, due to some lesion of the right iliac fossa, where the sensitiveness was a little more marked, necessitated an immediate operation; when, to his surprise, an enormous gallstone, completely obstructing the ileum, was encountered and removed. He closed the intestinal wound with suture and the patient made a prompt recovery. Indigestion, with repeated attacks of pain and belching, or even no pain but severe discomfort, particularly after eating meat, should, in the absence of emaciation and jaundice, arouse a suspicion of gall-bladder stone of large size. Small stones were apt to pass into the common duct, thus causing more or less icterus. The increase in weight in biliary disease, more particularly when gallstones were present, had been an interesting observation. Long-continued jaundice, however, tended to cause emaciation. The typical gall-bladder patient was a woman in the early forties who had rapidly taken on flesh, who ate ravenously, bolting her food, and who was careless regarding her bowels. If one added to this a nervous disposition, with frequent emotional crises, the picture would be pretty complete. In regard to the relations between gall-bladder and appendix, he had become so convinced of the frequent coincidence of these disorders that he invariably questioned the patient, with a view to bringing out the history of a possible old appendicitis. If there was a working suspicion of this diagnosis he usually removed the appendix through a second small incision at the time of the operation on the gall-bladder, and even if the history were negative he tried to draw the cecum into the upper wound, in order to examine the appendix before completing the operation.

Case III, that of a woman of 31, illustrated the usual type of pure gall-bladder calculi without infection and with no calculus in other parts of the body. She was sent to him with a diagnosis of cholelithiasis, and he went so far as to further suggest the probability of one or more large stones, and no small ones, because there had never been the slightest jaundice. This proved to be correct, for at the operation a rather thin-walled gall-bladder, containing a single large ovoid calculus, was found and removed. Some years later he operated upon the same patient for calculus in the renal pelvis, this being one of perhaps half a dozen cases in which he had met with the coexistence of biliary and renal calculus.

Case IV. was one of infection of gall-bladder and appendix in a female patient of 42. At operation there was found a chronic appendicitis, the organ being high up under the gall-bladder, the walls of which were also very tense and thick. There were no gallstones, and the tension was doubtless due to numerous old adhesions about the cystic duct, probably from old pericholecystitis. Both appendix and gall-bladder were removed, and the patient was completely relieved of the dyspeptic symptoms from which she had suffered for many years.

Case V. that of a woman of 40, presented the same association of lesions. On incision a large calculus, with a thick-walled gall-bladder full of muco-pus, was found and removed, and the appendix, which was very large and subacutely inflamed, was extracted through the cholecystectomy incision.

Case VI was of special interest because it typified the association of cholecystitis with gastric symptoms. The patient, an unmarried woman of 40, had always had "stomach trouble," with one attack diagnosed as appendicitis during childhood. For twenty years she had had numerous attacks of unconsciousness, followed by profound shock, and at such times her hands invariably went to the epigastric region, a little to the right side. She was in the habit of vomiting, and a week before she came under observation the vomitus contained some blood. Physical examination was negative, but, exploration of the right upper quadrant having been determined upon, a rather thick-walled gall-bladder, with extreme stricture of the cystic duct, was found and removed. She made an uneventful recovery, and the stomach trouble, as well as the attacks of unconsciousness which had rendered her an invalid, disappeared permanently.

The speaker said he did not wish to convey the impression that all gastric symptoms meant gall-bladder disease. He met with a considerable number of operative cases in which the diagnosis of gastric ulcer or gastric carcinoma was confirmed, and it occasionally happened that when he had expected to find gallstones he encountered a gastric ulcer. Having narrated an instance of this, he said that the object of the paper was to call attention once more to the importance of considering the probability of biliary surgical disease in all cases of chronic indigestion, or at least in all which persisted for years in spite of skilful medical treatment. If we were to restore to health these unhappy "dyspeptics" we should not feel that it was a confession of weakness to advise an operation. Pure exploration, with negative findings and no improvement, did occur sometimes, but it was rare. Ulcer or cancer of stomach or duodenum, appendicitis, or adhesions were found commonly enough, but by far the greater number of the cases operated upon for gastric symptoms were in reality instances of biliary disease. His object would have been attained if he had so emphasized his subject that surgery would be called in as a legitimate source of relief a little earlier than was now the custom with the great mass of the profession, and not merely as a last resort to record the failure of pure medicine.

The Neurotic Element in Abdominal Surgery.—Dr. Morris made an extemporaneous address on this subject, and in it gave a warning against unnecessary operations. He said that if neurotic conditions had been properly considered, the discredit which fell upon ovariotomy some years ago might have been avoided.

Dr. Clarence A. McWilliams said that Dr Lilienthal's paper was certainly very timely An interesting point was, What caused the pain in gastric diseases? A well-known gastroenterologist with whom he had conversed on the subject expressed the opinion that this was due to pyloric obstruction. Thus, in a patient suffering from hyperacidity the resulting reflex spasm caused obstruction of the pylorus and, consequently, distention of the stomach; and this gave rise to the pain present. He believed it had been demonstrated that the walls of the stomach did not have any sensory nerves. So, in chronic appendicitis, as well

as in gallstone disease, we were now recognizing that many of the stomach symptoms were really due to spasm of the pylorus. As to the cause of hyperacidity, Deaver contended that this was a reflex manifestation referable to some organic change in the vicinity, as in the gall-bladder or the appendix, or to a gastric ulcer. Many of these cases were in fact surgical, rather than medical, in character. This was certainly true of many cases of gastric ulcer. He would like to inquire of Dr. Lilienthal how he would differentiate between biliary and gastric disease where the characteristic frank colics were absent. Not long since he had met with a case of perforating ulcer of the pylorus which had been treated by a physician of great ability for neurosis of the stomach. He then referred to a case of supposed gastric ulcer, in which prolonged medical treatment, including rectal feeding, proved ineffectual and operation became necessary, and this revealed a large gallstone. In conclusion, Dr. McWilliams expressed the opinion that patients with intractable stomach symptoms were becoming more and more surgical.

Dr. Victor A. Robertson spoke of the bad effect which cholecystitis was liable to have on pregnant women. Some years ago, he said, a pregnant woman came under his care who had such severe vomiting that at last he was obliged to empty the uterus. In a subsequent pregnancy the vomiting again became so pronounced that the uterus had to be emptied as before; but at neither of these times, although cholecystitis was suspected, could any evidence of its presence be discovered by physical examination. Less than a year later the patient went to Florida, and while there had a typical attack of hepatic colic and hurried home. She was not pregnant at this time, and physical examination showed an easily palpable and enlarged gall-bladder. On operation three large stones were removed, one of which was blocking the cystic duct. She then got rapidly well, and in the past two years had gained forty pounds in weight. Was it possible, he asked, that the added toxemia of pregnancy overburdened a system somewhat habituated to the toxic influence of cholecystitis, and caused an exacerbation of the patient's symptoms, which were only those of a moderate dyspepsia when she was not pregnant? This possible cause of vomiting in pregnancy was worthy of consideration in cases which were of a pernicious type. In the class of neurotic cases cited by Dr. Morris he had met with several. One notable one was that of a woman who came to him with dyspeptic symptoms. She was an indicanuric patient, with foul stools, and a physical examination was negative except for some tenderness, not marked, at McBurney's point. He made the diagnosis of chronic appendicitis and advised operation. Being dissatisfied, she consulted several specialists in gastroenterology, all of whom diagnosed cholecystitis and advised operation. Finally, she came back to him, and he called in two consultants, one of whom pronounced for gall-bladder inflammation and the other for appendicitis. It was then determined to operate, but when the abdomen was opened no biliary trouble was found, while palpation of the stomach and duodenum was also negative. As the appendix was slightly bound by adhesions, it was removed, and for six months the patient did perfectly well. Recently, however, Dr. Robertson had been hastily summoned to see her again, her pain, vomiting, and other symptoms having reappeared. This patient was highly neurotic, and the frequent examinations and questioning by physicians had undoubtedly given her the obsession of pain in the hepatic region.

Dr. Robert T. Morris said the time had arrived when we could discuss the principles of such interdependence of conditions as Dr. Lilienthal had described. He agreed with Dr. Lilienthal that not only the motility but also the chemistry of the stomach was disturbed simultaneously was infections of the gall-bladder. The liver was the great sewage disposal plant of the system. When toxins and bacteria were being poured into the duodenum, there was toxic disturbance of hormone secretion, and deranged hormone secretion led to various features classified as gastric disturbance. We might have cholecystitis and ulcer of the stomach simultaneously, due to the same toxic cause, and this toxic impression became intensified when some such disease as appendicitis resulted in forcing the liver to pour out an excessive amount of toxins or of bacteria. Ordinary intestinal putrefaction gave a chronic condition in which not only the appendix, gall-bladder, and duodenum might be involved simultaneously, but also the kidneys, as bacilluria with the presence of the colon bacillus was often an accompaniment of gall-bladder and stomach disturbance from toxins. We could go further and assume that, at the same time, concretions might form in the appendix, gall-bladder, kidneys, and urinary bladder, from the conjunction of colloids with insoluble salts under the influence of toxins. Such interdependence as Dr. Lilienthal had described seemed to Dr. Morris to allow of rather simple explanation although he preferred the phrase "simultaneous involvement of organs."

Dr. Anthony Bassler said it had afforded him unusual pleasure to listen to the presentation of Dr. Morris, for the reason that it was seldom that one heard from a surgeon such a perfect clinical description of a type of cases from a medical standpoint. Undoubtedly, no kind of patients were more anxious for operations than these splanchnoptotic ones, all of whom had a marked hystero-neurasthenic element. The neurosis and toxemia, which were clinical features in the cases, should, he thought, receive more consideration from surgeons than they did. Referring to Dr. Lilienthal's contribution, he said that the diagnosis of pathological conditions of the gall-bladder in cases which gave stomach symptoms was not so difficult in a clinical way. In the frank forms of cholelithiasis, namely, those with biliary colic, jaundice, etc., the diagnosis was sufficiently easy, but the more frequent ones were those in which frank symptoms were not present, and stomach symptoms of an indefinite nature were the only ones met with. Surgeons had been aware of the commonness of gall-bladder conditions in what might be termed the stomach cases for years, and it was only recently that the gastroenterologists were awakening to them. The main fault now lay with the general practitioner, in treating cases of stomach distress without sufficient examination and analysis. During the past few years an immense amount of work had been done in the study of stomach conditions for the purpose of diagnosing gallstone disease, and also an immense amount of time, print, and paper had been wasted on it. There was no one symptom or symptom-complex in the stomach that could lead one to the diagnosis of gall-bladder diseases. Of course, if there was an anchoring of the pyloric region or duodenum from adhesions which extended to these parts from the gall-bladder, accompanied possibly with their retraction upward by reason of such adhesions, a diagnosis would be suggested. But when it came to the status of secretion, whether high or low, motility, retarded or enhanced, and the observation of the peristaltic or antiperistaltic waves, there was nothing pathognomonic. To diagnose gall-bladder conditions we must examine the abdomen from the gall-bladder side, and not from the stomach side; that is, from the right of the abdomen and not from the left. With a patient in the sitting position, and the examiner sitting back of her, the hand could be deeply sunk into the upper abdomen, under the costal margin, and the gall-bladder region palpated. As one would compare a diseased joint with a normal one, to note the difference, so one could then compare the two sides, and it was almost always found to be the case that, when

the gall-bladder was responsible for a person's illness, local pain was present upon pressure over the gall-bladder in this way, no tenderness existing, on the left side or elsewhere in the abdomen. If 10 per cent. of all autopsies showed the presence of gallstones, and only 5 per cent of persons having gallstones manifested frank symptoms, only 1/2 per cent. of all those with gallstones had definite symptoms. Now, while we might look with question on the rightfulness of the extreme deductions of Mayo, namely, that all of those with gallstones gave symptoms of some kind, there was no doubt that he was right to an extent in 9/2 per cent. of cases. Dr. Bassler said he believed in the removal of gallstones when they gave continued symptoms of distress, whether biliary or gastric, and these cases represented a large proportion of the ones the surgeons were now diagnosing and treating properly.

Dr. Lilienthal said he thought Dr. McWilliams had not quite understood him in reference to the matter of diagnosis, for in the paper he had endeavored to designate as far as possible the points to be considered. He then went on to say that every abdominal opening was in fact an exploratory operation. Beforehand, we could not in any instance pronounce positively as to the existing condition. The right upper quadrant was to be regarded in the same light as the appendix region. In an exploratory laparotomy it was very desirable to make the incision such as would enable one to find out as much as possible. By means of the high vertical incision separating the fibers of the rectus, we could examine the gall-bladder, the duodenum, the pylorus, a good part of the stomach, and the hepatic flexure of the colon. If this was not sufficient to show the seat of trouble, we could then make a small additional incision in the right iliac region, and, even were the result negative, no great harm would be likely to result. We should not try to make the preliminary diagnosis too exact. If the troublesome symptoms had lasted for years, we ought to make the incision with an open mind. It was almost never necessary to make a very large incision, and to supplement such an incision with a transverse one might involve no little danger. The subject of gall-bladder disease in pregnancy, as brought up by Dr. Robertson, was, he thought, one of extraordinary interest. The coincidence of the two was not uncommon, and cholecystitis after labor was frequent.

Pathological Society of Philadelphia

At a stated meeting held December 28 Dr. George W. Outerbridge presented a specimen of "Unusual Dilatation of the Common Gallduct." The patient had been a woman, 50 years old, with intense jaundice. Post-mortem examination disclosed a dilated gall-bladder containing serous fluid of watery appearance, together with a single ovoid mulberry calculus the size of an olive. The cystic duct was occluded. The common bile duct was dilated enormously, and the hepatic ducts to a lesser degree. The papilla of Vater was found to be the seat of malignant disease. The pancreatic ducts appeared patulous and the pancreas was somewhat indurated. Dr. John Speese presented specimens of "Papillary Cystadenoma of the Breast." This neoplasm represents about 3 per cent. of mammary tumors and in 15 per cent. of cases it becomes malignant. It usually appears as a soft growth in the vicinity of the nipple. The occurrence of infiltration and extension and the formation of adhesions indicate malignant transformation. Dr. Herman R. Allyn demonstrated a specimen of "Chronic Endocarditis Affecting All Four Valves; Subserous Cysts of the Liver." The patient had been a boy of 15 years, who had suffered from valvular disease of the heart from the age of 5 years, following attacks of various infectious diseases. Murmurs were audible from time to time over the various valvular orifices of the heart, but death occurred from intercurrent cervical adenitis. After death, in addition to the inflammatory changes in the valves at all of the orifices of the heart, and the pulmonary valve being made up of four cusps, apparent cysts were visible on the surface of the liver, but these were thought to be factitious and caused by the presence of ascitic fluid beneath the fibrous tissue covering the surface of the liver. They could be felt during life and were supposed to be the enlarged gall-bladder containing calculi. Dr. Jay F. Schamberg presented "Clinical Photographs and Microscopic Sections of Subcutaneous Syphilomata of Six Years' Duration." The patient was a colored woman with a positive Wassermann reaction presenting on her right forearm ulcerating gummata and on her left arm firm nodules beneath the surface of the skin. Histological examination of a portion of excised tissue disclosed a picture containing among other things giant cells, and resembling both that of syphilis and tuberculosis. Both tubercle bacilli and spirochetes were looked for, but not found. Dr. Robert H. Ivy read a paper entitled "Leucoplakia Buccalis, with Report of Cases." He related four cases, in all of which the tongue escaped involvement and there was no history of syphilis. Dr. K. M. Lynch presented a communication entitled "The Bacteria of the Conjunctiva." Observations were made on individuals free from any apparent disease of the eyes, including hospital resident physicians, as well as on others presenting symptoms of acute and of chronic conjunctivitis. In more than half of the healthy cases xerosis bacilli were present, and next in frequency were pneumococci. In all cases of gonorrheal conjunctivitis xerosis bacilli appeared as soon as the gonococci disappeared.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

West Virginia State Board of Health.

Charleston, July 10, 11 and 12, 1911.

ANATOMY AND EMBRYOLOGY.

1. Name the bony prominences of the elbow and the ligaments of the elbow joint.
2. Give articulations of the first cervical vertebra.
3. Where is the spleen and what are its uses?
4. Describe the two principal arteries of the forearm and tell how they form the palmar arches.
5. Of what does a vertebra consist? Name the processes and tell what their object is.
6. Describe the stomach.
7. Give a brief description of the facial nerve.
8. Name the muscles of the shoulder and arm.
9. Name the sutures and fontanelles in the fetal head.
10. Give difference in fetal and adult heart.

PHYSIOLOGY AND HISTOLOGY.

1. Mention briefly chemical and physical changes in the air and the blood caused by respiration.
2. Discuss sleep theories, naming three hypotheses.
3. Discuss the origin, function, and fate of the red blood corpuscles.
4. State in percentage ratio of weight of blood to that of body. What percentage of loss may be borne?
5. Define systolic, diastolic, and mean arterial pressure. How determined?
6. Define enzymes and discuss briefly their action.
7. Define protein, carbohydrate, and fat. Estimate their nutritive value.
8. What is bile? Discuss its physiological importance.
9. Discribe histology of a transverse section of the spinal cord at the cervical enlargement.
10. Discuss the histological structure of the blood.

MATERIA MEDICA AND THERAPEUTICS.

1. What is Materia Medica? What is Pharmacy?
2. What is opium? Give its derivatives and dose of each.
3. Give composition of Dover's powder; Fowler's solution; Lugol's solution.
4. Give five principal emetics, dose of each and method of administering.

5. Name five intestinal antiseptics.
6. Give physiological action of urotropin, its dose and method of administration.
7. What is a specific in medicine? Give examples and make therapeutic application.
8. Define anesthesia, give examples of general and local anesthetics.
9. Define pyrexia and hyperpyrexia. How would you meet these conditions?
10. What are the therapeutic indications in intestinal hemorrhage in typhoid fever?

CHEMISTRY AND MEDICAL JURISPRUDENCE.

1. Define Chemistry.
2. How many elements are there? How represented?
3. Give symbols of gold, silver, iron, lead, arsenic, potassium, mercury, calcium, and sodium.
4. Name elementary substances used in their pure state in medicine.
5. Define qualitative and quantitative analysis, with example of each.
6. What are mineral waters? Name three.
7. Define and illustrate an acid, base, and salt.
8. What is a poison? Illustrate.
9. What are evidences of death by drowning?
10. Evidences of rape?

BACTERIOLOGY AND HYGIENE.

1. Classify bacteria and give example of each.
2. Name the bacteria frequently found in soil, water, milk, and air.
3. What are toxins and antitoxins? Give example of latter.
4. What is meant by phagocytosis?
5. Describe sterilization and antisepsis.
6. How would you prepare specimen (diphtheria) to be sent to a laboratory for examination?
7. Describe pure water; how would you render it wholesome when contaminated?
8. Describe the location of well or spring in relation to privy vault or stable.
9. Describe the hygiene of a tuberculous patient.
10. Give causes of air contamination of school room and proper ventilation of same.

PRACTICE OF MEDICINE AND PEDIATRICS.

1. To what class of diseases does chorea belong? Give treatment and name important complications.
2. Give the prognosis and treatment in a case of aortic regurgitation with general arteriosclerosis.
3. Give treatment of acute endocarditis.
4. Give causes, symptoms, physical diagnosis, and treatment of acute croupous pneumonia.
5. Describe causes, tests, symptoms, and treatment of typhoid fever.
6. Diagnosis and treatment of pleuritic effusion.
7. Diagnose, treat, and give the cause of cholera infantum.
8. Write a prescription for modification of cow's milk for a child three months old.
9. What are the causes of convulsions in infants and children?
10. Give causes and treatment of summer diarrhea.

OBSTETRICS AND GYNECOLOGY.

1. What is the placenta? From what is it formed? What is its structure and what are its functions?
2. Name the bones, straits, and divisions of the obstetric pelvis.
3. What are the diameters of the pelvic outlet? How is it bounded?
4. Describe the fontanelles and their diagnostic uses.
5. What are the signs of pregnancy, probable, doubtful and certain?
6. Interstitial nephritis in a pregnant woman, how would you treat?
7. Name the diseases of the endometrium and state their effects in pregnancy.
8. Define miscarriage, abortion, and premature labor.
9. Describe Credé's method for the delivery of the placenta.
10. What care does the mother require after labor? Define the nurse's duties.

SURGERY.

1. Give the methods of controlling hemorrhage.
2. Mention the uses of iodine in modern surgery.
3. Differentiate fracture of the surgical neck of the humerus from fracture of anatomical neck of humerus.
4. Diagnose and treat carbuncle.
5. Give treatment of shock.
6. Give symptoms and treatment of cholelithiasis.
7. Diagnose and treat Colles's fracture.
8. Give symptoms and treatment of erysipelas.
9. Give symptoms and treatment of prostatic abscess.
10. Give symptoms and treatment of strangulated inguinal hernia.

SPECIAL PRACTICE.

1. Give the symptoms of infantile spastic paralysis.
2. Differentiate between epileptic and hysteroid seizures.
3. Name the causes and dangers of otorrhea.
4. In what acute disease is the ear most commonly involved, and, as a rule, what part of the general structure of the ear is first attacked?
5. Name the conjunctival diseases due to microorganisms.
6. Name four causes of iritis, and note the subjective and objective symptoms.
7. In nephritis where does the effusion of serum first appear? In cirrhosis of the liver, where? In cardiac diseases, where?
8. State the diagnostic value of a blood examination in chlorosis; appendicitis; trichinosis.
9. Give cause, symptoms, pathology, and treatment of laryngismus stridulus.
10. Give symptoms and treatment of nasal polypi.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

WEST VIRGINIA STATE BOARD OF HEALTH.

Charleston, July 10, 11 and 12, 1911.

ANATOMY AND EMBRYOLOGY.

1. The *bony prominences of the elbow* are: Internal condyle of humerus, external condyle of humerus, and olecranon process of ulna.

Ligaments of elbow joint: Anterior, posterior, internal lateral, external lateral, capsular, and orbicular.

2. First cervical vertebra articulates with the occipital bone and with the axis.

3. The spleen is situated below the diaphragm, between the diaphragm and the fundus of the stomach; it is chiefly in the posterior part of the left hypochondriac region, but it extends also into the epigastric region.

The spleen has been held to be: (1) a place where the white blood corpuscles are made; (2) a place where the red blood corpuscles are made during fetal life; (3) a place where the red blood corpuscles are destroyed; (4) the place where uric acid is made; (5) the source of an enzyme which converts the trypsinogen of the pancreas into trypsin.

4. The two principal arteries of the forearm are the radial and ulnar. See Cunningham's "Anatomy" (1909), pages 831, 834, and 836; or Gray's "Anatomy" (1910), pages 546, 650, 647, and 654.

5. *A vertebra consists of:* Body (or centrum) and neural arch; this latter consists of two pedicles, two laminæ, and seven processes. These processes are: one spinous, two transverse, and four articular. The spinous and transverse processes are for the attachment of muscles and ligaments; the articular processes are for articulation with the vertebræ immediately above and below.

6. See Cunningham's "Anatomy" (1909), page 1050; or Gray's "Anatomy" (1910), page 1270.

7. See Cunningham's "Anatomy" (1909), page 686; or Gray's "Anatomy" (1910), page 997.

8. *Muscles of the shoulder and arm:* Deltoid, subscapularis, supraspinatus, infraspinatus, teres major, teres minor, coracobrachialis, biceps, brachialis anticus, triceps, and subanconeus.

9. *Sutures of the fetal head:* Coronal, sagittal, lambdoid. *Fontanelles:* Anterior, posterior, and four unimportant ones (two at the inferior angles of the parietal bones on each side).

10. In *the fetal heart are:* (1) Direct communication between right and left auricles, by the foramen ovale; (2) the Eustachian valve, guarding the opening of the inferior vena cava into the right auricle.

PHYSIOLOGY AND HISTOLOGY.

1. Respiration causes changes in the *air*, as follows:

	EXPIRED AIR.	INSPIRED AIR.
Oxygen.....	16.6 per cent	21 per cent.
Nitrogen	79 per cent	79 per cent.
Carbon dioxide ..	4.4 per cent	0.04 per cent.
Other gases	Often present	Rare.

	EXPIRED AIR.	INSPIRED AIR.
Watery vapor	Saturated.	Variable.
Temperature	That of body.	Variable.
Volume	Diminished.	Varies.
Bacteria	None.	Always present.
Dust	None.	Always present.

Respiration causes changes in the *blood*, as follows: *Arterial* blood is red, slightly warmer, more coagulable, more uniform in composition, contains more oxygen and less carbon dioxide; *venous* blood is purple, slightly cooler, less coagulable, less uniform in composition, and contains more carbon dioxide and less oxygen.

2. "There are several hypotheses as to the causation of sleep. It has been attributed to cerebral anemia; to chemical changes in the brain cells or neurons, such as an exhaustion of their intramolecular oxygen, or an accumulation of fatigue products; to a contraction of the dendritic processes, and a consequent break in the transmission of nervous impulses; to an expansion of the neuroglial cell processes insulating the nerve cell processes, and producing the same effect; and to a purely psychological condition, namely, loss of consciousness apart from any physical or chemical change. This last explanation is simply a cloak for our ignorance. The most probable hypothesis is that of an altered metabolism of the cerebral cells dependent upon exhaustion and diminished influx of stimuli." (Allbutt's *System of Medicine.*)

3. RED BLOOD CORPUSCLES. *Origin:* Red bone marrow, liver, and spleen. *Function:* To take up oxygen from the lungs and carry it to the tissues. *Fate:* Supposed to be destroyed in the spleen, also in the liver cells.

4. The blood is said to be about one-thirteenth of the weight of the body; recently this figure has been altered to one-twentieth of the body weight. "Just what percentage of loss (of blood) may be borne by the human being has not been determined, but it is probable that a healthy individual may recover without serious difficulty from the loss of a quantity of blood amounting to as much as three per cent. of the body weight." (Howell.)

5. "The maximum pressure caused by the systole of the heart, the apex of the pulse wave, is spoken of as *systolic pressure;* the minimum pressure in the artery—that is the pressure at the end of the diastole of the heart, or the bottom of the pulse wave, is known as the *diastolic pressure.* . . . In speaking of the pressure in the blood-vessels we refer usually to what is called the *mean pressure.* It is obvious that, so far as the larger arteries are concerned, the *mean pressure* is only a convenient expression for the average pressure during a certain period. If we know at any moment the systolic and the diastolic pressure in an artery we can estimate the mean pressure with approximate accuracy by taking the arithmetical mean of the two figures." (Howell.)

Blood pressure is determined by a sphygmomanometer.

6. *Enzymes* are substances produced by living cells and which act by catalysis. The enzyme remains unchanged and exerts its activity only upon certain definite substances.

ENZYMES.	ORIGIN.	FUNCTIONS.
Ptyalin.	Saliva.	Changes starches into dextrin and sugar.
Pepsin.	Gastric juice.	Changes proteids into proteoses and peptones in an acid medium.
A curdling ferment.	Gastric juice.	Curdles the casein of milk.
Trypsin.	Pancreatic juice.	Changes proteids into proteoses and peptones, and afterward decomposes them into leucin and tyrosin in an alkaline medium.
Amylopsin.	Pancreatic juice.	Converts starches into maltose.
Steapsin	Pancreatic juice.	Emulsifies and saponifies fats.
A curdling ferment	Pancreatic juice.	Curdles the casein of milk.
Invertin.	Succus entericus	Converts maltose into glucose.

FOOD.	FUNCTIONS.
Proteins.	
1. All substances containing nitrogen, of a composition identical with, or nearly that of albumin; proportion of N to C being nearly as 2 to 7.	Formation and repair of tissues and fluids of the body. Regulation of the absorption and utilization of oxygen. May also form fat and carbohydrate, and yield energy sometimes. In most foods the above, both animal and vegetable, are largely converted into albumoses and peptones during digestion. These perform the above functions less perfectly, or only under particular circumstances.
2. Substances containing a larger proportion of N are apparently less nutritious; proportion of N to C about 2 to 5½.	These substances appear essentially as regulators of digestion and assimilation, especially with reference to the gelatin group.
3. Extractive matters, such as are contained in the juice of the flesh.	
Carbohydrates.	
Substances containing no N, but made up of C, H and O; the O being exactly sufficient to convert all the H into H_2O.	Production of energy and animal heat by oxidation. Form fats and possibly some proteids.
Fats.	
Substances containing no N, but made up of C, H and O; the proportion of O being *less* than sufficient to convert all the H into H_2O.	Supply of fatty tissues, nutrition of nervous system; supply of energy, and animal heat by oxidation.
Salts.	Support of bony skeleton, supply of HCl for digestion, regulation of energy and nutrition.

(Notter and Firth's *Hygiene.*)

Proteins, carbohydrates, and fats are all necessary in a well-ordered diet.

8. Bile is a secretion of the liver; it contains water and solids. The latter are bile salts (sodium taurocholate and sodium glycocholate), mucin, bile pigments (bilirubin and biliverdin), cholesterin, lecithin, neutral fats, and inorganic salts (NaCl, KCl, and phosphates).

The functions of the bile are: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.

9. See Cunningham's "Anatomy" (1909), pages 458 and 460; or Gray's "Anatomy" (1910), pages 836 and 840.

10. The blood is composed of plasma, red corpuscles, white corpuscles, and platelets.

The *red corpuscles* are biconcave discs, about 1/3200 of an inch in diameter; they are non-nucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They contain hemoglobin.

The *white corpuscles* are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes, (2) large mononuclear, (3) transitional, (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named.

There are also *platelets*, which are very small, colorless, irregular shaped bodies; they are about one-fourth the diameter of a red corpuscle. In number they vary from about 200,000 to more than 500,000 in each cubic millimeter of blood.

MATERIA MEDICA AND THERAPEUTICS.

1. *Materia medica* is the name given to the agents used in the treatment of disease.

Pharmacy is the art of preparing drugs in a suitable form, and of dispensing them.

2. *Opium* is the exudation obtained from incising the unripe capsules of the *Papaver somniferum* (white poppy).

Officia dericatives with doses: Powdered opium, gr. j; extract of opium, gr. ss; powder of ipecac and opium, gr. vijss; vinegar of opium, ℥viij; camphorated tincture of opium, ℥ij; tincture of deodorized opium, ℥viij; granulated opium, gr. jss; wine of opium, ℥viij; morphine, gr. 1/5; morphine sulphate, acetate, and hydrochloride, each, gr. 1/4; codeine, gr. 1/2; codeine sulphate and phosphate, each, gr. 1/2; apomorphine hydrochloride, gr. 1/10.

3. *Dover's Powder* is composed of ipecac, powdered opium, and sugar of milk.

Fowler's Solution is composed of arsenic trioxide, potassium bicarbonate, compound tincture of lavender, and distilled water.

Lugol's Solution is composed of iodine, potassium iodide, and distilled water.

4. *Five emetics:* Apomorphine hydrochloride, dose gr. 1/10; ipecac, dose of the fluidextract, ℥xv; tartar emetic, dose gr. 1/2; zinc sulphate, dose, gr. xv; copper sulphate, dose gr. iv. Atropin is given hypodermically; the others are administered by the mouth.

5. *Five intestinal antiseptics:* Salol, thymol, naphthol, naphthalin, and guaiacol.

6. Urotropin, when taken, is decomposed in the body, and formaldehyde is liberated and eliminated in the urine; hence it is used as a urinary (and intestinal) antiseptic, dose gr. iv, administered in water.

7. *A specific* is an agent which has a selective curative effect on a particular disease. Examples: Quinine on malaria; mercury on syphilis; diphtheria antitoxin in diphtheria.

8. *Anesthesia* is the condition characterized by loss of sensation (and in general anesthesia by loss of consciousness also). *General anesthetics:* Ether, chloroform, nitrous oxide, ethyl chloride; *local anesthetics:* Cocaine, eucaine, ethyl chloride, ether spray.

9. *Pyrexia* is fever; *hyperpyrexia* is very high fever (above 105° F.). The treatment is by antipyretics.

The following table (from Potter's "Materia Medica") gives the chief antipyretics with their manner of action. Temperature depression may be done by five different actions working upon two principal lines, viz., by:

(*a*) *Lessening heat production, by*
- (1) diminishing tissue change,
- (2) reducing the circulation.

(*b*) *Promoting heat loss, by*
- (3) dilating cutaneous vessels, thus increasing heat radiation.
- (4) promoting perspiration—its evaporation lowering the temperature.
- (5) abstracting heat from the body.

The following list of antipyretics includes a few for each of the above-named actions, to which the numbers refer in each case, viz.:

Quinine, 1.	Aconite, 2.	Antipyrin, 1, 4.
Phenol, 1.	Alcohol, 1, 3.	Antimony, 2, 4
Salicin, 1.	Nitrous ether, 3, 4.	Cold bath, 5.
Digitalis, 2.	Acetanilid, 1, 4.	Cold drinks, 5.
	Phenacetin, 1, 4.	Wet-pack, 5.

10. See French's "Practice of Medicine" (1910), page 117; or Osler's "Practice of Medicine" (1909), page 103.

CHEMISTRY AND MEDICAL JURISPRUDENCE.

1. *Chemistry* is that branch of science which treats of the composition of substances, their changes in composition and the laws governing such changes.

2. There are about eighty elements. Elements are represented by symbols.

3. *Symbols:* Gold, Au; silver, Ag; iron, Fe; lead, Pb; arsenic, As; potassium, K; mercury, Hg; calcium, Ca; sodium, Na.

4. *Elementary substances used in their pure state in medicine:* Oxygen, chlorine, iodine, sulphur, carbon, phosphorus, mercury, and iron.

5. *Qualitative analysis* is the determination of the nature of the elements which enter into the composition of a substance. Thus, determining that hydrogen, sulphur, and oxygen are contained in sulphuric acid. *Quantitative analysis* is the determination of the amount as well as the nature of the elements which enter into the composition of a substance. Thus, determining that sulphuric acid contains two parts by weight of hydrogen, 32 of sulphur, and 64 of oxygen.

6. *Mineral waters* are waters which are of therapeutic value by reason of the nature or quantity of dissolved solids which they contain, or which have a temperature greater than 68° F. *Examples:* Hunyádi, Saratoga Springs, and Vichy.

Acids are compounds of an electronegative element or radical with hydrogen, part or all of which hydrogen they can part with in exchange for an electropositive element, without formation of a base. *Examples:* Sulphuric acid, H_2SO_4; nitric acid, HNO_3.

Bases are ternary compounds capable of entering into double decomposition with an acid to produce a salt and water. *Examples:* Potassium hydroxide, KOH; calcium hydroxide, $Ca(OH)_2$.

Salts are substances formed by the substitution of an electropositive element for part or all of the replaceable hydrogen of an acid. *Examples:* Sodium nitrate, $NaNO_3$; Monopotassic sulphate, $KHSO_4$.

8. A *poison* is any substance which, being in solution in, or acting chemically upon, the blood, may cause death or serious bodily harm. Thus arsenic, after being absorbed, is a poison. But corrosives, such as sulphuric acid, act locally; so, if a man fell into a vat of sulphuric acid, though he might die from it, it would not be correct to say he was poisoned.

9. *In death by drowning:* The surface is pallid, the face appears tranquil, the eyes and mouth being partly open. The skin often has the appearance known as goose-skin, and, if the body has lain upward of twelve hours in the water, that of the hands and the feet is sodden by inhibition. The most important external sign is the presence on the mouth and nostrils of a fine froth (possibly blood stained), composed of air, mucus, and the medium in which drowning took place; if the body remains three or four days in water, the froth disappears. Exceptionally, fragments of weeds or other small objects may be found tightly grasped in the hands. On opening the thorax the lungs, gray in color, with reddish staining, are seen to be very voluminous, a condition known as ballooning, partly due to infiltration of the lung tissue with some of the medium in which drowning took place, and partly to true edema. The lung substance is inelastic and pits on pressure. On section, fluid and froth resembling that found on the lips exude from the divided air passages. Minute subpleural hemorrhages are not infrequently present, and the pleural cavities may contain fluid. The stomach often contains water or other liquid which was involuntarily swallowed during attempts at respiration. Occasionally some of this fluid is forced by vital action into the intestines. With one exception, the remaining appearances are those met with after death from asphyxia. The exception is constituted by the blood, which is not only dark colored and fluid, as is usual after death from asphyxia, but is also diluted by the imbibition of water from the stomach and lungs.—(Quain's *Dictionary of Medicine.*)

10. The *medical evidence of rape* is based on: (1) Marks of violence about the woman's genital organs; (2) wounds, bruises, or other marks of injury on the woman or on the accused; (3) blood stains and seminal stains on the person or clothing of either party; and (4) the presence of any venereal disease on either party.

BACTERIOLOGY AND HYGIENE.

1. *Bacteria are classified* as: (1) *Cocci*, which are round or oval, and may appear singly, in pairs, in chains, or in groups; example—streptococcus of erysipelas. (2) *Bacilli*, which are rod shaped, with the longer sides parallel and the short ends either straight, rounded, or concave; example—bacillus of tetanus. (3) *Spirilla*, which are spiral; example—spirillum of relapsing fever.

2. *Bacteria found in soil: Bacillus tetani, Bacillus, edematis, Bacillus aërogenes capsulatus, Bacillus proteus, Bacillus subtilis*, anthrax bacillus, typhoid bacillus, *Bacillus coli communis, Bacillus proteus.*

Bacteria found in water: Typhoid bacillus, cholera spirillum, streptococci, *Bacillus proteus, Bacillus aërogenes capsulatus, Bacillus subtilis, Bacillus fluorescens liquefaciens, Bacillus coli communis.*

Bacteria found in milk: Bacillus of lactic acid, *Streptococcus lacticus, Bacillus aërogenes*, bacillus of anthrax and of malignant edema; bacillus of typhoid, of tuberculosis, of cholera, and of diphtheria.

Bacteria found in air: Bacillus subtilis, tubercle bacillus, pyogenic cocci, various forms of micrococci and sarcinæ.

3. *Toxins* are the poisonous products of pathogenic bacteria or of ptomaines or leucomains. *Antitoxins* are substances formed in the body, of a protective character, and

capable of rendering inert the poisonous products of bacteria. *Examples:* Antitoxins of diphtheria, plague, streptococcus, tetanus, tuberculosis, and typhoid.

4. *Phagocytosis* is the faculty of certain cells (notably the mononuclear and polynuclear leucocytes) to take up and destroy bacteria.

5. See Rose and Carless' "Surgery" (1911), pages 205 and 207; or Da Costa's "Surgery" (1908), pages 25 and 50.

6. To *obtain a culture:* A sterile swab is rubbed over any visible membrane on the tonsils or throat, and is then immediately passed over the surface of the serum in a culture tube. The tube of culture, thus inoculated, is placed in an incubator at 37° C. for about twelve hours, when it is ready for examination. A sterile platinum wire is inserted into the culture tube, and a number of colonies of a whitish color are removed by it, and placed on a clean cover slip, and smeared over its surface. The smear is allowed to dry, is passed two or three times through a flame to fix the bacteria, and is then covered for about five or six minutes with a Loeffler's methylene-blue solution. The cover slip is then rinsed in clean water, dried, and mounted. The bacilli of diphtheria appear as short, thick rods with rounded ends; irregular forms are characteristic of this bacillus, and the staining will appear pronounced in some parts of the bacilli and deficient in other parts.

7. *Pure water* is colorless, odorless, cool, without disagreeable or salt or sweetish taste, and is free from bacteria, poisons, foreign bodies, etc.

Characteristics of a good drinking water. (1) It should be clear and limpid. Cloudy and muddy waters should be avoided. (2) It should be colorless. A greenish or yellowish color is usually due to vegetable or animal matter in solution or to organisms. (3) It should be odorless; especially free from sulphuretted hydrogen or putrefactive animal matter. (4) It should not be too cold, but should have a temperature of from 46° F. to 60° F. (5) It should have an agreeable taste; neither flat, salty, nor sweetish. A certain amount of hardness and dissolved gases give a sparkling taste. It should contain from 25 to 50 c.c. of gases per liter, of which 8 to 10 per cent. is carbon dioxide and the rest oxygen and nitrogen. (6) It should be as free as possible from dissolved organic matter, especially of animal origin. (7) It should not contain too great an amount of hardness. A certain quantity of saline matter is necessary, however, to give it a good taste. It should not contain over three or four parts of chlorine in 100,000 parts of water.—(From Bartley's *Chemistry.*)

Contaminated water is purified by: Distillation, boiling, filtration, precipitation, and various chemical processes.

8. "It is a common belief that if the well is located in higher ground than the cesspool there can be no danger of pollution of the water. This, however, is a most fallacious proposition, for it is not so much the location of the outlet of the well that determines the possibility of pollution as the relative position of the cesspool and the point where the water enters the well. . . . Again, the geological formation may be such that a cesspool on higher ground than the nearby well will have no influence on the purity of the water. Thus a ledge of rock may crop up between them, and divert the flow of polluting matters away from the well." (Harrington's *Hygiene.*)

9. Hygienic precautions to be taken in treating a case of tuberculosis: "The patient's quarters should be free from dust, and admit of spending many hours daily in the open air in all weathers, properly sheltered, and, if very ill, lying wrapped in a hammock or reclining chair. His bedroom should be well aired at night, draughts being avoided. The room should be uncarpeted and free from hangings. It should be often cleaned and periodically disinfected. All sputum should be collected in paper spit-cups, which should be burned daily. Smoking should be forbidden. Harm is done by any exercise which results in fatigue, and while fever exists it should not be attempted at all. Patients should be taught the necessity of practising lung gymnastics and breathing only through the nose, which should be kept clear and free from occlusion by secretions, or an hypertrophied catarrhal mucosa. . . . The clothing should be woolen, but not too heavy, or sweating is increased; and a flannel nightgown and loosely knit leggings should be worn at night in cool weather. The skin should be cleansed by daily sponge baths of lukewarm alcohol and water."—(Thompson's *Practical Medicine.*)

10. Air of schoolrooms may be contaminated by the respiration of scholars and teachers; products of combustion from the heating apparatus, also from the lighting apparatus, dust, epithelial cells, and disease germs.

Modern methods of heating and lighting should be adopted; ample ventilation should be insisted on; children who are not in good health should be excluded, the schoolroom should not be used for any purpose after school hours.

PRACTICE OF MEDICINE AND PEDIATRICS.

1. See French's "Practice of Medicine" (1910), pages 1153, 1150, and 1155; or Osler's "Practice of Medicine" (1909), pages 1052 and 1047.

2. See French's "Practice of Medicine" (1910), pages 662 and 668; or Osler's "Practice of Medicine" (1909), pages 814 and 816.

3. See French's "Practice of Medicine" (1910), page 882; or Osler's "Practice of Medicine" (1909), page 791.

4. See French's "Practice of Medicine" (1910), pages 151, 150, 171, and 174; or Osler's "Practice of Medicine" (1909), pages 165, 172, 175, and 180.

5. See French's "Practice of Medicine" (1910), pages 65, 193, 74, and 109; or Osler's "Practice of Medicine" (1909), pages 57, 93, 70, and 99.

6. See French's "Practice of Medicine" (1910), pages 713 and 715; or Osler's "Practice of Medicine" (1909), pages 651 and 653.

7. See French's "Practice of Medicine" (1910), pages 801 and 800; or Osler's "Practice of Medicine" (1909), pages 507, 500, and 504.

8. For an infant of three months, Winters advises the following:

Take the upper eleven ounces from a quart of milk, 16 hours after milking.

Milk-sugar, about 7½ teaspoonfuls.

Lime-water, 4 ounces.

Filtered water, enough to make one quart.

Quantity at each feeding, 3 ounces.

Eight feedings, at 6, 8:30, 11 A. M.; 1:30, 4, 6:30, 9 and 12 P.M.

9. Causes of infantile convulsions are: "Overeating, especially of indigestible food; rachitis, debility from exhausting diarrheal diseases; high fever, especially at the onset of the acute specific infections; very seldom dentition, phimosis, and acute middle-ear inflammation; injuries to the brain at birth, infantile hemiplegia, meningitis, and tumor of the brain; rarely of spinal cord disease.—(From Butler's *Diagnostics of Internal Medicine.*)

10. See French's "Practice of Medicine" (1910), pages 798 and 799; or Osler's "Practice of Medicine" (1909), page 504.

OBSTETRICS AND GYNECOLOGY.

1. See Jellett's "Midwifery" (1910), pages 93 to 97; or Hirst's "Obstetrics" (1909), pages 120, etc.

2. PELVIS. *Bones:* Right and left innominate bones (each consisting of ilium, ischium, and pubis), sacrum, and coccyx. *Straits:* Superior and inferior. *Divisions:* True and false.

3. See Jellett's "Midwifery" (1910), pages 10 and 7; or Hirst's "Obstetrics" (1909), pages 18 and 22.

4. See Jellett's "Midwifery" (1910), pages 114 and 308.

5. SIGNS OF PREGNANCY: "The *positive signs* cannot usually be detected until after the fourth month, and are three in number: (1) hearing and counting the fetal heart-beat; (2) perception of the active and passive movements of the fetus; and (3) the ability to map out its outlines. The *probable signs* can be appreciated at a much earlier period, and are: (1) changes in the shape and consistency of the body of the uterus; (2) changes in the cervix; (3) the detection of intermittent uterine contractions; and (4) increase in the size of the abdomen and uterus. The *presumptive evidences*, with a few exceptions, are subjective, and may be experienced at varying periods. They are: (1) cessation of the menses; (2) changes in the breasts; (3) morning sickness; (4) quickening; (5) Chadwick's sign; (6) disturbances in urination; (7) abnormalities in pigmentation; (8) abnormal cravings; and (9) mental disturbances."—(Williams.)

6. See Jellett's "Midwifery" (1910), page 584; or Hirst's "Obstetrics" (1909), page 249.

7. See Jellett's "Midwifery" (1910), page 489; or Hirst's "Obstetrics" (1909), pages 148 to 153.

8. *Abortion* is delivery of the product of conception before the twelfth week.

Miscarriage is delivery of the product of conception between the twelfth and twenty-eighth weeks.

Premature labor is delivery of the fetus between the twenty-eighth week and full term.

9. See Jellett's "Midwifery" (1910), page 353; or Hirst's "Obstetrics" (1909), page 343.

10. See Jellett's "Midwifery" (1910), page 463; or Hirst's "Obstetrics" (1909), pages 365 and 376.

SURGERY.

1. *Methods of controlling hemorrhage* Ligation, suture, torsion, pressure, elevation, styptics, cautery, forced flexion, heat, cold, ergot, suprarenal extract.

2. *Tincture of iodine is used in modern surgery:* (1) To cleanse the skin; (2) as an application to infected wounds; (3) to irrigate sinuses.

3. See Rose and Carless' "Surgery" (1911), pages 490 and 497; or Da Costa's "Surgery" (1908), pages 487 and 488.

4. See Rose and Carless' "Surgery" (1911), page 398; or Da Costa's "Surgery" (1908), page 1058.

5. See Rose and Carless' "Surgery" (1911), page 201; or Da Costa's "Surgery" (1908), page 242.

6. See Rose and Carless' "Surgery" (1911), pages 1074 and 1077; or Da Costa's "Surgery" (1908), pages 891 and 894.

7. See Rose and Carless' "Surgery" (1911), page 518; or Da Costa's "Surgery" (1908), page 506.

8. See Rose and Carless' "Surgery" (1911), pages 121 and 123; or Da Costa's "Surgery" (1908), page 201.

9. See Rose and Carless' "Surgery" (1911), page 1245; or Da Costa's "Surgery" (1908), pages 138 and 143.

10. See Rose and Carless' "Surgery" (1911), pages 1117, 1119, and 1121; or Da Costa's "Surgery" (1908), pages 904 and 905.

SPECIAL PRACTICE.

1. See French's "Practice of Medicine" (1910), pages 1119 and 1001; or Osler's "Practice of Medicine" (1909), page 911.

2.

EPILEPSY.	HYSTERIA.
1. No apparent cause.	1. Cause, emotional.
2. Sudden and rapid onset.	2. Onset gradual, usually after some mental excitement.
3. Aura generally present.	3. Globus hystericus or palpitation.
4. Consciousness lost.	4. Consciousness generally preserved.
5. Pupils general dilated.	5. Pupils normal.
6. Tongue often bitten.	6. Tongue never bitten.
7. Patient very liable to hurt himself.	7. Patient not liable to hurt himself; may injure others.
8. May be involuntary bladder and bowel discharges.	8. Never.
9. Of short duration.	9. Duration longer.

3. *Otorrhea may be caused by:* Otitis media, with or without complications; abscess or polypus in the external meatus. *Dangers:* Thickening of tympanum, destruction of ossicles, caries of mastoid, facial paralysis, inflammation or abscess of brain or meninges, pyemia, infective thrombosis of lateral sinus or jugular vein.

4. Scarlet fever is the disease in which the ear is most commonly involved. The tympanum is generally first attacked.

5. *Conjunctival diseases due to microorganisms* Conjunctivitis, ophthalmia neonatorum, pink eye, gonorrheal ophthalmia, diphtheritic conjunctivitis, trachoma.

6. IRITIS. *Four causes:* Rheumatism, syphilis, gout, and gonorrhea. *Subjective symptoms:* Pain, photophobia, lacrymation, interference with vision, and malaise. *Objective symptoms.* The iris is swollen, dull, lacks luster, changes color, is congested; the pupil is contracted, sluggish in action and irregular; circumcorneal injection is present; the contents of the aqueous chamber are turbid, and may show pus, or fibrin, or blood.

7. In *nephritis* the effusion of serum begins in the face and extends downward; or in the upper half of the body. In *cirrhosis of the liver*, in the lower half of the body. In *cardiac diseases*, at the feet and extends upward.

8. In *chlorosis* a blood examination shows marked diminution of hemoglobin, slight diminution of red cells, poikilocytosis, and in severe cases nucleated red cells. The diagnosis is certain. In *appendicitis* leucocytosis is fairly constant, except in the mildest and most severe cases. The blood examination will differentiate this condition from typhoid. It is a valuable help in diagnosis, but there is nothing absolutely certain about it. In *trichinosis* there is a leucocytosis with a pronounced eosinophilia. It is of great diagnostic value.

9. See French's "Practice of Medicine" (1910), page 663; or Osler's "Practice of Medicine" (1909), page 598.

10. NASAL POLYPI. These are of two different origins (1) Inflammatory, and (2) neoplastic.

1. *Mucous polypi* are merely edematous granulations hanging from the surface of a diseased ethmoid bone, which is affected by rarefying ostitis or caries. They occur in young adults, and cause nasal obstruction, often bilateral. Grow from the middle and superior turbinate bones. They frequently undergo cystic degeneration from the development of cysts in the glands of the mucous membrane covering them. After local removal they recur within a few months.

Treatment: (*a*) Removal by wire snare under cocaine. (*b*) Usually a thorough erasion of the lateral mass of the ethmoid or the opening of a suppurating sinus is required, so as to remove the diseased bone.

2. *Fibrous and sarcomatous polypi.*—Consist in all gradations between fibromata and sarcomata, usually beginning as the former and ending as the latter. Occur in children and adolescents most commonly. Grow from the base of the skull and occupy the nasopharynx. Cause nasal obstruction with sanious discharge. *Pressure signs* may be: (1) Pushing down the velum palati and causing asphyxia; (2) expanding the nasal cavities and producing a widening of the nasal bridge; (3) pressing the eyeballs outward; (4) extending into the base of the brain. *When they are malignant*, secondary growth may occur in the lymph glands of the neck. In these cases the primary growth is probably a lymphosarcoma of the pharyngeal tonsils.

Treatment is possible only in the early stages. In suitable cases, when the growth has not progressed far: (1) Removal by a snare through the anterior nares; (2) removal through the mouth after splitting the soft palate, (3) removal from the face after turning up the soft parts and enlarging the anterior nares by temporary displacement of the maxilla.—(Groves' *Synopsis of Surgery.*)

ADVANCED REQUIREMENTS OF PRELIMINARY EDUCATION.

(From the Bulletin of the Illinois State Board of Health.)

A medical student desiring to enter into practice in a certain state would do well to see if his chosen college is fully recognized in that state. The several states named below have enacted requirements of preliminary training in excess of those generally called for. In these a high school education is no longer accepted as a qualification for admission to a medical school. Instead—and in addition—there is demanded evidence of one or more years' attendance in a college or university of arts and sciences. In Utah the advance requirements are specifically provided for by law. In the other States mentioned they have been prescribed by the rules of the State Medical Board.

The States exacting one or more years of college work are as follows:

State.	Years.	In Force.	Affecting Graduates of
Colorado	2	1911	1914
Connecticut	1	1910	1914
Indiana	1	1910	1913
Indiana	2	1911	1914
Iowa	2	1911	1915
Kansas	1	1910	1914
Minnesota	2	1908	1912
North Dakota	2	1908	1912
South Dakota	2	1907	1911
Utah	1	1913	1917

More detailed information concerning the requirements in the above States may be obtained from the respective secretaries, as follows:

Colorado: Dr. David A. Strickler, Secretary State Board of Medical Examiners, Denver.

Connecticut: Dr. Charles A. Tuttle, Secretary Medical Examining Board, representing Connecticut Medical Society, New Haven.

Indiana: W. T. Gott, M.D., Secretary State Board of Medical Registration and Examination, Indianapolis.

Iowa: Dr. Guilford H. Sumner, Secretary State Board of Medical Examiners, Des Moines.

Kansas: Dr. Henry A. Dykes, Secretary State Board of Medical Registration and Examination, Lebanon.

Minnesota: Dr. W. S. Fullerton, Secretary State Board of Medical Examiners, St. Paul.

North Dakota: Dr. G. M. Williamson, Secretary North Dakota State Board of Medical Examiners, Grand Forks.

South Dakota: Dr. L. G. Hill, Secretary State Board of Medical Examiners, Watertown.

Utah: Dr. George E. Harding, Secretary State Board of Medical Examiners, Salt Lake City.

BULLETIN OF APPROACHING EXAMINATIONS

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W H Sanders, Montgomery	Montgomery	July 9
Arizona*	Ariel Martin, Phoenix	Phoenix	April 1
Arkansas	F T Murphy, Brinkley	Little Rock	May 14
California*	Chas L Tisdale, 929 Butler Bldg, San Francisco	San Francisco	April 2
Colorado	David A Strickler, Empire Building, Denver	Denver	April —
Connecticut*	Chas A Tuttle, New Haven	New Haven	Mar 12
Delaware	J H Wilson, Dover	Dover	June 18
Dist. of Columbia	Geo C Ober, Washington	Washington	April —
Florida*	I D Fernandez, Jacksonville	Jacksonville	May 7
Georgia	C T Nolen, Marietta	Atlanta	
Idaho*	O J Allen, Bellevue	Boise	April 2
Illinois*	J A Egan, Springfield	Chicago	
Indiana	W T Galt, Crawfordsville	Indianapolis	July 9
Iowa	G H Sumner, Des Moines	Des Moines	Feb 6
Kansas	H A Dykes, Lebanon	Topeka	Feb 13
Kentucky	J N McCormack, Bowling Green	Louisville	Dec 19
Louisiana	A B Brwan, Crescent Bldg New Orleans	New Orleans	May 30
Maine	F W Searle, Portland	Portland	Mar 12
Maryland	J McP Scott, Hagerstown	Baltimore	June 18
Massachusetts	E B Harvey, State House, Boston	Boston	Mar 12
Michigan	B. D Harrison, 205 Whitney Building, Detroit	Ann Arbor	June 11
Minnesota	W S Fullerton, St Paul	Minneapolis	Jan's 2
Mississippi	S H McLean, Jackson	Jackson	May 14
Missouri	Frank B Hiller, Jefferson City	Kansas City,	
Montana*	Wm C Riddell, Helena	Helena	April 2
Nebraska	E A Carr, Lincoln	Lincoln	Feb 14
Nevada	S L Lee, Carson City	Carson City	May 6
N Hampshire	Henry C Morrison, State Library, Concord	Concord	Jan's 9
New Jersey	H G Norton, Trenton	Trenton	June 18
New Mexico	J. A. Massie, Santa Fe	Santa Fe	April 8
New York	C F Wheelock, Univ. of State of New York, Albany	New York Albany Syracuse Buffalo	Jan 30
N Carolina	B K Hays, Oxford	Hendersonville	June 11
N Dakota	G M Williamson, Grand Forks	Grand Forks	April 2
Ohio	Geo H Matson, Columbus	Columbus	June 11
Oklahoma*‡	J. W Deke, Guthrie	Oklahoma City	April 9
Oregon	B E Miller, Portland	Portland	
Pennsylvania*	A R Aleen, Carlisle	Philadelphia Pittsburgh	
Rhode Island	G. T Swarts, Providence	Providence	April 4
S Carolina	H. E. Boozer, Columbia	Columbia	June 11
S. Dakota	F. W Freyberg, Mitchell	Huron	
Tennessee	C. A. Abernathy, Pulaski	Memphis Nashville Knoxville	
Texas	J. D Mitchell, Fort Worth	Austin	June 27
Utah	R. W Fisher, Salt Lake City	Salt Lake City	April 1
Vermont	W Scott Nay, Underhill	Burlington	July 9
Virginia	R S Martin, Stuart	Lynchburg	Dec 21
Washington*	F P. Witter, Spokane	Tacoma	July 2
W. Virginia	H A Barbee, Point Pleasant	Parkersburg	April 8
Wisconsin	J. M Beffel, Milwaukee	Milwaukee	May 28
Wyoming	A.B Tonkin, Riverton	Riverton	Mar 13

*No reciprocity recognized by these States

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State

Vermont.—The refraction test is no longer required of applicants for a license to practise medicine.

Louisiana.—At the October examination there were thirty-six candidates; of this number twenty were successful.

Ohio has reciprocity with the following States upon certificates issued after an examination only: New York, New Jersey, Illinois, and Texas. With the following upon certificates by diploma as well as by examination: Arkansas, Colorado, District of Columbia, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Michigan, Minnesota, Missouri, Nebraska, Vermont, West Virginia, Wisconsin, Wyoming, Kentucky.

Influence of Rest and Movement on the Elimination of Ammonia in the Urine.—Giuseppe Moscati divides the nitrogen in the urine into weak and non-weak. This division covers our ignorance of the composition of many substances which are midway between albumin and urea. He has made tests in man and animals of the elimination of ammonia during rest and after exercise. These results are tabulated and the conclusions are given. The ammonia eliminated in man varies with repose or labor; it increases during rest, and diminishes or disappears on exercise, whether the patient is on ordinary or milk diet. On a flesh diet the amount of ammonia, whether during rest or exercise, varies little. On a vegetable diet the inverse is true: there is an increase of ammonia during exercise. The probable explanation of these facts is that there is a fixation of a part of the acids of metabolism by the alkalies which result from the disintegration of the tissues, thus leaving ammonia free to be synthesized into urea. In dogs with exercise caused by small doses of strychnia no results were obtained on account of the interference of the drug with the normal metabolism. In horses exercise determined a disappearance of ammonia from the urine, the ammonia being elevated and synthesized into urea.—*Giornale Internazionale delle Scienze Mediche.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended January 20, 1912.

	Cases	Deaths
Tuberculosis Pulmonalis	457	171
Diphtheria	247	31
Measles	616	6
Scarlet Fever	252	5
Smallpox	1	—
Varicella	253	—
Typhoid Fever	87	9
Whooping Cough	29	2
Cerebrospinal Meningitis	2	4
Malarial Fever	—	—
Totals	1,914	228

Treatment of Torticollis.—Desfosses describes torticollis as a shortening of one sternocleidomastoid muscle so as to turn the head to one side, while the spine undergoes a scoliosis with the convexity toward the healthy side. Formerly this trouble was supposed to be due to the neglect of the accoucheur, but at the present day it is believed that such an accident can happen only in a muscle already pathological, and Couvelaire demonstrated in such cases post-mortem that there was degeneration of some of the muscle fibres. For the cure of the condition there must be a section of the muscle, either subcutaneously or after an incision; this is followed by a plaster dressing to maintain the head in a position of over-correction, which dressing is worn for a week; then an apparatus for the same purpose should be worn for a month. At the end of this time active and passive movements are begun to preserve the length of the muscle and develop its strength. The result is generally perfect.—*La Presse Médicale.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended January 10, 1912.

CHOLERA

Places	Date	Cases	Deaths
India: Calcutta	Nov. 12-18	..	42
Madras	Nov 26-Dec 9	216	167
Madras presidency	Dec. 1-31.	3,879	2,412
Rangoon	Oct 1-31	2	1
Italy	Dec. 10-17	18	10
Provinces: Caltanisetta	Dec. 10-17.	2	
Girgenti	Dec. 10-17.	16	10
Java: Batavia	Nov 19-Dec. 2	8	3
Persia: Adaban	Nov 4.	1	1
Turkey in Asia: Adana	Dec. 2-6	16	5
Basra	Oct. 22-28	14	10
Erzeroum, vilayet	Sept. 11-16	50	28
Erzeroum	Sept. 11-16	11	8
Kaifa	Dec. 8	..	Present
Jiddah	Dec 2-10	77	46
Mekka	Dec 4-10.	716	678
Mersina	Dec. 6.	1	..
Osmania	Dec 1-6	2	4
Sinope	Dec. 7.	2	1
Trebizond and vicinity	Sept 18-23	64	34

YELLOW FEVER

Mexico: Merida	Dec 24-30.	1	1
At Sea	Dec 17-23.	1	1
On a vessel en route from Manaos to Para			

PLAGUE

Brazil: Bahia	Sept. 1-30	..	2
British East Africa: Kisumayu	Oct 15-25	12	..
One case pneumonic.			
Chile: Iquique	Nov 26-Dec 9	2	1
China: Amoy	Jan 15		Present
India: Bombay	Dec 3-9	8	7
Calcutta	Nov 12-18		8
Rangoon	Oct 1-31	26	27
Mauritius	Nov 10-16	2	1
Straits Settlements: Singapore	Nov 19-25	1	1

‡From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Dec. 29, 1911.

SMALLPOX

Arabia: Aden	Nov 28-Dec 4	1	..
Canada: Ontario: Ottawa	Dec 24-30	5	..
Quebec: Quebec	Dec 10-Jan. 6.	120	..
Jan. 6, 14 cases present, diminishing.			
France: Paris	Dec 10-16	11	2
India: Bombay	Dec 3-9	6	5
Madras	Nov. 26-Dec 9	18	10
Rangoon	Oct. 1-31	18	6
Italy: Leghorn	Dec. 17-23	38	..
Naples	Dec. 17-23.	10	
Java: Batavia	Nov 19-Dec 2	7	2
Mexico: Mazatlan	Dec. 27-Jan 2.		1
Porfirio Diaz	Dec. 17-Jan 6	17	17
San Luis Potosi	Nov 12-25	2	..
Portugal: Lisbon	Dec. 9-23	8	..
Russia: Libau	Dec. 17-23	1	..
St. Petersburg	Dec. 9-16	7	1

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Original Articles.

RÉSUMÉ OF THE IMPORTANCE AND PREVALENCE OF THE OCCUPATIONAL DISEASES.*

By W. GILMAN THOMPSON, M.D.,

NEW YORK.

THE occupational or industrial diseases are beginning to attract in this country the systematic study which has been bestowed upon them for some years past in Germany, France, and England, where it has been shown that an increasingly large variety of diseases are directly attributable to occupational hazards of many kinds.

The study of the conditions under which these diseases develop invites attention alike from the humanitarian, scientific, and purely economic points of view.

The multiplicity of manufactures, the crowding together of large numbers of working people in ill-ventilated factories, the strain of tending certain kinds of machinery, the danger of handling many varieties of metals and chemicals, the stress of hurry and competition, the common ignorance and carelessness regarding dangers grown familiar through constant association, as well as the lack of authoritative supervision of hazardous occupations, are all contributing factors to the group of occupational diseases. While none of these diseases involve new fundamental principles of pathology, yet they are new in etiology and prophylaxis, and their symptoms, in sequence and rapidity of development, as well as in grouping, often constitute unique and distinguishing features. Thus it has come to pass that in our complex civilization the evolution of new machinery and apparatus, of new varieties of food and drink, of new occupations and habits of life—in a word, of our whole environment—has been accompanied by the employment of new poisons in the mechanical art, new irritants for inhalation, new uses for the muscles, new strains for the nerves, and new stress of the mind. Many of these factors operate most insidiously, others more acutely; but, sooner or later, they tend to injure the structures of the body or alter its activities in a manner to produce what fairly may be regarded as new diseases or disorders, and consequently to affect longevity and mortality in very striking degree. Thus, for example, there are 150 trades in which exposure to lead in various forms may occasion serious and sometimes fatal plumbism. In this city not long ago three deaths from lead poisoning occurred among the men employed in a single lead smelting establishment, and I have collected the histories of 267 cases of serious lead poisoning treated within a few years in only three of our medical institutions. Dr. Alice Hamilton, working on a special commission in Illinois to investigate the prevalence of lead poisoning, found cases of plumbism in 33 of 56 establishments where lead was used in processes of manufacture, with a yearly average of 665 cases. In England, in the white lead works in the neighborhood of Newcastle, compulsory medical inspection has so far reduced the cases of lead poisoning that in 1910 the ratio was 1 case in 264 employees, whereas in Illinois, without legalized inspection and control, Dr. Hamilton found the ratio 1 case in 7 employees.

There are twenty-seven trades in which arsenic constitutes a similar hazard.

Dr. Frederick L. Keays of the staff of the Cornell University Medical Clinic, while serving as physician to the Pennsylvania Railroad Tubes, published a report concerning 3,692 instances of caisson disease occurring among the 10,000 workmen employed, and including 20 deaths. Mr. John B. Andrews of the American Association for Labor Legislation, in his recent investigation of phosphorus poisoning among those employed in the manufacture of matches in this country, found records of 40 cases of necrosis of the jaw in a single factory. "Of this number 15 cases resulted in the loss of one or both jaws, and several cases resulted in death." In another small factory there were records of 21 cases, 6 of which developed in a single year.

There are many trades in which the hazard to the unprotected workmen is equally great, although the facts are less widely known. Thus workmen who inhale the chromic acid used in the production of chrome pigments may acquire deep ulceration of the mouth, and I have seen necrosis of the upper jaw which destroyed completely the floor of the nasal cavities. Those employed in the pressing and glossing of silk hats are subject to serious mercury poisoning. A salt of mercury used to produce the gloss is pressed in with hot irons, which volatilize the mercury. Workers in pottery and porcelain are subjected both to lead poisoning from the glazing materials andto pneumoconiosis and chronic bronchitis from inhalation of particles of flint, silica and other substances. In many of the occupations in which the inhalation of dust constitutes the chief hazard, the victims not only suffer from the effects of constant irritation of the bronchi and lungs, but the lesions thus produced render them especially liable to the subsequent acquisition of tuberculosis. In Lancashire, for example, in some years the deaths from tuberculosis among cotton spinners and weavers have risen as high as 20 per cent. of the total deaths from that disease.

Such are a few examples only of the prevalence of the industrial diseases, which serve to illustrate the importance of a subject which is beginning to

* Introduction to a discussion on Occupational Diseases at the N. Y. Academy of Medicine, Committee on Public Health, etc., meeting, Jan. 4, 1912.

excite widespread attention and call for preventive measures, legislative and otherwise.

June, 1910, was signalized by the meeting in Chicago of the first National Conference on Industrial Diseases, and, in a memorial sent to President Taft by this conference, it was stated that there occur annually in the United States 13,400,000 cases of sickness among artisans and craftsmen, many of which are attributable directly to special occupational hazards, involving a total annual economic loss of nearly three-fourths of a billion dollars. It is high time, therefore, that physicians bestir themselves to look carefully into the problems involved and aid in gathering accurate data in order clearly to differentiate the influence of occupational environment and hazard in special lines of work, for on such data only may be based proper legislative action.

The United States Census Bureau has lately issued a partial classification including 101 diseases due to hazardous occupations, under which death returns or other statistics should be grouped. The States of Illinois and New York have established commissions to investigate the problems of the occupational diseases, particularly in relation to providing suitable factory legislation.

Thus far six States, California, Connecticut, Illinois, Michigan, New York, and Wisconsin, have passed laws requiring physicians to report certain cases of occupational disease whenever found. These diseases are derived from four metals, lead, mercury, arsenic, and phosphorus; one germ, the anthrax bacillus, and the caisson disease. The reports must be made either to the State Board of Health, as in four States, or to the State Labor Bureau, as in two States, including New York. Penalties varying from $10 to $100 may be imposed for failure to report. This is a scant list, in some respects not well selected, but it constitutes a beginning and should serve to interest the cooperation of physicians in gathering important facts which heretofore have never been tabulated in this country. Legislation aimed at the mitigation of the evils of unhygienic mills, factories, and hazardous trades is doubtless desirable in many instances, but it is a grave mistake to enact it too hastily before the existing evils are better understood, both as to their nature and extent. In this work the active assistance of physicians is absolutely essential, especially of those living in manufacturing towns whose dispensary or hospital opportunities bring them in direct contact with many illustrations of the occupational diseases.

In order to render such statistics of value, it is most desirable to establish agreement upon a definite nomenclature, both of the hazardous trades, the noxious substances encountered, and the diseases incident thereto. Thus far the literature of the occupational diseases is so meager, consisting, as it does, of less than a half dozen books in English and a few scattered journal articles and insurance reports, that physicians generally are unfamiliar with very many of the occupation hazards, as a glance at the statistical records of hospital cases easily demonstrates. It is to be hoped that the Census Bureau will shortly take this matter into consideration, and in New York State the Labor Bureau is about to issue to physicians a nomenclature and classification for information and guidance in returning uniform statistics.

In many instances better ultimate results may doubtless be obtained through a campaign of education than by means of legislation. Some of the large corporations have already found the enormous economic advantage in protecting workmen from injury by accidents, instance the admirable example of the Illinois Steel Corporation, which, without legislative compulsion, has found it economical to expend over $1,000,000 a year in devices for protection of its workmen and in issuing printed circulars of information to instruct them in the avoiding of accidents. That such results would accrue from similar appreciation of the economic advantage of avoiding disease hazards there can be no question.

Another important phase of the subject of occupational diseases concerns employers' liability, which in several foreign countries is now made to cover industrial diseases as well as accidents. In England, for example, in a single year damages were awarded in over 2,000 cases of industrial disease arising from ten of the hazardous substances enumerated by Parliamentary act.

In the larger cities of Europe fourteen museums have already been established to illustrate, by means of models, charts, diagrams, etc., the hazardous occupations, as well as the means of prophylaxis. In this country the first museum of the kind has been established in New York, and it is intended to exhibit the occupational hazards of disease, such as the various dusts, metallic salts, etc., as well as safety appliances for ventilation of factories, and other forms of protection.

To Milan belongs the credit of establishing in 1910 the first hospital for the treatment and study solely of occupational diseases. It is an admirably appointed institution, containing, besides 150 beds for patients, extensive chemical, physical, and pathological laboratories and an amphitheater for instruction.

The American Medical Association, the New York State Medical Association, the International Association for Labor Legislation, the American Economic Association, and the New York Academy of Political Science are among the numerous organizations which recently have shown encouraging interest in the problems of the occupational diseases through the appointment of special committees to investigate them.

This brief general introductory outline may serve to emphasize the many-sided interests which the study of the diseases of occupation presents, and in which European countries are already considerably in advance of our own. To the others who are to participate in this discussion must be left the more detailed presentation of the subject.

34 East Thirty-first Street.

STATE CONTROL OF OCCUPATIONAL DISEASES.*

By LEONARD W. HATCH, Ph.D.

ALBANY, N. Y.

CHIEF STATISTICIAN, NEW YORK STATE DEPARTMENT OF LABOR.

Why should the physicians of New York be required to report occupational diseases to the State government? More particularly, why should they report such diseases to the State Department of Labor, as required by Chapter 258 of the Laws of 1911, which took effect on the first of last September? It is to endeavor to answer these questions, briefly, that

*Read at a meeting of the New York Academy of Medicine, January 4, 1912.

I have been glad to avail myself of your committee's invitation to address this meeting.

At the very outset, it is suggested that, while my position is that of a department official to whom it falls to conduct administrative work connected with seeing that the required reports are sent in, while you, or so many of you as belong to the medical profession, are in the position of those required to send in those reports, it will greatly tend to clarify our view of the whole matter if it be considered almost entirely from the social point of view instead of from the personal point of view of either party directly concerned. Certainly it is only from that point of view that a correct notion of it can be secured.

Considered thus broadly, the matter is essentially one of the public health. Physicians have long been familiar with governmental regulations, local or State, touching various phases of public health, in connection with which they are called upon to observe certain requirements, mainly in the way of furnishing information to public authorities. A familiar example of these is the quarantine regulations in connection with contagious diseases. The direct and serious menace to the public generally from a case of contagious disease left free to propagate itself in the community through ignorance or carelessness makes very obvious the wisdom and advantage to the public as a whole of such regulations and the required duties of physicians in connection therewith. Another example, more closely analogous to the case in hand, is the compulsory registration of deaths, where perhaps, to many physicians, the practical bearing of the regulation upon the general public health may not be so clear as in the case of quarantine regulations. In the one case a physician is required to report to local authorities the existence of what his technical knowledge tells him is of itself a direct menace to the neighboring community. In the other he is required to report to the public authorities what, indeed, his technical knowledge alone can furnish (that is the cause of death), but what neither immediately nor directly, in the vast majority of cases, menaces the health of the surrounding community. But the public service rendered by the physician in the latter case may be just as practical and important to the public health as in the former, though much less immediate and direct in its effects. Here is a concrete example, which happens to be within the writer's knowledge. Several years ago the city of Albany had a very high death rate from typhoid fever. This general fact, which could only be established by public registration of deaths, called attention to the question of the purity of the water supplied to the citizens, which finally led to the installation of a system of filtration of the water, which was taken from the Hudson River, with the result that the typhoid rate was rapidly and steadily reduced to one not above the normal in recent years. Here, it will be seen, is a very practical result, quite as important for the public health as preventing the spread of a contagious disease, directly traceable to the information afforded by physicians' reports of deaths. In other words, knowledge of the frequency and incidence of a given disease as a cause of death, which could only be had by general registration, proved to be the primary means to the prevention of that disease.

Now, the above familiar examples of requirements laid upon physicians for the sake of the public health in the case of contagious diseases and registration of deaths may serve very well for more than mere illustration; because, as a matter of fact, the reason for the reporting of occupational diseases to the State Department of Labor is precisely the same in principle as that for the reporting by physicians to local boards of health of deaths and contagious diseases, and a comparison of the two will, perhaps, best serve to make clear the reasons for reporting of occupational diseases.

Note, first of all, the points of similarity. In both cases the physician is required to furnish information which he alone can supply, since only the physician can accurately identify diseases. In both cases this information is to be furnished to a public authority for the purpose of enabling that authority either to enforce immediately preventive regulations or to bring together comprehensive information as to the causes of disease or death, to the end that the need of preventive measures, and the kind of such measures required, may be understood. The differences lie only in the class of information required and the public authority to whom it is to be furnished, the latter, in the case of occupational diseases, being largely determined by the former.

You have already heard of the importance and prevalence of occupational diseases. The thing to be emphasized in the present connection is that these diseases, except in the case of tuberculosis due to occupational causes, are a matter not of the health of the whole community, as in the case of the reporting of contagious diseases, or general registration of deaths, but only of a certain portion of it, although the most numerous one, namely, the wage-earners of our industrial population. It is for this reason that the term industrial disease has come into common use as practically synonymous with the broader term, occupational disease. It is certain of these industrial diseases which constitute the new class of information required of physicians under the new law. (Why the selection of certain ones only is made will be explained hereafter).

Now, it happens that the health of industrial workers has long been a subject of legislation in all civilized countries, because it was long ago discovered that without such laws the short-sightedness or rapacity of employers, and ignorance or pressure of the struggle for existence in the case of employees, would inevitably lead to large numbers of wage-earners being employed under conditions highly deleterious to health. Accordingly, factory laws, and more recently laws applying to other forms of industry, have been enacted to prevent over-long hours for women and children, to prevent overcrowding, to require proper ventilation, toilet facilities, cleanliness, etc., all these being nothing more or less than health laws. Furthermore, such matters of industry being chiefly within the province of State legislation in this country, the States have very generally established labor bureaus or departments for the enforcement of such laws or investigation of conditions with a view to further legislation. In other words, industrial hygiene has long been assigned to special State agencies like the New York State Department of Labor for investigation, or administration of laws designed to promote the same. And this is the reason why the State Department of Labor is the perfectly natural public authority to which the new law makes industrial diseases reportable. It is the established State agency dealing with matters of industrial hygiene, just as local boards of health are the established agencies dealing with matters relating to the general health of the community.

If the foregoing makes it clear that this new law does not inaugurate something that is revolutionary in principle, but only applies to a new or special field familiar and established practise in other fields, it may be helpful to note more fully the broader significance for its own field of industrial hygiene of this new step.

It was noted above that laws to conserve the health of industrial workers have long been on the statute books. But almost without exception in this country up to the present time, such laws have been confined to very general requirements of a few elementary conditions. Thus in New York State the present factory law contains only such general requirements with reference to lighting, ventilation and overcrowding, time for meals, cleanliness of workplaces, plumbing and drainage, and toilet facilities, and some of these have been found in actual practice to be inadequate. Such requirements deal only with matters of common knowledge; with certain simple essentials of sanitation not peculiar to factories or industrial life, but recognized as essential everywhere. In other words, thus far labor laws have to a large extent attempted little more than to see that factories and industrial establishments shall not fall below the elementary standards of sanitation recognized as necessary everywhere. Very little has been done toward the establishment of special regulations for the elimination of those special dangers connected with the use of harmful substances or processes, which are the prolific source of disease to workers exposed to them, as you have heard from the preceding speakers. And it is becoming more and more evident that the great line of progress for the future toward industrial hygiene lies chiefly in this field.

Now, if this progress is to be made in scientific fashion, and unless it be scientific, it will fail of the highest effectiveness, it must be based, first of all, on thorough investigation and knowledge of the facts. Some valuable studies in this field have already been made in this country, and in New York State three years ago an important step in this direction was taken in the appointment in the Bureau of Factory Inspection of a medical inspector of factories, such appointment being unique in the history of such bureaus at that time in this country. But if the problem is to be comprehensively studied and treated, the necessary starting point would seem clearly to be adequate knowledge of the frequency, and location in industries and establishments, of these occupational diseases. To borrow a medical term, a comprehensive diagnosis of this social ill must be the first step. For this the indispensable means is the registration of such diseases, and, as already pointed out, it is at this point, just as in the case of contagious diseases or registration of deaths, that the public authorities must call upon the only source of information, the medical profession. For the field of industrial hygiene, therefore, this new reporting law represents a most important step forward toward a broad and scientific treatment of the special dangers menacing wage-earners, supplementing the older and more primitive requirements of labor laws. These latter could be formulated on the basis of the common knowledge of men concerning such matters; regulations for the control of occupational diseases require as a basis special knowledge. It is in large degree, therefore, for the necessary basis of a vastly important forward movement in the interests of the health of the industrial population that the law for the reporting of industrial diseases calls upon physicians.

While the road toward control of occupational diseases above outlined must commend itself as reasonable and scientific, it is important to observe that it is far from one wholly untried when foreign experience is noted. No country has a higher reputation for efficient and progressive efforts by direct State inspection and regulation to promote industrial hygiene than Great Britain, and it is safe to say that a very important element contributing to this success has been the large measure in which the British authorities have enlisted the cooperation of the medical profession in their work. Particularly in this very field of diseases due to occupation is this true, and for years the British factory law has required registration of such diseases precisely as provided for in the New York law. In fact, the New York law is copied verbatim from the English act, so that the American Association for Labor Legislation, which was the original proposer of the New York law as well as similar laws passed this year in several other States, did no more than propose the adaptation to the American problem of industrial diseases of a tried and proven method in advanced practice abroad.

In the short time here available it has been both necessary and desirable to consider principally the more general aspects of reporting by physicians as a factor in State control of occupational diseases, so that any full discussion of the New York law in detail is out of the question. But there are two matters connected with details of the law, to which it is appropriate to call attention here.

The law lays on physicians the specific duty of reporting only certain diseases, namely, poisoning by lead, phosphorus, arsenic, or mercury, anthrax and caisson disease. As has been made apparent by the preceding paper, this is but a very small number out of a very large list of diseases to which workers are liable from the nature of their work. The selection made in the law must be regarded as more or less arbitrary except that it is based on the English statute, and represents, perhaps, the most clearly recognized and most common diseases due exclusively to circumstances of occupation. But what has here been said as to the importance of registration of industrial diseases, if it be the correct view, applies equally well to any other occupational diseases. In other words, the fundamental principles of the matter make it highly desirable that all occupational diseases should be reported. While, therefore, the compulsion of law has been placed by the State only upon certain selected diseases, the opportunity of public service open to physicians is as wide as the whole field of occupational diseases. Is it too much to hope that physicians will see their opportunity for co-operation in this matter as broadly as the possibilities of the whole field, rather than the limited one covered by the law, so that the way shall be paved for rapid progress toward complete registration of all industrial diseases, as the necessary means to their control? Certainly the high character of the profession warrants expression of the hope at least.

Finally, there is one matter, which, while very much one of detail, is nevertheless one of such vital importance to the successful utilization of the knowledge which registration of occupational diseases will make available for the state as to warrant its mention here.

In what has been said in the foregoing it has been emphasized that registration of occupational diseases by physicians is the necessary means by which technical information which comes naturally to

physicians in the practice of their profession is to be made available for the state authorities. But it is absolutely necessary in this matter that the physician's technical information his diagnosis of the disease—shall be accompanied by information as to the occupation of the patient and the industry and establishment in which he is employed if the exact relation between the occupation and the disease is to be determined and the furnishing of this information is accordingly definitely specified in the law. Obviously this is asking the physician for something not necessarily a matter of knowledge in connection with his professional relations with the patient at all, so that the reporting law is requiring at this point that the physician shall take the trouble to secure information outside of his professional knowledge and useful to the state alone. It is probably for this reason that, as experience abundantly shows, physicians so often fail to exercise care in reporting this particular information in connection with registration of deaths. But it is of the most vital importance to the state that this should be done with care both in reporting deaths and in reporting occupational diseases. From the statistical point of view the value of all the information furnished largely hangs on this one thing. It is the necessary link by means of which the connection between disease and occupation may be established. Physicians cannot be too strongly urged, therefore, to exercise care at this particular point. Believe me, though it may seem extraneous matter from the medical point of view, and though it may cause what may seem unnecessary effort to secure it accurately, upon the physician's care at this point depends not a little the success of the present movement to establish a broad scientific basis for the control of occupational diseases.

INDUSTRIAL DISEASES DUE TO THE USE OF METALLIC POISONS AND THE MEASURES NEEDED FOR THEIR PREVENTION.*

By M. ALLEN STARR, M.D., LL.D., Sc.D.,

NEW YORK,

PROFESSOR OF NEUROLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, MEDICAL DEPARTMENT OF COLUMBIA UNIVERSITY.

In many trades the workers are exposed inevitably to the dangers of poisoning by metals, especially by lead, arsenic, mercury, and phosphorus.

Lead is used in many industries and its ill effects on the body have long been recognized. In the smelting of lead ore at the mines, in the manufacture of red and white lead, in the use of paints, in the printing trade, in file-cutting, in enameling, in the manufacture of china and earthenware, in glass making, and in all work where paint is used, such as carriage and automobile making, shipbuilding, or house decoration, and among plumbers the exposure of the laborer is constant.

The common forms of lead poisoning—lead colic, lead tremor and lead palsy—are easily recognized, and are very serious as they are of such long duration. In my clinic, where such cases are common, it is rare to see recovery under six months—a long time for a man to be out of work.

It is not only these types which are of importance. The chronic poisoning by small amounts of lead, leading to a general state of malnutrition, pallor, anemia, ill health, and lack of strength and of mental capacity, is often overlooked. Many cases of gradual loss of vigor and so-called neurasthenia are actually due to chronic lead poisoning. This may manifest itself by chronic headaches, loss of eyesight, forms of neuritis, lack of ambition, and the impaired power of work and by psychasthenic symptoms. The blue line along the gums is a sign never to be overlooked.

These facts have been appreciated more fully in England where much legislation has been carried through for the protection of workers in lead. The efforts of the Home Office regulations and of medical inspection in Great Britain reduced the number of cases of lead poisoning between 1899 and 1906 one-half. The measures taken in factories where red and white lead are manufactured consisted in requiring that the walls be kept smooth and clean and free from dust, that the floors be made of cement and washed, that where dust containing lead was inevitable it be moistened by sprinklers, that the workmen be shifted frequently from the dangerous exposure to dust and fumes to less perilous departments, that they be provided with moist respirators to prevent inhalation of lead dust and with special overalls which are regularly washed, that bath houses be provided, that cleanliness be inforced, and that washing of the hands in a weak acetic acid solution before eating be insisted upon. The use of tobacco and alcohol is prevented so far as possible as they both predispose to lead poisoning. And an effort has also been made to prevent women and children from going into this industry as lead predisposes to abortion and stunts the growth of minors.

It was found in England that many cases of lead poisoning arose in the manufacture of glazed china. The glaze, which is a liquid, contains lead and when dried the articles are smoothed and cleaned. In this smoothing the lead dust gets into the air and is inhaled by the operators. In Staffordshire alone 50,000 persons are employed in this industry. In 1898 Professor Thorpe and Sir Thomas Oliver were appointed to see what could be done to prevent the enormous number of cases of lead poisoning. They ascertained that white and cream ware could be glazed by silicates without lead, and that the per cent. of lead could be reduced in other glazes from 20 or 15 per cent. to 5 per cent., and that the use of raw lead was most dangerous and should be avoided. They therefore recommended that the processes of manufacture should be changed. The manufacturers of course objected, but after investigation and arbitration the Home Office enforced the adoption of these measures and further prohibited women and children from working in the trade. As a result of this governmental supervision the number of cases of lead poisoning in the earthenware trade was reduced 70 per cent. in five years.* Overalls and respirators are worn, proper ventilation is required, the rooms are kept sprinkled and clean, and the operators are regularly examined medically and a health register is kept. Similar restrictions should be demanded in this country. In our manufacture of earthenware 10 per cent. of lead is now used and few precautions against poisoning are observed.

Another industry in which lead poisoning occurs is the manufacture of storage batteries, a paste of red lead and sulphuric acid being rubbed into the openings in perforated metallic plates. This employment has been considered dangerous in Germany and England, statistics showing that nearly 30 per cent. of the workers are poisoned and special

*Read at a meeting of the New York Academy of Medicine, January 4, 1912.

regulations in regard to the wearing of rubber gloves and to personal cleanliness, which is the chief preventive, are enforced there. In our factories these are neglected.

In the industries of file cutting, diamond cutting, the polishing of precious stones, glass and crystal, the enameling of iron work, especially bath tubs, in all of which lead is used; in all plumbing work, in the founding of type, in printing and type setting, and particularly in the use of paints there is always danger of lead poisoning.

Layet states that in France 111 industrial processes involve the use of lead, and Dr. Alice Hamilton states that in Illinois there are seventy industrial processes in which lead or its salts are handled which have caused lead poisoning. Painters who work indoors, those who scrape off paint from old objects before repainting, as in coach and ship-painting, and who mix paints are very subject to poisoning. I have talked with many painters on this subject and it is rare to find one who has not at some time suffered. I have seen two severe cases of lead paralysis, one fatal, in little children of a painter who had been allowed to play with paint. Plumbers have informed me that it is rare for a man long in the business to escape poisoning. Oxide of zinc may be substituted for white lead in paint, and in 1909 a law was passed in France making this compulsory after 1914. It is to be hoped that other countries will follow and forbid the use of lead in paint.

I fail to find any effort at instruction of these laborers as to the means to prevent the effects. If in every shop there were printed notices, or if to every worker notices were presented, or if in every labor union meeting notices were distributed containing directions, something might be accomplished. The need of using respirators when working in dusty or close rooms, the need of washing the hands in vinegar, the need of protecting the food from paint by holding it between bits of clean paper when washing is impossible, the need of the frequent use of saline laxatives and of applying for treatment as soon as the common symptoms of colic or headache are noticed, should be made plain by these means.

Such measures might be entrusted to labor unions, to the Board of Health, or to the Commissioner of Labor, but some one should undertake a campaign of education among the workers in these dangerous trades, and in factories some method of protecting operatives should be enforced.

The crying need of some such measures is shown by the fact that "of two factories engaged in the production of white lead in one of the central States, one, in which no effort was made to safeguard life, although employing only eighty hands, was compelled to renew virtually the entire working staff every ten weeks; the other, conducted on principles of humanity and civilization and employing twice as many hands, took on less than a hundred new workmen during the year." (MEDICAL RECORD, December 2, 1911.)

Dr. Alice Hamilton states that in 1910 in England, under the rules already mentioned, out of 1,320 persons employed in white lead works in Newcastle on Tyne only five cases of poisoning were reported; while out of 450 persons employed in Illinois sixty-three cases were reported, *i.e.* one in every seven. (*Jour. Amer. Med. Assoc.*, 1911, April 29.)

In lead smelting works almost all the operatives become poisoned sooner or later by the fumes containing lead if they remain at work more than a few months. This was formerly the case in Germany, but while there in 1885 with no regulations, 73 per cent. of workers were poisoned, in 1892 under regulation only 0.8 per cent. were affected. In one Austrian smelter the introduction of proper ventilation by erection of a tall chimney reduced the per cent. of operators affected from 70 per cent. to 3 per cent. (*Boulin Bull. de l'inspection du travail*, 1906.)

Laureck (Weyl, *Handbuch der Arbeitenkr.*) states that in Austria in lead-producing factories in 1886, 43 per cent. of the operatives suffered from poisoning, while after governmental supervision had been instituted in 1892 but 6 per cent. were affected. He also shows that 71 per cent. of all cases of lead poisoning occur in winter and but 29 per cent. in summer, a fact which proves that free ventilation and plenty of fresh air is a great preventive of such diseases.

If these facts are admitted it becomes evident that State supervision of the industries in which lead is used is imperative; that factories should be properly ventilated by forced drafts; that good warm bathrooms with hot water, free soap, and towels should be provided and time allowed operatives to bathe; that clean overalls and respirators should be furnished and their use insisted on; that medical inspection under the Department of Labor should be required with power to enforce the precautions recommended. The mouth should be washed before eating with a solution of sulphate of soda and the hands in a solution of nitro-hydrochloric acid.

These are regulations which are now enforced in England and all over the Continent. They are not considered by employers there unreasonable and they have resulted in a rapid diminution in the percentage of operatives thrown out of work by reason of poisoning and hence to a material saving both to the employer and the employee.

Arsenic is another poison whose effects are most serious. Its handling occurs in twenty-seven trades, all of which are dangerous. In arsenic mines and in the works where arsenic is reduced from the ore, in the preparation of arsenic for use in the arts, in the dyeing of wall papers and fabrics, in the curing of furs, and in the dyeing of rugs and many textiles by analine dyes, there is great danger of poisoning. The arsenic is given off in fumes or exists in fine dust which is inhaled.

The symptoms are more insidious than those produced by lead. Gastric and intestinal affections which become chronic are first noticed and these lead to a state of malnutrition, anemia and cachexia, rendering the person an invalid. Dark pigmentation of the skin, dryness and falling of the hair, and then various forms of paralysis due to multiple neuritis follow, and the person affected is useless for many months. The presence of arsenic in the urine where it can be easily detected is a positive proof of poisoning. Hence this examination is imperative in all cases of obscure disease developing in this class of workers.

Arsenical poisoning is not uncommon among the public. I know of one case at least where it was directly traced to wall paper. The patient was advised to remain in bed during the first three months of pregnancy in order to avoid a miscarriage. In view of this confinement her room was repapered and refurnished with a green fabric. In both paper and fabric arsenic was subsequently found. At the end of the second month she developed arsenical

multiple neuritis and for a year and a half was paralyzed and unable to walk, but finally recovered.

In 1899 a widespread epidemic of arsenic poisoning occurred in England which was traced to the beer manufactured in Salford and Manchester. This beer was brewed by the aid of "inverse sugar," or glucose, a substance in the preparation of which sulphuric acid is used. This acid was the source of the arsenic. Examination showed that the glucose contained four parts of arsenic to 10,000 parts and that the beer contained from 0.14 to 0.28 grain of arsenious acid to the gallon. Hundreds of persons were affected, many being paralyzed for months.

In the fur trade persons are exposed to arsenic. Out of forty-two samples of furs recently examined by an American chemist, eleven were found to be heavily loaded with arsenic, reaching 170 grains to the square yard. Such furs are dangerous to the wearer.

Knowledge of the dangers in these trades and in the use of arsenical papers, beers, or furs may lead to the adoption of such precautions as will prevent poisoning. In the factories preventive measures such as forced ventilation, exhaust pipes to draw off poisonous fumes, the use of respirators to prevent the inhalation of dust should be enforced and the operatives instructed in the dangers and in the need of great cleanliness. They should be careful to protect any cracks or sores on the skin from contact with arsenic.

Mercury is another poison dangerous to workers. In the mines where the metal is extracted by vaporization and subsequent condensation, little drops of metallic mercury are deposited on the persons and in the hair and clothing of the workmen, and being oxidized in the air the oxide is inhaled or swallowed causing poisoning.

In the preparation of barometers and thermometers workmen have to handle mercury. In the separation of gold and silver from various ores by means of an amalgam, mercury is used.

In the manufacture of incandescent lamps where mercurial pumps are used to cause a vacuum, in processes of gilding and bronzing, and in the silvering of mirrors, mercury is employed. Silk hats are dressed in an acid solution of nitrate of mercury, and the same process is used in dressing furs and in making some felt hats.

In everyone of these employments cases of poisoning are frequently reported. The poison causes gastric and intestinal symptoms, and ulceration of the gums with falling of the teeth and salivation. Tremor of a chronic character soon appears and general weakness with marked cachexia which may go on to paralysis.

The dangers of this toxic agent have been widely appreciated and in these factories considerable care is already taken to avoid the effects. Thus the process of silvering mirrors has been entirely changed in recent years and the danger there is eliminated. But in other industries much remains to be done in the way of forced ventilation, provisions for personal cleanliness, and personal instruction as to means to avoid toxemia. I see cases coming from the hat factories of Orange, N. J., every year where few precautions are taken.

Poisoning by *phosphorus* occurs in those industries in which matches are manufactured. This has been made the subject of a special investigation by Dr. Graham Rogers, the medical inspector of factories of the State of New York, in the report of Commissioner of Labor for 1910, where all the processes of manufacture are described and the dangers set forth.

About 600 operatives are employed in this state in this industry, but cases of poisoning are not very common as precautions have been taken in many of the factories to prevent them.

The attention of the public has been called so frequently to the dangers of workers in phosphorus, that in the chief factories of this state proper ventilation has been secured. Directions are posted up in various languages for the employees of the company, giving instructions as to the risk of poisoning and as to the methods of avoiding it. Washing facilities are ample and a dentist is employed by the company to examine the teeth and gums, as it is well known that with the earliest signs of poisoning appear a decay of the teeth and a necrosis of the jaw.

It is a fact that a harmless process of manufacturing matches has been discovered and that the match company which owned this discovery made it public so that it could be used by every company engaged in the business. This increases the cost of manufacturing about 5 per cent., but it is probable that public sentiment will enforce its adoption.

It is evident, therefore, from this review of diseases due to the use of metallic poisons, that much can be accomplished in their prevention by the proper regulations of the processes of manufacture by law. State supervision is absolutely needed and can only be secured when public sentiment is aroused to the need of it, and when measures can be carried through the legislatures for the protection of working people. These measures have been carried and enforced in England and on the Continent and it appears to be the duty of the medical profession at the present time to do all in its power, by exciting public sentiment, by the diffusion of general information, and by bringing personal influence to bear upon the members of the legislatures of various States to secure these results.

OCCUPATIONAL DISEASES OF THE SKIN.*

By JOHN A. FORDYCE, M.D.,

NEW YORK.

PROFESSOR OF DERMATOLOGY AND SYPHILOLOGY UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE.

THE skin both anatomically and physiologically is endowed with a relative amount of protection against the action of irritant substances. Cutaneous vulnerability is more or less an individual peculiarity, for while individuals are met with who are so sensitive to an irritant, be it physical, chemical, thermal, or actinic, that they react after a short exposure or contact by an acute dermatitis, many other people may handle the same agents with impunity. The majority of irritants met with in the trades do not of themselves evoke an eruption but rather act in conjunction with certain contributing factors. Those which come more prominently under consideration are a "special susceptibility," a delicate skin, or one presenting some congenital anomaly, as excessive dryness or ichthyosis; impaired gastro-intestinal, hepatic, or renal function; a depressed state of health, neglected hygiene of the skin, or a lowered resistance by a preexistent eruption.

Persons who exhibit a high degree of sensitive-

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ness are usually obliged to seek some other occupation for instead of acquiring an immunity an increasing susceptibility is established. Fortunately they are in the minority and it is more usual to see workers subjected to continuous injury only after a longer time develop lesions either from the summation effects of the irritant or because the resistance of the skin has been gradually undermined. After such a cutaneous outbreak there is frequently a tendency to acute exacerbations at regular intervals or when the occupation is resumed. In such individuals an eruption may persist for years.

As the skin responds to the most diverse irritants by the production of a catarrhal inflammation, it is not surprising that the commonest type of occupational disease should be an eczematoid dermatitis. This may vary in grade and intensity from an erythematous and scaling dermatitis to a vesicular and bullous eruption. As the condition becomes chronic infiltration of the skin takes place with scaling and fissuring. With the cutaneous defenses lowered, pus infection is frequently superadded.

By extracting the fat and macerating the horny cells the excessive use of soap and water reduces the resistance of the skin. They may then act as direct excitants or prepare the way for some other irritant, as washing powders, etc. Severe eczemas of the hands and forearms are seen in those whose occupation requires them to have their hands continually in water, as in the case of washerwomen, housemaids, barkeepers, etc. In my clinic at the University and Bellevue Hospital Medical College about two per cent. of the total number of new cases for 1911 constituted occupation dermatoses, of which nearly one-third were seen in persons whose vocations necessitated the frequent employment of soap and water and in some cases the various cleansing alkalis.

A warm moist atmosphere, such as laundresses work in, also causes a cystic condition of the sweat ducts of the middle third of the face, known as hydrocystoma. People exposed to heat, as cooks, stokers, firemen, etc., present various inflammatory processes and sweat eruptions like prickly heat.

In bakers a form of dermatitis of the hands and forearms is known as baker's itch. The exciting cause is probably the heat, although both the flour dust and a mite said to live in flour have been incriminated. Candy makers suffer from a similar eruption as well as impetiginous lesions. In a personal communication Winfield describes a dermatitis in sugar refiners which involves the hands, forearms, and legs and resembles an impetiginous scabies. It has been claimed that a mite found in raw sugar is responsible, but this lacks verification. Oliver states that in sugar factories a condition known as "lymphangitis of sugar makers" is sometimes found among the refiners and molasses stirrers. It is accompanied by slight constitutional disturbance and a crop of boils is a not unusual sequel. According to Gaillot the lymphangitis is a *Staphylococcus pyogenes aureus* infection. The organism is said to be found not in the freshly made molasses but in the residue, and that the temperature of the factory and the condition of the skin of the people favor its development.

Builders and masons sometimes develop an eczematous affection of the exposed parts of the body from the irritating effects of lime and Portland cement. In stone cutters an analogous condition is caused by the stone dust. A palmar dermatitis is also seen in brickmakers.

The resinous dust of certain hard woods, like teak, will occasionally set up a dermatitis in carpenters and joiners. In teak the exciting agent is believed to be an essential oil derived from the central part of the tree and present in the dust. The symptoms are sometimes very severe, the eruption becoming generalized and accompanied by vomiting. It may last for several months and is quite apt to recur on resumption of work.

The so-called polisher's itch of the forearms and hands met with in furniture polishers is attributed to the methyl or impure alcohols present in varnishes and polishes. Impure turpentine used for cleansing purposes and benzine likewise provoke an eczema of the hands.

Chemists are prone to inflammation of the hands and sometimes the face from handling various drugs and chemicals. Their skin often develops so marked a susceptibility that minute quantities or even fumes will call forth an outbreak. I have several times noted a similar anaphylactic condition in laboratory workers from formalin. Another familiar example of an eczema due to chemical action is that of the hands of physicians and nurses from the use of antiseptics, notably bichloride of mercury. These forms of dermatitis are very rebellious to treatment. An eruption of an erythematous and pustular type due to mercury is also met with among miners, smelters, and photographers.

The irritant action of arsenic on the skin is well known. In the arts and manufactures where its compounds are employed workers are attacked with eczema or ulcerative and gangrenous lesions, which may be present on the face, neck, and extremities, but more especially the genitals. In color works ulcers of the hands and designated "arsenic pock." The sulphide of arsenic which, with lime, is used in curing fur sets up a very severe dermatitis in furriers, not infrequently with persistent ulceration.

The use of the chromates in the arts and trades gives rise to an eczematoid eruption as well as ulceration of the skin and mucous membrane, which shows little tendency to heal.

Hydrofluoric acid, employed in the manufacture of glass, the bleaching of cane, washing of manure, etc., produces sores of the nasal orifice and gums and painful blisters and ulcers of the skin.

Electroplaters, who use a mixture of lime dust and olive oil in "finishing" and sour beer in the process known as "scratch brushing," are liable to an inflammation of the hands and forearms.

Printers, from contact with the various chemicals employed in their trade, often develop a chronic eczema of the hands and forearms.

Metal workers, either from the constant irritation of the dust or filings or from their direct cauterant action, suffer from various grades of inflammation to intractable ulceration.

In flax and linen workers various skin affections are reported, among them a follicular eruption due to the oils and irritating materials met with in this occupation. In Belgium many of the flax-workers show a peculiar abrasion and ulceration of the palmar surface of the hand. Fissures form, exfoliation takes place, and when the deeper structures are involved the condition simulates a syphilitic lesion. An eruption resembling smallpox has also been described on the forearm, arm, and face of the workers who remove the bobbins from the spinning frames. From the pressure and friction caused by pulling threads the people who engage

in this part of the work present callosities on their index fingers.

Callosities of the palms are also met with in laborers, engine drivers, etc. Among miners they form a special dermatosis called "beat hand." Painful thickenings develop over the regions where the handle of the pick makes greatest pressure, along the bases of the fingers, over the ball of the thumb, and outer side of the hand. The subjacent tissue becomes inflamed, and not infrequently is further complicated by suppuration. To this condition the term "keens" is applied.

Dyers and workers in aniline colors are apt to suffer from eczematoid and pustular eruptions on different portions of the body. The bad effects are not limited to those in this trade, but the wearers of clothing prepared with certain of the dyes may ultimately be the victims of a severe dermatitis. The black, red, and orange yellow pigments are particularly irritating, marked inflammatory reactions having been caused by socks, gloves, underwear and shoes so colored. I have also seen unusually severe forms of eczematoid dermatitis in barbers who had employed proprietary aniline hair dyes on their patrons. It is not an uncommon experience in dermatological practice to be consulted for a dermatitis of the face, neck, and ears which had followed the application of various of these hair dyes. In susceptible subjects the use of hair tonics may produce similar trouble.

The manufacture of chloride of calcium and chloride of sodium and potassium by electrolysis is sometimes attended by an erythematous and edematous inflammation of the face of the workmen resembling erysipelas. This is attributed to the hypochlorite of soda that is formed. With the subsidence of the acute process an acneiform eruption is left behind, the so-called chloracne, which is the commoner cutaneous malady met with in this occupation. It is characterized by the early development of blackheads followed by a grayish discoloration of the face. With inflammation and suppuration of the follicular glands pustules and boils appear on the face, chest, and back.

Tar and paraffin workers develop a similar eruption which may last several months and then change to the so-called "tar itch." This is accompanied by hyperkeratosis and increased activity of the sebaceous glands, forming plaques and crusts, with the further development of multiple warts, one or more of which degenerate into malignant growths. The disease affects chiefly the hands, forearms, and scrotum. It progresses slowly and in many instances no recurrence takes place after removal of the epithelioma. Oliver cites the case of a man aged 58 who had worked among coal-oil and tar products for thirty years. He presented numerous indurated patches, some of which had ulcerated, as well as multiple black warts and scars, the remains of old ulcers. His son, 27 years old, following the same employment, developed a malignant growth of the forearm which necessitated amputation. Metastases of the axillary and cervical lymphnodes took place, the patient succumbing to secondary carcinosis.

Cancer in chimney sweeps has been reported chiefly from England. The soot produces a chronic irritation of the skin and when retained in such regions as the folds of the scrotum causes warty growths which become epitheliomatous. In some instances the hands, arms, and thighs have been involved. The incidence of scrotal cancer has been markedly reduced by the use of machinery to clean chimneys.

It is reported that gardeners who employ soot for the protection of plants from slugs similarly show the effects of this irritant in the development of malignant growths of the hands.

Gardeners and florists not infrequently suffer from some form of inflammation of the hands and arms occasioned by contact with certain plants. It is estimated that between sixty or seventy possess this irritant action and the power to induce a dermatitis. The more familiar ones are poison ivy, poison sumac, primrose, chrysanthemum, and eucalyptus, the eruption varying from a simple erythema to marked swelling with the formation of vesicles and bullæ. Not only are the exposed parts involved but the affection may be carried by the hands or clothing to other portions of the body. It is probable, as in the case of rhus toxicodendron, that the active principle in the majority of these plants is an essential oil.

In individuals who follow an outdoor occupation the uncovered portions of the skin sometimes undergo peculiar degenerative changes. Under the name of sailor's skin Unna has described an affection which he observed chiefly in seafaring men. A diffuse cyanotic redness not unlike chilblain develops at first on the ears, adjacent parts of the cheeks and temples, the backs of the hands, and fingers. The skin then becomes mottled, pigmented, rough, and hard, and in places papillomatous. These warts may last for years and slowly undergo a malignant change. A similar condition is met with on the face, neck, and hands of people who follow agricultural pursuits. The cause is sought in the actinic rays. The effect of light on the skin is illustrated in x-ray workers, in whom, unless protected, the hands become the seat of a mild erythematosquamous eruption, more or less persistent, which is succeeded by pigmentation, telangiectases, and atrophic wrinkling. This condition may remain unchanged or keratoses be added which develop into epitheliomata.

Drivers and coachmen exposed to the rigors of the weather are often the subjects of the severer forms of rosacea. The use of alcohol, however, to which many of these people are addicted, cannot be wholly ignored as a contributing etiological factor.

Certain callings, notably those dealing with live or dead animals or their products, favor the development of parasitic diseases. Owing to the prevalence of pyogenic organisms local pus infections are not at all rare, especially in butchers, slaughter house men, and other individuals who handle dead animal matter. A generalized bullous dermatitis with a fatal termination has also been observed. The diseases which are more definitely identified with particular occupations, however, are tuberculosis, anthrax, glanders, and actinomycosis.

Inoculation tuberculosis occurs in its simplest form as verruca necrogenica or anatomical tubercle. It is encountered chiefly among medical students, physicians, hospital ward attendants, and butchers as a localized warty formation usually about the knuckles or other parts of the hand or forearm.

Anthrax is uncommon in this country but is very prevalent among animals, especially cattle and sheep, in certain parts of Europe and Asia. In man the disease occurs as the result of direct infection from such animals or their products. It is met with in the wool-sorting, wool-combing, and spinning in-

dustries, in horse-hair and brush factories, in stevedores, wharf-laborers, carters, farmers, shepherds, butchers, meat inspectors, and cattle salesmen. Infection takes place through the skin, the intestines, or, more rarely, the lungs. The internal form is known as wool-sorters' disease. Of the external, which is also the more usual, there are two varieties, the malignant pustule and malignant anthrax edema, the more fatal of the two.

Glanders, usually contracted from horses or asses, is seen almost exclusively in hostlers or those who have to do with these animals. It is rare in this country. The bacillus may gain entrance through the mucous membrane of the eye, nose, mouth, or respiratory tract, or the site of inoculation may be a lesion of the skin. Clinically the disease is divided into glanders and farcy according to whether the lesions of the mucous membrane or skin predominate. Both types present an acute and a chronic form.

Actinomycosis is endemic in cattle and more rarely affects horses, hogs, and other animals. In man the disease is seen in those who come in contact with such animals or handle fodder or grain, as farmers, coachmen, dairymen, millers, etc. The ray fungus is said to flourish on corn, hay, and cereal grains. Infection in man takes place through a carious tooth or lesion in the mouth and less often through the skin.

Sporotrichosis, a mycotic infection of the skin, occurs as subcutaneous nodules which soften and may or may not break down and form indolent ulcers and sinuses. They sometimes follow the line of the lymphatics and again the lesions may be widely disseminated over the body. The fungus, which probably gains entrance to the body through an abrasion or wound, is readily cultivated from the abscesses. The disease is met with spontaneously in horses and mules as epizootic lymphangitis, and hostlers, farmers, and other people who deal with these animals are liable to infection. The sporothrix has also been demonstrated on vegetables and these may form a source of inoculation to individuals who handle them.

Ringworm is one of the minor infections transmitted from horses, dogs, and other domestic animals to men and boys employed about stables or engaged in the care of such diseased animals.

Erysipeloid, an infection of the skin caused by poisoning from meats, fish, poultry, cheese, and similar animal products, is seen chiefly in butchers, fishmongers, poultry-dealers, and cooks. Crab bites are also a frequent cause. The disease is characterized by one or more areas of slowly spreading inflammation, the advancing border of which is festooned. It is usually confined to the hand and fingers.

In certain grain regions infested by a mite, *Pediculoides ventricosus*, an intensely itching urticarioid eruption is endemic among the farmers and laborers who handle sacks of wheat, barley, and other grains or straw harboring this parasite. Small epidemics have also appeared at different times from the use of mattresses made from straw on which the organism had made its habitat. To Dr. Jay F. Schamberg belongs the credit of priority in describing the affection in this country.

With the exception of certain well defined types ocupational dermatoses as a class have perhaps not received the attention they merit. It is possible that the influence of industries in the production of obscure maladies and sporadic cases of infection is more significant etiologically than usually credited. As pertinent to this an interesting case of leprosy was recently brought to my attention by Dr. Marcus Haase of Memphis, Tenn., and is cited here on account of its possible connection with the man's occupation. The patient was a native of Arkansas, sixty years old, and a furniture dealer. He had never been out of this country, nor indeed away from his own State, except on two occasions when he visited Philadelphia. Dr. Haase first saw him three years ago, at which time he made a diagnosis of tubercular leprosy. The disease had existed for six years. The man's work necessitated handling matting which he received in original packages from Canton, China. The patient's daughter is also a victim of the affection, having had the macular type for two years.

Dr. Haase's interest in this case prompted him to write to the American Consul in Canton, China, regarding the employment of lepers in the matting industry and, under date of December 4, 1911, received the following letter from Mr. Bergholz: "In reply to your letter of August 26, relative to the possibility of leprosy being carried to America in matting made in China, I beg to inform you that I have made extensive inquiries here, among foreigners and Chinese alike, and I am convinced that lepers are not allowed to engage in the weaving of matting. I am told by a large matting exporter that it is physically impossible for a leper to do this sort of work, and the probability that they are never permitted to engage in the industry is further strengthened by the fact that in those districts where Canton matting is made lepers are well-nigh segregated from the rest of the people—in fact, in places where, unlike Canton, there is no isolation station they are driven out to shift for themselves. At Do Sing, on the West River, there is a large leper colony, the members of which live in small boats and subsist chiefly, if not entirely, by begging. It cannot be ascertained here whether or not they engage in any industry. At Canton there is an isolation station accommodating about 600 lepers, many of whom are allowed into the streets to beg and a very few to make hemp rope, bambooware, and woodware, all of which articles, I understand, find their way into the local market. The inmates receive fifty cash (about two cents gold) a day from the Government and one cotton garment a year and are left to eke out their subsistence with the proceeds of their industry and begging. That there is need of further action before the degree of leper segregation approaches completeness at Canton may be inferred from the fact that the subject was discussed in the Provincial Assembly during its second annual session in 1910, and recommendations made that further steps be taken toward more perfect isolation. You will find a more comprehensive article on leprosy in China in Prof. J. Dyer Ball's 'Things Chinese,' from which it may be inferred that in Swatow, at least, unless recent steps have been taken to alter the conditions therein stated, lepers are allowed to mingle with the people and isolation is unknown."

In view of the fact that it is claimed by Duval of New Orleans and others that the lepra bacillus might live for two years exposed to the air, an observation like Dr. Haase's deserves careful consideration.

The author acknowledges his indebtedness to Dr. Thomas Oliver's work "Diseases of Occupation" (E. P. Dutton & Co., 1908) for much information concerning the various industries.

8 West Seventy-seventh Street.

ON THE USE OF SALVARSAN IN SYPHILIS OF THE NERVOUS SYSTEM, BASED UPON A STUDY OF EIGHTY CASES.*

FROM THE NEUROLOGICAL SERVICES OF THE MOUNT SINAI HOSPITAL AND THE MONTEFIORE HOME.

By B. SACHS, M.D.,

AND

I. STRAUSS, M.D.,

NEW YORK.

It is not an easy matter to arrive at a definite conclusion regarding the effect of a new form of treatment upon the acute and chronic diseases of the central nervous system. During the past year we have endeavored in hospital and in private practice to give Ehrlich's new remedy an impartial trial. Ehrlich himself was at first sceptical as to the possible use of salvarsan in syphilitic diseases of the nervous system; in print as well as in personal communication he expressed great hesitancy, and even fear, as to the employment of this drug. It was for this reason that for the first few months we employed very small doses, which Ehrlich was kind enough to send us in special tubes, and it was only after full justice was done to Ehrlich's suggestions that we proceeded to employ the new remedy in its full dosage. Our entire experience has shown that there is no more reason to fear the drug in syphilis of the nervous system than in syphilis of any other organs of the body, and it is well to record at the very outset that, if we could except a very few complications due to imperfection of technique in our earliest cases, we have not observed a single nerve or constitutional disorder which could be attributed to the use of the drug.†

Of the recurring specific manifestations (the *Neurorecidive* of the Germans) or of the complications which have been reported as following upon the administration of salvarsan, we have seen absolutely nothing. In this our experiences tally absolutely with those of Alt and Nonne; and Ehrlich has recently emphasized the point that these neural recurrences were to be expected in the early secondary stage of infection. Such developments as we had occasion to note—convulsions in one case, repeated attacks of hemiplegia, keratitis, and in one instance progressive optic atrophy—could in no wise be connected with the administration of the drug, and the complication was in each case to be interpreted as an incident in the natural course of the disease.

Before recording the exact results and the impressions, rather than the conclusions, based upon a year's experience, a word regarding the method employed. Both the intramuscular and the intravenous methods have been given a fair trial. Intramuscular injections have been given by using the arsenic preparation together with iodipin. We have used four or five c.c. for each dose of four, five, or six tenths of salvarsan, and have found that the injection of this mixture through a previously dried and heated needle caused very little trouble. There is no reason to limit the amount of iodipin, as some writers have advised, and we have felt that, by using a somewhat larger quantity of iodipin, a more diffuse depot could be formed, which was of no disadvantage to the patient. These intramuscular injections have the great advantage that they can be given in the office or in a private laboratory, and that the patient can be sent home at once, and is not likely to be disturbed in his daily routine. Whether the effect of these intramuscular injections is as marked as that of the intravenous injection, as applied to diseases of the nervous system, it is difficult to determine, since the effect of both is so largely negative. The relative merits of the two methods must be decided by those who are called upon to treat the earlier stages and the general manifestations of constitutional syphilis. In the wards at the hospital, and whenever practicable in private practice, we have given preference to the intravenous method. The technique, while it must be carried out with great precision, is such as every practitioner, and surely every neurologist, should acquire. If the solution is carefully prepared,* kept at a proper temperature, if the needle is introduced with equal care, and if normal salt solution is allowed to flow into the veins before the introduction of the salvarsan, there is little to fear. As a matter of fact, there is but one difficulty, and that is in introducing the needle in such a way as not only to enter the vein, but not to pass out of it again, and to hold the needle so steadily during the entire procedure that it is not unconsciously pushed through the wall of the vein opposite to the one which was punctured by the needle. If the vein cannot be punctured subcutaneously it is well to expose it by incision.

In every case, both at the hospital and in private practice, the Wassermann reaction of the blood and, if possible, of the cerebrospinal fluid, was taken. Whenever it was found positive we proceeded at once with the injection; if found negative—and it should be remembered that in a great majority of the cases after mercurial treatment it is negative—the history of the case was again well considered, and, if on clinical grounds the diagnosis of syphilitic disease was probable, the injection was given. We still consider that a purely clinical diagnosis of syphilis of the nervous system may be as certain as the diagnosis given us by the laboratory. Of course, a positive Wassermann reaction in the blood or cerebrospinal fluid, or a marked lymphocytosis, implies a more or less active specific process, and in such cases the salvarsan treatment would be applicable beyond a doubt. We are also in favor of repeated courses of treatment until the Wassermann reaction becomes negative, or until marked improvement takes place in the clinical symptoms. After giving one or, at the utmost, two full doses of salvarsan we have continued the administration of mercury and iodides.

Our impressions of the effect of salvarsan in syphilis of the nervous system are based upon a series of eighty cases.† This does not include cases in which the method has been employed for syphilis of other organs, or of cases in which the injections were given even if the diagnosis of syphilis of the nervous system was somewhat doubtful. Taking all these cases together, the remedy was applied in 18 cases of tabes, 7 of undoubted general paresis, in 30 cases designated as lues cerebri or cerebrospinal

*Read in part at a meeting of the New York Neurological Society, November 14, 1911.

†Since writing the above we have had one case (No. 43) of severe arsenical poisoning (hemorrhagic enteritis, auricular Zooster, severe ulcerative stomatitis, and moderate nephritis) following the second intravenous injection.

*We have had most satisfactory results since the adoption of Ehrlich's suggestion that only *freshly distilled* water be used.

†We are indebted to Dr. I. Abrahamson for the records of his cases at the Montefiore Home and for his willing cooperation

lues, in 14 cases of lues spinalis, in 2 cases of syphilitic epilepsy, and in 9 cases of constitutional lues with nerve symptoms, such as headaches, optic neuritis, specific pupils, and the like.

The experience thus far gained leads us to state that the course of the disease has not been markedly affected in a single case of tabes, although some improvement has taken place in one or the other of the symptoms. This is particularly true of the pains, of the vesical control, and of the ataxia, and, above all, of the recovery from complete loss of sexual power. We have the distinct impression that the disease has remained stationary in a number of instances, while in some others it has progressed rapidly in spite of the administration of salvarsan. All this could be said with equal truth of the behavior of the cases under mercurial treatment and in some cases in which no treatment whatever had been attempted. There has been no change in the pupillary reflexes, in the behavior of the deep reflexes, or in any of the objective symptoms.

Let us refer to a single case a little in detail as showing what the drug can do and what disappointment there may be, after all, before a long period of time has elapsed. A gentleman from the West, who had been off and on under observation for at least five or six years, had a specific chronic myelitis for which he had had continuous mercurial and iodide treatment, partly at Hot Springs, Ark., and partly at Aix-la-Chappelle. Clinically he was suffering from a spastic paraplegia, with some slight involvement of the bladder and with complete loss of sexual power. Hearing of the new form of treatment, he went to Europe in 1910, and in September of that year managed to see Prof. Ehrlich himself, who referred him to Alt for treatment. After the first intramuscular treatment he got worse; after the second (0.3) a very marked improvement set in. He returned in January, 1911, enthusiastic as to results. As a matter of fact, he walked far better than I had seen him walk in years; he looked well, and was satisfied with the return of sexual power which had been absent for many years. The improvement lasted for about six months; he returned in March, 1911, complaining again of soreness of the left leg and that his gait had lost its spasticity. His physical symptoms were completely unchanged. He developed a slight heaviness of speech, but he claimed that there was less fatgue than in former years and that the sexual power was maintained, and thinks the salvarsan injections have done him good. I saw him again November 8, just one year since the first salvarsan injection. During the last four weeks he has shown a slight mental depression and complains of his memory being poor, sexual power not being better than before the salvarsan injections. He was, however, so much impressed with the effect of the drug that he was ready to sail again to have another test of his blood made abroad, and if Alt advised another salvarsan injection he would be willing to submit to it.* I had no reason to oppose his plan. Such an experience is more or less typical of many others that we have had—a temporary improvement immediately after the treatment, relapses later on, renewed improvement, and a continuous alternation between recoveries and relapses.

In spite of the disappointing results of this new form of treatment, we are by no means ready to discard it, but since, if properly administered, it may be considered harmless, we shall continue to employ it, particularly in association with sublimate injections.

In view of what was said in the earliest literature on "606," it may be well to state that in not a single instance has the optic nerve been unfavorably affected by the use of salvarsan. In the one case of tabes with optic atrophy, in which blindness followed in spite of the salvarsan treatment or after it, the nerve was already so far atrophied that complete blindness was inevitable and the treatment was only given at the insistence of the patient and his friends.

In general paresis the impressions received were almost identical with what has just been recorded regarding tabes. In not a single instance could we claim that the disease has been cured, and, even after a surprising remission had followed the administration of the drug, the period that has elapsed is altogether too short to warrant more definite statements.

In at least two cases of the seven a thorough remission followed, lasting a number of months, but at the end of that time a further progression of the symptoms has occurred—the very thing which we are accustomed to observe in untreated cases and in patients who have received the full course of mercurials and iodides. It can hardly be put down to the discredit of this new remedy that it has accomplished so little in tabes and general paresis It was not supposed to accomplish much except in those conditions in which spirochetes were still present in the blood, and it was only an afterthought, a wholly natural one to be sure, that the attempt was made to employ the drug in parasyphilitic and metasyphilitic conditions. On the other hand, in several cases we have observed the most marked improvement, not directly upon the administration of salvarsan, but after a course of sublimate injections or inunctions given about a week after salvarsan had been exhibited. We employ in this class of cases both salvarsan and the mercurial preparations, in the belief that they supplement each other. It would not be conceivable that the drug should affect the degenerated tissues of the brain and spinal cord. It appears to us to be wise to employ salvarsan in the earliest stages of tabes, general paresis, and of cerebrospinal lues, to prevent the occurrence of purely specific complications, and possibly to check the further progress of the disease.

In the more active forms of brain and spinal-cord syphilis—in those that we have designated lues cerebri and lues cerebrospinalis—the effect of the drug has not been so disappointing. In a number of these, distinct improvement has followed upon the use of salvarsan. This has been particularly noticeable in the cases of brain syphilis complicated by purely cerebral symptoms. The somnolence, the headaches, the depression—which are so common in cases of brain syphilis, and the various forms of palsy, have disappeared after the treatment was given, and, as will be shown in the completely tabulated histories, improvement followed so rapidly in some instances that it must be attributed to the influence of the drug. The same is true, and to a greater extent, in the cases of purely spinal syphilis. In this group of cases improvement has followed more promptly upon the use of salvarsan than we have experienced in former years upon the use of iodides or mercurials.

*The patient again reports improvement (January, 1912) after two intravenous injections of 0.15 each

BRIEF SUMMARY OF CASES.

No	Age	Diagnosis	Wassermann	Treatment	Remarks
1	48	Lues cerebrospinalis	Not taken	Dec 18, 1911—0 4 intravenous	Claims improvement in vision (optic atrophy)
2	30	Cerebral lues (basilar)	Positive	Oct 11th Intravenous 0 4 Oct 27, 29, 31 Deep injections of bichloride Referred to dispensary	Somnolence, severe headaches Marked improvement, somnolence disappearing One convulsion 14 days after injection Patient appears psychically well (Sachs)
3	44	Cerebral lues	Negative (Blood and c s fluid)	Oct 12th 2 mercurial injections Sept 2d Intravenous injection 0.4	Gastric acidity Lymphocytes, 92%, Polynuclears, 8%, condition unchanged
4	34	Cerebrospinal lues Left hemiplegia (short duration)	Positive	June 12th One Salvarsan 0.6 intravenous.	Discharged ten days later, almost well Marked improvement. Infection 6 years previously
5	33	Cerebrospinal lues General paresis (?)	Positive (Blood and c s fluid)	July 28th—Intravenous 0 6. Aug 8th—Intramuscular 0 6 Followed by 12 sublimate injections. Specific lymphocytosis	Dr Harris reports: "Mental condition still suspicious of general paresis, but markedly improved" (Late in Dec , 1911, recurrence of speech disturbance and rapid development of symptoms of paresis)
6	45	Cerebrospinal lues Left hemiplegia	Slightly positive	Feb 27th—Intramuscular 0 3 Mar 17th Intravenous 0 4.	Infection 4 years previously Gumma on shin slightly diminished after treatment Marked temporary mental improvement followed by mental deterioration
7	37	Cerebral lues	Positive (Blood, weakly) (C S fluid, strongly)	Feb 8th Intramuscular 0 6 (marked lymphocytosis) Feb 27th—Intrascapular 0 3	Specific infection 13 years ago Marked mental improvement immediately following injections
8	25	Cerebral lues Right hemiplegia	Negative	Two months before admission intravenous "606" followed by 60 daily mercurial inunctions. In hospital and dispensary 10 additional sublimate injections	Infection 3½ years previously General condition improved Intravenous injection followed by marked improvement
9	59	Cerebral lues	Negative	July 21st Intravenous 0 6 Aug 8th—Intramuscular Aug 21st to Oct 18th 12 bichloride injections.	Marked improvement in mental symptoms Physical symptoms not altered
10	50	Cerebrospinal lues	Negative	12 Bichloride of Mercury injections in hospital and dispensary.	Infection 34 years ago Marked improvement; returned to work
11	45	Left hemiplegia	Positive (Blood and c s fluid)	July 20th Intravenous 0 6 Aug 5th—Intravenous 0 4	Infection 2 years previously Improvement in paralyzed hand and in face Was considered much improved
12	33	Left hemiplegia	Negative (after treatment)	June 8th Intravenous 0 6. June 19th—Intramuscular 0.3, followed by 23 injections of Bichloride of Mercury	Infection 4 years ago Several attacks of hemiplegia, right and left, improving under ordinary specific treatment Improvement more marked after second intramuscular injection
13	40	Cerebrospinal lues, right hemiplegia; right ptosis.	....	15 injections of Mercury.	Marked improvement; disappearance of all symptoms.
14	27	Cerebral lues	Negative (Before and after treatment)	1910 12 sublimate injections in 2 series of 6 Dec , 1910, to Mar , 1911—2 intravenous injections	Specific infection 3 years ago Previous attack of aphasia and hemiplegia; intense headaches; depression Knee jerks subnormal Complete recovery.
15	10	Hereditary lues Left hemiplegia		Treatment given by Dr Fordyce	Seen with Dr. Fordyce Symptoms—Keratitis, iritis, dactylitis, deafness. Attack of right hemiplegia with unconsciousness at 2 years Ten months later another stroke on same side. Has convulsize seizures
16	36	Cerebral lues	Negative after injections	Dec 29th, 1911—Intravenous 0 6	Unequal pupils, transitory diplopia; headaches, vomiting Improved markedly
17	?	Cerebral lues	Strongly positive	Mar 11th—Intragluteal injections 0 3 Mar. 18th—Intragluteal injections 0 3 May 18th—Intragluteal injections 0 3 Sept 7th—Intragluteal injections 0 5	Intense headaches and inability to do work with comfort for years Specific infection 14 years ago. Feb., 1911, and ever since, has reported complete recovery from former troublesome symptoms Is active in practice and most enthusiastic in his comment on the effects of treatment. Return of old-time energy; head perfectly clear Sept. 7, 1911—Complains of slight return of symptoms. In July had squamous eruption which disappeared after inunction treatment of 5 days
18	51	Hemiplegia. Arteriosclerosis. (Possibly specific)	.....	Feb. 19th—Intragluteal 0 3.....	No effect
19	27	Frontal headaches, left optic atrophy. Temp hemianopsia	Blood positive C S fluid; globulin cytology and reaction negative	Nov 11th, 1911—Intravenous 0 6 Dec 13th, 1911—Intravenous 0.6.	Reports marked improvement after 2 days
20	37	Lues cerebri. Diplopia, headaches; loss of speech (transitory)		Feb 29th—Intravenous 0 3 Mar 17th Intravenous 0.6 Nov 1st—Intravenous 0 5 23 sublimate injections (15 before admission).	Chancre 7 years ago Improved considerably after injections Also reports improvement after intravenous injections
21	44	Lues cerebri et cerebrospinalis	Negative ...	Oct 11th—Intravenous 0 6 ...	No change
22	40	Lues cerebri et cerebrospinalis	Blood negative	Apr 11th—0.6 intravenous	No change
23	50	Lues cerebri et cerebrospinalis	Blood negative	Mar 16th—Intravenous 0.3 Sublimate injections	Memory and speech improved Died of intestinal obstruction
24	24	Lues cerebri et cerebrospinalis	Blood positive.	Mar 10th—Intravenous 0.3. 9 salicylate injections.	Presented symptoms of cerebellar neoplasm; markedly improved, optic neuritis disappeared; returned to work
25	68	Lues cerebri et cerebrospinalis	Blood positive. C S fluid negative.	Sept. 2d—Intravenous 0 6	Glycosuria, 2 days following injection gangrene of toe; death from sepsis; glycosuria disappeared after injection
26	52	Lues cerebri et cerebrospinalis	Blood positive C S fluid negative	Oct 28th—Intravenous 0.6. Sublimate injections, and then Nov 9th—Intravenous 0 3	Marked improvement in mentality and cessation of syncopal attacks Second injection followed by rapid return of symptoms; asthenia and death

BRIEF SUMMARY OF CASES.—*Continued*

No	Age	Diagnosis	Wassermann		Treatment	Remarks
27	43	Lues cerebri et cerebro-spinalis	Blood positive fluid negative	C S	Oct 27th—Intravenous 0 6 Sublimate injections and inunctions Nov 9th—Intravenous 0 6	Symptoms of hemiplegia alternans superior, recovery of leg and of ophthalmoplegia externa and improvement in mentality
28 *	35	Lues cerebri et cerebro-spinalis	Blood positive fluid negative	C S	Sept 1st—Intramuscular 0 6 Sublimate and inunctions Oct 27th—0 4	Symptoms of intracranial pressure, transitory hemianopsia, glycosuria, dementia, recurring state of stupor All disappeared after treatment but have reappeared at time of report
29	50	Lues cerebri et cerebro spinalis	Blood positive fluid positive	C S	May 16th—Intravenous 0 4 June 22d—Intravenous 0 6 Then sublimate injections	Sight, hearing and general condition markedly improved. Post-neuritic atrophy of both eyes with complete amblyopia of one eye and improvement in vision of other eye
30	26	Lues cerebri et cerebro-spinalis	Blood positive		Aug 10th Intramuscular 0 6	No improvement
31	38	Specific Myelitis (Tabic type)	Negative		Mixed treatment Salvarsan given	Specific infection in 1896, mixed treatment Shooting pains, lively knee-jerks; some ataxia
32	41	Specific myelitis	Negative		Continuous mercurial and iodide treatment had been given, followed by improvements and relapses Sept, 1910—Intramuscular 0 2 Three weeks later Intramuscular 0 3	Under observation since 1907 Great variation in symptoms Had been given continuous mercurial and iodide treatment followed by improvements and relapses Treatment at Hot Springs, Arkansas, and at Aix la Chapelle At first got worse, then a very marked improvement Returned in Jan, 1911, enthusiastic as to results Spastic ataxic gait much improved; return of sexual power In March, 1911, complained again of soreness of left leg; gait lost its elasticity; both pupils react; knee-jerks gone. Condition very much the same as in former years Sept, 1911, occasional heaviness of speech, much less fatigue than in former years, sexual power maintained Thinks Salvarsan injections have done him good Optic nerves normal Nov 8th—(one year since Salvarsan injection)—In last 4 weeks slight mental depression; complains of poor memory; sexual power not any better than before Salvarsan injections
33	28	Specific paraplegia			Feb 17th—Intramuscular 0 2 Feb 19th Intramuscular 0 2 Feb 24th Intramuscular 0 2	Marked improvement in spasticity Some relapse after 6 months
34	53	Lues spinalis Spastic paraplegia (with bladder symptoms)	Positive		Specific treatment for years May 1st, 1911—Intramuscular 0 5 Followed by slight swelling	Infection 25 years ago, no improvement, symptoms slightly progressive
35	45	Lues spinalis, spastic (Some bladder involvement and much paralysis)	Positive		Apr Intramuscular 0 3 April—Intramuscular 0 3 Followed by necrosis	No improvement
36	26	Lues spinalis incipiens (Const lues)	Negative		Nov 6th, 1911 Intramuscular 0 5 Preceded by thorough mercurial and iodide treatment	Weakness of left upper extremity; slight hemi-hypaesthesia Too early to report result
37	56	Lues spinalis (Tabic type)	Blood positive Cerebrospinal strongly positive		Nov 6th, 1911 Intravenous 0 5	Shooting pains; increased reflexes; Argyll-Robertson pupils Reports improvement after injections surely subjective
38	45	Spastic paraplegia	Positive		Nov 7th, 1911 Intravenous 0 5. Dec 10th, 1911 Intravenous 0 4	Reports less stiffness after injection
39		Complete paraplegia during pregnancy	Positive.		Intramuscular injection 0 6 Intravenous could not be given	Some improvement after two months.
40	42	Lues spinalis	Blood negative. C S fluid positive		Apr 8th 0 6 Apr 11th—Intravenous 0 4	Spastic paraplegia, no improvement
41	38	Lues spinalis	Blood negative		Nov 11th Intravenous 0 4	Paraplegia and distinct sensory disturbances Bed-sore followed immediately after first injection No improvement
42	56	Lues spinalis	Blood negative C S fluid negative		Apr 11th Intramuscular 0 4	Slight improvement in spasticity
43	46	Lues spinalis	Blood positive		Oct 11th, 1910 Intravenous 0 4 Feb 23d, 1911 Intramuscular 0 6 Mar 23d, 1911 Intravenous 0 6, and sublimate injections	Pachymeningitis cervicalis; some improvement in power, lessening of pain
44	40	Lues spinalis	Blood positive C S fluid negative		Dec 18th, 1911—Intravenous 0 6 Dec 28th 1911 Intravenous 0 6	Acute onset commencing with paraplegia and later followed by involvement of arms Was improving when Salvarsan given
45	50	Locomotor ataxia	Blood negative C S fluid negative		Mar 20th—Intramuscular 0 3 Mar 27th—Intramuscular 0 3	Not improved
46	48	Locomotor ataxia			Feb 12th Intramuscular 0 1 Feb 18th Intramuscular 0 2 Mar 3d Intramuscular 0 6	Some improvement in general condition
47	38	Tabes dorsalis Ocular motor palsy	Positive		June 26th Intravenous 0 6 July 3d Intramuscular 0 6 At Dispensary 14 injections of Bichloride	Two days after intramuscular injection marked improvement; improvement in some of the complicating symptoms followed series of 14 mercurial injections.
48	43	Tabes dorsalis	Positive		Sept 7th Intravenous 0 5 (Dr Fordyce) Eight weeks later another	Initial infection 25 years ago Improvement in pains, condition otherwise stationary
49	37	Tabes dorsalis with optic atrophy			Feb 22d Intravenous 0 1 followed by 0 2 Intragluteal at intervals of 2 weeks	No change in symptoms Optic atrophy progressive, but rate of progression not more rapid than before treatment
50	31	Tabes incipiens (Pupils react Knee-jerks absent)			Mar 2d Intragluteal 0 3 Mar 4th Intragluteal 0 2 Preceded by 15 sublimate injections	No influence on symptoms Beginning loss of vesical control

*Since writing the above patient has died and autopsy revealed a neoplasm of the optic thalamus

BRIEF SUMMARY OF CASES.—*Continued*

No.	Age	Diagnosis	Wassermann	Treatment	Remarks
51	40	Tabes psychic depression	Strongly positive	Twenty-eight sublimate injections Mar 4th, 1911 Intragluteal 0.2 Mar 18th, 1911 Intragluteal 0.3	Slight albuminuria following S. injection Symptoms stationary except beginning loss of vesical control
52	49	Tabes (stationary)	Negative	Mar 4th, 1911 Intramuscular 0.3 Mar 14th, 1911 Intramuscular 0.3 Apr 29th, 1911 Intramuscular 0.4 During former years repeated courses of sublimate injections	No effect upon symptoms Clinical condition stationary for years
53	42	Tabes dorsalis incipiens	Negative (Wassermann and Noguchi)	Apr 14th, 1911 Intramuscular 0.2 Apr 18th, 1911 Intramuscular 0.4 Preceded by 10 sublimate injections 6 months previously	Feels distinctly benefited by "606;" less Romberg, less shooting pains No return of sexual power Initial infection 22 years ago
54	46	Tabes with psychic symptoms and ocular palsies	Positive (9 mos ago)	Apr 27th, 1911 Intramuscular 0.5 Apr 13th, 1911 Intramuscular 0.4 First injection followed by iritis, has had several previous attacks, present attack subsided rapidly Much specific treatment for many years	Infection 14 years ago, went to Europe, general improvement
55	44	Tabes dorsalis	Positive weak	May 18th, 1911 Intragluteal 0.3 May 25th, 1911 Intragluteal 0.3	Has had sublimate injections, mercurials and iodides for 4 years under immediate supervision No change in symptoms, very slow progression
56	39	Tabes dorsalis	Positive	In 1909 and 1910 several courses of sublimate injections (14 in all) May 30th, 1911 Intragluteal 0.2. June 6th, 1911 Intravenous 0.3	Better control of bladder, feels improved, no untoward symptoms after treatment
57	31	Tabes dorsalis with Epilepsy	Strongly positive	Oct 9th, 1911 Intravenous 0.4 Oct 9th, 1911 Intramuscular 0.4 Followed by 8 sublimate injections	No convulsive seizures since Salvarsan injections, looks better and brighter, feels much benefited
58	40	Tabes dorsalis	Strongly positive	Nov 28th, 1911—Intravenous 0.6 Sublimate injections to be given	Chancre 17 years ago. Much mercurial treatment in former years, chiefly salicylate treatment. Disease distinctly progressive
59	50	Tabes dorsalis	Positive.	Intramuscular 0.3 0.3 Intramuscular by Dr Mailhouse	Reports improvement in "dizziness, bladder symptoms and ataxia"
60	25	Tabes dorsalis	Negative (blood and c. s. fluid).	Oct 24th, 1910 0.6 June 14th, 1911 0.3	Ptosis disappeared, diplopia likewise
61	55	Tabes dorsalis	Negative (blood and c. s. fluid).	Nov 3d— Intramuscular 0.3	Improved, general condition
62	43	Tabes dorsalis	Positive (blood)	Sept 21st—Intravenous 0.6 Sept 30th—Intravenous 0.6 Oct 15th, HCCL2 injections.	Dizziness and somnolence disappeared
63	45	Tabes dorsalis	Blood positive	Dec 1st, 1911 Intravenous 0.6 Dec 13th, 1911— Intravenous 0.4	Somnolence and depression much improved Third attack of depression in 6 years.
64	52	General paresis	Positive	Sept 10th—Intravenous 0.4, followed by 12 bichloride injections Sept 17th - Intravenous 0.6	No improvement
65	46	General paresis	Positive	"606" given. Two intramuscular injections followed by mercurial inunctions and iodide	Five years ago gumma in nose In summer of 1910 became paralyzed No distinct benefit from treatment as reported by Dr Goldstein
66	38	Pseudo paresis luetica (Possibly G. P.)	Positive	Mar 7th—Intrascapular 0.3 Mar 20th Intragluteal 0.6	Very marked change in symptoms Distinct clearing up mentally; subsidence of excitement; bed-sore gradually healed, but case has shown marked remissions under all forms of treatment
67	40	General paresis (incipiens)	Positive	Mar 8th Intramuscular 0.2 Mar 22d—Intramuscular 0.3 Apr 1st—Intramuscular 0.3 Preceded by iodide treatment	No effect, symptoms have been steadily progressive
68	...	Incipient paresis or pseudo-paresis luetica	Positive	Nov. 7th, 1911—Intravenous 0.5, Dec 21st, 1911—Intravenous 0.6	
69	18	General paresis (juvenile)	Blood, positive Fluid, negative.	Oct 27th—Intravenous 0.6 Nov. 9th—Intravenous 0.2	Improved in mentality
70	38	Vague spinal symptoms Syphilidophobia Constitutional lues.	Negative	Feb 28th—Intrascapular 0.8 Followed by numerous sublimate injections Mar 25th—Intrascapular 0.6	No development of other symptoms Has irregular specific pupil No untoward effects from injection.
71	50	Lues, specific pupils, headaches.	Strongly positive	Intravenous 0.2, followed by swelling indurated mass which had to be removed by operation.	Infection 2 years ago; widower Immediate and vigorous treatment at Hot Springs, Ark., and at St Blasien Improvement as regards headaches.
72	42	Specific pupils	Positive	May 14th 1911—Intramuscular 0.4 May 19th, 1911—Intramuscular 0.3 Followed by 6 sublimate injections in Sept., 1911	No change
73	35	Specific pupils	Positive	Oct., 1911, a course of 6 sublimate injections Nov 9th, 1911— Intramuscular 0.5	No change
74	36	Specific vertigo	Negative	Nov 3d, 1911—Intramuscular 0.5	(Too early to report results)
75	36	Constitutional lues Dipsomania	Positive.	Nov 18th, 1911—Intravenous 0.3 Has had several courses previously of sublimate treatment	No distinct effect as yet
76	28	Constitutional lues	Positive (blood) Positive (c. s. fluid)	Oct 5th Intravenous 0.4	No improvement, evidences of pulmonary tuberculosis
77	27	Constitutional lues	Positive (blood)	Mar 8th—Intravenous 0.6	No improvement
78	...	Constitutional lues (fear of paresis).	Positive	Intravenous 1.2 given by another physician several months ago.	At present only specific pupils

BRIEF SUMMARY OF CASES.—*Continued*

No.	Age	Diagnosis	Wassermann	Treatment	Remarks
79	31	Specific epilepsy	Positive Aug., 1909 and May, 1910	Oct., 1909, to Christmas, 1910, 23 injections of bichloride; after that salicylates and mercury. Two Intravenous injections (dates not recorded) followed by several courses of sublimate injections	Specific infection 5 years ago. Epileptic attacks without consciousness at varying intervals. Incapacity for work during entire period of 1910. Marked diabetes insipidus, sleeplessness, general mental depression. Agarophobia, specific pupils. Recovery from psychic depression. Unable to ascertain whether he has been able to return to work
80	31	Idiopathic epilepsy. (Intercurrent syphilitic infection)		Nov. 29. Intravenous 0.5. Intravenous 0.4	Dec. 8. Had almost daily convulsions although under bromides. Since last injection none up to date, Dec. 17. Since then they have recurred and a psychosis has developed

These cases of lues cerebri and lues spinalis represent, after all, a less chronic form of the disease and one in which the morbid process is more likely to be of the exudative kind, the variability of the symptoms being largely due to the changes in exudate and in the vascular affection of the meninges and of the brain and spinal-cord tissue. One case of tabes with epilepsy has been markedly benefited by the treatment, inasmuch as the convulsive seizures, which had been frequent and which were evidently due to active specific involvement of the meninges, had subsided for a number of months, while the tabic symptoms have remained entirely stationary. The most satisfactory results following the treatment have occurred in that smaller group of nine cases of constitutional lues with special nerve symptoms. We refer particularly to the cases of chronic specific headaches with some other nervous manifestations, and it is astonishing that so few cases of this sort have as yet been recorded in the literature of the subject.

We have seen a fellow physician, who had acquired lues a number of years ago, whose blood was strongly positive, and who has received both intravenous and intramuscular injections on four different occasions during the past year. He had been suffering from intense headaches, inability to work with comfort for years, and a total lack of concentration upon his work. He is a man of calm and deliberate judgment, and in his own opinion the drug had done wonders for him. In February, 1911, he recorded a complete recovery from former troublesome symptoms; he was active in practice, and most enthusiastic in his comment on the effects of treatment; speaks of the return of his "old-time energy," his head is perfectly clear. In September, 1911, there was a slight return of his former symptoms, but improvement again followed upon another intramuscular injection. In July he had a squamous eruption, which disappeared after inunction treatment of five days. Similar improvement, particularly of chronic specific headaches, has been observed in other cases, and, if in no other, it is at least in this series of cases that we would give salvarsan preference over all other remedies hitherto employed.

We conclude that salvarsan has no curative effect in tabes and general paresis; that it seems to influence favorably some of the symptoms, particularly the vesical and sexual functions, and that under its use some of the cases remained stationary, and that none of them exhibited any unfavorable symptoms attributable to the drug itself; that in these two diseases it accomplishes as much as, but not any more than, was achieved in former years by the use of mercurials. In brain and spinal-cord syphilis the administration of salvarsan is followed by improvement in many of the symptoms, and it seems to accomplish at least as much as mercury did in these diseases. In the acute and subacute forms of brain syphilis, particularly in those associated with convulsive seizures and with chronic headaches, the drug has exercised a distinctly beneficial influence. There is no doubt, however, that the good effect of this treatment may be made more lasting by the additional use of mercury and the iodides.

In spite of these rather negative impressions, we must not lose sight of the fact that the drug may prove most efficient in the prevention of parasyphilitic and metasyphilitic diseases of the nervous system. That general paresis, and probably tabes, run a more slowly progressive course, and, on the whole, a milder course than they did in former years is true beyond a doubt. It is to be hoped that the administration of salvarsan in the early stages of syphilitic disease may prevent the development of late and more serious forms of specific disease of the central nervous system.

135 Central Park West.
108 W. Eighty-seventh Street.

THE UNRECOGNIZED TRAGEDIAN, SYPHILIS.

By E. HARRISON GRIFFIN, M.D.,

NEW YORK.

Away back, when I was in the swaddling clothes of my profession, shortly after receiving my degree, I had the pleasure of being present at a dinner, given in honor of Sir Morell McKenzie. The evening was taken up with a paper on laryngeal phthisis. The paper was followed with a discussion by various members of the nose and throat world of the time.

Sir Morell McKenzie stated that he could diagnose positively an ulceration of the larynx as either tuberculous or syphilitic in about eighty per cent. of the cases, while twenty per cent. were open to question. A very eminent member of the profession stated that he could diagnose positively laryngeal phthisis in every case.

A short time after this I chanced to see a case, which this person had diagnosed as laryngeal phthisis, given a prognosis of certain death in six months or less, and at the next lecture had changed the diagnosis after the case had been treated with the iodides. This little fact taught me to be very careful in a diagnosis of an ulceration when situated in the larynx. Years have passed since that period, and at the present time the more certain I am in regard to a diagnosis of an ulceration situated in the larynx the more careful I am in giving a positive diagnosis.

The following case emphasizes the above: Mrs. X., married, one child, age five years, had never had a miscarriage and had never been ill until she applied for treatment to me four years ago. She

then applied for a bronchial cough, had lost ten pounds in weight, and was troubled with fever and chill. An examination of her lungs was negative. She improved under tonics and remained well until she applied to me again, some months afterward, complaining of a cough and a pain in swallowing. An examination of her lungs showed consolidation at the apices, and her sputum contained a few tubercle bacilli. The examination of her larynx showed a marked edematous swelling of the epiglottis with an edema of the arytenoid cartilages. The membrane was pale in color and had the anemic appearance that is commonly found in laryngeal phthisis. The pain in deglutition, the marked anemic color of the membrane, and the microscopic examination of the sputum left no question in regard to the diagnosis. I saw her brother and gave a grave prognosis. Her condition was such that I did not think any benefit would come from removal to the mountains.

I placed her under creosote and morphine internally for her cough, and gave her throat the usual medication demanded in phthisis of this part. The patient steadily grew worse; there was no doubt in my mind in regard to my diagnosis. One day I thought I would place her under the syphilitic treatment, to give her the benefit of a doubt. Inside of a week the edema began to diminish, the cough lessened, and in three weeks the larynx was healed. Here is a case of a mixed sore. There was absolutely no history of any syphilis, no miscarriages, no eruption, no sore throat, no alopecia—negative, only negative. At this writing her larynx has completely healed and she is gaining in weight.

Some years ago I wrote an article showing the importance of recognizing the mixed sore, especially when situated in the larynx. The above case emphasizes the fact how important it is to recognize that great actor, syphilis.

All the world's a stage and we are merely actors. We've had our McCready, Booth, Charlotte Cushman, Bernhardt, who trod the boards and played their rôles to perfection. Iago, Hamlet, the Romeos and Juliettes have passed before our eyes again and again; these characters have been portrayed so perfectly that at times the actor is lost sight of, and it is not the actor we see, but the Iago or the Hamlet in the flesh and blood. These are produced in some large playhouses; but I know of no playhouse where the bill is changed more often, and the play more perfectly performed, than that acted again and again upon the stage of the human body.

A bursting of a bag of water, a short prelude, and there is brought into the world a stage upon whose boards is played a repertory more varied, more distinct, than in any theater. The abilities of Booth, Barrett, and Cushman sink into insignificance compared to this great artist, who changes his color, his location on the stage of life, and plays his part so well, disguising himself so perfectly that he is seen again and again in various rôles and still unrecognized. I mean that superb actor, Syphilis.

Who cannot recall a case where he has made his appearance on the boards of life when the child is only a week or more old? His makeup has been so perfect, his characteristics so obscured, that the actor is unrecognized, and the spots we see mottling the stage, the great stage of life—the body—is called by any other name but the true one. It is here again and again mistaken for measles, scarlet fever, or some other malady rather than the correct one. These words are not dramatic; these words are not mere play; they are facts, unblemished facts, which I can support by case upon case which I have seen in either consultation or in my clinical work.

The puling infant now grows into childhood, a boy or a girl, we will say, in the teens; here again this artist plays his rôle and again disguises himself so perfectly that he is unrecognized. We find him perching himself upon the tonsil in the shape of an enlargement of the gland; there is no ulceration, there is no mucous patch; there is simply a congestion; but if we raise our curtain a little higher and examine the skin, the mottled appearance and the eruption permit us to see through the maze and to recognize our versatile actor, Syphilis.

The closed-up nose, the pus discharge, and the bleared eye are again accoutrements for this dramatist to play his part. These are more his gowns for hereditary syphilis; but his wardrobe is perfect, more varied when he plays his full repertory from his initial lesion to the old age of necrosis.

John Drew might possibly hide his identity in a dime museum, as the chancre hides its identity when it steps out from the reproductive organs and begins making history in the mouth, or the scalp, or perchance on the wrist as an initial lesion. I have seen this lesion make its début in all localities and play its part as perfectly as if it had started in its home theater, the reproductive organs. A chancre of the tonsil in ninety-nine cases out of a hundred is overlooked. The actor is not called by his stage name of Syphilis, but is called possibly Mr. Mumps, an enlargement of a gland, or some other *nom de plume*. He has played his part now as the chancre for three or more weeks, and, wearying of his tragedy, he calls Dame Nature to his aid and disappears from the scene as perfectly as Harlequin in the pantomime, but only for a moment, when he again comes upon the stage, like Harlequin, in another disguise, and besmears the body with a ruddy eruption that may pass unrecognized, because in this rôle he gives so little trouble. Again that great physician, Dame Nature, steps in and this lurid mottling disappears from sight. He is no longer the amateur; he has trod the boards of the body now for a year or more. His quest for glory is still unsatiated. He wishes to play a more important rôle; he now attacks the mucous membrane. Here he finds his field so fertile that he is able to play a varied repertory. His syphilitic iritis, his mucous patches of the tonsil, his rôle of alopecia, are played to perfection.

Again the curtain descends, an interlude is played by the orchestra, an intermission occurs; but soon the curtain goes up again and we find our artist seeking even deeper ends. He is no longer satisfied with playing the superficial rôle of the mucous patch or of only besmearing himself in a mottled condition on the skin; his aim now is to penetrate deeper into his profession and to engulf not only the superficial layers of that great stage, the body, but to penetrate deeper and still deeper into his artistic career. He now makes his appearance as a gumma, then throwing off his mask and appearing as the deep ulceration, implanting this possibly upon the pharynx or perchance the larynx, or maybe the vault of the pharynx, here shifting his scenery to the bones of the nose, to suit his whim. Now he causes his exfoliations, and if not recognized will so shift and change the anatomy of this part in a few weeks that the part, which was at first swollen, will shrink, fall

in, and the stage will be bereft of all adornments.

His ambition is still unsatisfied. He is still discontented. I know of no actor that is so prolific. He now attacks the arteries of the body, possibly suspending animation in some of its extremities by perching himself upon that throne, the brain. Here he produces his paralysis, his agraphia, and, extending down the cord, his locomotor ataxia.

A repertory of which any Booth or a Barrett might well be proud, but still that mighty actor, Syphilis, is discontented; like Alexander, he wishes for more worlds to conquer. He hesitates, muses, and thinks, but not for long. His versatile, energetic being is untired; he now seeks the main arteries of the body, possibly the arch of the aorta. Here he steps upon a throne from which, when once having taken possession, he rules with a mighty sway. He is no longer an actor, no longer a little, mild, puling infant, the chancre, but the despot that commands attention and usurps the body as any conqueror. He changes the character of the arteries, and with his decaying touch brings forth an aneurysm that may press upon one of the recurrent nerves and give rise to a hoarseness and a cough; or, wishing to vary his monotony, he may branch out and press upon the trachea, causing dyspnea. His rule is unquestioned; he becomes the usurper, he dictates his terms, and now perchance, wearied with his work, like Sampson, he opens up one of these aneurysms of the arch; a quart or more blood is expectorated through the mouth, and this great actor passes from this stage and the tragedy is ended.

Now *mon père Syphilis* is dead. We've had our elder Booth and our younger Booth, we've had our Salvini, who played his Othello and at times, it is said, broke the ribs of his play wife, Desdemona, the younger Salvini, who played the leading man with Clara Morris. We see here the talent of the father descending to the son. Syphilis is no bachelor. *Mon père* is dead, but his offspring has ascended the throne and rules with a mightier sway than even the father. It is dogmatic, tyrannical, and overbearing in its sway. It is not only a member of the anatomy; it is here paramount, supreme, and it takes no second place; it retreats to no back corner, but is all supreme.

Where the father was ushered into the world as a modest chancre, and took years to rise to his supremacy, the offspring has all his powers and virulence; it is like a rich man's son, it has acquired all his wealth, all his power, and starts with its wealth of destruction in its grasp and implants upon its unfortunate possessor manifold destruction. *Mon fils* has acquired all his father's wardrobe and starts out to play his part, not with a question, Do I fill my father's shoes? But I have his accoutrements in my grasp and am more powerful than *mon père* Syphilis ever dreamed to be. He plays his part at birth in the character of an eruption, which eruption is often mistaken for the measles, scarlet fever, or some kindred disease of childhood. In later years he may locate his playhouse in the nose. Here he moves his scenery so often and so ruthlessly that an ulceration appears, the bones are exfoliated, the supports are necrosed, and the nose falls in. Perchance he may alight upon the tibia or the fibula; this he ulcerates and necroses. The bones exfoliate. The glands of the neck he attacks, or else he may sight out the palate. Here he plays a most regal rôle. Nothing seems to hold him in check, except that great angel, the Iodides. Without this check his rule is all supreme. He starts as a small ulceration, and in a short time the stage is cleared, the uvula, the palate and the pharynx have received the marks of his imprint, a most dastardly touch, a gummatous condition, an ulceration and an adhesion, and the human theater is polluted for any other production.

55 West Forty-seventh Street.

SEXUAL NEURASTHENIA AND THE PROSTATE.

By G. FRANK LYDSTON, M.D.,

Chicago.

Professor of Genitourinary Surgery and Syphilology, Medical Department Illinois State University.

For the purposes of this brief article sexual neurasthenia implies ordinary neurasthenia with a sexual element, either psychic or physical in character. Organic sexual disturbance can hardly exist without a strong incidental psychic element. A purely psychic sexual element in so-called sexual neurasthenia is rare. There is almost always some functional derangement of the sexual apparatus behind which lies a varying degree of organic disorder.

My experience leads me to the conclusion that neurasthenia in the male is associated with prostate hyperemia and hyperesthesia of the prostatic urethra more often than with any other condition.

Knowing the abundant sensory and sympathetic nerve supply of the prostate and its intimate relation to the sympathetic system in general, one should not be surprised at the frequency with which nervous symptoms develop in patients suffering from prostatic disease. Add to the purely organic factors the profound psychic impression made upon the patient by the knowledge of sexual disability and we have a very satisfactory explanation of the frequency of "sexual neurasthenia."

Disturbed digestion, irregular bowel action, headache, depression, lassitude, melancholy and brooding, hypochondriasis and introspection, unstable emotions, and "hysteria"—for there is a condition in the male analogous to hysteria, which we logically might call "prostateria"—are among the results of a sensitive, congested prostate and deep urethra.

It is the custom of the reputable profession to regard the sexual neurasthenics who are the prey of the quacks as sufferers from purely imaginative ailments. As practically all of these subjects have been masturbators, many of them have indulged in sexual excesses, and not a few have had gonorrhea, the verdict of the profession is not always sound as regards the quack's victim, however just it may be as to the quack himself.

Reputable medical men are wont to wave the sexual neurasthenic away with a bluff and hearty "My good friend, forget it. There is nothing the matter with you." The patient seeks for some one who will sympathize with him, and goes to the quack. The quack doesn't find out what the matter is but, to the patient's cost, he does find a lot of things that do not exist, and all because the reputable physician flouted as imaginary conditions which, to the patient's sensitive and morbid mind, are always terribly real. The layman who feels, however erroneously, that the regular profession is both ignorant and unsympathetic is fine food for the quacks.

I doubt if it is possible for one to indulge in either masturbation or sexual excess for any great

length of time without producing disturbance of prostatic circulation and innervation. We advise such patients to stop their evil habits, but ignore the sensitive prostate and hyperesthetic veru montanum which are continually sending sexual stimuli to the psychosexual centers, where they are at once transformed into erotic ideas. These erotic pictures of the imagination reverse the nerve current, so to speak, and increase the prostatic irritation. The patient's sexual emotions are used as a shuttlecock by the seat of sexual sensibility in the prostate on the one hand and the psychosexual centers on the other.

We tell such patients to keep their minds off their sexual organs; this is a pseudo-Christian Science prescription which works satisfactorily only when conjoined with the instillation of a little nitrate of silver solution into the prostatic urethra supplemented by prostatic massage.

Practically every masturbator who has practised the habit for any length of time may be considered as having a more or less tender and swollen prostate. My experience goes to show that this condition underlies many of the cases of nocturnal emissions with which we meet.

The analogy between the prostate and seminal vesicles and the uterus and tubes is nowhere better shown than by pathological conditions of these organs. The infected subinvoluted uterus and tubes, with the surrounding pelvic infiltration producing pressure symptoms and neurasthenia, have their counterpart in the enlarged infected prostate, infected seminal vesicles, and periprostatic infiltration, producing the same local disturbance and general nervous symptoms. The two conditions are alike in the matter of the stubbornness and lasting quality of the infection.

The management of sexual neurasthenia, while largely directed to the relief of local conditions, requires even more care and judgment than that of cases of neurasthenia in which there is no sexual element. Regulation of sleep, diet, and work is always in order. Hydrotherapy, general massage, and static electricity all have their uses, in conjunction with prostatic massage, instillations of silver, and, in infected cases, irrigations. Urethral dilations should supplement the other local treatment.

We occasionally meet with cases in which, while the local conditions improve and the neurasthenia is more or less benefited, the patient remains unfit for the active duties of life and becomes a confirmed hypochondriac. For cases such as these complete change of scene and climate is required. A sea voyage sometimes accomplishes wonders. In a series of cases of my own in which a sea voyage was practicable the results were all that could be desired. I recall one case of a gentleman whose will was so unstable that it was necessary to keep some one with him constantly until the steamer started, lest he should fail in his determination to take the voyage. He was so emotional that, when his frequent fits of self-pity came over him, he would cry like a child. This meant much in a man like him, for he was an ex-soldier of tried mettle and courage. He first went to the Philippines, then to Japan. He returned perfectly well in five or six months, as he expressed it, snapping his fingers at the doctors. This case is but a type of a number in my experience.

Sexual neurasthenia associated with real or imaginary spermatorrhea, obstinate prostatorrhea, or seminal emissions occurring frequently and resistant to treatment is sometimes very difficult of management. In such cases I have frequently obtained excellent results from temporary resection of the vasa deferentia. Aside from the moral effect, which is profound, the relative rest secured for the sexual apparatus and the lessened activity of the circulation of the prostate are extremely beneficial. As I have elsewhere shown,* and have demonstrated in my own work, subsequent anastomosis is perfectly practicable, by my method of coupling the vas on silkworm gut.

Cases of sexual neurasthenia with or without prostatic derangement associated with impotency are the most trying of all. If unrelieved, these cases go from one doctor to another and finally land in the arms of the quacks. Many of them are purely psychic at the beginning, but a few recurrences of their inability to copulate puts a large proportion of them into the permanent class. In such cases the nomenclature "psychic" is not comforting to the patient, and if one stops to think is somewhat absurd. One of my patients rather rudely brought me to a realization of the profession's lack of humor. When I told him that his impotency was purely psychic, he replied: "Psychic h—l! Why, I can't get an erection."

As potency really consists of ability to get and sustain an erection, my patient's point was well taken. I would remark, in passing, that our nomenclature has driven a host of patients to the quacks. The cause of impotency may be psychic, but the lack of erective power *per se* is a purely mechanical proposition.

In many cases of impotency the failure of erective power is due to plainly evident general or local organic conditions. Once the accident of failure of erection has occurred, however, the patient's memory of the first failure is sufficient to cause another and another, until failure is the rule of his sexual life. Here even the removal of the original organic condition is likely to fail to cure.

Morbid prostatic conditions, involving especially the veru montanum, often underlie impotence. In such cases message, silver instillations, or endoscopic applications of silver to the veru montanum often do excellent work. Not infrequently, however, all these measures fail completely. Unless the impotency is relieved, cure of the neurasthenia is impossible, hence any measure that holds out hope of relief should be adopted. It has been my experience that a very respectable proportion of cases of sexual neurasthenia associated with impotency are remediable by resection of the vena dorsalis penis. As to how far the psychic effect of the operation explains its benefits I am unable to say, but as the local mechanical effects are obvious and constitute the only means of psychically impressing the patient I will not quarrel with terms. The patient, noticing an immediate increase in the functional activity of the penis, is justified in having some psychic impressions from the operation, and, as these impressions run counter to those which have been a prominent feature of his sexual disability, the operation would seem logical enough. Even a small proportion of cures would justify the operation, and, as the proportion is really large, I believe that the procedure should be generally employed in suitable cases. It is hardly necessary to say that proper surgical technique is essential. In a large proportion of cases that have been submitted to the

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operation the cutaneous vein has been resected and the failure charged up to the operation. It should be unnecessary to say that the dorsal vein and the dorsal cutaneous vein are not the same.

32 North State Street.

BLOOD PRESSURE AND THE PATIENT.

By WM. HILLS SHELDON, M.D.,

NEW YORK.

INSTRUCTOR IN MEDICINE AND CHIEF OF CLINIC, OUT-PATIENT DEPARTMENT, CORNELL UNIVERSITY MEDICAL COLLEGE.

Since I have been interested in the study of blood pressure I have been surprised, not so much at the frequent occurrence of the condition as at the information of patients concerning this condition. Every practising physician knows that medical knowledge can be assimilated by the lay mind only in homeopathic doses, and my experience has shown me that the present popularity of blood pressure is causing serious mental indigestion among those who fail to understand its significance.

A few years ago patients endeavored to assist a physician in his diagnosis by informing him, "Doctor, I am full of uric acid." A few years later it was "Doctor, my hemoglobin is low." Following that came the statement, "My free hydrochloric acid is 5/10 per cent." At present it is, "Doctor, I have high blood pressure." Now, the uric acid theory was harmless, low hemoglobin not necessarily fatal, and the percentage of free hydrochloric easily remedied. But blood pressure is an altogether different matter.

In a large number of elderly persons a heightened blood pressure seems as inevitable as white hair. As it is absolutely incurable in advanced cases, and very probably a compensatory phenomenon, it is highly desirable, in the majority of instances, that the patient should be kept in ignorance of the fact that his tension is high. I refer particularly to that class of highly organized, nervous individuals who seem to be specially liable to this condition.

A number of cases have recently come to my notice which illustrate the imprudence of telling patients about their blood pressure. A physician came to my office one day and said, in an agitated voice, "Doctor, take my blood pressure." I saw he was greatly upset. Upon inquiry I found that he had felt perfectly well till two weeks previous, when a medical friend had told him that his blood pressure was high. Since that time his wife had taken his blood pressure night and morning, and his attention was absolutely riveted on the matter. I talked to him on various subjects for some time, and then took his blood pressure. I found it 160 mm. As an experiment I told him it was high, and took it again. In the few minutes that had elapsed it had jumped 20 mm. I then explained what I had done, and was able to demonstrate to him how worry heightened his tension.

A certain manufacturer was told by his physician that his blood pressure was high, and the dangers of this condition were considerably exaggerated. For several months this patient, a very nervous man, had his blood pressure taken several times a week. After taking certain pills his physician would tell him that it was lower, and when they were withdrawn that it was higher. When his blood pressure rose he would worry over his condition to such a degree that he was unable to sleep. Insomnia and constant fretting soon affected his general health, and his friends noticed that he looked older and thinner, and, as is the habit of friends, told him so. On these occasions he would transfer his attention from his blood pressure to his tombstone. Finally he went to another doctor, who explained to him that blood pressure was a symptom and not a disease, and outlined a sensible but not too severe régime. Under this treatment the patient has regained in health, weight, and mental composure what he had lost by the unfortunate and quite unnecessary revelation of his high tension, and it is only at long intervals that his blood pressure is now taken.

This is one of the innumerable instances which show how little study some physicians give to the psychology of their patients, and it is greatly to be regretted that more attention is not paid to this most important factor in the successful treatment of disease.

I know of one patient with postretinal hemorrhages who fell into the hands of a blood-pressure-electrical enthusiast. Three times a week he took her blood pressure and gave her electrical treatment. This lasted until her money gave out. She then went to an oculist, who had once treated her. He found her almost totally blind and in wretched physical condition.

I am inclined to believe that the less the average patient knows about his blood pressure the longer he will live and the happier he will die. There are, of course, a certain number of cases in which the only method of controlling vicious habits is by exaggerating the danger of this condition, but these are in the minority. The majority of cases are merely aggravated by such knowledge. For once a patient is told he has a high blood pressure there is no way of protecting him from the misinformation of his friends, those kind, well-meaning friends who add so greatly to the problems of the physician. Once a man's attention is fixed upon his blood pressure it is almost impossible to pry it loose. There is always the danger also that a patient may obtain some of the literature on this subject, the tone of which is distinctly pessimistic.

With regard to the present outlook of blood-pressure conditions, it is as well to remember that not many years ago cases of mitral regurgitation were regarded as giving a very serious prognosis. But now our attitude toward these cases is entirely changed. Blood pressure is a relatively new subject and can bear considerable investigation. It will be many years before we have an accurate appreciation of its value as a symptom, and, in the light of medical history, it will doubtless be as well not to overestimate its dangers or the seriousness of its prognosis.

As I have said in a previous article, the importance of blood-pressure determinations lies in their being taken early in life, before the condition has become chronic and when it is most amenable to treatment. If this were done as a routine method its serious effects later in life could be avoided. But in long-continued cases it is incurable. All that can be done is to keep the patient comfortable, and this cannot be accomplished by telling him that he has a high blood pressure.

784 Park Avenue.

Spontaneous Puerperal Infection.—W. Poten maintains that puerperal infection may occur spontaneously from microorganisms normally present in or on the genitalia.—*Zentralblatt für Gynäkologie.*

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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New York, February 3, 1912.

THE NATIONAL CONTROL OF NEW YORK QUARANTINE.

THE anomalous situation with reference to the administration of the quarantine of New York harbor has reached its climax of absurdity. The spectacle no less tragic than grotesque of the executive of the Empire State looking about for some one competent or willing to take the place of Dr. Doty, who with meager facilities has sturdily guarded the sanitary gateway of the Western World, can admit of but one interpretation. The State of New York can no longer be trusted by the nation to supervise the quarantine of its principal port. If there has ever been need for argument why the quarantine of any port should not be under Federal control, surely that need has vanished in the face of the object-lesson that has been lately unfolded. With the health officer of the port facing the insidious bearers of pestilence from abroad, and at the same time being compelled to defend his administration from the attacks of his political foes at home, it was an act of Providence that cholera did not gain a foothold in this country during the past summer. It should be a source of pride to Dr. Doty that during his incumbency of office the national government has never questioned his ability to defend the entire country from pestilential invasion.

But the quarantine of any port should not be left to the chance appointment of any man who may or may not be capable. The quarantine administration of the entire country should be systematized and uniform, with a machinery and a personnel perfected with the precision characteristic of the standing army or diplomatic corps. That machinery and that personnel exist to-day in the splendid organization of the Public Health and Marine-Hospital Service, which is acknowledged even by foreign authorities to be unequaled by any similar organization in any other part of the world.

In the current issue of the *Survey* the editor makes a plea for the national control of the quarantine of New York harbor. This quarantine should be purged of political interference, should be uniform and standardized, adequate in its hospital and laboratory equipment, and capable of reconciling the interests of passengers and commerce with those of safeguarding the public health. In only three cities, Boston, Baltimore, and New York, is quarantine still under the obsolete system of State control, while in forty-four other ports the national government exercises this supervision. Yet the most important port of the entire country, New York, through which pass in one year eight hundred thousand persons or three-fourths of the immigrants coming to this country, is left in the sanitary control of the local authorities. A large proportion of these immigrants are destined for parts of the country more or less remote from the port of entry. Why should the expense, the burden, the responsibility, and the danger of merely local supervision be tolerated in the most important gateway of the country, while the national government exercises this control in all the minor ports? Surely there is a precedent for the extension of this control to New York, for in 1892, when the cholera menace became most acute, the national government stepped in and took charge of the quarantine administration of New York harbor.

The safeguarding of the country from epidemic invasion from abroad is not a local function; it is national, if not international, in its scope. There should be a perfect coordination of activities throughout the country, with the assistance of the foreign agents of the public health authorities; with the utilization of all the sources of information, and the adoption of the most modern methods of quarantine supervision. This is possible only under Federal control. A movement with this end in view was inaugurated at a meeting of the Academy of Medicine on Thursday of this week (see page 226) when papers showing the advantages of the national control of quarantine were read by Assistant Surgeon-General L. E. Cofer of the U. S. Public Health and Marine-Hospital Service and Mr. William Williams, Commissioner of Immigration at the Port of New York. But one of the strongest arguments in support of such a move has been unwittingly furnished by Governor Dix.

CHRISTIAN SCIENCE IN THE CANAL ZONE.

IN the issue of the MEDICAL RECORD of January 27 attention is called by a correspondent to the startling fact that the Christian Science healer has received a special dispensation from the Canal Zone administration to practise his sanctimonious calling. Dr. Baruch had commented on the singular fact that in the Zone, where the United States Government has achieved the greatest sanitary triumph of modern times solely through the efforts and sacrifice of medical men, it discriminates against the latter by placing the science healer on an equality with the physician who has expended years of study and effort to master his profession and from whom it demands an examination and license. The Secretary of War made an absurd defense of his anomalous position and now comes an anonymous, probably inspired, writer in the *Sun* of January 27, who claims that, in addition to the States (Connecticut, Maine, New Hampshire, South Dakota, and Tennessee) enumerated by our correspondent as exempting these healers from the license required by medical men, there are Illinois, Kansas, Louisiana, Utah, Massachusetts, and probably Vermont and

Washington which have legislation similar in purpose. It is surely admitted, he writes, "that this is an imposing array." Not at all.

We have taken pains to investigate this addition which is claimed to form the "imposing array," with the following result: Massachusetts does exempt from license and examination "registered pharmacists prescribing gratuitously, osteopaths, clairvoyants or persons practising hypnotism, magnetic healing, mind cure, massage, Christian Science, or cosmopathic method of healing," provided, however, they do not violate the provisions of Section 8, which reads: "Whoever not being lawfully authorized to practise medicine holds himself out as a practitioner of medicine . . . shall for each offence be punished," etc. Illinois provides that "the examination of those who desire to practise any other system or science of treating human ailments, who do not use medicines internally or externally, shall be of a character sufficiently strict to test their qualifications as practitioners." In Vermont, after providing that all practitioners of medicine shall be examined and licensed, the law says: "The provisions of this act shall apply to persons professing or attempting to cure disease by means of faith-cure, mind healing, or laying on of hands, but shall not apply to persons who merely practise the tenets of their church." In Utah, after providing that all practitioners be examined and licensed, the law says: "This act does not apply to those who heal only by spiritual means without pretending to have knowledge of the science of medicine." In Louisiana, after carefully providing that all practitioners are examined and licensed, the law says: "Nothing in this act shall be construed to prohibit the practice of religious tenets of any church whatsoever." In Kansas all physicians must be licensed as in other States, but "the act does not apply to domestic medicine or gratuitous service." In the State of Washington all persons practising medicine must be licensed and no exception is made for any reason whatever. It has remained therefore for the Canal Zone administration, not to "follow the legislation of a large and important number of States" (the imposing array numbers seven), but actually to lead them all by permitting the practice of the religious tenets of any church in the ministration to the sick or suffering by mental or spiritual means, whether gratuitously *or for compensation*. This clause is found in the laws of no other State in the Union. Of what use is it for any one to spend years in preparation for the study of medicine, then pass six years in study and hospital work, if one may adopt the more simple and direct way to become a healer, practise medicine without let or hindrance, and escape State examination?

Dr. Baruch's suggestion that the medical profession take immediate and effective action to meet these disgraceful encroachments on its rights and privileges is worthy of serious consideration. It would seem on calm consideration of all the data that medical men are actually legislated against by several States in order to protect the special interests of clairvoyants, magnetic healers, Christian Science healers, *et id genus omne*. The situation demands investigation by competent legal authority to determine whether our rights as citizens are not discriminated against by the laws of these seven States, and whether there should not be a resort to legal steps to secure these rights.

THE WHOLESALE POISONING EPISODE IN BERLIN.

Somewhere about January 20 a cablegram in the local daily press announced that the mysterious wholesale poisoning in Berlin had been found to be nothing more or less than methylism, and that the joke (if joke there could be in such a tragic happening) was on the doctors. It was evident, however, that the symptoms bore little or no resemblance to the typical effects of wood alcohol, and a letter from P. Fraenkel, who seems to have been in close touch with the autopsies made, and whose communication appears in the *Berliner klinische Wochenschrift* of January 8, makes it evident that this substance must have played a very minor rôle in the endemic or epidemic, for which a number of factors could have been operative. The author saw over sixty of the cadavers and witnessed a majority of the twenty-seven autopsies. The number of alcoholics was singularly small considering the external circumstances of the victims. Contrary to reports in the daily press, most of the supposed outcasts were well nourished. The chief finds were as follows: fluidity of the blood was constant; there were marked reddening of the skin and visible mucosæ and injection of the conjunctivæ, which may have represented a stasis due to exposure to the cold weather; there was also notable hyperemia within the cranium and thorax, while the abdominal organs were correspondingly ischemic; there was intense inflammation of the trachea and bronchi, and also of the intestinal mucosa; finally there was retention of urine. These finds seem to throw little light on the nature of the intoxication. There was at times an aromatic odor to the stomach contents or urine. The character of the lesions in the alimentary tract bore at times some resemblance to the finds in sausage poisoning and methylism, but other evidences in this direction were absent. The intense bronchial irritation suggests the results of the elimination of a volatile irritant poisoning, such as carbolic acid or lysol.

The first suspicion was that involving a contagious disease. Next in order came a possible verdigris poisoning. Sausages were next accused and then wood alcohol. All these factors seem to have been excluded, as has, of course, the theory that death occurred from a cumulation of all factors which make for starvation and misery. That the mystery is not yet solved is not strange. Not sufficient time has elapsed for full chemical analyses and histological studies. Furthermore, it is not always possible to solve problems of this character from autopsy findings alone, and the complete history of the supposed epidemic still has to be ascertained. Similar episodes, less severe in character, may, and very probably have, occurred before. Accounts are not lacking of a severe type of gastroenteritis which attacks harvesters by the wholesale in the summer or autumn, and which has, perhaps erroneously, been ascribed to a plant cause. In the words of an eyewitness, these peasants would have been called vic-

tims of the most severe form of influenzal pandemic with gastric location, had not the season been the wrong one for that affection. The disease has never been explained, and is practically a new malady. Possibly it is related to, or identical with, that which slew the Berlin outcasts at Christmas time.

ENURESIS NOCTURNA AND SPINA BIFIDA OCCULTA.

ENURESIS NOCTURNA is commonly believed to be an evidence of a neuropathic degenerative substratum in children. It has been brought into a special association with hysteria, and also with the so-called spasmophilic diathesis. Many years ago it was also brought into necessary relationship with so-called myelodysplasia or spina bifida occulta, but objection was at once made that the two conditions are prone to develop in the same kind of children, and that the defective development of the cord was not in itself the cause of enuresis. In the *Deutsche medizinische Wochenschrift* for July 6, 1911, Peritz writes at much length on this subject and reports a case in which a wide fissure in the sacrum readily appears in a radiogram. He examined two series of subjects with bed wetting, one composed of children and the other of young adults. It by no means follows that the bed must be wet often, for three or four passages a year which cannot be readily explained would constitute a case of enuresis. The author's conclusions are as follows: In every case of bed wetting we must bear in mind the possibility of myelodysplasia. If the later can be diagnosticated, a mechanical plan of treatment is indicated, either epidural injections of saline infusion, which tend to remove the pressure caused by cicatricial tissue, or suspending the patient for a time by the legs, which has a similar effect. Both procedures have to be repeated a number of times, and if benefit does not accrue a plastic operation will be indicated.

In this connection it is of interest to note that H. B. Sheffield of this city has reported a case of the same type in a recent number of the MEDICAL RECORD. The patient, a boy aged seven years, had been treated medically and without success for enuresis diurna and nocturna persisting since birth. By the merest accident a small prominence was remarked in the sacrolumbar region as the boy bent over a chamber vessel to urinate. When he stood up the prominence was effaced. A hiatus in the sacrum was evident without an *x*-ray examination. Peritz's paper had not yet been published, but Sheffield came independently to the conclusion that in obstinate enuresis we should always examine for occult spina bifida. The latter at once becomes so obvious as soon as we are aware of its existence that its overlooking seems singular. Sheffield's patient had a peculiar gait, and in addition to incontinence there was a difficulty in expelling residual urine. A plastic operation was refused by the parents.

SWAMP FEVER IN HORSES.

FOR some years past a peculiar disease of horses, widely known under the name of swamp fever, has engaged the attention of veterinarians and horse owners of various sections of the Northwest. In Dakota, also, the disease has occasioned a considerable amount of damage, and in order to obtain some definite knowledge on the subject L. Van Es, E. D. Harris, and A. F. Shalk were entrusted with the task of systematically investigating the disease. They appear to have done this thoroughly and Bulletin 94 of the North Dakota Agricultural Experiment Station gives an exhaustive account of their findings. Among the conclusions at which they have arrived, the most essential are that swamp fever is an infectious disease transmissible by subcutaneous and intravenous injection and also by ingestion. While not denying the possible transmission of the disease to healthy animals by means of insects and parasites, the author says that animals contract the disease naturally by the ingestion of food and water contaminated by the urine of an infected horse. The blood of an animal may remain virulent for as long as thirty-five months after the initial infection without the infected horse manifesting any clinical evidence of the fact. Such "carriers" probably play an important part in the establishment of more or less permanent centers of infection. Both trypan-blue and atoxyl are worthless in the treatment of the disease. Finally, in the light of present knowledge of the disease, such prophylactic measures must be depended upon as the destruction of diseased animals, segregation of suspects, care in introducing new horses into the stable, and the safeguarding of food and water supply from urine contamination.

MALARIA IN PANAMA.

AT a meeting of the Los Angeles County Medical Association, held October 20, Walter V. Brem presented a review of the prophylactic measures against malaria carried out in the Canal Zone, and discussed the subject of malaria in general (*Southern California Practitioner*, December, 1911). He pointed out that the multiple subdivisions of pernicious malarial fever were confusing, unnecessary, and often based upon misconceptions. As an illustration he reviewed the experience in Panama relative to the "dysenteric type" of pernicious malaria, and showed that such a type does not occur there, the apparently synchronous infections with the malarial parasites and *Bacillus dysenteriæ*, being due to the lighting up of latent malarial infections by the dysentery. According to Brem, all pernicious malarial infections can be classified in one of the four following groups: the group of intense infection, the comatose group, the intermediate hemoglobinuric group, and the erythrocytic hemoglobinuric group. The author endeavored to show by means of experiments that erythrocytic hemoglobinuric fever is a manifestation of malaria. These experiments tended to reconcile the views of those who hold that blackwater fever is essentially malaria and those who contend that it is due to quinine. The treatment of this disease by transfusion of normal blood, in the opinion of Brem, seems to be indicated. In the discussion that followed, A. H. Zeiler, who had worked with Brem in the Canal Zone, said he thought that hemoglobinuria, where the peripheral infection was 6 per cent. or over, was quite common, in fact occurred in nearly all cases. Such hemoglobinuria was usually not of the intensity of so-called blackwater fever. In the Canal Zone there has been plentiful experience of malaria in all its manifestations, and Brem and his coadjutors had under their observation at one time and another no fewer than 4,691 patients suffering from malaria.

News of the Week.

More Yellow Fever on the "Yorktown."—A report from Dr. Parker of the United States Marine-Hospital Service, stationed at Guayaquil, states that he has ten more of the crew of the gunboat *Yorktown* under his care in Guayaquil. Seven of these have yellow fever and three others are suspected of having the disease. Two deaths have occurred.

Cholera in Albania.—A special cable despatch to the *Sun* announces that there are 29 cases of cholera in the city of Janina.

Typhoid Fever in Milwaukee.—An investigation by the committee of the Milwaukee County Medical Society shows that there has been a great increase in the number of typhoid fever cases in that city. There are about forty cases of the disease being treated in the hospitals and inquiry among physicians revealed the fact that there are a number of cases of typhoid fever being treated in their homes and that intestinal disturbances are quite prevalent. The committee urges that the public be advised to boil all water and milk used for drinking purposes.

Meningitis in the Southwest.—Cerebrospinal meningitis, which has been epidemic in Dalls, Waco, Fort Worth, and several other localities in Texas and has appeared in the sounthern part of Oklahoma, is reported to have spread to six counties of that State. A number of fatalities have been reported. Several cases and one death have also been reported from Springfield, Mo. The situation in Texas seems to be well in hand, only a few new cases having been reported since January 15. The United States Marine-Hospital Service has sent hospital tents to the Board of Health of Shreveport, La., to be used in the detention camp that has been established there for persons coming from the infected districts of Texas, and Dr. Dowling, President of the Louisiana State Board of Health, has sent the State health car so that it may be in readiness for any outbreak of the disease that may occur. Dr. R. H. von Ezdorf of the United States Public Health and Marine-Hospital Service has gone to Dallas, Tex., to cooperate with the State Department of Health in combating the epidemic.

Rabies in the Neighborhood of New York.—The town of Westbery, L. I., is under quarantine, conducted by the State Department of Agriculture, on account of an epidemic of rabies. The infection has invaded the stables of the wealthy residents and three valuable horses, one of which was worth $4,000, have been shot within two weeks. A slight epidemic of rabies is reported from Staten Island. Dr. Lederle has announced that he will adopt a new policy in the near future, requiring all dogs to wear muzzles and to be leashed when at large. In New Jersey also many mad dogs have been killed, some after having bitten a number of children.

Pneumonic Plague.—This disease killed 50,000 persons in Manchuria and northern China last year. An interesting report regarding it has just appeared; it is written by Dr. Richard Strong of the Philippine Bureau of Science, and is issued from the Bureau of Printing.

Antityphoid Vaccination of a Hospital Staff.—The staff of the Episcopal Hospital of Philadelphia, doctors, nurses, orderlies, and attendants, have voluntarily submitted to inoculation with antityphoid serum. This is the first time in America that a hospital staff has followed the example of the Army and Navy in the matter of antityphoid vaccination.

Medical Library for San Francisco.—Plans of the trustees of Stanford University have been matured for the new Lane Library building now in the course of construction in San Francisco opposite the Cooper Medical College. The library will be the seventh in size of its kind in America. the building covers an area of 60 by 100 feet and the stacks will be four stories in height, constructed entirely of steel with glass floors, and will have a capacity of 80,000 volumes. There is also a capacity for placing 30,000 volumes on the second floor of the building.

For a National Health Department.—The Republican Club of New York City recently adopted a resolution: "That a national health service be organized which shall coordinate all the bureaus of the national Government now dealing directly or indirectly with the public health, except the medical service of the Army and Navy. That the Federal Government shall take charge of quarantine service in every part of the United States. That action on the foregoing matters be urged upon Congress as of immediate and pressing importance. That this health service shall be organized under the Department of Commerce and Labor, in the title of which the word 'health' shall be incorporated."

The New Charity Directory.—The Charity Organization Society has issued its twenty-ninth annual e lition of the New York Charities' Directory. This publication lists 254 hospitals, dispensaries, and homes for incurables, and 90 asylums for children in the five boroughs of the Greater City of New York. More than 3,000 charitable, philanthropic, and religious agencies in the city are briefly described.

Results of a Practical Milk Test.—At a meeting before a committee of women's organizations, held at the Hotel Astor on January 26, Dr. William H. Park described the results of an observation conducted by the Rockefeller Institute for Medical Research of the comparative health of 500 babies fed on five different qualities of milk. There were 100 babies on each of the following diets: Mother's milk, pasteurized milk, certified milk, ordinary dairy milk, and that obtained from grocers. The superiority of mother's milk was proved beyond question. The results from pasteurized milk were better than from certified milk. The danger from the ordinary milk and the poorer quality was distinctly shown in that seven deaths resulted during the summer months among the babies using this diet, while there was only one death in each of the other classes.

Health Day for New Hampshire.—At the request of the Women's Christian Temperance Union, Governor Bass has designated February 3 as Health Day for the State of New Hampshire. It is stated that the object of setting apart this day is to interest every individual in the community in improved sanitary and hygienic conditions and to emphasize right methods of living whereby the health of the community may be permanently improved.

Tammany Aldermen Are Antivaccinationists.—At a recent meeting of the Board of Aldermen the finance committee recommended that $10,000 in special revenue bonds be issued to pay for the employment of special medical officers to vaccinate

children in the public schools and tenements of New York. Aldermen Dowling, the Tammany leader, opposed the resolution on the ground that he considered vaccination a fad and did not think the "doctors had any right to invade the homes of the poor and scratch the arms of the kids." The other Tammany men voted with Alderman Dowling with the result that the appropriation was refused.

Health and Education Departments Clash on Vaccination Question.—The local Board of Health of Olean, N. Y., has forbidden children who have not been vaccinated from attending school, while the Board of Education of that town disapproves of vaccination and has told the children that they may return to school. As a result of this action 1,400 children are exposed to smallpox, which is prevalent in that section. The local board of health has decided to waive its orders, under protest, until the conflict in the law is cleared up by the Legislature.

To Abolish Public Drinking Cups, Brushes, Combs, and Towels.—The Missouri State Board of Health has passed resolutions prohibiting the common drinking cup, comb and brush, and towel in public buildings, railroad stations, and trains after March 1. Representatives of a number of railroads who were present at the meeting declared themselves in favor of the resolutions and signified their intention of complying with them. Missouri is the twenty-fifth State in which the common drinking cup has been abolished during the past year.

The Smallpox Inquiry in Pennsylvania.—In accordance with a bill passed by the last Legislature of the State ordering an inquiry into the value of vaccination as a preventive of smallpox, Governor Tener has appointed the following men to constitute the Pennsylvania State Vaccination Commission: Drs. J. Frank Schamberg and William M. Welch of Philadelphia; Porter F. Cope, secretary of the Antivaccination League of America and of the Antivaccination League of Pennsylvania; John Pitcairn, another prominent antivaccinationist; and three jurists, ex-Governor Samuel W. Pennypacker, George Wharton Pepper, and Emil Rosenberger.

Dr. F. B. Fusion of Springfield has been elected president of the Missouri State Board of Health.

Dr. Charles A. Bundsen of South Downing, Col., has been knighted in the Order of Vasa by King Gustaf of Sweden in recognition of his work in connection with the establishment of the Swedish National Consumptives' Sanatorium in Denver. Dr. Bundsen was awarded a medal for bravery by the United States Government and the State of Colorado at the close of the Spanish-American War for his services in the Philippines.

Dr. J. Clark Hubbard of Holyoke, Mass., has been elected president of the Williams College Alumni Association.

Dr. Harvey W. Wiley was the guest of honor of the University Club of Brooklyn on the evening of January 21, which was "Doctors' Evening." Among the other speakers were Dr. William M. Polk, Dr. Eugene H. Porter, Dr. Edward E. Hicks, Dr. E. H. Bartley, and Dr. Zachary T. Emry.

In Memory of Pasteur.—John D. Rockefeller has given $11,000 toward the preservation of the house in which Pasteur was born. The house is located in the village of Dôle and the villagers have offered to give their aid in making repairs without charge.

Health Board Bars Wood Alcohol. At a meeting of the New York Board of Health on January 23 a new section to the Sanitary Code was adopted which prohibits the sale or use of wood alcohol in any food or drink or in any preparation or mixture intended for internal or external use by man. This section was directed not only against the use of wood alcohol in food or drink, but also against its use by barbers and others in hair tonics, face lotions, and other external applications.

Hospital Heads Plan Social Service Work.—Plans for a permanent conference on hospital social service were completed at a meeting of hospital officials and social workers held at the New York Academy of Medicine on January 24. The object of the conference is to stimulate the growth of social work departments in all the hospitals of New York City and to standardize the work of these departments when they have been established. Delegates from other organizations in the city desiring to assist in the work will be welcomed. Dr. John Winters Brannan, president of Bellevue and the Allied Hospitals, was elected permanent chairman of the conference.

Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis.—Official record has been made in the city of Philadelphia of the transfer of the new hospital built and endowed by Henry Phipps of Pittsburgh to the University of Pennsylvania. The cost of the new building is $300,000, and the entire project will represent an outlay of about $1,000,000.

Philadelphia Medical Club.—At the annual meeting held January 19 the following officers were elected for the ensuing year: *President*, Dr. S. Lewis Ziegler; *First Vice-President*, Dr. B. Alexander Randall; *Second Vice-President*, Dr. Wilmer Krusen; *Treasurer*, Dr. Lewis H. Adler, Jr.; *Governor*, Dr. E. E. Montgomery; *Directors for One Year*, Drs. McCluney Radcliffe, Chas. A. E. Codman, Wm. Edgar Darnell, John W. West, and Wm. Duffield Robinson.

William McKinley Hospital Seals.—The William McKinley Memorial Hospital League, which plans to raise $7,000,000, half of which will be used for the erection of a memorial hospital in New York and half for a national crusade against tuberculosis, put its seals on sale on January 29, which was the anniversary of the birth of William McKinley. The stamps sell for a cent apiece and are to be used after the fashion of the Red Cross seals.

The Stonywold Sanatorium Corporation held its eleventh annual meeting at the Hotel Manhattan, New York City, on January 25. Its annual report was unlike that of most institutions in that its running expenses were $4,000 less during the year 1911 than for 1910. This saving has been effected by careful economy in all departments.

National Control of Quarantine.—The meeting of the Academy of Medicine on Thursday of this week was devoted to a discussion of the advantages of the federal control of the quarantine service at all the ports of the country. Dr. L. E. Cofer of the United States Public Health and Marine-Hospital Service read a paper in which he stated these advantages as follows: (1) Uniformity of quarantine regulations and quarantine procedure. It is of distinct advantage year in and year out, for both the commercial and sanitary interests, for the quarantine functions to be operated by one corps of officers under one set of laws and regulations. The

tendency under these conditions is to have every one affected by quarantine laws, that is the quarantine officers, the municipal or local health authorities, and the mercantile marine interests, develop among themselves team work along the lines under consideration. It means a great deal to the maritime interests to be familiar with what is required of them, and to know that once they are familiar with the quarantine operations in one port they are familiar with them in all ports, and it is of great advantage to the quarantine officers to know that the mercantile interests understand the code under which quarantine is administered. (2) The Treasury Department by correlating the work of its Customs Division and Revenue Cutter Service Division with the Quarantine is able to furnish the latter with the maximum amount of assistance and dispatch. (3) The national quarantine establishment is in direct touch with all parts of the world through the State Department and its consular bureau, and publishes a weekly bulletin devoted to sanitary reports and statistics. While the State quarantine officers have access to these bulletins, they cannot possibly be in such close touch with the sanitary conditions of the world as can the officers of the Public Health and Marine-Hospital Service. (4) The quarantine officers in the national service are appointed for life, consider themselves residents of no place in particular, and are non-partisan in the performance of their official duties. Their time and their mental activities are devoted to their work and they are not disconcerted by fear of removal from office. Their acquired knowledge of marine architecture, nautical usage, and maritime conditions enables them to adjust in perhaps a judicial way the many differences of opinion and difficulties which arise in the enforcement of quarantine laws upon maritime commerce. It has been the endeavor of the service to create a genus which may be termed a "quarantine officer," which, in the broad sense, would designate a well-appointed medical man, versed in maritime conditions and usage and gifted with executive ability and tact. Fortunately the Service at this time has a number of such men, and when a man of this kind is needed in a particular place his services are immediately available. (5) The supplemental quarantine work, invariably performed by medical officers of the Service engaged in the medical examination of arriving aliens, is an important factor in the advantages of the national control of quarantine. In other words, the public at large, the maritime interests, and the quarantine function at a given port must receive in the long run great benefit from having both the quarantine and immigration examination conducted by the same set of officers in a uniform manner. (6) In the matter of expense, it would appear that if a State would ask the nation to conduct its quarantine service, simply to save money, the only benefit to accrue would be to the maritime interests and to the individual State. On the other hand, if a State would elect to transfer the quarantine function to national control, in order that the money previously spent for maritime quarantine purposes could be diverted for the betterment of intrastate sanitary conditions, then this reason alone would seem sufficient for every State turning its maritime quarantine over to the nation as a whole. It may be mentioned as a reason for national control of quarantine that no fees are charged to vessels, either for inspections or for quarantine treatment. This fact may be of some interest to the steamship companies, and would doubtless be given by them as an important reason for national, as against State, control. (7) An important feature in connection with the national control of quarantine is the fact that the subject is being closely studied from many standpoints, and the Hygienic Laboratory at Washington is being called into constant use for the purpose, not only of giving technical instruction to officers, but of simplifying the regulations and restrictions in accordance with the growth of knowledge as to quarantinable diseases and their methods of transmission. Then again, by the intimate touch which the Bureau at Washington keeps on the work going on at the various quarantine stations, the carrying out of quarantine regulations by rule of thumb methods is being discarded and quarantine at individual ports, indeed at times on individual vessels, is being carried out with special reference to the actual conditions existing at the time.

Harvey Society Lecture.—The eighth lecture in the present course of lectures given under the auspices of the Harvey Society will be delivered at the New York Academy of Medicine on February 3, at 8.30 P.M., by Professor T. W. Richards of Harvard University. His subject will be "The Relations of Modern Chemistry to Medicine."

The New York Society of Anesthetists will hold a meeting at the New York Academy of Medicine on February 7 at 8.30 P.M.

Hospital Will Pay Visiting Staff.—The Hospital for Deformities and Joint Diseases of New York City, of which Dr. Henry W. Frauenthal is physician and surgeon-in-chief, announces that hereafter members of the visiting staff will be paid $300 a year. The directors of this hospital are of the opinion that it is only fair that medical services should be paid for as well as other help employed in any operating hospital. It is planned to raise this amount to $500 in the near future.

Another Mouse Cancer Cure.—A despatch to the *New York Times* states that Ehrlich says that a mouse cancer cure which he has devised is more positive in its results than that announced a few weeks ago by von Wassermann. It is reported that Ehrlich has obtained 100 per cent. of cures in the mice treated, including not only those artificially infected but those having cancer of spontaneous origin. It is also announced that henceforth Ehrlich and von Wassermann will cooperate in their work on the cancer problem, although continuing their researches in their respective laboratories.

The Army Canteen.—It is announced that more than twenty physicians of Boston have added their names to the petition asking for the restoration of the canteen in the Army. This petition now has the signature of 279 men prominent in medicine and surgery throughout the country. A similar petition has been signed by 2,386 army women, wives, mothers, and daughters of officers and enlisted men. No stronger argument in favor of the canteen could be made than the petition of these women who have the best opportunity to know whether the condition of the enlisted men has been improved or injured by the prohibition of the canteen.

Report of Hebrew Charities.—The annual report of the United Hebrew Charities of New York called attention to the fact that of $40,500 disbursed for relief purposes 20 per cent. was due to the ravages of tuberculosis. This is an increase of $8,000 over the amount given for this purpose during the year 1910. From this the committee concluded that this city is not making much progress in stamping

out tuberculosis. An experiment carried on for two years with thirty-five families, whereby they were moved into sanitary apartments, showed that some sufferers could be cured in their own homes. The society's deficit has grown during the year from $15,000 to $33,000.

American Society of Sanitary and Moral Prophylaxis.—A regular meeting of this society will be held at the New York Academy of Medicine, Thursday evening, February 8. The following papers will be presented: "A Report of the Progress of the Movement," by Prince A. Morrow, M. D.; "A City-wide Investigation of Vice and Its Diseases in Baltimore," by Dr. Donald R. Hooker; "The Reduction in Vice in Many of the Western Cities through Administrative Reforms," by Wirt W. Hallam of the Chicago Vice Commission.

Laboratory for Mount Sinai Hospital.—At the annual meeting of the Directors of Mount Sinai Hospital on January 29, it was announced that the pathological laboratory, for the construction of which Adolph Lewisohn gave $130,000 some time ago, will be begun in the near future. It was also announced that the hospital had closed negotiations for two more lots opposite the present Administrative Building where it has purchased in all fifteen lots.

The Pueblo County Medical Society, at its meeting in Pueblo, Col., on January 18, elected the following officers: *President*, Dr. M. J. Keeney; *Vice-Presidents*, Drs. Bon O. Adams and Harry B. Killough; *Librarian*, Dr. R. W. Corwin; *Member of Board of Censors*, Dr. W. L. Dorlan.

The Medical Society of Franklin County (Pa.) held its annual meeting in Chambersburg on January 16. The following officers were elected: *President*, Dr. Frank N. Emmert of Chambersburg; *Vice-Presidents*, Drs. Guy P. Asper and A. B. Sollenberger of Waynesboro; *Secretary and Reporter*, Dr. John J. Coffman of Scotland, reelected; *Assistant Secretary*, J. Elmond Kempter of Chambersburg; *Treasurer*, Dr. Johnston McLanahan of Chambersburg, reelected; *Censor*, 1912 to 1914, Dr. J. Burns Amberson of Waynesboro.

The Northern Medical Society is the name of a new society in New York. The following officers have been elected: *President*, Dr. William J. Robinson; *First Vice-President*, Dr. A. L. Goldwater; *Second Vice-President*, Dr. Alex. Goldman; *Corresponding Secretary*, Dr. H. Schumer; *Treasurer*, Dr. M. Aronson. Meetings will be held monthly.

Obituary Notes.—Dr. William Asa Wheeler of Portland, Me., a graduate of the Medical School of Maine, 1859, and also from the College of Physicians and Surgeons, Columbia University in 1877, died at his home January 20, at the age of 58. In 1892 he was commissioned a surgeon in the United States Marine-Hospital Service and in 1893 was placed in charge of the medical department of the United States Immigration Service on Ellis Island, which position he held until 1896. He was at one time professor of descriptive and surgical anatomy in the medical college at Evansville, Ind., and when stationed at Buffalo held the chair in surgery in the Niagara Medical College. In 1893 he was sent by the United States Government to study the emigration methods in various European ports.

Dr. Harris A. Slocum of Philadelphia died of apoplexy on January 15 at the age of 54 years. He was graduated from the Medical Department of the University of Pennsylvania in 1879 and was for many years professor of gynecology in the Philadelphia Polyclinic.

Dr. James McKee, superintendent of the Central State Hospital of North Carolina, died suddenly on January 10 at the age of 67. He practised his profession for many years in Raleigh, was trustee of the Rex Hospital, and for six years secretary of the State Medical Society.

Dr. John Augustus Lamson died at his home in Boston on January 16 at the age of 80 years. He was graduated from Dartmouth College in 1853 and from the medical department of Harvard in 1856. During the Civil War he was surgeon of the Forty-second Regiment of Massachusetts Volunteers, and later chief physician in the Discharged Soldiers' Home. He served two years as a member of the Legislature, and in 1880 was appointed chief medical examiner of the Equitable Life Assurance Company for Boston and eastern Massachusetts.

Dr. Charles H. Terry, a graduate of the Albany Medical College in 1864, died at his home in Brooklyn on January 18 at the age of 67 years. He was a Civil War veteran and for many years a surgeon of the New York Police Department. He was a member of the New York State Medical Society, the Kings County Society, and the Brooklyn Pathological Society.

Dr. Edwin W. Bennett of San Francisco died suddenly on January 9 at the age of 65.

Dr. Ernest C. McGouldrick, a graduate of Yale University in 1900 and of Johns Hopkins Medical School in 1904, died in Machias, Me., on January 12 at the age of 37 years. He was a member of the medical staff of the Eastern Maine General Hospital.

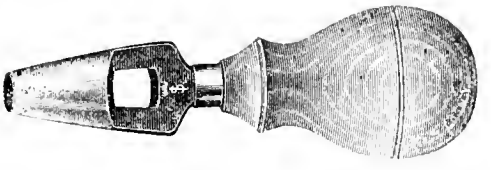
Dr. Charles Hilliard Prague died at his home in Chicago on January 11. He was born near London, Eng., graduated from McGill University, Montreal, Que., in 1867, and served as a surgeon during the Civil War. He was one of the attending physicians to Governor Altgeld during his last illness.

Correspondence.

THE REPAIR OF RUBBER GLOVES

To the Editor of the Medical Record:

Sir: In a large hospital the number of rubber gloves used is so great that even a small detail which tends to economy of time in their repair is of considerable importance. The feature here recorded not only facilitates the repair of a glove, but also renders a repaired glove safer for use in an operation.



In mending rubber gloves, the needle punctures and other small holes are usually repaired by the application with rubber cement of small round patches cut from gloves that are useless. To cut these patches with scissors, as is usually done, not only requires considerable time, but leaves the patches with somewhat ragged edges, which easily become loosened, and frequently result in detachment of the patch. We have adopted at the New

York Hospital punches for cutting these patches. They have been in constant use for two years and have proved very satisfactory, as perfectly round patches may be quickly cut. It is essential to have the punches sharp; as a rule, they can be used for about ten days. We have two sets of punches on hand, so that while one set is in use the other may be sharpened. The cutting is done on a soft rubber block ½ inch thick, but wood is almost as satisfactory. It has been found unnecessary and a disadvantage to use any device such as an embroidery ring to stretch the rubber during cutting. The punches we use are known to the trade as "arch" and "belt" punches. A great variety of sizes are on the market, but the most useful are those which cut patches ¼, ½, ¾, and 1 inch in diameter. By attaching a wooden handle the manipulation of a punch is rendered very easy.

EUGENE H. POOL, M.D.

NEW YORK.

THE GENTLENESS OF DEATH.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—The editorial on Euthanasia in a recent issue caused me to look over some old medical literature on the subject of death. The best chapter on the subject in my opinion is to be found in Dunglison's "Physiology," published in the year 1838.

Your two last sentences especially attracted my attention: "Immediately death impends, the end is almost invariably benignant and peaceful. What, indeed, is there in all the cosmos so composed and content as the face of the dead?" Dunglison particularly dwelt upon this phase of the subject in the following words: "Perhaps one of the most beautiful and accurate pictures drawn by Byron is his description of the serenity of countenance observable in most fresh corpses; an expression which, by association, is deeply affecting, but not without its consolation to the friends of the departed:

'He who hath bent him o'er the dead,
Ere the first day of death is fled;
* * * * * * * *
Before decay's effacing fingers
Have swept the lines where beauty lingers;
And marked the mild angelic air,
The rapture of repose that's there;
The fix'd yet tender traits that streak
The languor of the placid cheek;
And but for that sad, shrouded eye,
That fires not, wins not, weeps not now;
And but for that chill, changeless brow,
Where cold obstruction's apathy
Appals the gazing mourner's heart,
As if to him it could impart
The doom he dreads, yet dwells upon:
Yes, but for these and these alone,
Some moments, ay, one treach'rous hour,
He still might doubt the tyrant's power.
So fair, so calm, so softly seal'd,
The first, last look by death reveal'd.'
—Byron's Giaour."

ROBERT E. COUGHLIN, M.D.

BROOKLYN, N. Y.

SCHOOL EXAMINER IN THE HOME—A BAD PRECEDENT.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—The average physician's lot in Philadelphia, unless he is a school examiner, must be like that of the policeman, unhappy, and, as in *Pinafore*, the babies will be mixed up by a system. I note in a recent issue of the MEDICAL RECORD that a nurse, if necessary, will follow the child into its home to see that the school physician's orders are complied with! We do not know how much of this enforced medical attention the Philadelphia people will stand, but it will inevitably at times give rise to disputes, if not to hair pulling, between the matron and the young lady in uniform, and the trained nurse will be put to flight.

On the other hand, she may be welcomed in place of the family physician, and asked to look at Tommy, who is not of school age. Tommy has a fever and the nurse does not resist the temptation to prescribe, and the mother is saved the expense of calling in a physician. A prescription is not necessarily written.

But for sickness among children the average doctor's income would be even much lighter than it is. The Philadelphia plan makes a "puller" of the nurse for the school doctor, or examiner, and will thereby indirectly cause friction between the family physician and the school doctor. This gratuitous and enforced hospital extension into homes is against the spirit of what was once known as the constitution. Formerly a house could not be invaded without a warrant, based on cause, with particulars.

THOMAS R. EVANS, M.D.

ACME, W. VA.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

HUNTERIAN ORATION—TUBERCULOUS DISEASES OF THE JOINTS IN CHILDREN—INSURANCE ACT.

LONDON, January 12, 1912.

THE annual oration at the Hunterian Society was delivered on Wednesday evening by Mr. Ch. A. Ballance, who devoted it to "Resources of Surgery in Certain Emergencies." No one is, perhaps, more capable of dealing with the progress that has been made in late years in grave emergencies and the formidable operations that have been attempted to meet them, and he spoke with confidence of the advances we may anticipate in the future, the examples he quoted in the various experiments being most encouraging. The foundation of cardiac surgery, he considered, was laid by the experimental work of Block in 1882. The most astounding instance of operation on the great blood-vessels was the removal of a clot from the pulmonary artery by Trendelenburg. He made an opening into the patient's thorax at the level of the third rib, laying bare the great cardiac vessels and, with a curved sound, lifted them sufficiently to enable him to carry out his purpose. He then made an incision in the pulmonary artery and removed four clots, one of which measured 14 inches. Artificial respiration had to be employed while the edges of the wound were held together by forceps. Suturing followed when practicable. The patient survived for thirty-seven hours, death resulting from persistent hemorrhage from the internal mammary artery. The orator expressed a hope that the time was not distant when surgery would prove as valuable within the thorax as it was in the abdomen.

Tuberculous joint diseases in children was the subject of the set discussion last month at the section for children's diseases. The surgical measures that have been or may be employed were mainly considered. Mr. A. H. Tubby opened with a paper pointing out that in children there was not the limitation to extension of the diseased process which existed in adults. The fibrous barrier which limited the process favored the formation

of abscesses and these are more responsive to aspiration and injections of iodoform or camphorthymol. Conservative treatment was to be preferred on the whole to operation. Excision of the hip was not a successful operation, and of the knee little better. The main function to be preserved in those was to carry weight. In the upper extremity complex movements were so important that operation at an earlier date might be considered.

Sir A. Bowlby followed, and stated the results to be obtained without operation. In children growth of new bone was remarkably rapid and suppuration was rare. Even the soft parts in the child repair in a way unseen in the adult. But much depends on the general health and the nutrition, which claim close attention. Rest for a time to the joint, fresh air, and all hygienic conditions for the system. The danger of abscess was septic infection. When large septic sinuses had been formed he saved many limbs by care of the child's general health, and so he amputated less and less often even for desperate cases. More hospital accommodation in the country was greatly needed.

Dr. Butler Harris treated of tuberculin and did not attach importance to the strain. The opsonic index did not differ as to this. He collected from thirteen hospital records which gave divergent results. His conclusion was that, on the whole, small doses of tuberculin accelerated the recovery of cases by surgical rest in hygienic conditions.

Mr. Robert Jones said tubercule in the child thoroughly attended to in the early stage ran a benign course. Absolute rest to the joint, good nutrition and country air, plenty of it, were required. He would keep the children out of doors continually. They were often taken out of splints much too soon. If an abscess came to the surface a small aseptic puncture was enough.

Sir Watson Cheyne so seldom operated now that he sometimes thought these tuberculous joints in children might take a milder course than formerly. But he admitted one could not put out of mind altogether that sometimes operation might be necessary. For abscesses he relied on asepsis and antisepsis, opened freely, and scraped them out. He used tuberculin, thinking it did no harm, but he could not say he had seen it do good. If all cases were treated in country hospitals he thought 95 per cent. of recoveries might be expected.

Mr. Jackson Clarke thought many cases of recovery in infancy recurred in later life. He had not seen a case which had resisted other treatment gain any benefit from turberculin.

Mr. Sutcliffe spoke of the time required for healing—four or five years—for a hip or knee. These did best if kept in bed for many months. He had used tuberculin, but had not seen any definite benefit from it.

Mr. E. M. Corner's experience with tuberculin agreed with that of previous speakers. An abscess case would sooner or later, he believed, come to operation. He opened, washed it out, and used temporary drainage. The cases which recovered without operation he suspected might be nontuberculous. Many were, perhaps, infected by some other organism. Further, some successful cases under tuberculin might not be due to that treatment but to some other factor.

Mr. Lockhart Mummery was for conservatism. If he had to operate he did as little as possible, merely opening an abscess by a small incision, removing any caseous matter, and suturing the wound at once. If septic infection occurred he scraped the sinuses, plugged with gauze soaked in formalin (5 per cent.). This often gave good results.

That the Insurance Act continues to be the chief concern of the profession is shown in the fact that Mr. Ballance gave it consideration in his Hunterian oration on Wednesday. He said medical men had of late been driven back on the primitive instinct of self-defence, but that was neither the last nor the first motive for union. The British Government had passed a law through Parliament professing to provide medical attention for fifteen million people, but we all knew that the act as it stands could not do so, and to place the service under medical control was the only way to make it successful. The government sanctioned the abominable slavery of medical men under laymen, and would fasten the hateful yoke of contract practice on thousands, reducing them and their families to penury. Medical attendance was entitled to fair remuneration as much as any form of State service, but there was nothing in the Act on this point. It would be interesting to note what the legal profession would say to a proposal to compel them to give their services for a capitation fee of 4 shillings per annum. The medical aspect of the act of the problem was purely medical, and any attempt to control or inspect treatment by laymen was a gigantic fraud on the people and an intolerable oppression of those engaged in the most self-sacrificing of all callings.

The meeting of West End practitioners, which I informed you was to be held to form a society to insist on reform of the Council of the B. M. A., took place on Tuesday afternoon. About 250 were present and Dr. Fred. J. Smith took the chair. A society was formally constituted under the name of the "Reform Committee of the B. M. A.," perhaps an unfortunate term, as it appears to exclude nonmembers of that association. Above 100 members of this "committee" were enrolled, and an executive committee was appointed and is already at work. Yesterday it issued a manifesto to the "medical profession in general, and to the British Medical Association in particular," inviting those in sympathy to establish branches of this in the several divisions of the B. M. A., for this committee is determined to work within the Association and desires all its supporters who are not members to become so. In short, it appears that the name adopted, if clumsy, fairly expresses the intention, which is to "end or mend" the council of the Association, as one put it, or to "get rid of it root and branch," as another urged, at the meeting. The executive will confer as soon as possible with any or all the other medical organizations dealing with the situation created by the Act with a view to union. From some aspects it looks as if this committee might not as well amalgamate with the Manchester Union, but in other respects it is too bound up with the B. M. A. for that. The manifesto says the committee exists solely to enforce the avowed policy of that body rather than the more recent weakened version of its Council, and will only contrive to exist until the profession's interests under the Act are adequately guarded "without evasion, equivocation, or mental reservation." The committee holds that the Council was influenced by political considerations to endanger professional interests, is directly opposed to the idea of leaving things to be dealt with

by regulations as the Council now weakly advocates. To attain their end the committee proposes to promote an amending act through Parliament to embody the six points of the original B. M. A. plan. It will certainly require the union of all the societies now to work to pass such an act.

The B. M. A. itself, you know, is canvassing for a pledge to work only as local practitioners may agree as medical committees, not under the thrall of the clubs and with the six points virtually conceded, though not included in the Act. It is reported that they have pledges enough to render the Act unworkable unless so much is agreed to. The *Practitioner's* pledge goes further, but has not so many signatures—estimates 22,000, against 17,000.

Yesterday a committee of the Royal College of Surgeons was appointed to report at the next council meeting as to the position of Fellows and members under the Act, in the meantime consulting with other committees of other societies formed with similar objects.

I have only mentioned some of the many important utterances. I may add that the newspapers are daily giving columns to the campaign. It is to be hoped all this publicity will eventually add to the prestige of the profession, but the papers almost invariably reflect their political bias. A comparison of numerous assertions and revelations forces the conclusion, now generally adopted, that the Council could at one time have defeated the bill, but its negotiators gave way rather than bring about the fall of the government.

It is said that one can boast of having the oldest doctor in the world as a British subject and a magistrate to boot. He lives in Essex, on the Bench of which county he has sat for 60 years. His name is Edgar Jones, and he has just entered on his one hundred and third year. Sometimes I have asked myself whether some of our aged friends may have made a mistake in the date of their birth, as I have found they relied on their recollection of their parents' memory. However, Dr. Jones belongs to a long-lived family; his father died at 92, his eldest brother and sister both passed their 90th year, and a brother still living is nearing his one hundredth.

Progress of Medical Science

Boston Medical and Surgical Journal

January 18, 1912.

The Gas Bacillus as an Agent of Intestinal Fermentation and Diarrhea. H. F. Hewes and A. I. Kendal.
The Treatment of Tuberculous Adenitis with Report of Fifty-six Cases from the Tuberculosis Department of the Massachusetts General Hospital and from Private Practice. J. B. Hawes, 2d.
Nitrous Oxide-Oxygen Anesthesia, with a Description of a New Apparatus. W. M. Boothby.
Relation of Thigh and Leg Muscles to Malpostures of the Feet. C. L. Lowman.
Hemorrhage from the Throat. A. C. Getchell.
Case I: Status Lymphaticus. Case II: Syphilitic Infection Involving the Floor of the Fourth Ventricle. F. S. Crossfield.
Two Cases of New Growth Involving the Eustachian Tube. P. C. Proctor.
An Unusual Tumor of the Fauces. E. E. Foster.

The Gas Bacillus in Intestinal Fermentation and Diarrhea.—H. F. Hewes and A. I. Kendal state that in certain cases of colitis the gas bacillus apparently finds a very favorable field for activity, causing marked fermentation of carbohydrate food with much augmentation of the diarrhea. How far a control of the activity of the gas bacillus, by the proper use of diet, may influence the actual cure of the pathological condition present in these cases can be determined only by further study. If, as is quite probable, this activity of the gas bacillus is simply an associated condition, in the course of the colitis, the special treatment of this one factor may have no permanent influence on the condition of colitis. But it will certainly do much to lessen the diarrhea and thus benefit the patient. It would seem probable, since the gas bacillus can play a secondary part in the maintenance of diarrhea in colitis, that it may be a not uncommon cause of diarrhea in many cases not associated with such severe pathological conditions of the intestinal mucosa as a colitis or dysentery, for example, in the numerous transitory conditions of diarrhea lasting from a few days to a few weeks, in which the discovery of the organism and the consequent application of the proper treatment may result in a prompt and complete relief of the condition.

Treatment of Tuberculous Adenitis.—J. B. Hawes, 2d, states that to get good results in the treatment of tuberculous adenitis it is more important to treat the patient than to devote one's attention solely to the tuberculous process in the glands. The physician should not depend upon surgery alone, hygiene alone, or tuberculin alone, but should use all or each of these measures as is required by the individual patient.

Nitrous Oxide-Oxygen Anesthesia.—W. M. Boothby notes that the first attempt to give a public demonstration that the body can be safely rendered insensible to pain for surgical procedures was made in Boston by Horace Wells, a dentist of Hartford, Conn., with nitrous oxide in December, 1844, or January, 1845, nearly two years before the demonstration of ether by Morton at the Massachusetts General Hospital, on October 16, 1846. Nitrous oxide-oxygen anesthesia, with the addition of such minimal quantities of ether vapor as may be needed, is, Boothby maintains, the anesthetic of choice. The general use of this anesthetic is necessarily dependent on the perfection of an apparatus which will overcome the many and peculiar mechanical and operative difficulties attending its administration. Such an apparatus for the giving of those combined anesthetics is described by the author.

Malposture of the Feet.—C. L. Lowman concludes from his investigations that positions of the knee and thigh in relation to the weight line and as affected by the action of the external rotators of the thigh have a marked effect on that malposture of the foot known as "pronation" or valgus.

Hemorrhage from the Throat.—A. C. Getchell states that the spitting of blood to the amount of a teaspoonful or more is to be attributed to pulmonary tuberculosis, and a general practitioner who assumes that the blood comes from the throat, which he cannot see, because he fails to find evidence of disease elsewhere, takes a position which cannot be justified by correct practice; and the laryngologist who allows himself to give an opinion that the blood comes from the throat, without direct visual evidence of the fact, and also an exhaustive study of the general condition of the patient, commits a similar error.

Status Lymphaticus: Syphilis Involving Floor of Fourth Ventricle.—F. S. Crossfield reports cases of these conditions.

New Growth Involving Eustachian Tube.—P. C. Procter reports a case of carcinoma involving the pharyngeal end of the Eustachian tube; and also a case of a growth in the same locality, which growth consisted of inflammatory tissue which could not be identified, being either adenoid tissue or lymphosarcoma.

Unusual Tumor of the Fauces.—E. E. Foster reports the case of a woman aged sixty years from whom was removed a tumor slowly growing in the region of the right tonsil. The appearance was similar to that of a peritonsillar abscess without the signs of inflammation. The tumor was identified by Councilman as a colloid carcinoma, very suggestive of the type of tumor seen sometimes in the parotid gland.

New York Medical Journal.

January 20, 1912.

Dr. Edward G. Janeway. S. A. Knopf.
The Relation of Medicine to the Law. J. H. Gleason.
Two Unusual Cases of Uterine Myomata. A. Stein.
A New Operation for Fixation of the Kidney. F. McK. Bell.
Diagnosis and Treatment of Congenital Pyloric Obstruction. H. Lowenburg.
Hysterical Rabies. T. A. Williams.
The Indications for Prostatectomy and the Advantages of the Supra pubic Method. J. A. Gardner.
The Movable Cecum. C. A. Roeder.
A Plea for the Establishment of a Department for the Conservation of Health in Hospitals and Dispensaries. M. J. Schoenberg.
Kraurosis Vulvæ. C. F. Kivlin.
The Urine in Its Pathological Relations to Gout. S. R. Klein.

Dr. Edward G. Janeway.—S. A. Knopf describes the manifold activities of the late Dr. E. G. Janeway in furthering the antituberculosis cause.

Medicine and the Law.—J. H. Gleason considers the physician as a witness and as an expert; as to his duty in reference to death, as to his responsibility for the betrayal of the professional secret, for neglect, imprudence, ignorance, or want of skill in the practice of his profession; also the physician's relation to the criminal law respecting operations or mistakes resulting fatally, and as to the concealment or nondisclosure of crime discovered in the course of his practice.

Uterine Fibroids.—A. Stein reports two cases of this condition in which the sudden onset of the pains was suggestive of peritonitic manifestations and in which immediate operation was imperative. In both cases there were multiple fibromyomata, all of which presented the same clinical picture. In the first case the intramural fibromyoma was of such strikingly soft consistence that at first the possibility of pregnancy was suspected.

Fixation of the Kidney.—F. McK. Bell describes a new operation that he has devised for this purpose.

Congenital Pyloric Obstruction.—H. Lowenburg discusses the various phases of this subject.

Hysterical Rabies.—T. A. Williams reports two cases of simulated hydrophobia in which the hysterical mechanism was distinctly evidenced.

Prostatectomy.—J. A. Gardner believes the suprapubic operation is the ideally conservative one, because it is anatomically correct; the offending part is easier of access by this route; the obstruction is completely removed; control of the urine is regained with no dribbling, and the ejaculatory ducts are presumably not injured.

The Movable Cecum.—C. A. Roeder states that a movable cecum may be productive of symptoms resembling chronic appendicitis. A high cecum may be a movable cecum producing symptoms. On finding only a kinked appendix and a pronounced anterior ileocecal fold, one should look for a prolapsing cecum and a Lane kink. The type of constipation produced by a prolapsed cecum may be due to traction on and narrowing of the ileocecal valve. Some cases of pylorospasm may be due to narrowing of the ileocecal valve by traction of the cecum. Wilm's cecopexy, Murphy's sigmoidopexy, Lane's ablation and anastomoses, all efforts to relieve stasis, show a variety of opinions on surgery to remedy functional conditions of the colon and indicate the necessity for further study.

Conservation Department in Hospital and Dispensary.—M. J. Schoenberg states that the teaching of the principles of conservation of health is the real and most important task of the medical profession of to-day. This teaching can be effectively carried out in hospitals and dispensaries.

Kraurosis Vulvæ.—C. F. Kivlin reports a case of this condition in which he performed the following operation: Commencing from above, outside the diseased tissue, he dissected away the whole diseased tissue, excluding the hymen, the incision starting on the right side and from above. He came down upon the posterior commissure and upon the left side after the diseased tissue had been removed. He dissected the posterior vaginal and lateral wall for about one inch, and cut partly through the external perineal muscle so as to have a large vagina. He then sewed the vaginal mucous membrane to the healthy skin. The patient made a good recovery.

The Urine in Gout.—S. R. Klein discusses this subject from the viewpoint of diagnosis.

Journal of the American Medical Association.

January 20, 1912.

Technique and Results of Deep Injections of Alcohol for Trifacial Neuralgia. H. T. Patrick.
A Practical Method for the Control of Typhoid as Applied to the Watershed of Baltimore, M. L. Place, W. R. Stokes and C. W. G. Rohrer.
The Comparative Merits of Several Anesthetics. M. Metzenbaum.
Operating Cystoscope for Removing Pedunculated Tumors. H. Meyer.
Exophthalmic Goiter and Symmetrical Lipomatosis. L. Neuwelt.
Three Outbreaks of Typhoid Traced to Milk Infection. F. O. Jordan and E. E. Irons.
Strangulated Femoral Hernia. J. Douglas.
On What Do the Hygienic and Therapeutic Virtues of the Open Air Depend? H. Sewall.
Anaphylaxis. St. G. T. Grinnan.
Significance and Treatment of Vomiting in Infants and Children. H. Lowenburg.
The Neurotic Basis of Juvenile Delinquency, with a Study of Some Special Cases, Mostly from the San Francisco Juvenile Court. P. K. Brown.
An Unusual Cholera Carrier. R. H. Creel.
Experience with Vaccine in the Treatment of Chancroids. R. H. Herbst and L. C. Gatewood.

Deep Injections of Alcohol in Trifacial Neuralgia.—H. T. Patrick describes the technique of deep injections of alcohol into the fifth nerve and its different branches for trifacial neuralgia. The ophthalmic nerve is not suitable for the injections, as there are other important vessels and nerves too near to permit them to be used with perfect safety. Superficial injections of the supraorbital nerve have been usually successful. It is usually easily located by pressure over the supraorbital notch, but if this cannot be found the operator must rely on his anatomical knowledge and the distribution of analgesia after the injection. The supratrochlear branch of the frontal nerve may have to be separately injected. It may be reached at a point about midway between the inner canthus of the eye and the eyebrow on a line running upward and inward at an angle of about 45 degrees. The solution used is muriate of cocaine 2 grains, alcohol 2½ drams, and distilled water sufficient to make ½ ounce. The author prefers not to use an anesthetic, as the sensations of the patient are of great assistance in locating the injections and showing its results in the production of anesthesia or analgesia in the distribution of the nerve. He likes to wait two or three days before repeating the injection, but has given a second in twenty-four hours, and even a third on the second day after.

The Control of Typhoid Fever.—M. L. Price, W. R. Stokes, and C. W. G. Rohrer have devised special outfits which, with directions for their use, are left by the inspectors with the attending physician, nurses, or attendants. The inspector is supposed to see that these are instructed in the use of the materials and he may add as many oral instructions to those given in the circulars as he thinks best. After the case is over he collects the utensils which after cleansing and disinfection are used again in other cases.

Anesthetics.—M. Metzenbaum states that chloroform must be considered a dangerous anesthetic even in the hands of an expert. Ether is administered best by the drop method. By this method ether can be used more universally than any other known anesthetic. From 1/200 to 1/100 grain scopolamine combined with ⅛ to ¼ grain morphine should be given by mouth or hypodermically one-half hour before general anesthesia, excepting in very young or elderly patients or in those with fever.

Operating Cystoscope.—H. Meyer describes a new operating cystoscope which embodies the priniciples of clamp and cautery in one, acting simultaneously, and ac-

complishing as much at one sitting as is required by two or more sittings with the Nitze instrument. It eliminates the snare problem and is much easier to learn and can remove small foreign bodies or crush small vesical calculi.

Exophthalmic Goiter and Symmetrical Lipomatosis.—L. Neuwelt reports the case of a man aged forty-two years in whom both of these conditions were present.

Typhoid Fever Traced to Milk Infection.—E. O. Jordan and E. E. Irons report three outbreaks of typhoid fever resulting from milk infection.

Strangulated Femoral Hernia.—J. Douglas states that, because of the danger of strangulation and inability to cure by other than operative measures, operation should be advised when a diagnosis of femoral hernia is made. Sufficiently early diagnosis and operation would prevent the necessity of intestinal resection, and thus lessen the mortality. Intractable vomiting with pain, either abdominal or localized in the groin, especially in women, should indicate careful examination of the femoral rings, even before it is obvious that intestinal obstruction exists. Operation should be performed as soon as the diagnosis of strangulated femoral hernia is made, if gentle attempts at reduction fail. If the strangulated intestine is damaged beyond viability, resection and anastomosis should be performed. When there is a sufficiently long mesentery not to hamper the operation, this may be done through the primary incision made over the femoral ring; otherwise, a secondary abdominal incision should be made. Except in the most desperate cases, when the patient's condition is so extremely bad that it is impossible to perform an anastomosis, an enterostomy, even as a temporary resort, should not be done.

Hygienic and Therapeutic Value of the Open Air.—H. Sewall notes that no proof has been furnished that the increase of carbon dioxide, the decrease of oxygen, or the addition of organic animal matter in the air of ill-ventilated apartments is, under any ordinary circumstances, injurious to health. It has been proved that such chemical changes are not the cause of the sensations and symptoms due to poor ventilation. The subjective and objective effects of close air are the result of the combined elevations of temperature and the humidity incident to the association of living bodies. It is argued that the temperature nerves of the skin are specific sense organs for the appreciation of the variations of temperature and humidity, through which nerves a wide range of metabolic actions in the body is regulated. It is through the genius of the moving air of the open that the temperature nerves find their most salutary stimulus and induce forms of metabolism characteristic of highest mechanical efficiency in the body. The physiological difference between "open" and "closed" air depends partly or wholly on differences in the stimulation of the temperature nerves of the skin under the two conditions. The environment of the open air is conducive to an esthetic state that should not be ignored as an aid to healthy living.

Anaphylaxis.—St. G. T. Grinnan emphasizes the importance of the study of this phenomenon, especially with reference to the use of vaccines and antiserums.

Vomiting in Infants and Children.—H. Lowenburg discusses the causes and treatment of the different forms of vomiting in infants and young children.

Neurotic Basis of Juvenile Delinquency.—By P. K. Brown. (See MEDICAL RECORD, Vol. 80, page 107.)

Cholera Carrier.—R. H. Creel presents the history of a sailor on a transatlantic liner from Italian ports who was found to be carrying the cholera vibrio. He was under examination at the New York quarantine station from August 17 to September 27 and was treated for the condition. The conclusion held was that the vibrios were contained in residual masses of fecal matter, which were evacuated by purgation, thus explaining the irregularity of the findings in the stools.

Vaccine Treatment of Chancroids.—R. H. Herbst and L. C. Gatewood state that in a majority of the cases of chancroids examined they have found an organism belonging to the pseudodiphtheria group, in some instances almost in pure culture. A bacillus, nonpathogenic, belonging to this group, and morphologically identical with what the authors have found is commonly present in the urinary tract and on the genitalia. Clinically, one rarely sees chancroids in clean individuals, while in dispensary practice they are very common. In other words filth seems to play an important rôle as an etiological factor. The authors suggest that vaccine treatment may be of value.

The Lancet.

January 13, 1912.

Relationship of Tuberculosis to Accident and Injury.—By W. Cecil Bosanquet. (See page 237.)

Sensory Disturbances from Cerebral Lesions.—H. Head and G. Holmes describe the sensory disturbances associated with certain lesions of the optic thalamus, based on a study of 24 cases in which there were sufficient symptoms and signs to justify the diagnosis of a thalamic lesion. The loss of sensation differs in no way from that produced by interference with sensory impulses, either as they enter the optic thalamus or as they pass to the cortex by way of the internal capsule. Put to these familiar defects another factor may be added when the lesion destroys certain parts of the optic thalamus. This fresh factor, which alone can be attributed to the disturbed activity of this organ, is a tendency to react excessively to unpleasant stimuli. The prick of a pin, painful pressure, excessive heat or cold, all produce more distress than on the normal half of the body, and this is the essential feature in all the cases. There is also a greater response to pleasurable sensations on the affected side. The two sides of the body react differently with reference to emotional states. Some loss of sensation is always manifest on the affected half of the body. This is most frequently the case with respect to the appreciation of posture and the recognition of passive movement. Tactile sensibility is diminished in many cases, and localization of the spot touched was defective in half the cases. Sensibility to heat and cold may show all degrees of change from total loss to a slight increase of the neutral zone. The power of estimating the relation between two weights and the appreciation of relative size are frequently disturbed in the abnormal half of the body.

Rupture of the Uterus.—G. Blacker reports eight cases of this condition and concludes that as regards conservative treatment or laparotomy, while in cases of incomplete rupture gauze plugging or vaginal drainage may prove a useful method, in all cases of complete rupture the treatment most likely to give the best results in the future will prove to be abdominal section, followed by the removal of the damaged uterus and the provision of efficient drainage for the peritoneal cavity.

Incidence of Mediterranean Fever in Malta.—J. W. H. Eyre states that following the prohibition of the use of milk from the Maltese goat, and the reduction of the goat population of Malta, there has been a striking diminution in the case incidence of Mediterranean fever among the naval and military forces stationed at Malta.

Electric Metallic Colloids.—B. G. Duhamel states that these are valuable as a means of stimulating phago-

cytosis and of destroying microorganisms and their toxins, in such diseases as septicemia, pyemia, pneumonia, pleurisy, empyema, and meningitis. Injections of 5 to 20 c.c. are made intramuscularly or intravenously. In local lesions injections may be made into the affected tissues.

Treatment of Gonorrheal Conjunctivitis.—J. S. Hosford and G. B. James state that the constant use of the irrigating douche is the primary curative factor. It may be applied either by a mechanical apparatus fastened to the head or by the hands of a relay of properly instructed nurses. These should sit behind the patient's head and apply the unintermitting stream as the surgeon may direct from time to time. No cessation in the flow is to be permitted for a moment either day or night. The solution which the authors found most satisfactory for this purpose is one of permanganate of potash, varying in the early stages from 1 in 15,000 to 1 in 20,000, and in the later stages a solution of boric acid, eight grains to the ounce, may replace this and be all that is necessary. The temperature should be from 85° te 90° F. in the douche reservoir, where a thermometer is constantly prsent. Eight days' continuous irrigation has been found sufficient to bring the case completely under control, provided that the cornea has not been affected.

Psychotherapy.—W. P. S. Branson states that there is only one measure of the suitability of an illness for treatment with the aid of psychotherapy, and that is the measure of its emotional and ideogenic ingredients, provided always that rational faculty is not seriously in abeyance. There is practically no place for it in urgent and acute physical illnesses, nor in the graver developments of chronic ones; for in proportion as physical disturbances are profound emotional ones tend to sink into insignificance. Nor can it be employed for developed psychoses, since an appeal to the reason is the essence of the practice. On the other hand, it is applicable, in a greater or less degree, to a large assortment of chronic maladies of little urgency, however recalcitrant they be to treatment; to neurasthenic states, especially chronic ones; to the milder types of hysteria, and to a great variety of psychical symptoms masquerading as physical diseases.

British Medical Journal.

January 13, 1912.

Auricular Fibrillation.—T. Lewis states that the condition of auricular fibrillation clearly explains the following phenomena: The original rapidity of the pulse and its irregularity, the character of the irregularity, the loss of the auricular wave in the neck, the loss of the P summit in the electrocardiogram, the loss of presystolic murmurs, the presence of rapid oscillations in the venous curve, the presence of oscillations in the electrocardiogram, the varying rate of the ventricle in a single patient or from patient to patient, and the action of digitalis. Each of these is clear once the true explanation of the mechanism is grasped.

Effects of Soluble Digitoxin.—B. Moore states that soluble digitoxin, on account of its solubility in water, can be used for intravenous injection. This solubility prevents any pain or local inflammation, such as is occasioned by injection of alcoholic solutions, and the low toxicity as compared with that of the mixed glucosides in tincture of digitalis renders intravenous administration safe. At the same time a full therapeutic effect, which is very persistent, is obtained on the heart. In administering soluble digitoxin a full therapeutic effect should be aimed at, and thereafter the drug should not be pushed further, but just enough given to maintain the advantage by keeping pace with the elimination of the drug. The heart tracings show that a pure digitalis effect is obtained on perfusing digalen, the therapeutic effect being marked, and the tonus at the end being very considerable. Soluble digitoxin shows none of that hemolytic action which is possessed by those sapo-glucosides which act on the heart, as, for example, the digitoxin present in ordinary tincture of digitalis.

Cane Sugar in Cardiac Failure.—H. Dingle reports the case of a man aged 28 years in whom absolute rest, a suitable diet, and various drugs did not relieve a failing heart. Although the condition was considered hopeless, the administration of cane sugar was resorted to. Five ounces of this substance were given daily with beneficial results. The patient's abdomen previous to that treatment had been tapped on two occasions, when respectively twenty-two and sixteen pints of fluid had been withdrawn. Since the treatment began the patient has required cardiac drugs only for a few days and has not required further tapping.

Infection by Leptothrix Bacillus.—J. M. Clarke and G. Scott-Williamson report a case of continued fever of obscure origin, running a course of a little over three weeks, with marked symptoms of disturbance of the nervous and also of the urinary system. It appears to have been due to a leptothrix bacillus not previously described as a pathogenic organism except in a case of pyemia and meningitis recorded by J. Ritchie and S. McDonald, and in five other cases met with by the latter during an epidemic of cerebrospinal meningitis. These cases were all fatal.

Testing of Color Vision.—W. M. Beaumont points out the advantages of the Eldridge-Green lantern over Holmgren's yarn in the testing of color vision. The advantages of the lantern are that it is simpler to apply; the colors do not fade or get soiled by time or use; the lantern is a method of testing which resembles the actual signals in use by land and sea, and the obscurity produced by distance, fog, mist, or rain can be closely imitated. The two signal colors are red and green. The lantern can be arranged to show the red as seen on a foggy day; some color-blind men, while recognizing the red as red under ordinary circumstances, will call it green when it is modified by fog. By varying the size of the diaphragm aperture one can represent the bull's-eye signal lantern as seen at 600, 800, or 1,000 yards. A congenital case of total color-blindness is rare, and more so is the acquired form. A one-sided lesion in the color center is occasionally met with. It is well recognized that there are symptoms which point to intracranial pressure which precede papilledema and among these are changes in the recognition of color. The importance of these prepapilledematous symptoms lies in the fact that the tendency of present-day surgery is in the direction of early decompression operations.

Corneal and Absolute Astigmatism.—J. Rowan notes that out of 1,000 eyes examined by him the absolute astigmatism and the corneal astigmatism were the same in 475 cases—that is, 47.5 per cent.; 230 were hypermetropic, 353 showed compound hypermetropic astigmatism, 89 were myopic, 100 showed compound myopic astigmatism, and 138 mixed astigmatism.

The Administration of Oxygen.—L. Hill points out the inefficiency of the nozzle and funnel methods of administering oxygen, for the latter diffuses into the air and the patient inspires air enriched very slightly with oxygen. A tight-fitting mask has the disadvantage that

it cannot be borne by patients who are ill and fretful, as with pneumonia. The problem is to contrive a mask which will allow a patient with pneumonia to receive an efficient supply of oxygen and yet will not render him uncomfortable or fretful. The author has devised a celluloid facepiece to which a curtain of washable material is attached. The handle of the mask is also the inlet tube for the oxygen. The current of oxygen flows over the mouth and nose of the patient. The current is turned on until an agreeable cooling effect is obtained, and no sense of closeness is felt when the mask is applied to the operator's face. The operator, by applying the mask to his own face, will soon get to know the right degree of hissing noise in the tube. The patient inspires the atmosphere confined under the mask, and, as a current is used sufficient to blow away the CO_2, a very high percentage of oxygen is obtained in the alveolar air, for example, over 70 per cent.

Berliner klinische Wochenschrift.

January 8, 1912.

Oral Auscultation.—Takata describes succinctly the diagnostic resource which he has been developing since 1907, in Tokio, and which he has demonstrated at the University of Halle in 1911. The technique is simple, for the patient merely holds the end of an ordinary stethoscope in the mouth and breathes slowly and quietly. The opening of the mouth required is that made in saying "ah." The patient is asked to cough as in the course of an examination. It is important that the breath through the mouth, and, if necessary, the nares may be occluded with the fingers. Different râle-like sounds which may emanate from the tongue, palate, larynx, etc., require differentiation from intrathoracic râles. Among the advantages of the method are the following: The ordinary sounds heard through the chest wall may be heard through the mouth without touching or exposing the patient. The number of individual râles heard is much greater and the tone somewhat louder than with ordinary stethoscopy. Heart murmurs are audible, but not pleuritic friction sounds; hence a useful differential test is at hand. The method is used by the author in bronchitis, pneumonia, pulmonary edema, hemoptysis, infarctions, and especially in incipient tuberculosis. Central pneumonia may be detected when nothing positive results from ordinary auscultation. The method is especially useful when a large number of people have to be examined in a short time. The greatest drawback, aside from the need of excluding intraoral and laryngeal sounds, appears to be the sterilization of the mouthpiece between examinations. A large number should be available for a day's work, to be resterilized over night.

Sympathoma Embryonale.—Pick concludes his article on this subject. The tumor in question may be termed an immature or undifferentiated neuroma of non-medullated nerve tissues, and has nothing in common with glioma. It may also be termed a ganglioma. It is very largely an affection of very early childhood, and may be present at birth, but rarely it occurs in adults as well. Nearly every case thus far reported was clinically malignant. Clinically the sympathoma is most commonly a neoplasm in the suprarenal glands of one or both sides. Other lesions may be present in the liver, in the lymph-nodes, or within the cranium, and it may occur isolated in the latter. Its localization is due to the fact that in the embryo the structures from which the sympathetic nerve tissue develops (sympathogons) are very widely distributed. We need not be surprised, therefore, if such tumors are found in unsuspected regions, even if isolated, *i.e.* without localization in the seats of predilection. Pick himself saw a case in the uterus and pelvic connective tissue. The multiple deposits in the liver and the occurrence in lymph-nodes are not necessarily metastatic and may not be metastatic at all, as sympathogons occur in these structures. Histological study shows a sort of progressive scale of evolution. The simplest form, consisting only of unchanged sympathogons, is known as sympathogonoma. With some differentiation resembling the structure of a sympathetic ganglion we have a ganglioma embryonale sympathicum. With further organization a ganglion neuroma would result. Intermediate forms occur. In future so-called sarcomas and cancers in very young children may turn out to belong to the class of neoplasms under consideration.

Nerve Extraction in Gastric Crises.—Franke calls attention to the silence which greeted his announcement, in 1910, of a case of complete extraction of an intercostal nerve for gastric crises in a tabetic. The operation was intended to replace a Foerster's radiculectomy or rhizotomy. He has since operated on two other patients. In all three cases the results were excellent. Prof. Leriche of Lyons has written the author that he has performed two successful operations, so that in a forthcoming report at least five cases will be controlled.

Münchener medizinische Wochenschrift.

January 2 and 9, 1912.

Röntgen Castration.—Von. Herff contrasts this resource with operation castration (female). The latter is the more certain and complete, but it is possible that the artificial climacteric is less severe in Röntgen sterilization—milder and of shorter duration, while the danger to life is very much less, although not wholly absent. The trouble and expense are, or at least may be, far less in operative cases, and the Röntgen patient is also exposed to some collateral action of the rays. From another viewpoint oophorectomy is useful in a much wider range of cases than the competitive procedure. Finally the weight of evidence as to practicability seems thus far to lie with operative castration.

Stenotic Tendovaginitis at the Styloid Process of the Radius.—De Quervain states that this affection, which he described in 1895, occurs by preference in women and without apparent adequate cause, although in some cases it is evidently due to the influence of overwork on a too narrow compartment of the sheath which contains the extensor pollicis brevis and the abductor pollicis longus. The chief symptom is more or less violent pain reflected to both the elbow and thumb. The symptoms may take the form of acute relapses or a single chronic affection. Histologically is found only a thickening of the wall of the tendon sheath compartment involved. The treatment in recent cases consists of cold applications, fixation, pressure bandaging, sometimes in warm applications and revulsion (in insidious cases), while in very obstinate cases in open or subcutaneous tenotomy. All cases thus far reported of operative intervention were cured permanently.

Remote Results and Relapses After Gallstone Operations.—Arnsperger controls 147 cases from this viewpoint. Of this number 13.6 per cent. are known either to have sustained relapses or to have received no apparent benefit from the operation. Of the remainder 64.6 per cent. are known to have recovered fully, while 10.7 per cent. did not recover fully, but are efficient for work. The best results occur when the stones are present in a saceulation or reservoir in which cholecystitis is present. Naturally the results of total extirpation are most favorable. Spurious recurrence is seen when stones form in the liver. After cholecystotomies about one-half the cases give no further trouble as far as overlooked or recurrent stones are concerned. In the others the symptoms are due to adhesions, sclerosis, etc. It is therefore best in all cases of cholecystitis to extirpate the gall-

bladder. There is a distinct field for cholecystotomy when extirpation would prove too formidable an intervention, and also in the case of stones in an intact gall-bladder when the stones are not too large.

Is Labor an Anaphylactic Phenomenon?—Esch considers this interesting problem, the importance of which can hardly be overestimated. For if labor is the sequence of an anaphylaxis the pathology of pregnancy becomes much more intelligible. Esch, however, takes the opposed view as a result of his own experiments. If labor be anaphylactic then the injection of a gravida with fetal or placental serum should cause a reaction; and such a sequence could not be obtained by the author in animal or human experiment. The lessened toxicity of the urine of a parturient also militates against such a supposition. The technique employed by the author in his human researches is of the same order as the von Pirquet tuberculin diagnostic test. The subcutaneous incorporation of large quantities of serum could well produce a catastrophe, although the method seems harmless in animal experiment.

Myoma Heart.—Neu and Wolff decide that there is no specific myoma heart, the lesion so called being an ordinary fatty heart or brown atrophic heart due to hemorrhage and resulting anemia or to the "consumption" caused by a large uterine neoplasm. Brown atrophy occurs in carcinoma, tuberculosis, and exhaustive affections, and is almost constantly present in paralysis; so that there is more justification in calling it a paralytic than a myoma heart. On the other hand, it is by no means the rule to find brown atrophy in myoma, for the lesion may be fatty heart or a combination of the two. This is not denying that the heart must suffer in some manner sooner or later from uterine myoma; for not only will the hemorrhage lead to the so-called albuminosis or fatty degeneration, but every consumption of the tissues will tend to cause brown atrophy of the heart. If the patient is already a cardiac the development of myomata will produce the same degenerative changes.

Antitoxin in Postdiphtheritic Paralysis.—Crohn first refers to the supposed inefficacy of the serum in postdiphtheritic paralyses and in the form of secondary heart failure believed to depend on neuritis of the cardiac nerves. Recently Kohts, disregarding this teaching, continued to inject antitoxin after apparent recovery from the toxemic state and reported brilliant results. The author also reports two successful cases. The original injections were in small single doses, the disease being clinically of mild type. As paralysis and cardiac failure developed in three and six weeks respectively, and did not respond to symptomatic treatment, 2,000 units of antitoxin were injected, with results which could only be regarded as specific in character. The diphtheric sequelæ therefore seem to be due to toxic material generated in the body of residual bacteria or from some at present unsurmised source; or the neutralization may have been incomplete at first or the tissues may have become anaphylactic.

Deutsche medizinische Wochenschrift.

December 21 and 28, 1911, and January 4, 1912.

Chemotherapy of Mouse Cancer.—Von Wassermann and two others at work upon this problem in Gaffky's laboratory state that at present the effort is concentrated on the discovery of some chemical which when injected into the circulation will automatically leave the blood, enter the tumor cells, and destroy the latter. Thus far all attempts in this direction had failed of practical results, but the discovery was made that sodium telluride and sodium selenide, when directly injected, possess a selective affinity for the interior of the cancer cell, their deposition therein being attended by a reduction, with deposition of the metal *in loco*. It appeared also as if both metals and especially tellurium produced a softening and liquefaction of the cells. The salts were injected into the caudal vein, but it was soon apparent that they did not reach the tumor mass when thus exhibited. It was then recalled that the fluoresceïn coloring matters when injected intravenously are able to react and color even the least vascular tissues like the cornea; and it was surmised that the poverty of mouse-cancer in blood vessels was a handicap to the intravenous method. The attempt was therefore made to combine into a synthetic eosin and selenium, and after much labor such a substance was obtained, and the results secured have been in all respects those which satisfy the theoretical requirements. It has become possible to cure a mouse cancer permanently, provided it has not reached a certain magnitude.

Technique of Artificial Pneumothorax.—Forlanini sums up a serial article on his operation as follows: When the nitrogen is first introduced and whenever it is subsequently conveyed into the pleural cavity his method of procedure reduces the danger of gas embolism to a minimum. When first introduced aspiration is usually necessary. If on account of soluble adhesions the nitrogen in the cavity is under pressure the amount of the gas is so small that it could hardly suffice to cause embolism. In consecutive operations it is always possible to control the needle. Compression of the rubber tube makes possible the formation of a pneumothorax in cases of soluble adhesions of the pleura, in which simple aspiration is insufficient. In the same way a needle which has become stopped up during its passage through the thoracic wall is rendered pervious. The author's apparatus now fulfills all requirements. The operation may be performed quickly, the amount of gas pressure can be controlled at all times, and the apparatus is portable and handy to operate.

Treatment of Gout.—Richter is not an adherent of emanation therapy for gout, as he has seen none of the favorable results ascribed to this remedy by others. It may expel the uric acid from the blood, but without thereby influencing the severity of subsequent attacks. Still, the method is in its infancy as yet and he does not discourage its use. Inhalation is the proper method of exhibition. Large doses of HCl, once thought to be eminently contraindicated, are now known to prevent the formation of uratic deposits, and may be given when there is no evidence of hyperacidity. It has likewise been shown that alkalies, so far from rendering uric acid soluble, produce just the opposite effect. Local warmth is a dependable resource and facilitates solution of both uric acid and urates. Colchicum during an acute attack holds its own as a truthworthy remedy.

Case of Pregnancy Toxicosis Cured with Horse Serum.—Freund, having deducted on theoretical or empirical grounds the probable efficacy of normal horse serum in this affection, tested it in a case of multiform toxic dermatosis in a gravida. The eruption appeared a day or so before labor and did not subside after delivery. On the sixth postpartum day it was still active and 25 c.c. fresh horse serum were thrown into the left median vein. A serum reaction promptly followed—chill, high fever, and headache—and persisted for half a day, during which the eruption receded and the itching subsided. This result is believed to have proceeded from a specific activity of the serum, but the rationale is not clear.

A Remarkable Hermaphrodite. — Hirschfeld and Burchard describe the case of what was undoubtedly a male with perfect female external genital organs. The sex diagnosis was made through the discovery of spermatozoids in the urethra. The individual had in part the secondary sexual characters of a female and had been brought up as a girl. Not until the age of 20 did the individual have any doubt as to the sex, although psychically the male type had always been approximated, not

only in choice of occupation and recreation, but in sexual feelings, strong but innocent attachments having been formed with certain girls. At puberty menstruation did not appear, but the voice changed and a scanty beard and moustache appeared, which had been removed by a beauty specialist. Sexual excitement, both when awake and in dreams, was accompanied by erection of the clitoris, and orgasm and ejaculation of a whitish fluid from the urethra. The lines of the figure were feminine throughout, and the breasts were well developed and the hands and feet small and slender. The external genitals were feminine throughout. There was an intact hymen and normal vagina. The uterus was infantile and anteflexed. No ovaries were palpable. The expression of the face, the gait, speech, and handwriting were masculine and the impression made was that of a male. The mental processes were decidedly masculine. The crucial test was found in the urethral ejaculation which contained active spermatozoids. Extreme care had to be taken to exclude the possibility of deception, and a well-known embryologist was one of the scientific men invited to be present, the case having a forensic side in that the correct sex was to be publicly established. The ejaculated substance was shown to be semen and not a mere fluid containing spermatozoids. The sex was affirmed to be male and male clothing was thenceforth worn. The right to marry is questionable, as coitus could not be effected. From this point of view the individual could have married as a woman, for the vagina is quite normal. On the other hand, paternity is possible with artificial impregnation. The case appears to be quite unique.

Medical Men in Germany.—In 1911, according to Prinzing, there were 13,866 physicians registered in Germany, of which no less than 4,083 devote themselves to specialties. The percentage of specialists is increasing steadily. In 1911 their number in proportion to 10,000 population was 6.13, as against 3.37 in 1906. On the other hand, the nonspecialists show a slight decrease, for in 1911 they numbered 6.15 per 10,000, as against 6.67 in 1906. No less than 780 specialists are gynecologists and there are 212 gastroenterologists. The ophthalmologists and laryngorhinologists are about equally represented (over 500 each). Nearly all the nose and throat men treat the ear, while only a small number of eye men do this; and there are but fifty-one exclusive otologists. All the other specialties are well represented. There are 444 exclusive surgeons, while 121 combine surgery with gynecology.

Artificial Adrenalinemia as a Protection of the Skin in Radiotherapy.—Reicher and Lenz, who have written before on this subject, announce their most recent conclusions as follows: When the skin is rendered anemic with adrenalin it is more resistant than normal skin to Rontgen ray and radium radiation, and has withstood a double erythema dose of mild rays for three weeks. In therapeutic deep radiation the strong rays have generally been used, allowing the mild ones to be filtered out. When the skin is rendered anemic the mild rays are absorbed by it to a less extent than the strong ones. The procedure is indicated especially for radiation of malignant growths covered with skin and other soft parts accessible to injections of adrenalin.

Intravenous Injection of Pneumococcus Serum.—Beltz says of the Römer serum that theoretically it fulfills all requirements. It is polyvalent in the double sense, being a mixture of immune sera of various animals and therefore able to combine with the most varied complements, while it is specific to all known strains of pneumococcus. Naturally it would possess no specific power against pneumonia due to other than the Fraenkel diplococcus. From the viewpoint of practice testimony as to its clinical efficacy varies widely. If given toward the critical period a positive result is open to dispute, hence the remedy must be given by the third day in order to get a line as to a specific clinical result. The author has used it intravenously at about the third day in twenty-five cases. A few injections were made before and a few after the third day. The age of patients varied widely. It is significant that the two who died were between 50 and 60 years old. No data are given as to their cases. The author never saw the serum modify the course of the disease. He certainly would not inject the serum as a routine procedure early in the disease, especially with any hope of aborting the latter, for his experience would not justify any such procedure.

Industrial Affections of the Skin.—Herxheimer under this head enumerates no less than twenty-four etiological kinds of eczema due to the most varied irritants. The term dermatitis is not employed. The seventy-four varieties are associated with that number of callings, the occupation serving as a basis for classification. The first one listed is "cement itch"; next comes "baker's itch," then "washerwoman's itch," terms in use by the public. Wool and cotton spinners are next mentioned, their dermatitis being set up by irritating oils, which also set up eruptions with other occupations. The great majority of the lesions are naturally due to irritating chemicals of the most varied description in connection with the industrial arts. No less than twelve varieties of exotic wood are mentioned as being able to cause lesions in cabinet makers, turners, and other woodworkers. Next in frequency to eczema comes acne, the chief form of which is that due to chlorine, which is cognate with bromide and iodide acne. Rosacea is common enough in cabmen, cooks, etc., to be called a professional affection, and this is true of the chilblains of gardeners and others similarly exposed. Caustic burns and sores in various localities menace certain workmen, and these, as well as calloused surfaces, have received considerable expert consideration and are useful in identifications. In this connection should be mentioned boils and pustules. In addition to conditions due solely to certain irritants, certain workers are more exposed to definite diseases than others, so that occupation throws light on diagnosis. The wool sorter's anthrax, hostler's glanders, etc., readily suggest themselves here, but so should also the syphilis of glass blowers and smallpox of feather bed renovators. Prolonged irritation of the skin also leads often to the development of industrial cancer.

Contribution of the Study of Teratomata of the Ovaries.—M. Savarese reports a case of teratoma of the ovary, and presents the histories of eighty published cases. These tumors are relatively rare and occur in young women or girls; they differ from the other ovarian tumors in the youth of the patients, and in the occurrence of pain, amenorrhea, and the signs of malignancy. There is generally a pronounced distention of the abdomen from ascitic fluid. While these tumors are similar to dermoids in their genesis they differ from the latter in anatomical characteristics and clinical history. They are formed from all three layers of the blastoderm and are often cystic. One of their special characteristics is the large number of metastases to the omentum, and parietal and visceral peritoneum, consisting of small, white nodules of myxomatous or gliomatous tissues, unique in character. There are known transition forms between the teratomata and the dermoid cysts. The former are malignant on account of the rapid proliferation of their elements and their rapid development, as well as the tendency to degenerate into sarcoma or carcinoma. The diagnosis is difficult before operation, the early performance of which, according to Savarese, is the only advisable treatment.—*Folia Gynecologica.*

Insurance Medicine.

Prolongation of Life.—Rahts says that simple mortality statistics calculated as the number of deaths per 1,000 individuals may be very misleading when used in comparing various social groups. The mortality of the different ages differs so much as to affect the total mortality of a group when compared with another group of a different average age for its individuals. To judge duration of life properly, mortality must be calculated for every division of age, so that groups of the same average can be directly compared. If a single value is asked for, then it may best be calculated as the average duration of life from the mortality statistics of all the ages. Becker's statistics for Germany give the average duration of life in the seventies of the last century among males as 35.58 years, in the eighties 37.17, and in the nineties 40.56. The corresponding figures for the female sex run as follows: 38.45, 40.25, and 43.07. It is apparent therefore that the average duration of life in Germany has been increased by 14 per cent. in the thirty last years of the past century. This increase has come about by the diminution of mortality among the young and the very old. No change in the duration of life took place so far as the average age 45-46 is concerned. The typical "high age" has been reckoned as that in which the greatest number of deaths took place; this age was 71 years in the seventies, and 72 in the nineties.

However, Germany still remains behind several other nationalities of Europe, so far as duration of life is concerned. In Sweden, the average duration for the male sex is 50.04 and for the female 53.63 years; that is, almost ten years higher than in Germany. France and England also compare favorably with Germany, while Austria and Italy have a lower average duration of life. In all countries the female sex seems to have a higher average duration. Germany's lower showing is due to the high infant mortality as compared with other countries. Later statistics would probably show better figures for Germany because the problem of preservation of infant lives has been only lately given much attention in Germany. Of course, the increase in the average duration of life means an economic advantage to the nation that can only be measured by millions of dollars.

Somewhat different light is thrown upon statistics when the "expectation of life" at any age is studied. Figures show that such expectation is lowest in infancy and rapidly rises to its maximum at the age of 12 or 13 years. In the male sex the expectation of life is somewhat higher at this age because girls seem to be more liable to disease in school ages. The expectation of life then drops again until the age of 22 years is reached, then remains almost constant till 27 years, and finally gradually declines after this age. The drop in the curve after the maximum has been reached was very puzzling until lately, when separate causes of mortality began to be studied. It is now evident that this drop is due to the incidence of tuberculosis, both the drop in the curve and this disease being equally marked in the male sex at these ages. When tuberculosis is excluded the diminution in the expectation of life after the maximum has been reached becomes very gradual and about the same for both sexes.—*Zeitschrift für die Gesammte Versicherungs-Wissenschaft*, Vol. XI, No. 4.

Relationship of Tuberculosis to Accident and Injury.—W. Cecil Bosanquet states that this subject has acquired considerable importance within recent years in view of the enactment of employers' liability and workmen's compensation laws. The important facts to be considered in this connection are the possibility (1) that an accident or other injury may be the means by which tubercle bacilli are introduced into a person; or (2) that the injury may cause a weakening of natural resistance to the bacillus and thus permit it to establish itself when it would not otherwise have done so, or may lead to dissemination of the bacilli, thus giving rise either to a new focus of tuberculosis or to extension of one already existing. There are certain peculiarities about the tubercle bacillus which render the problem of the relationship between an injury and a subsequent tuberculous infection specially difficult to determine. In the first place the microorganism is fairly ubiquitous. Secondly the tubercle bacillus is a slowly growing organism in the majority of instances, so that symptoms of disease do not arise until some considerable period of time has elapsed after its actual introduction into the body or its establishment in some new focus. Accidental injury may cause a direct infection with tubercle bacilli, as in the case of the nurse who cut herself with a fragment of a broken spittoon which had contained tuberculous sputum. Butchers are liable to inoculation from cutting up infected cattle. The condition known as "anatomical tubercle" is a form of slowly developing verrucose tuberculosis of the skin which at one time was not uncommonly found among pathologists. It may be alleged that injury may cause the extension of an existing tuberculosis owing to a weakened resistance or to the dissemination of bacilli. Tuberculous disease of the joints should be considered in a class by itself. There is a considerable mass of evidence that in some way or other injury does lead to tuberculous arthritis; and if the occurrence of the accident is clearly established and it is followed at a reasonable interval by the tuberculosis one may accept the causal connection as probable. As to what constitutes a reasonable period of time opinions may differ, but it seems unlikely that symptoms would be delayed for more than three months. Also one must look for some sign that recovery has never been perfect—some persistence of pain or stiffness in the joint in the interval. Cases have been reported of pulmonary tuberculosis resulting from severe traumatism to the thorax, but in these cases there was probably a latent tuberculosis before the accident which served to quicken into activity the disease process. If the onset of a case of pulmonary disease were attributed to an injury one would be obliged to regard the assumption with grave doubt, since the sequence is undoubtedly rare and its very existence may be doubted. It is well established that injury may cause aggravation of an existing tuberculosis. It is only when the injury affects the tuberculous part directly that one can admit without scruple that subsequent increase of the disease is due to it. Before it could be admitted that an accident had aggravated an existing focus of tuberculosis situated at a distance from the part affected by the injury it would in any case be necessary to show that it was of such gravity as to produce a clear deterioration of general health.—*The Lancet*, January 13, 1912.

Apoplexy and Accident Insurance.—Procházka says that the real cause of an apoplectic stroke is either a disease of the arteries, resulting in a cerebral hemorrhage, or a disease of the heart, resulting in a cerebral embolism. In either case some accident may be the exciting cause, or at least play a significant rôle in the occurrence. In cerebral hemorrhage the breaking of the weakened vessel may be caused by undue exertion, by abrupt change in temperature of the body, by the rise of blood pressure following fright. Of course, concussion of the skull and brain may have a similar effect. Cerebral embolism may follow injury involving the thorax, any psychic excitement or physical strain leading to overactivity of the heart, etc. Any of these occurrences may be looked upon as determining the onset of an apoplectic stroke, and, therefore, they must be considered in all claims for indemnity by persons insured against injuries and accidents.—*Medizinische Blätter*, November 4, 1911.

Book Reviews.

Ueber Neurorezidive nach Salvarsan- und nach Quecksilberbehandlung. Ein Beitrag zur Lehre von der Fruhsyphilis des Gehirns. Von Dr. J. Benario. Mit einem Vorwort von Wirkl. Geheimen Rat P. Ehrlich. Mit 1 Tafel und 5 Figuren im Text. Price 6 marks. Munchen: J. F. Lehmann's Verlag, 1911.

Benario has collected all the published and many unpublished cases of the involvement of cerebral nerves or other parts of the nervous system after administration of salvarsan, and has compared their frequency with the frequency of similar lesions after the use of mercury. He concludes that these so-called "neurorelapses" are syphilitic in origin and are not due to arsenical poisoning; that they are a sign of insufficient treatment of the existing syphilis, and that their number must steadily diminish since the proper dosage of salvarsan has been determined. His evidence certainly seems to bear out the validity of his conclusions, and his monograph should be carefully perused by all physicians who have used or contemplate the use of Ehrlich's salvarsan in the treatment of syphilis.

The Parasitic Amœbæ of Man. By Charles F. Craig, M.D., Captain Medical Corps, United States Army. From the Bacteriological Laboratory of the Army Medical School, Washington, D. C., and the Rockefeller Institute for Medical Research, New York City. Price $2.50. Philadelphia and London: J. B. Lippincott Company, 1911.

The great importance of amebic infections has of late been pretty generally recognized, and they are so generally distributed throughout our country, especially in our tropical possessions, that almost any practitioner is liable to meet a case at any time. This monograph, which is the first on the subject that has appeared in English, gives in detail the work accomplished by numerous students of the parasitic ameba, together with descriptions of the species, especially as regards morphology, life cycle, methods of differentiation, and relation to disease. For several years Captain Craig has had unusual facilities for the study of his subject and he has made excellent use of his opportunities. The major portion of the work is based upon personal observations at the bedside, upon the autopsy table, and through the microscope, thus assuring an interest and value impossible in a compilation or a review of the literature. The descriptions are minute and exact and the illustrations are most satisfactory. His emphasis on the fact that a very large percentage of men in certain sections of the country harbor a non-pathogenic ameba in their feces is exceedingly well timed and makes one wonder how much value can be attached to many of the case reports in which the diagnosis was made simply on the finding of an ameba in the stool. This volume should prove of great value to practitioners as well as to laboratory workers despite the fact that treatment is not touched upon. There is appended a very complete bibliography.

A Manual of Materia Medica for Medical Students. By E. Quin Thornton, M.D., Assistant Professor of Materia Medica in the Jefferson Medical College, Philadelphia. Price $3.50. Philadelphia and New York: Lea & Febiger, 1911.

This book is designed for the medical student and in many respects it meets his requirements most admirably. It is not too discursive, it does not trench too much on the domain of therapeutics, and it presents the main facts of materia medica with sufficient detail. The first part deals with posology, prescription writing, Latin essentials in prescription writing, incompatibility, and weights and measures. Part II, the most important section of the book, is devoted to the discussion of the drugs and preparations official in the U.S.P. Attention is given to the English and Latin names, synonyms, sources, properties, incompatibilities, constituents, administration, dosage, poisonous effects, and antidotes. Part III gives a list of the pharmacopœial preparations. The only adverse criticism we have to make is on the quality of the Latin and the uncertainty of the dosage. The section on Latin essentials in prescription writing is the weakest part of the whole book. It is evident that the author has not the same first-hand knowledge of Latin that he has of materia medica. On page 44 *sulphatis* is said to be feminine, and on page 45 it is given as masculine; *sodii* is said to be a feminine noun; *fiat* is said to be a transitive verb; *recepti* is given as the perfect of recipio; *dat* is given as the present subjunctive of do; "*capiat cochleare unam parvam ex paulo aqua*" is an atrocity which makes a classical student shudder. The whole of this section is very much like one in an older and more elementary work by the same author. With regard to the dosage, this is inconsistent, and in a work designed for medical students such inconsistency should be avoided. Thus, the dose of liquor ammonii acetatis is given as 1 to 4 drams and also as 1 to 8 drams; that of tincture of aconite as 3 to 10 minims and also as 5 to 20 minims; of Tully's powder as 1 to 5 grains and also as 5 to 10 grains; of blue mass as 3 to 10 grains and also as 2 to 20 grains; of extract of nux vomica as 1/6 to ½ grain, and also as 1/6 to 1 grain; of Basham's mixture as 1 to 4 drams and also as 2 to 8 drams; of amyl nitrite as 3 minims and also as 3 to 10 minims. It will be noticed that in some cases these differences are quite considerable. Among other points that should be corrected in another edition are the statements that "gallic acid is an inorganic acid" and that "sodium bromide is made by double decomposition between potassium carbonate and ferrous bromide."

Syphilis, from the Modern Standpoint. By James McIntosh, M.D. (Aberd.), Grocers' Rearch Scholar, and Paul Fildes, M.B., B.C. (Cantab.), Assistant Bacteriologist to the London Hospital. Illustrated. New York: Longmans, Green & Co., 1911.

The discovery of the *Treponema pallidum*, the use of the deviation of complement reaction in the diagnosis of syphilis, and the appearance of salvarsan as the sovereign antisyphilitic remedy have quite revolutionized our knowledge of syphilis and have rendered obsolete the classic treatises of the disease. The manual before us collects all the remarkable advances in the domain of syphilis and presents that disease as other infections have been presented in bacteriological textbooks. Yet, while the laboratory diagnosis and the pathology of syphilis are fully treated, many clinical features of the disease are touched upon, so that the volume is of interest to the practical physician as well as to the immunologist. The identification of the *Treponema pallidum*, the technique and interpretation of the Wasermann reaction, the value of salvarsan are the subjects especially fully treated. The information, too, is not a mere compilation of literature, but an abstract of experience of two men occupied with the subject matter of the book. This makes this small manual (a little over 200 pages) one of the most valuable among the numerous works on syphilis that have appeared lately. We heartily recommend the work to physicians looking for an authoritative statement of the new lore in this disease.

Serum Diagnosis of Syphilis and the Butyric Acid Test for Syphilis. By Hideo Noguchi, M.D., M.Sc., Associate Member of the Rockefeller Institute for Medical Research, New York. Fourteen illustrations. Second Edition. Price $2.50. Philadelphia and London: J. B. Lippincott Company, 1911.

Dr. Noguchi's method of the serum diagnosis of syphilis has now been tested in over 10,000 cases of syphilitic, parasyphilitic, and other disease. It has been shown to be as accurate as the original Wassermann method, and somewhat simpler. In the new edition of his manual Noguchi gives the technique of his method and Wassermann's as well, and includes, in addition, much information valuable in selecting and testing suitable antigen for the performance of the reactions. He also gives many new data supporting the reliability of his butyric acid test for syphilis. The book is clearly written, the directions are ample and well illustrated, and the monograph, accordingly, should prove of great value to the immunologist occupied with the methods of diagnosing syphilis.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles * * * by Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U. S. A. Volume III: Twenty-first Series. Price $2.00. Philadelphia and London: J. B. Lippincott Company, 1911.

The present volume of this well-known quarterly shows as varied and as entertaining contents as any of its predecessors. Therapeutics, Medicine, Pediatrics, Neurology, Surgery, Diseases of the Ear, Obstetrics, Ophthalmology, and Economics of Medicine, one or more articles appear under these various headings. Of them, Heart Therapeutics, by James J. Walsh, is an entertaining study of the influence of rest and suggestion upon "cardiac" patients; Relationship Between Gastric and Urinary Acidity is discussed by Thomas R. Brown; I. W. Hunter writes on Venereal Diseases in Children; Thomas F. Reilly gives many hints valuable to the beginner in a paper on the Successful Practice of Medicine, etc., etc. In all, the volume contains twenty-two well written articles in the various departments of medicine named above.

Einfuhrung in die Physiologie, Pathologie, und Hygiene der menschlichen Stimme. Von Dr. Ernst Barth, mit 200 Abbildungen und 2 farbigen Tafeln. Leipzig: Verlag von Georg Thieme, 1911.

With characteristic Teutonic thoroughness this book covers the subject of the human voice. It opens with a chapter on acoustics and tone production, followed by one on the breathing apparatus, with special attention to the muscles and vocal accessories, as pharynx, palate, nasal organ, etc. Then comes a series of interesting chapters on the various types of breathing, origin of the voice in the larynx, proper methods of examining the larynx, the register of the voice and its ontogenetic development, origin of vowels and consonants, etc., etc. Under the pathology of the voice the changes produced by some dozen different diseased conditions are enumerated, and the book closes with a part on the hygiene of the voice. The book is complete, orthodox, and well subdivided.

Diseases of the Ear, Nose, and Throat, for the Family Physician and the Undergraduate Medical Student. By Henry Ottridge Reik, M.D., Associate in Ophthalmology and Otology in Johns Hopkins University, and Surgeon in the Baltimore Eye, Ear, and Throat Hospital, Baltimore, Md.; assisted by A. J. Neilson Reik, M.D., Surgeon in the Baltimore Eye, Ear, and Throat Hospital, Baltimore, Md. With 81 illustrations in the text and two colored inserts. Price $4.00. New York and London: D. Appleton & Co., 1911.

This is an excellent book and will well fill the purpose for which it was intended. The author does not encroach upon the territory of the specialist and yet he is not too elementary in his discussions of the diagnosis and treatment of ear, nose, and throat diseases. His description of the influence of the tonsils and adenoids on the general health and on the hearing is eminently clear, and his statement regarding the inadvisability of one not especially trained undertaking the operation of tonsillectomy is sound. The chapters on bronchoscopy, epistaxis, asthma, epilepsy, and carcinoma of the tongue bring these subjects fully up to date and make the book a useful guide for the general practitioner.

Applied Anatomy and Oral Surgery, for Dental Students. By Robert H. Ivy, M.D., D.D.S., Assistant Oral Surgeon at the Philadelphia General Hospital; Assistant Surgeon Out-Patient Department University Hospital, Philadelphia. Illustrated. Price $1.50. Philadelpha and London: W. B. Saunders Co., 1911.

This book represents the progressive movement in dentistry, which includes much more than a mere knowledge of dental pathology and mechanics. There are chapters on the circulation and composition of the blood, inflammation, contusions, and wounds, surgical fever, anesthesia, and general instructions as to sterilization of instruments and preparation of patients for operation. The chapter on diseases of the maxillary sinus is well done, as is also that on fractures of the jaw. Review questions are given at the end of each chapter and are designed to aid the student in going over the work a second time. The book is of distinct value to dental students, and will prove of help to medical men who are interested in the surgery of the head and neck.

Lippincott's New Medical Dictionary. A Vocabulary of the Terms Used in Medicine, Dentistry, Veterinary Medicine, and the Allied Sciences, with their Pronunciation, Etymology, and Signification, including much Collateral Information of a Descriptive and Encyclopedic Character. By Henry W. Cattell, A.M., M.D., Editor of International Clinics, Fellow of the College of Physicians of Philadelphia, etc. Freely Illustrated with Figures in the Text. Second Edition. Philadelphia and London: J. B. Lippincott Company, 1911.

In this second edition of Lippincott's Dictionary there have been over 5,000 additions and changes made in the text, the editor states, about 500 new words having been inserted. Much ingenuity has been expended by the Editor in making these 5,000 additions, for the size of the book has not been increased by even one page and every letter begins and ends on the same pages as in the first edition. The illustrations have apparently been increased in number, thought not always judiciously; we find, for example, on page 483, alongside of the same caricature of Koch that marred the first edition (though it is here smaller), an equally libellous representation of Theodore Kocher. All the excellent features of the first edition, such as the use of lower-case titles, illustrated medical bibliographies, illustrations of medicinal plants, etc., have been retained in this revision. The publishers claim that this was the first medical dictionary to contain medical and veterinary terms, but we think this must be an error, for we remember to have seen some medical terms in one of the earliest editions of Dunglison's Dictionary, and this feature has been copied more or less successfully by all medical dictionaries since that time. Most of the dictionaries have also contained some veterinary terms. But even disallowing these claims of the publishers there are good features enough in this scholarly work to recommend it. The chief fault, and one that is inherent in the arrangement of the titles, is the difficulty offered to one who looks for a definition by the lack of alphabetical sequence in many cases.

Das Erkenntnisproblem und seine kritische Lösung. Von Berthold Kern. Zweite erweiterte Auflage. Price 5 marks. Berlin: Verlag von August Hirschwald, 1911.

This monograph reviews the theories of knowledge that have been put forth by various thinkers and then presents the author's original theory of the matter, which seems to be based almost entirely on Kant's critical study of the human mind and its processes. It should prove of interest to any physician who likes to delve in metaphysical matters.

The Origin of Life. Being an account of Experiments with Certain Superheated Saline Solutions in Hermetically Sealed Vessels. By H. Charlton Bastian, M.D., F.R.S. Emeritus Professor of the Principles and Practice of Medicine, University College, London. With ten plates, containing numerous illustrations from photomicrographs. Price $1.50. New York and London: The Knickerbocker Press, G. P. Putnam's Sons, 1911.

For several reasons this is an interesting work. In the first place, although its venerable author is one of the oldest and best known of the Fellows of the Royal Society, that society did not consider this memoir suitable for its acceptance. This, of course, is not necessarily derogatory either to the author or to his thesis, for the same society at an earlier date rejected Joule's paper on the "Mechanical Equivalent of Heat," which subsequently proved such an important contribution to the doctrine of the correlation of the physical forces enunciated by Grove. Next, although Pasteur's work has been very generally accepted, and with it the belief that life comes from life and from life only; still it has not been (and naturally cannot be) proved that life never can and never will appear spontaneously. This book contains an account of Bastian's experiments; any competent scientist can duplicate them, and if such repetition should lead to similar results our present beliefs as to life and its origin will have to be modified. Life originated once; why may it not originate again? The old controversy, represented by Pasteur, Tyndall, and Lister on one side, and by Haeckel, Pouchet, Hughes, Bennett, and Bastian on the other side, may still prove to be alive. In the meantime all interested in these biological problems will feel grateful that the Royal Society rejected this work; for had it accepted these papers they would have been buried in a volume of transactions, and so have been inaccessible to the world at large.

The Mechanism of Life. By Dr. Stephen Leduc, Professor at l'Ecole de Médecine de Nantes. Translated by W. Deane Butcher, formerly President of the Röntgen Society and of the Electro-Therapeutical Section of the Royal Society of Medicine. Price, $2.00. New York: Rebman Company.

It is curious that this book should appear at the same time as Bastian's work on "The Origin of Life." They both deal with the same biological problem, and they were both practically branded as scientific heresy by the "powers that be." Bastian's memoirs were "not considered suitable for acceptance by the Royal Society"; and Leduc's "Théorie Physio-Chimique de la Vie et Générations Spontanées" was excluded by the Académie des Sciences from its *Comptes Rendus*. Every man who thinks at all about the great problems of life will welcome this volume, which is as interesting as it is important. Particularly noticeable are the clearly expressed views of the author, and the admirable definitions and descriptions. There is never any doubt as to his meaning. The language is so clear and certain that it is hard to believe that we are reading a translation. The subjects discussed are: Life and living beings; solutions; electrolytic solutions; colloids; diffusion and osmosis; periodicity; cohesion and crystallization; karyokinesis; energetics; synthetic biology; osmotic growth; the phenomena of life and osmotic productions; and evolution and spontaneous generation. This book and the companion volume of Bastian's are among the most important works of the year.

HANDBUCH DER ALLGEMEINEN UND SPEZIELLEN ARZNEIVERORDNUNGSLEHRE. Auf Grundlage des deutschen Arzneibuches 5. Aufgabe und der neuesten auslandischen Pharmakopoën. Bearbeitet von Dr. C. A. EWALD, Geh. Med.-Rat, o. Honorarprofessor an der konigl. Universitat, dirigieriender Arzt am Augusta-Hospital zu Berlin; und Dr. A. HEFFTER, Geh. Med.-Rat, o. Professor und Direktor des pharmakologischen Instituts an der königl. Universitat zu Berlin. Mit einem Beitrag von Professor Dr. E. FRIEDBERGER. Vierzehnte ganzlich umgearbeitete Auflage. Price 18 marks. Berlin: Verlag von August Hirschwald, 1911.

THIS is the fourteenth edition of the well-known and venerable textbook on materia medica originally written by Posner and Simon but now revived by Ewald and Heffter. It is based upon the fifth edition of the German pharmacopœia and the pharmacopœias of other countries. One need hardly comment on the thoroughness of this work, its scientific accuracy, and the readiness with which it may be referred to, thanks to an excellent index. It combines the qualities of a textbook of materia medica with those of a formulary, containing incorporated in the text a total of 1,643 prescriptions. He who would keep abreast of what is offered by the pharmacopœias of the Old World can not afford to get along without this volume.

DIE DIVERTIKEL UND DILATATIONEN DER SPEISERÖHRE. Von Dr. HUGO STARCK. M. 2.40. Halle: Carl Marhold Verlagsbuchhandlung, 1911.

WITH regard to dilatation of the esophagus, which is so much more frequent than diverticula, Starck has the following to say: A diet list suitable for all cases of esophageal dilatation cannot be given. For the permeability of the cardia varies in different patients for the same food. The one case permits fluids and semisolids to pass more readily, the other solid, firm substances. Starck had a patient who wanted particularly heavy food, lentils and peas. These disappeared quickly into the stomach, whereas soft and fluid food remained above for a long time. All our endeavors must tend to remove the stenosis at the cardia. Von Mikulicz was probably the first to attempt to dilate the cardia by operation through the stomach. This can be accomplished by digital divulsion or by hyperextension by means of a dilator. Lately this divulsion has been performed by dilators introduced through the mouth. We must, of course, be able to enter the cardia. If we accomplish this, success is assured. Dilatation is done about twice weekly and often the patient is able to swallow after the first treatment. Sometimes this occurs only afer several treatments. In one of Starck's cases the esophagus held no more residual food from the day of the first dilatation. With the dilating instrument we desire to overstretch the muscular ring, without at the same time injuring the elastic mucous membrane. If a fissure of the mucous membrane occurs we must wait some time with our attempts at dilatation. What is the success of our dilatation? The wall of the esophagus never returns to normal, a dilatation remains until death, but the cardia allows food to pass, no food remains (in the moderate and fusiform dilatations), or the food remnants are scanty (sacculated or bottle-shaped dilatations). The esophagus can contract to a degree and the signs of irritation disappear. Recurrences occur, but can be cured by renewed dilatation. We have in this method a means to cure the patient relatively and prevent his starvation.

THE MECHANICAL FACTORS OF DIGESTION. By WALTER B. CANNON, M.D., Professor of Physiology, Harvard University. London and New York: Longmans, Green & Co., 1911.

THIS is the first volume of a projected series of International Monographs edited by Drs. Leonard Hill and William Buloch. In it Cannon embodies his well-known researches with regard to the processes of digestion. According to Cannon the presence of peristaltic waves in the right half of the stomach and their absence from the left half indicate two separate parts of the stomach. The evidence now before us shows that these two parts have distinct functions. The left half is a reservoir in which the food is not mixed with the gastric secretion and from which the contents are slowly pressed out into the active right half. The peristaltic waves coursing over the right half mix the food with the gastric juice, expose it to the mucosa of the vestibule for absorption and for the continuance of gastric secretion, churn the unbroken particles of food until they are triturated, and finally expel the chyme into the duodenum. The pylorus is tonically closed when food is ingesed and remains closed against recurring pressure. The appearance of acid at the pylorus causes the sphincter to relax. The pressing peristaltic waves now force some of the acid chyme into the duodenum. The acid in the duodenum at once tightens the sphincter against further exit. The same acid also stimulates the flow of alkaline pancreatic juice. Since no inorganic acid is normally present beyond the first centimeters of the small intestine and since the acid reaction of the contents in this uppermost region is replaced throughout the rest of the small intestine by practically a neutral reaction, the acid chyme must be neutralized soon after its emergence from the stomach. As neutralization proceeds the stimulus closing the pylorus is weakened; now the acid in the stomach is able to relax the sphincter. Again the acid food goes forth and immediately closes the passage behind until the duodenal processes have undergone their slower change. And thus, repeatedly, until the stomach is empty. The book is herewith warmly recommended.

DIE METHODEN DER UNTERSUCHUNG DES MAGENS UND IHRE DIAGNOSTISCHE VERWERTUNG. Von Dr. EMIL SCHUTZ, Privatdozent an der Universitat Wien. Mit 80 Textabbildungen. Price $2.75. Vienna and Berlin: Urban & Schwarzenberg; New York: Rebman Company, 1911.

NUMEROUS isolated additions to the diagnosis of gastric diseases have appeared in the last few years in the periodical medical literature, but no book has been published lately that attempted to separate the grain from the chaff in these publications and to gather the new knowledge into a systematized whole. Schütz's book attempts to do just that, entering into the various methods proposed and giving the author's valuation of them. Especially to be mentioned is the author's careful presentation of the results of palpation of the gastric region, according to the technique elaborated by Glenard, Obratzow, and lately Hausmann. The more spectacular and special methods, such as gastrodiaphany, *x*-rays, etc., have for a time crowded simple palpation into the background, but signs are not failing to show that this method, of which every careful physician can avail himself without laboratory and hospital apparatus, is fast regaining its proper place in diagnosis of abdominal conditions. Schütz's careful presentation of palpatory findings is typical of the whole book: it leaves nothing desired in the way of presenting the diagnostic methods and of interpreting the results obtained. We know no better book on the diagnosis of gastric disease for the use of the internist.

MÉMOIRES RÉDIGÉS EN L'HONNEUR DU PROFESSEUR RAPHAËL LÉPINE À l'occasion de sa retraite. Par ses élèves et ses amis. Paris: Librairie Félix Alcan, 1911.

THIS book, which is the October issue of the *Revue de Médecine*, is a volume of several hundred pages containing over one hundred short papers by the pupils and friends of Professor Lépine. Most of the articles consist of a few remarks on some clinical or pathological subject, and their only *raison d'être* is the apparent desire of the editors to include as many friends of Dr. Lépine as possible among the contributors. More pretentious are papers on lumbar puncture in uremia, hemiplegia iin pneumonia, acetone in diabetes, hemolytic icterus in cirrhosis of the liver, cysts of the kidney, etc., by various authors. The volume is a fair reflection of the French medical thought, and physicians should find some one thing or another of interest in its multiform table of contents.

DIAGNOSE UND FEHLDIAGNOSE VON GEHIRNERKRANKUNGEN AUS DER PAPILLE NERVI OPTICI. Von Prof. Dr. Fr. SALZER, München. Mit 29 Abbildungen auf 2 farbigen Tafeln. Price 1.50 marks. München: J. F. Lehmann's Verlag, 1911.

THIS is a brochure of sixteen pages in which the author deseribes the appearances of the optic nerve papilla in diseases of the brain, as well as normal variations of the retina and optic disc, that may lead to confusion. It is illustrated by two very good colored plates picturing a number of normal and pathological appearances of the fundus of the eye.

HEART SOUNDS AND MURMURS. By E. M. BROCKBANK, M.D. (Vict.), F.R.C.P.; Senior Hon. Assistant Physician Royal Infirmary, Manchester. Price 2/6. London: H. K. Lewis, 1911.

IN this small volume the author has attempted to put into convenient form the elements of cardiac auscultation for the use of students. As a whole it is well done, except that the reader is apt to understand him to say that a murmur *per se* means a valve lesion, a rather dangerous doctrine to instill into a medical student. Also he persists in his theory of the causation of the presystolic murumr of mitral stenosis in spite of the fact that this has been pretty thoroughly disproved by the use of the electrocardiograph and by the experimental work of Hirschfelder. The book will hardly find a large field in this country

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting Held January 4, 1912

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR.

THIS meeting was held under the auspices of the New York Academy of Medicine Committee on Public Health, Hospitals, and Budget. The subject of the evening was "Occupational Diseases."

Report of the Committee on Medical Expert Testimony.—Dr. JOHN H. HUDDLESTON read this report. It was moved, seconded, and unanimously carried that this report be accepted. It read as follows:

"The Committee on Medical Expert Testimony has had a number of conferences with the Committee of the New York Bar Association and has had also several meetings in which they have conferred upon the matters assigned to them. They have reached the following conclusions:

"1. That it would be advisable to favor the passage of the so-called Clearwater Bill or some modification of it. The modification which we have agreed upon to favor is that the Judges appoint a list of medical experts in each Judicial District. This list to include only the men who come up to the minimum standard of qualification for expertness prescribed by the resolutions which we submit here. This will make the Bill cover two definite and essential points. (*a*) That the medical expert be paid by or through the Court and not by the parties in whose behalf the expert testifies. (*b*) That the medical expert have certain definite minimum standard of qualification.

"2. The Committee ask that the Statement of the Evils of Expert Testimony as presented by Judge Clearwater be added to the report.

"3. The Committee recommends that the Council adopt and recommend to the Academy for adoption the following Resolutions: *Whereas*: Medical expert testimony is necessary and helpful to justice and ought to be effectively and freely used in the courts. And *whereas*: The methods of legal procedure in trials involving medical expert testimony are now inefficient, and fail to utilize effectively expert knowledge and skill. Therefore in order to promote an improvement in these conditions, this Committee asks the adoption of the following recommendations by the Council and Academy of Medicine.

"*As regards the legal side of the medical expert question we recommend*: (1) A freer use of appointments of commissions and of experts by the court. (2) That the medical expert should be paid by or through the court, and not by the party in whose behalf he testifies. (3) That the period of hospital or similar form of observation of persons the nature of whose troubles is under dispute be adopted as being the best method for securing impartial and accurate opinions; and we recommend the enactment in every State of laws favoring such method.

"*As regards the medical side of the question we recommend*: (4). That it be adopted as the opinion of the Council and Academy that it is inadvisable and objectionable for any physician to occupy the position of medical advisory counsel in open court and at the same time to act as expert witness in a medicolegal case. (5) That it be adopted as the opinion of the Council and Academy that the acceptance by a physician of a fee that is contingent upon the result of a medicolegal case is not in accordance with medical ethics, is derogatory to the good repute of the profession, and is injurious to the efficacy of expert testimony. (6) That the Academy adopt the following as a definite minimum standard of qualification for medical men giving expert testimony: 'That a physician should not be considered a medical, surgical, or special expert unless he is a graduate of a reputable medical college; has paid special attention for at least six years to the particular branch as to which he claims to be expert; has had opportunities of laboratory or clinical study or both in that branch for at least four years, and is a member of a general and of a special medical society in good standing.' (7) That the Academy recommend that other medical organizations adopt this or a similar minimum standard." Signed, Charles L. Dana, Edward D. Fisher, Bernard Sachs, Max G. Schlapp.

The Evils of Medical Expert Testimony.—Statement of the case by Judge Clearwater in a review. "(1) There are no satisfactory standards of expertness, and thus the testimony of charlatans is invited; (2) The character of the evidence often given by so-called experts is partisan and unreliable; (3) Trials are prolonged and their expense is increased on account of the number of witnesses; (4) The contradictory testimony of experts of apparently equal standing, having the same opportunities for acquiring knowledge of the facts, has a confusing effect upon juries; (5) Unprincipled self-styled experts are sometimes unscrupulously hired to support causes by specious and untruthful testimony; (6) Some Trial Judges are prone to permit incompetent so-called experts to testify to opinions predicated upon widely unrelated facts, and to express views which are but the speculative vagaries of ill-formed minds; (7) The expert must depend for compensation solely upon the litigant for whom he testifies; (8) The litigant who has the longest purse can produce the most imposing array of experts; (9) The Bench sometimes permits the Bar to treat the accomplished and modest expert with studied contempt; (10) Some Trial Judges are disposed to convert important trials into spectacular dramas which not infrequently descend to comedy and degenerate into farce, with the result that the administration of justice is degraded."

Acknowledge Treasurer's Services.—Dr. A. M. JACOBUS moved that a special vote of thanks be given for the very efficient and valuable services of Dr. Reginald R. Sayre, one of the most valuable treasurers the Academy had ever had. This was seconded and unanimously carried.

Appropriation for the Library.—It was moved, seconded, and carried that $5,000 be given for the use of the library.

Résumé of the Importance and Prevalence of Occupational Diseases.—Dr. W. GILMAN THOMPSON read this paper. (See page 201).

State Control of Occupational Diseases.—LEONARD W. HATCH, State Statistician of the New York State Department of Labor, read this paper by invitation. (See page 202).

Occupational Neuroses Due to Metallic Poisons.—Dr. M. ALLEN STARR read this paper. (See page 205).

Occupational Paralyses and Atrophies.—Dr. CHARLES L. DANA read this paper. (To be published later.)

Occupational Diseases of the Skin.—Dr. JOHN A. FORDYCE read this paper. (See page 207).

Dr. JAMES ALEXANDER MILLER said there were but two aspects of the question before them that he would like to refer to briefly. One was the fact that a great many of the occupational diseases reported to-day were based on information that was out of date, a knowledge that had been gained from information that had been passed on to generation after generation, and to which practically nothing had been added. Now the opportunity was given the medical profession to add much to the knowledge of this subject by scientific investigations, and especially in regard to the respiratory diseases which resulted from dust, fumes, gases, and so forth, and their relation to the causation of tuberculosis. His attention was called to this by two investigations he had been called upon to undertake. One was in connection with the subway conditions, where it was stated that the workers in the subway were very much subjected

to respiratory diseases because of the inhalation of iron particles. Dr. Soper, some time ago, undertook an investigation of this, and he had this idea in mind. It was stated that one ton of steel and iron per mile per year was given out in the form of dust, and the question arose what effect this had on the employees. Examinations of the employees found that they in fact had no impairment in health because of their occupation in the subway; many gained in weight, in the common parlance they gained "subway fat." Many gained in their general health while engaged in the subway. This seemed to disprove the statement that the inhalation of iron dust had any deleterious effect upon health. It was stated that printers had a high rate of mortality from tuberculosis because of their occupation. Investigations of Typographical Union No. VI—200 were examined—showed a large percentage among them of tuberculosis, something like 17 per cent. After very careful examination it was found that one-half of them had cured tuberculosis; they had had tuberculosis, left their employment, took care of themselves, returned to their trade, and had no relapse. The knowledge they gained enabled them to return to their trade and keep well. It would seem therefore that the habits of the printers rather than their occupation were at fault. Dr. Miller thought that there was needed a more careful study of the various problems regarding various employments and tuberculosis. In New York the Cloak Makers' Union was studying the health of its employees. In Chicago the Harvester Company and in Boston the department stores were doing the same thing. This would lead to very valuable information regarding the influence of occupations upon various diseases. From a scientific point of view a study of the effect of occupation upon employees should be undertaken by the medical profession: it should take the lead in this work, and in this the Committee on Public Health, Hospitals and Budget should play a very important part.

Dr. Frederic S. Lee said that they had been hearing of special conditions and reading about special diseases, but he wished to speak about some general conditions which produced some general physical states which in turn conduced to disease. He used lantern slides to illustrate his remarks. The first condition he referred to was the quality of the atmosphere which surrounded workmen, and he called attention to the work of Billings and others who had shown that the deleterious effects of atmospheres in closed rooms was not due to inspiration of organic substances which the expired air was supposed to contain; it was not due to the quantity of carbon dioxide, for the atmosphere in these closed rooms could contain from three to four per cent. of this gas without producing deleterious effects. But their work did show that the deleterious effects were connected with the temperature and the humidity of the air in these closed rooms. Any workman who labored in closed rooms with a high temperature and where the atmosphere was very humid suffered in various ways. Because of the fact that the body could not cool itself by evaporation of the perspiration, the body temperature rose. Dr. Lee said he had just received and read with much interest a report on humidity and ventilation among the cotton weavers in England; it was claimed that, especially in the coarse cotton weaving, it was necessary to have the rooms very humid and various artificial methods were in use to render the air moist, and this was to the detriment of the workmen. Lantern slides were shown of the effects of fatigue. Fatigue among workmen had increased very much during the past few years because of greater speed required of them in their work; because, too, of the monotony of their work and other conditions which conduced to fatigue. Fatigue certainly increased one's susceptibility to infectious diseases in that it diminished the quantity of antibodies of an individual. Slides were shown to illustrate the relation of fatigue to the occurrence of accidents. There were two parts of the day, one in the morning and the other in the afternoon, when fatigue was the greatest and when accidents most frequently occurred.

Dr. C. T. Graham-Rogers, Medical Inspector of Factories, N. Y. State Labor Department, New York City, (by invitation) said he would speak more of opinions he had formed as the result of medical inspection of factories in the State of New York. In studying the causes of industrial diseases there were three factors to be considered, the factory, the worker, and the housing. Mercury was not used as claimed in the manufacture of silk hats, but it was used in the making of silk hats; the air in the fur-cutting room of such factories contained 2.6 milligrams of mercury per cubic meter. With regard to printing, linotype composing rooms contained no lead in the air as claimed by many. In electrotyping there were found in the rooms fine particles of dust with lead and arsenic contained therein. Wall paper to-day contained no arsenic. In the manufacture of artificial flowers wood alcohol was used, and there was aniline to be found in the dust, but no arsenic. In brass casting there were 75.2 grams of dust per million liters of air, and in it 55.4 grams of silica, also traces of zinc and copper. In sugar houses there were noted high temperature and humidity. In the manufacture of pearl buttons silica was found in the atmosphere; in print works, aniline and carbon-dioxide gas; in wire works, sulphuric acid (52.2 milligrams per million liters), iron (100 milligrams per million liters of air), and dust (88 milligrams per million liters); in the manufacture of gas mantles and garments carbon monoxide was found in the atmosphere. In the manufacture of matches phosphorus, 1.1 milligram per cubic centimeter, was noted. In mica goods 0.1 gram per cubic centimeter was found. He said that hours could be spent in the discussion of the diseases of occupation, and still very little ground be covered; so that in the short time allowed him it would be impossible to even more than emphasize important points of the divisions they might call industrial. For years the industries, and by that he meant manufacturing processes, had borne the burden as a direct cause of certain diseases, the accusation being based mainly upon mortality statistics. It was true that there was danger of poisoning or intoxication in certain industries, but every industry might be made safe by the application of safeguards. If the industry could not be made reasonably safe either by substitution of non-poisonous materials or proper appliances, it should be either prohibited or restricted. We were now in an era of prevention; our aim was to find the cause and remove it. It was not so long ago that all conditions of malaise were called malaria and ascribed to certain atmospheric conditions. If we desired to reduce diseases among the factory toilers, we should first analyze the process of manufacture, or conditions under which such processes were carried on, and determine the specific cause; then it would become very easy to supply the remedy through legal measures or otherwise. The study of occupational diseases was one of the first principles of hygiene, and was intimately associated with labor laws. Sir John Simon said "uncleanliness must be reckoned as the deadliest removable cause of disease." Dirt and disease were synonymous. The prevention of industrial diseases must be accomplished through cleanliness. Air made unclean through contamination by dust, fumes, gases, or vapors, or structural parts of buildings made unclean by dust and dirt, were the causes. Remove these causes, and the industry could no longer be blamed. The troubles then lay with the individual, and this became an educational as well as a public-health problem, as Dr. Richardson had very truly said. Uncleanliness, Dr. Graham-Rogers maintained, covered the whole field of sanitary law; it was the beginning and it was the end.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held December 28, 1911.

DR. FRANKLIN A. DORMAN, CHAIRMAN PRO TEM.

Omental Adhesions Following Operations, with Nausea for Two Years.—DR. LE ROY BROUN reported this case. A stenographer, twenty-seven years of age, was referred to him with the history of having had an operation for retroversion of the uterus, after which she had attacks of vomiting after each meal at intervals; sometimes this condition persisted for months. Her weight had fallen off from 160 to 130 pounds. She was admitted to the hospital on September 26, 1911, and kept under observation for a week, when an operation was determined on. The stomach and duodenum showed no evidence of abnormality. The stomach, however, was displaced downward and the transverse colon was pulled below the umbilicus by several dense adhesions of the omentum to the abdominal wall. No other abnormalities could be found. These adhesions were severed and the omentum was quilted and stitched to the abdominal wall above the umbilicus. The appendix was removed, although it showed no evidence of disease. After this the patient ceased to vomit, gained in weight, and was relieved of all her gastric pain. The omental adhesions had fixed the transverse colon in a vicious ptosis; this had pulled on the stomach and had also undoubtedly caused pressure through its mesentery and the superior mesenteric artery on the underlying duodenum, starting up the stomach disturbance. Dr. Broun said that since his attention had been called to omental adhesions and their influence on the transverse colon and the stomach, he had made it a uniform practice at the close of every operation to place the patient in the extreme Trendelenburg position and to give two quarts of salt solution by rectum. This would throw the transverse colon back into its normal position and prevent abnormal fixations.

Resection of Redundant Sigmoid.—DR. LE ROY BROUN said that in the preceding case they had symptoms resulting from an acquired ptosis as the result of adhesions, while in this case there was a defective development with the resulting pathological conditions and intercurring symptoms. The patient was an unmarried woman, twenty years of age, with all the symptoms of neurasthenia. The local condition was one of retroversion of the uterus and hemorrhoids. The uterus was replaced by shortening the round ligaments through a small transverse incision and the appendix was removed. The entire pelvis was occupied by a redundant sigmoid, which was much dilated and congested. The sigmoid was fastened to the abdominal wall, in the hope that some of the symptoms might be relieved. Resection was not done because the patient had not been consulted in the matter. Two and one-half months later she again entered the hospital and a resection of eight inches of redundant sigmoid was done. The attachment of the redundant sigmoid to the abdominal wall had improved her condition materially; the sigmoid was less distended and less congested. After resection of the sigmoid the transverse colon was suspended by its quilted omentum to the abdominal wall. The patient had made an uninterrupted recovery. Dr. Broun believed that such operations should only be done as a last resort, and then without any absolute assurance of relief from the symptoms. In those patients that they met with in the hospitals it was difficult to carry out any conservative treatment; they were forced back to work and could not rest or be subjected to long lines of medical treatment.

Squamous Epithelioma of the Cervix Associated with Tuberculous Peritonitis.—DR. LE ROY BROUN reported this case. The patient, thirty years of age, had been married twice. Her first husband lived seven years, and during this time she had two children, the first stillborn, the second born after a normal labor. Since the birth of her first child her health had not been good. Menstruation had been profuse and there was scarcely any interval between one period and another. She had been curetted twice, but not within the last four years. Her general condition was one of intense nervousness and anxiety. During the three years of her second marriage she was practically an invalid. The indication was that of radical operation for cancer, but the youth of the patient made them hesitate to take away all hope of maternity. Large sections were taken from the parts involved and sent to the laboratory for a report on frozen sections. The report returned was that they were free from cancer. On the basis of this report a high amputation of the cervix was done and the excised portion was examined in the regular way. The report was that the condition was one of squamous epithelioma. A radical operation was imperative and was done at once. This was peculiarly difficult, in that both ureters were imbedded in inflammatory exudate. At the time of the removal of the uterus, by cutting away the vagina below the occluding clamps, it was found that all of the involved parts of the vagina on the right side had not been removed. This was removed at once. The pathologist's report stated that the right lateral portion was involved up to the line of the cervix; this was recognized at the time of removal. The examination of the portion removed from the right side showed that no involved tissue had been left behind. The recovery of the patient was uneventful except for prolonged inability to empty the bladder, a condition not uncommon after this operation.

DR. FRANKLIN A. DORMAN asked if they were more uncertain of their diagnosis in frozen slides than if the sections had gone through a special process.

DR. BROUN replied that the sections were compared with other specimens that had ben gone over and in which evidences of malignant disease had been found.

Large Bilateral Bartholin Cysts.—DR. S. WIENER reported this case. The patient was an Italian, twenty-eight years of age, married, who was admitted to Mount Sinai Hospital on September 1, 1911. She had had three children, the last seven months previous to her admission. Ten months ago she had noticed a swelling on both sides of the vulva, which continued to increase in size, was painful, and associated with a moderate whitish discharge. Coitus had become very difficult and painful, and finally had to be abandoned. The uterus corresponded in size to the fifth month of pregnancy, and both labia majora were distended by tense, fluctuating, cystic masses the size of oranges. There was no redness, tenderness, or discoloration of the overlying skin. The left mass was slightly larger than the right. There was no impulse on coughing and no mass or pedicle could be felt in either inguinal region. These masses occupied the entire terrain of the labia majora, being covered on their outer aspect with skin and on the inner side by the labia minora and vulvar mucosa. Exploratory aspiration of the left mass revealed a thick, grumous, chocolate-colored fluid. No gonococci were found in urethral or vaginal smears. At operation both cysts readily peeled out of their surroundings through incisions along the muco-cutaneous junction. The left cyst was removed *in toto;* the right ruptured on removal with partial extravasation of its contents. Both cysts extended up to the pubic rami, which was exposed in the upper angles of the wounds. After complete healing there remained a gaping vulvar orifice with marked cystorectocele in full view. The case presented a number of interesting features. The cysts were bilateral; they were probably the largest on record; there was marked distortion and stenosis of the introitus. The cysts grew rapidly during pregnancy. This last feature could be explained by hemorrhage into the cyst during pregnancy and the trauma on attempts at coitus. There was no ques-

tion but that the proper treatment of large cysts discovered during pregnancy was their total extirpation.

Dr. S. Marx said he had called the attention of the section to his experience with unilateral cysts some years ago. He made his incision at the musculo-cutaneous junction, and there was considerable dyspareunia afterwards. Since then he had made the incision as far away from this point as possible.

A Unique Labor Case.—Dr. S. Marx cited this case in which the baby was born simultaneously through the vagina and through the rectum. He was called in consultation to see a woman, thirty years of age, who had been in labor eight or ten hours. The os admitted two fingers and the head was in the first position. He told the physician to wait and see if it was necessary to send for him again. This was at 8 P.M., and at 2 P.M. the woman's pulse was 110 and the os was fully dilated. Axis traction was made and he thought he could easily deliver the child. The head was in the pelvic basin, and upon making traction he noticed the anus increased in size, soon attaining the diameter of four inches. He then found that the arm, hand, and shoulder were slipping through the anus, while the head was engaging at the vulva. He cut through the tissues separating the vagina from the anus and delivered the child naturally and readily. He found a tear in the rectum about three and one-half inches long. He sewed up the tear and there was good union after ten or twelve days. He did not know how the tear was caused, unless by pressure, as the forceps did not do it, the traction being downwards.

Dr. A. J. Ronga said that Dr. Marx's case was very interesting, there being but few such cases reported in the literature. They had had a case in which the woman delivered herself spontaneously through the rectum. These cases illustrated Klein's conception of the principles governing the pelvic outlet and also perineal lacerations. Klein divided the outlet by drawing a transverse line between the tuber ischii, dividing the pelvic outlet into the anterior and posterior segments. The posterior was the larger of the two. Where the pelvic arch was narrow and flat, and left no room for the head to engage itself in the anterior segment, it naturally had to be born at the expense of the posterior segment. When this deformity of the pubic arch was extreme, the greatest part of the head engaging itself beyond the transverse line, rupture of the perineum was likely to take place at its weakest portion, and with it the rectum was torn, and the head was born through this artificial opening. On the other hand, if the anterior segment was roomy and the pubic arch well-formed, the greater part of the head would be born at the expense of the anterior segment, and therefore the perineum was not likely to be lacerated.

Pubiotomy.—Dr. Sidney D. Jacobson read this paper, giving a report of ten cases and a review of the history of this operation in America. Pubiotomy differed from symphyseotomy, in that in the latter the ligaments which held the pubic bones together were cut with a knife. The operation of pubiotomy was first proposed by Gigli in 1894, and its first successful performance was accredited to Bonardi of Lugano in 1897. The first operation of its kind performed in the United States was done by Dr. Montgomery in Quincy, Ill., the occasion being a persistent face presentation with the chin posteriorly. A search of the literature showed the total number of cases operated on in this country was 53, operated upon by 20 different operators in six different States. Of these 30 were primary or elective, and 14 secondary, that was, they were cases in which attempts at delivery by forceps or otherwise had been attempted previous to the operation. In some of these the life of the child had been seriously jeopardized by previous treatment, and some of the mothers were septic. Of the 30 primary operations, all of the mothers, or 100 per cent., remained alive, while 30 babies, or over 90 per cent., remained alive for over one week. Of the 14 secondary pubiotomies, 11 mothers, or 78.5 per cent., were saved, while 6 babies, or about 42 3/4 per cent., were delivered alive and remained so for a week or more. These figures were an eloquent plea for the performance of pubiotomy in cases of moderately contracted pelves; without it, or with any other known form of treatment, practically all of the children in the secondary cases and a large number of the mothers would have been lost. Most of these cases were operated upon by the subcutaneous method, known as the Döderlein method; only 12 of the cases had been operated on by the open method, and of these the writer had done nine. After describing the subcutaneous method of performing pubiotomy which was in general use, Dr. Jacobson said that early in his experience with this method he had been impressed with two serious drawbacks in this method of operating. One was that after the bone section merely a thin bridge of skin and fat lay between the operator and the divided tissues. This bridge was of no value to the patient, and was harmful because it prevented the surgeon from using proper surgical methods to stop hemorrhage, which was sometimes serious. The second drawback was that under this bridge of skin a hematoma often formed, which might become infected and cause tedious suppuration and sepsis. The writer, therefore, used the open method of operating by dissecting down to the bone before dividing it. Thus all hemorrhage could be easily controlled. He also placed the patient on her back, with her legs extended, during operation. Thus the intraabdominal pressure was not raised, and consequently the baby's head was not forcibly jammed down into her pelvis the moment the bone section was completed, and the ends of the divided bone were not violently pried apart; thus extensive vaginal lacerations were avoided. The technique employed by the writer was simple and within the compass of any man claiming recognition as an obstetric surgeon. The patient's pubic region was submitted to a dry shave and her vulva and adjacent parts painted twice with tincture of iodine. If there was a purulent vaginal discharge the interior of the vagina was also painted with iodine. The patient being placed on her back and anesthetized, the operator found the left pubic spine by palpation and made an incision about four inches long just median to the spine and almost parallel with the left labium majus. The incision was longer if the patient was fat. This incision was deepened until the whole pubic bone came into view. Meanwhile a few small bloodvessels would have to be clamped. The saw-carrier or pubiotomy needle was passed around the back of the bone, keeping close to its posterior surface, from above downwards, until the lower edge of the pubic bone was reached. The carrier was passed just median to the pubic spine. When the point of the carrier had emerged into the wound under the lower edge of the bone, the saw was attached by a stout thread, and the carrier, being withdrawn, drew the saw up behind the bone with it. The carrier was detached from the saw and the handles were attached, and then the bone was sawn through by the aid of sight. As the bone section was completed the saw was discarded and a sterile gauze packing was pushed behind the cut ends of the bone, between its surfaces and in front of it, until the wound was full. The lips of the wound were brought together with 4 to 6 silkworm or Pagenstecher sutures and tied in bow-knots. The patient was slowly brought into the lithotomy position, care being taken that the toes were not everted, as this separated the bone ends and tore the soft parts. Forceps were then applied and the baby was delivered. After delivering the placenta, the vagina was packed with sterile gauze to prevent the possibility of postpartum hemorrhage. A little roll of sterile gauze was

placed over the line of incision and a three-inch-wide strip of adhesive plaster placed over that to keep out discharges. The urine was drawn by catheter, and, if free from blood, no injury had been done the bladder. About twelve hours later the dressing was removed. The bow-knots of the sutures were untied but left in place to close the wound after the packing had been removed. Gauze and plaster dressing was then applied after leaving a small gauze drain in the lower angle of the incision. This drain and dressing were changed daily and the stitches removed on the fifth day. The patient was catheterized every five hours for the first week. Otherwise the after treatment was the same as after instrumental delivery. After giving a brief history of the ten cases upon which he had operated, Dr. Jacobson summed up the advantages of pubiotomy as follows: 1. Where the disproportion was slight the patient might receive the benefit of the test of labor. This would protect the woman from unnecessary surgical interference. 2. The part at fault was operated upon and the pelvis was permanently enlarged. 3. The patient was not subjected to a dangerous or mutilating operation. 4. The child was not injured in the delivery. 5. The operation did not leave any permanent disability. 6. The patient might be safely delivered, even if exhausted or infected. 7. Prolonged anesthesia not being necessary, delivery might be performed in the presence of organic heart disease, and rapidly completed. 8. Statistics showed better results by this method than by any other in moderately contracted pelves.

Dr. S. Marx said that he was not only opposed to this operation, but to symphyseotomy as well. He felt that he could almost guarantee that an expert could do one hundred cesarean sections without mortality and the women would be left in good condition. They would not get 100 per-cent. recoveries in pubiotomy and the women would not be left in good condition. He had seen women injured for life as the result of pubiotomy. He had recently seen abroad three women who had been reported as cured; one had a hole in her bladder, a second had not walked for six or seven weeks, and the third had a permanent urethral fistula. He had never seen such wonderful results as Dr. Jacobson had seen. He had seen rise of temperature, necrosis of the bone, sepsis, hematoma, and other conditions of serious import develop. Dr. Marx compared these results to those that followed a good, clean, elective or non-elective cesarean section. Of his own 25 cesarean sections all had recovered except one, who was operated on during an acute pneumonia. Dr. Marx said that Dr. Jacobson's description was not full enough; he spoke of women with contracted pelves, of women with small pelves, but nothing was said about the position or the adaptability. He cared not what the pelvis measured, but he did care about the irregularities. If they could get the head to engage it would go through. In the case of symphyseotomy that Dr. Jacobson reported as having been done in Illinois, why did not the physician try to correct the position? In those cases in which a suspicion arose that a pubiotomy might be required, he advised the Walcher position; with the head in the pelvis he applied the forceps. When the waters had escaped it might be well to attempt an elective high forceps in the Walcher position. In those cases in which the child was dying or dead, there was a useful field for perforation, and he used the perforator to-day more than ever before. The best results, however, were obtained by doing a clean cesarean section. He did not care so much about the mortality rate as about the morbidity rate.

Dr. John O. Polak said the time had come when the delivery of the full-term child must be made by forceps, pubiotomy, or cesarean section. The forceps should be used only in those patients who had had the test of labor and where the head could be engaged in the pelvis. Version had no place in contracted pelves, particularly the kind one met with around New York. The great trouble with pubiotomy was the injury inflicted on the soft parts. It was well enough to say "open the pelvis by a pubiotomy incision and the head will fall in," but the operation was not completed by the descending head. The operation of pubiotomy did not finish the delivery. Often after the operation the woman was subjected to the same injuries that were attendant upon a difficult forceps operation, and these injuries were serious so far as the woman's future comfort was concerned. He thought that perhaps he was too enthusiastic in regard to elective cesarean section since Dr. Humpstone and he had operated upon 60 cases without a death, and they found that the length of time that the women had been in labor made no difference in the mortality. He thought their success was due to rapid and clean technique. Last year Dr. Polak had had occasion to perform a cesarean section on a woman who had previously had a pubiotomy performed. He did the cesarean section because of an exostosis at the line of the pubiotomy wound. This showed that pubiotomy did not always enlarge the pelvis. He was opposed to craniotomy and did fewer and fewer, because he believed the child had certain rights.

Dr. A. J. Rongy thought that pubiotomy had a definite field in modern obstetrics; an operation that had been performed over 500 times by our best obstetricians ought not to be condemned, particularly by those who had had no experience with it. Pubiotomy should never compete with cesarean section. Cases in which cesarean section was indicated, pubiotomy was contraindicated, and *vice versa*. Craniotomy must be eliminated from the category of modern obstetrics if the child was fully viable. Personally, Dr. Rongy said he would withdraw from a case if asked to perform a craniotomy on a living child. The method that Dr. Rongy followed was that of Doderlein, or the partially closed method, as he thought the open method exposed too many areas for infection and exposed the bony surfaces unnecessarily. The bleeding could usually be closed by compresses and packing the vagina, and the post-operative dressings and treatment were very simple. He allowed the patient to move about in bed at the end of the third day and allowed her to get up on the fifteenth day if her physical condition permitted. He found that in his cases bony union did not take place, and the reports from various clinics showed that fibrous union took place in two-thirds of the cases. There was no permanent enlargement of the pelvis, as claimed by pubiotomists. Among a series of 50 cases in Shauta's clinic, 44 had subsequent deliveries and only three of them delivered spontaneously. Pubiotomy should be performed only in misjudged or neglected cases.

Dr. E. K. Brown said that the operation of pubiotomy was not an operation of election because of its sequelæ. In Dr. Jacobson's cases they should have the full details of the measurements of the pelves of women operated on by him and also the measurements of the fetal heads.

Dr. Ralph Tousey said that, as he recollected in studying William's obstetrics, the operator was advised to raise the periosteum from the pubes and to saw underneath it. He asked if that was a necessary part of the procedure.

Dr. Rosalie Slaughter Morton asked Dr. Jacobson about the weight of the children born spontaneously in two of the pubiotomies that he reported. Was the second child less in weight than the first? Also was there a solid bony union following the operation in these cases?

Dr. S. Wiener said that five years ago, when he was in Berlin, he saw many of the bad results following pubiotomy. On one case in particular there was a tremendous injury to the bladder, for which the assistant was blamed because he did not push hard enough against the femur. It required three subsequent operations to heal the result-

ing vesicovaginal fistula. In Germany they were forsaking pubiotomy and going back to cesarean section.

Dr. Clinton Beecham Knapp said he had had but one case in which he had resorted to pubiotomy. Previous handling had excluded cesarean section, and hebotomy was done and the child came through easily with the use of the forceps, but died a day or two later of cerebral hemorrhage. He advised Dr. Jacobson not to consign his high forceps to the scrap heap, as he might need the forceps to bring the head through after he had performed pubiotomy. He did not think that the author of the paper had sufficiently considered the danger of rupturing the bladder. The indication for pubiotomy was where the mother was not strong enough, or where previous handling so increased the danger of infection that cesarean section could not be risked. In version or breech cases, where there was much doubt as to the delivery of the after-coming head, he felt that it was a safe procedure to place the Gigli saw.

Dr. Jacobson, in closing the discussion, said that he respected the opinion of Dr. Marx as coming from an obstetrician of large experience, but he differed from him in a few minor points. Dr. Marx quoted a series of 50 cesarean sections done by someone else without any mortality; these were probably picked cases which had not been subjected to long labors and various other attempts at delivery. Under similar circumstances he had quoted a series of 30 pubiotomies without maternal mortality. The most brilliant results shown by pubiotomy were in cases that had been in labor for a long time and had been handled so much that the advocate of cesarean section would not dare to operate. One of the most skillful of New York obstetricians had shown a mortality of 14 per cent in a long series of cesarean sections done in unpicked cases, and he had at his command trained assistants and a first-class hospital organization. Dr. Jacobson said he had never seen one case of hopeless crippling of the patient, either in his own practice or that of any other operator. That occasional cases might suffer from injury to the soft parts, due to pressure or to gouging with the forceps, was not denied, but that they should be charged to the safe operation of pubiotomy was not quite fair. Dr. Marx said he preferred version in cases of contraction of the pelvis. It was precisely in this class of cases that the head could not be delivered in time to save the child. The fetal mortality here was absolutely prohibitive. Personally, he felt that craniotomy on the living child was absolutely unjustifiable. Only 0.5 cm. increase in the conjugate diameter of the pelvis could be gained by the Walcher position, and usually only a few millimeters were gained in this way. The morbidity after the operation of pubiotomy had been highly exaggerated by the opponents of this operation. The liability of breaking the saw was referred to, and this was of frequent occurrence unless certain precautions in the technique were observed. The saw must not be bent at an acute angle and the sawing must be done very deliberately and the whole length of the saw used. The sawing must be done very slowly or the friction raised the temperature so high as to break the saw. He could not agree that the passage of the child after pubiotomy tore the vagina. Two factors operated after the division of the bone; firstly, the patient's legs, being bent over the abdomen, raised the abdominal pressure and forced the fetal head against the pubic bone; this gave no time for the soft parts to accommodate themselves. Again, by allowing the toes to become everted too much the head of the femur, acting through the acetabulum, acted as a lever to pry the end of the cut bone apart, and proportionately to the eversion of the patient's feet would her soft parts be torn. Only after all was ready for delivery were the legs slowly and evenly raised and made fast in the lithotomy position; but the thighs were kept at a right angle to the trunk, so as not to raise the intraabdominal pressure until the child had been delivered. The feet were not allowed to be everted any more than was necessary to gain sufficient bone separation for easy delivery of the child. In reply to Dr. Tousey's question, it might be said that it was not proper to raise the periosteum from the bone before section; such a procedure might induce necrosis of the bone. As to Dr. Morton's question regarding the size of the children subsequently delivered after pubiotomy, his impression was that they were average children, whose heads were a little larger and harder than those gotten at the time of the pubiotomies. The pelvic bone did not, as a rule, unite solidly, but the patients walked perfectly well after the parts were healed.

Election of Officers.—*Chairman*, Dr. Franklin A. Dorman; *Secretary*, Dr. George W. Kosmack.

THE WESTERN SURGICAL ASSOCIATION.

Twenty-first Annual Meeting, Held at Kansas City, Missouri, December 18 and 19, 1911.

The President, Dr. Amos W. Abbott, Minneapolis, Minnesota, in the Chair.

(*Concluded from page 190.*)

Treatment of Cancer of the Uterus by the Actual Cautery, with a Practical Method for Its Application.—Dr. James F. Percy of Galesburg, Ill., stated that he had improved his technique in using the actual cautery in otherwise inoperable cases of cancer of the cervix and body of the uterus, as follows: "(1) The abdomen is prepared as for any abdominal operation. (2) The patient is put in the full Trendelenburg position. (3) An abdominal incision is made just sufficient to admit one or two fingers of an assistant into the pelvis. In a thin patient one finger is enough. (4) A fever thermometer indexed to register at least 250° Fahr. is introduced through the urethra into the bladder after the urine is removed by catheter. A second similar thermometer should be in readiness for use in the rectum, if it is necessary to cauterize deeply posteriorly. The fingers can be used here also, and may be all that is necessary. (5) The cautery is applied in the vagina through a speculum after the pattern of that of Ferguson. This speculum is made on the plan of a thermos bottle. (6) There is no use of attempting this work unless the cautery used is perfect in its action, namely, has more heat under control and at command than will ever be required." The author referred to the use of the cautery in this disease twenty years ago by Dr. John Byrne of Brooklyn, N. Y., and commended it. The author based his technique on the statement of Loeb, that a section of mouse cancer, when frozen, would grow again when transplanted; but if the temperature of a control section was raised to 113° Fahr. or more it could not be successfully grown. A special form of heavy cautery was used which would raise the temperature in the pelvis to 120° Fahr. The author showed that by the technique described, the use of the cautery could be made just as accurate and finished as when the knife was used. If all cases of cancer in the region of the body under consideration were submitted to the improved cautery operation described, the author was more than convinced that practitioners would obtain not only the advantage of no primary mortality, but in addition a largely increased percentage of lives greatly prolonged in comfort, with freedom from hemorrhage, exhausting an offensive discharge, and mental distress.

Tubal Sterilization.—Dr. Lawrence W. Littig of Davenport, Ia., read a paper on this subject in which the following conclusions were drawn: (1) That animal experiments, the ligation or excision of pathological tubes, and the results of like operations on normal tubes proved

conclusively that tubal ligation, with or without excision, was not an efficient measure to prevent conception. (2) The only operation which gave a promise of success was excision of all or a part of the tube with a deep wedge-shaped incision of the uterine cornu, including the *pars uterina* of the tube, the uterine defect to be closed with a musculo-muscular, and a sero-serous row of sutures. (3) The anterior abdominal approach was the easiest, the simplest, and the safest. (4) Granting that the state had the right to sterilize its mental and moral delinquents, tubal ligation, as legalized in Iowa, considering its remote possibility of success, and its ever-present, although vanishing danger, was an unjustifiable operation, entirely without promise as a means to lessen the procreation of the unbalanced. (5) In medical practice tubal sterilization was but rarely justifiable because it did violence to the most deeply rooted of all instincts, after that of self-preservation. (6) Considering the almost fiendish pertinacity with which the female economy conserved the function of the Fallopian tubes, the efficiency of vasotomy or vasectomy might also be questioned unless Kipling were right when he said, "But the woman that God gave him, every fiber of her frame, proves her launched for one sole issue, armed and engined for the same, and to serve that single issue, lest the generations fail, the female of the species must be deadlier than the male."

Artificial Tendons and Ligaments of Silk in the Surgical Treatment of the Paralyses.—Dr. NATHANIEL ALLISON of St. Louis stated that his experience covered a considerable number of cases and dated back to one year and a half ago, when the operation of anterior foot suspension was first performed. Since then twenty odd cases had had the method employed to afford stability at their ankles in one form or another. But one case had been operated upon to check hyperextension at the knee. In none of these cases had the silk shown any tendency to come out, nor had there been an infection. The after-treatment of these cases should be carefully overseen for at least a year. Plaster-of-Paris dressing must be worn for the first six weeks. After this braces might be supplied, which would support the limb and protect the artificial tendons from undue stress, the idea here being to give the tissues a sufficient period of time to produce fibrous tissues in sufficient quantity to insure permanency of the support.

A New Apparatus for the Reduction of Fractures of the Lower Extremity.—Dr. CHARLES H. LEMON of Milwaukee said that this instrument was one of precision and when used intelligently much could be accomplished with it. That it would enable surgeons to obtain better results than were possible by Buck's extension was his experience after five years of personal use. It had made unnecessary the general operation of closed as well as of many compound factures by enabling the surgeon at his leisure and without the aid of assistants to completely extend fractures. By its use it was his hope that more definite apposition of fragments in all parts of the leg would be made possible because the rods which carried the footpiece from which the extension was made could be placed in any position the human leg could be. It had overcome the difficulty recognized by Sir Ashley Cooper and the limitation of Mr. Lane's plate in intracapsular fractures of the femoral neck. That this instrument might prove in the hands of others the valuable adjunct it had proven to himself in the treatment of fractures of the lower extremity was his reason for exhibiting it at this meeting.

Chronic Brain Abscess of Traumatic Origin.—Dr. WILLIAM JEPSON of Sioux City, Ia., reported the results in six cases of chronic brain abscess of traumatic origin which had been submitted to operation. There was one recovery among the three cases from gunshot wounds and two recoveries among the other three cases from fractures produced by means other than missiles. Dr. Jepson pointed out that in all cranial fractures assuming the type of punctured wounds there existed a great tendency to the production of a chronic abscess, which he designated as an encapsulated infection, and as long as the capsule held, which might be many years, the same would be without symptoms, as the capsule separated the tissues to a far greater extent than that of destroying them. Such capsule, however, sooner or later gave way, converting a latent into a potential infection, and the development of symptoms indicative of acute inflammation followed. He spoke of the danger of infecting the arachnoid space, a danger which should be guarded against by a not too rapid escape of the pus.

The Choice of Technique in Enterostomy Incident to Operations for Intestinal Obstruction.—Dr. JOHN P. LORD of Omaha favored refinement in the technique of enterostomy to render its application less objectionable than it was when the operation was performed by the present well-known methods, which he considered too crude. Their very objectionableness prevented their use except as a last resort. The frequent early use of an unobjectionable method improved results. The drainage of the bowel in chronic obstruction as well as in acute made for safer surgery. Venting by an enterostomy tube in uncertain or insecure sutures, especially in complicated cases in resections of the large intestine, removed the element of gas distention and allowed rest to the bowel, a necessary condition to insure primary union. The technique favored was practically identical with an E. J. Senn gastrostomy. Leakage had never been troublesome, and in all cases that survived closure was complete in a short time. The literature showed the use of the pursestring suture of the intestine about a catheter, but little was said about multiple pursestring sutures as in a Senn gastrostomy. Dr. Lord contended that the simplicity and safety of the method favored made the indications for enterostomy more frequent, and if it were often used and had a more general early application it would make for safer and more satisfactory intestinal surgery incident to operations for obstructions.

The President's Address: "The Western Surgical Association."—Dr. AMOS W. ABBOTT of Minneapolis said he believed the secret of the success of this association was this: the criticism in this association was not only honest but capable. Here the work, not the individual, was discussed. The members felt that the criticism was just and that it came from an authority, equal and often higher than his own. They came for the truth, and when they were through they felt that they had it, and that, small as the footing might be, each member knew where he stood. No member of the association would willingly fatten on an error that would do injury to his clientèle. He wanted to get at the absolute scientific value of his work. He had no vanity to sacrifice, but wanted only to take back to his people facts on which he could depend. On the other hand, when the approval of members had endorsed his work he was assured of its reliability and was proportionately comforted and encouraged. These, he believed, were the chief reasons for the success of this association

Infection of the Retroperitoneal Lymphatics.—Dr. JAMES E. MOORE of Minneapolis said that they were all familiar with perinephritic abscesses and retrocecal abscesses when the appendix was outside of the peritoneal cavity, but, aside from these, comparatively few cases had been reported in which the abscess was known to be of retroperitoneal origin. We would naturally expect this large space behind the peritoneum with its abundant areolar tissue and free lymphatic communication with parts so frequently the seat of infections to be a very common location for abscesses. The chances were that owing to

the inaccessibility of these parts infections, and even abscesses, often occurred here that were not recognized. When there was an infection here the intestines usually became distended, which added to the natural difficulties of examination; when chills, fever, and sweating were present, the cause of which was not found in any of the usual locations, or when the symptoms continued after thorough drainage of pelvic or abdominal abscesses the retroperitoneal space should be suspected. It was quite possible that in many instances where patients had died from sepsis without the abscess having been discovered it was located in this region. The presence of tuberculous abscesses in this location had been very frequently recognized. The reported causes of nontuberculous abscesses in the retroperitoneal space were typhoid fever, appendicitis, salpingitis, infection following abortion and parturition, and suppuration of the inguinal glands. In some cases following parturition infection had manifested itself as late as three months after labor. A few cases had been reported without apparent cause. The writer's experience was limited to four cases, the first two occurring years ago before laboratory facilities were at hand.

Failure of the Colon to Rotate.—Dr. Charles H. Mayo of Rochester, Minn., said that the relative rarity of these obscure intraabdominal abnormalities and the fact that they so infrequently gave rise to definite symptoms explained in part why a diagnosis was so seldom made. The common afflictions, such as harelip, club-foot, imperforate anus, anomalies of external genitalia, etc., usually came under the surgeon's care in infancy or early childhood. But within the abdomen congenital deformities were so efficiently concealed that only a small percentage of them was found until adult life was reached, and then only at operation or autopsy. The various phases resulting from nonobliteration of the vitelline duct, dermoid cysts, anomalies of the female genitalia, and variations in the position and relationship of the large intestine were familiar examples of these conditions. Because of congenital or acquired openings in the diaphragm, much of the colon with other abdominal viscera might be located in the pleural cavity. A partial rotation might leave the cecum at any point between the normal and the right under-liver position, or the left umbilical or left pelvic position. In the event of such abnormality there might be failure to find the appendix at operation and the congenital position should be considered probable when no colon was found on the right side, and positive if the duodenum was found uncovered by colon and with a mesentery. Failure of the colon to rotate should be considered as a possible cause in cases of obscure inflammatory conditions in the left or middle pelvis, or in the left iliac fossa. Approximately three hundred cases of complete transposition of the abdominal viscera had been reported in the literature. In six cases observed at St. Mary's Hospital they operated three times for left-sided appendicitis, twice in acute abscess. Very little was found in the literature as to failure of the colon to rotate, although it was undoubtedly a condition which should be considered as more frequent than complete transposition. The condition might be found described under various anomalies of the duodenum as well as of the colon. They had observed five of these cases during the past two years in operating upon the abdomen, and in only one of the cases was the abnormality diagnosed before operation. Dr. Mayo reported five cases observed at St. Mary's Hospital during the past two years.

Nitrous Oxide Gas and Oxygen Anesthesia.—Dr. Clifford C. Collins of Peoria, Ill., read a paper on this subject. The advantages of nitrous oxide gas and oxygen, as pointed out by him, were: (1) So far no one had been able to discover that it had any harmful action on any tissues of the body when administered in anesthetic quantities. (2) It had no odor, and the patient was not aware, so far as any odor was concerned, that he was taking an anesthetic. (3) It produced no shock of itself, and the total amount of shock from an operation was much less under gas and oxygen than under ether. (4) It did not have any harmful action on the leucocytes, therefore its use was indicated in infections. (5) Its danger was not increased by frequent subsequent administrations. (6) There was much less postoperative vomiting than from ether or chloroform. The disadvantages were: (1) It was considerably more expensive than ether or chloroform. (2) It did not produce deep relaxation of the muscles. (3) The anesthesia was lighter and more transient. (4) It required a more expensive administration apparatus. The disadvantages of gas and oxygen concerned the surgeon and anesthetist, but did not add any discomfort or danger to the patient. With an apparatus like the Teter nitrous oxide gas, oxygen, or ether might be administered separately or in any desired combination. In this way the anesthetics might be fitted to the patients and not the patients to one anesthetic.

Tuberculosis, Solitary and Apparently Primary, of the Fallopian Tubes.—Dr. Albertus J. Burge of Iowa City, Ia., reported two cases of tuberculosis of the Fallopian tubes. The sections in each case showed well marked tuberculosis in the partially destroyed or degenerated mucous and muscular walls with distinct giant cell formation. He predicted that the future would recognize distinctly the tendency of the female adnexa to develop primary tuberculosis as did the epididymis of the male. If so, what should be the treatment accorded such? Would it be the same vigorous, radical, and summary course which the analogous disease in the male merited and now received? In view of the added dangers of an intraperitoneal location in the female, he ventured to say that it would, saving the ovaries when free and safe, but in nowise temporizing with the tuberculous infected tubes.

Dr. John B. Murphy of Chicago stated that Dr. Burge's paper had interested him from several standpoints. First, from the pathological findings; second, from the clinical history; third, from the association of this lesion with hemorrhages from the uterus, and, fourth, from its surgical treatment. The reason for the deposit of tubercle bacilli in a tube was not definitely settled. Whether it was of hematogenous origin in the tube, or of hematogenous origin in the vas deferens, or the epididymis, which was a common point of location in the male organs of generation, was a question. It was his belief that infection in the tube was more commonly through the peritoneum or through the uterus, and that tuberculosis of the uterus was a more frequent lesion than was generally believed. Both of Dr. Burge's cases showed evidences of mixed infection, and not a pure infection. When there was a pure infection of the tube the fimbriated end was open. It was the only type of infection of the tube that retained the patency of the tube during the inflammatory process. In the other types of infection of the tube the tendency was at once to the closure of the tube by agglutination to the neighboring structures. Where a tube remained open the clinical course was almost identical with that of recurrent appendicitis. The patient would have a period of relief—in fact, of good health—followed by a sudden attack of pain, nausea, and vomiting, local sensitiveness, elevation of temperature, and often a discernible effusion in the peritoneal cavity. Examination through the vagina or through the rectum usually showed a thickening of Douglas' pouch in the class of cases of the type he mentioned. In the type of case Dr. Burge had reported here once the tube became closed it did not give the recurrent appendicitis syndrome of symptoms as did the open fimbriated end. Perforation of the tube on the side of tuberculosis, as mentioned in the paper, was not uncom-

mon. When it did occur it caused a limited peritonitis, which usually rapidly circumscribed itself and underwent repair. The peritoneum had such greater resistance against tuberculosis than any other tissue in the body that it rapidly healed up. In the treatment of these cases removal of the tube with the encapsulation of the ends sufficed for the cure of the local condition, and not only that, but the extensive peritonitis that might have resulted from repeated attacks of leakage from the end of the tube entirely repaired itself.

Observations on the Present Status of Surgery for Cancer of the Breast.—Dr. E. S. Judd of Rochester, Minn., said that tumors of the breast might be divided into two groups, benign and malignant. So far as was known at the present time, a differentiation other than microscopic could not be made between a benign tumor and a very early malignant one. They should all come under the same line of treatment, namely, radical excision of the malignant tumors and removal of the tumor followed by radical excision if the growth proved malignant in the supposedly benign type. Age was no longer considered an important factor in determining malignancy. Handley believed that cancer originating in the breast disseminated through the lymphatics in the fascia, and that the embolic theory had been accepted chiefly because there was no proof against it. While it was true that the muscles were seldom involved as compared to the fascia, at the same time he had recently observed several cases in which the lymphatics penetrating deep into the muscle were extensively involved. The frequency with which mammary carcinoma produced metastases in the bones was well known. The sternum and ribs were the most frequently involved, and this occurred by direct extension. The femur, bones of the spine, and humerus came next in the order of frequency. It was often advisable in cases of cancer of the breast to have *x*-ray plates made of the bones most frequently invaded, since it was obviously useless to remove the breast should one of these bones be involved. Two hundred and sixty-four cases of carcinoma of the breast had been observed in the clinics at St. Mary's Hospital within the past two years. Of this number two hundred were considered operable and sixty-four inoperable. In order to make an early positive diagnosis it was necessary to remove for macroscopic and microscopic examination all supposedly benign and doubtful neoplasms. The technique of radical amputation of the breast had changed but little in the past few years. A large amount of skin, equidistant in all directions, should be removed. The most important part of the technique was the removal of a very extensive part of the superficial and deep fascias. This dissection should begin above the axillary structures, include the pectoral muscles and fascia of the axilla, and extend down over the rectus muscle, taking in a part of its fascia. In removing the pectoralis major the fascial incision was carried to the sternum and from there outward to the large muscles of the back. If there were many skin nodules, or if the integument was brawny and edematous, although the local lesion could be entirely removed, in all probability there were internal metastases or bone lesions and the condition was hopeless. The prognosis as to the probability of a cure in a case of carcinoma of the breast would depend (1) on the length of time the neoplasm had been developing; (2) on the degree of outlying involvement; (3) the activity of the gland, which would be determined by the age of the patient and the relation to a period of lactation, and (4) the thoroughness of the removal of the gland-bearing fascia.

Sarcoma of the Testicle.—Dr. Arthur C. Stokes of Omaha reported a case of sarcoma of the testicle, after which he drew the following conclusions: (1) Typical sarcoma of the testicle occurs more rarely than atypical. (2) Tumors of the sarcoma type, but atypical, occur more frequently than those of the carcinoma type, Ewing to the contrary notwithstanding. (3) Typical sarcoma of the testicle occurs occasionally, but always arises in the epididymis or tubules, and never in the rete testis. All tumors taking on a carcinomatous appearance are teratomas in origin with the epiblasts predominating. (4) The mixed tumors of the testicle originate in the rete testis in tissues which, according to Grawitz, have their beginnings in primitive kidney embryonal tissue or mesoblastic origin carried down in the descent of the testicle. According to Waldeyer, they originate in the sexual cell, which has been subjected to some form of irritation. This last theory agrees more clearly with the clinical picture than does the theory of Grawitz. (5) The literature on prognosis is so fragmentary and imperfect that one has been unable to lay down any principles for operation from the accumulated records, but judging from the pathology of the tumor by the time a clinical diagnosis is possible an operation as radical as Bland Sutton's should be done, and the removal of the testicle and cord only begs the question and is never indicated.

Strangulation of Intestine Beneath a Persistent Inguino-Genital Ligament.—Dr. C. H. Wallace of St. Joseph, Mo., reported a case illustrating a very rare condition. The case presented the unusual features of cryptorchidism with a well organized embryonic inguino-genital ligament underneath which a loop of small gut became strangulated while the patient was in the act of lifting his leg. The development of a free band extending from the retained testes to the internal abdominal ring brought forth some controversy inasmuch as the settlement of considerable accident insurance was involved in the case. On the one hand, it was held that the inguino-genital ligament, which later became the gubernaculum, existed as a retroperitoneal structure similar in peritoneal relations to the ureter, hence the impossibility of the intestine being caught beneath it. This view appeared to be reasonable until further study was made of the development and descent of the testes. In order to clear up the question satisfactorily, a personal letter was addressed to Dr. George S. Huntington, Professor of Anatomy in Columbia University, New York, explaining the findings at operation. His letter of reply was freely and literally quoted in what followed: According to Professor Huntington, "there was unquestionably in this case the exceptional condition of cryptorchidism in which the testis remains, after reduction of the Wolffian body proper, in relation to the caudal pole of the permanent kidney, instead of descending, as it usually does, to the inguinal ring or some point within the inguinal canal." The constricting band was undoubtedly the inguino-genital ligament of the embryonic testis which normally becomes the gubernaculum. That it existed as a free band capable of strangulating the bowel is not remarkable. "All abnormally persistent embryonic structures, which raise the colon lining into folds, tend, if they persist in the adult, to become free structures traversing the peritoneal cavity. This is accomplished by absorption of the thin-layered sheet of colon lining which forms the foundation of the original fold of embryonic peritoneum developed by the growth of the related structure." An example might be found occasionally in the persistence of a free band extending from some point along the terminal portion of the ileum to the umbilicus. This was a fibrous cord representing persistent omphalomesenteric artery. Very rare was the condition of a persistent band representing the inguino-genital ligament. If persistent, however, the same law of absorption of mesentery had been followed. Originally the mesenteric folds performed a blood carrying function. "In the case of a descendant and rudimentary structure, persistent in the adult, this primitive mesenteric fold lost

its original significance as a blood carrying membrane The structure to which it originally brought vessels degenerated into a fibrous cord, with very slight vascular relations and the mesenteric peritoneal fold by means of which it was originally suspended within the peritoneal cavity, began to be absorbed in certain regions, producing lacunæ or perforations. The confluence of these areas of absorption tended to the formation of larger fenestra between the parietal peritoneum and the band, and finally by a continuation of this process the band, whatever its original significance and purpose might have been, traversed the abdominal cavity of the adult in the direction of its original embryonic relation and might act as a constricting or strangulating agent if intestinal coils were caught beneath it, or between it and the abdominal walls Another rather interesting feature in the history of the case was the apparent relaxation of the band while the patient was in the act of lifting the leg, thus permitting a long loop of intestine to slip beneath it.

Congenital Malformations of the Ureters.—Dr Daniel N. Eisendrath of Chicago read a paper on this subject in which he drew the following conclusions: "(1) Congenital malformations of the ureters were formerly thought to be only of interest to the pathologist. (2) The surgical importance of these malformations is just beginning to be appreciated. (3) Four of his cases were found to give rise to clinical symptoms sufficient to require operation. The fifth case was a specimen obtained at autopsy. (4) The clinical picture in these cases varies. In some the abdominal tumor is the most prominent symptom These are the cases which are generally spoken of as congenital hydronephrosis, where the obstruction is close to the renal pelvis. A second clinical variety is that in which the sausage-shaped tumor extends from the costal arch downward. A third variety is where a protrusion of the lower end of the ureter into the bladder exists. A fourth variety is where the clinical picture is that of a renal infection. Some of these cases may be very difficult to diagnose on account of their resemblance to other varieties of intraabdominal infection. The origin of all congenital malformations of the ureter is undoubtedly a persistence of fetal conditions The principal varieties found at operation and autopsy are these: (1) No lumen for the entire length. (2) Narrowing or localized absence of lumen: (*a*) ureteropelvic junction; (*b*) upper third alone; (*c*) both upper and lower thirds (*d*) at vesical and (cystiform protrusion). (3) Spiral twists, usually one or more. (4) In none of the cases was the lesion due to any accessory renal vessels or any extraureteral inflammatory process."

The following papers were also read: "Chronic Infective Synovitis," by Dr. W. W Grant, Denver, Col.; "Complications of Displacements of the Colon," by Dr. Carl E Black, Jacksonville, Ill.; "Surgery of the Thymus Gland, with Demonstration of Intratracheal Insufflation of a Dog," by Dr. B. Merrill Ricketts, Cincinnati, Ohio; "Treatment of Acute Intestinal Obstruction Accompanied by Impairment of Intestinal Vitality," by Dr. Van Buren Knott, Sioux City, Ia.; "Further Observations of the Regeneration of Bone and Reproduction of Joints," by Dr. John B Murphy, Chicago, Ill.; "Some Effects of Anesthesia Upon Toxin Resistance," by Dr. John L. Yates, Milwaukee, Wis.; "The Results in the Treatment of Cancer of the Uterus by the Actual Cautery, with a Practical Method for Its Application," by Dr. James F. Percy, Galesburg, Ill.

Officers.—*President*, Dr I. L. McArthur, Chicago; *First Vice-President*, Dr. Walter B Dorsett, St. Louis, Mo.; *Second Vice-President*, Dr. B. Merrill Rickets, Cincinnati, Ohio: *Secretary-Treasurer*, Dr. Arthur T. Mann, Minneapolis.

Cincinnati, Ohio, was selected as the place for holding the next annual meeting

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended January 27, 1912.

	Cases	Deaths
Tuberculosis Pulmonalis	564	195
Diphtheria	272	26
Measles	631	10
Scarlet Fever	274	8
Smallpox	4	1
Varicella	287	—
Typhoid Fever	40	10
Whooping Cough	60	3
Cerebrospinal Meningitis	3	2
Malarial Fever	—	—
Totals	2,135	255

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended January 20, 1912.

Places	Date	Cases	Deaths
CHOLERA			
Austria-Hungary: Coastland-Capo distria	Dec. 14-24	2	2
Hungary	Dec. 3-23	21	
Backs-Bodog	Dec. 10-16	9	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	
Torontal	Dec. 10-16	1	
Croatia and Slavonia: Sriem	Dec. 10-16	5	
Bulgaria: Burgas	Nov. 22-23	2	2
India: Calcutta	Nov. 19-Dec. 9		123
Madras	Dec. 10-16*	80	64
Indo-China: Saigon	Nov. 20-Dec. 3.	30	25
Italy	Dec. 17-24	30	
Provinces: Caltanisetta	Dec. 17-23	1	
Girgenti	Dec. 17-23	15	6
Syracuse	Dec. 17-23	14	8
Roumania: Districts: Braila	Nov. 24-Dec. 13.	1	
Dolniu	Nov. 24-Dec. 13.	1	2
Tulcea	Nov. 24-Dec. 13.		1
Siam: Bangkok	Nov. 5-Dec. 2.		149
Tripoli: Tripoli	Oct. 25-Nov. 10		
*150 to 200 among the civil population and 25 to 30 among the military.			
†Das österreichische Sanitatswesen, Dec. 21, 1911			
Tunis regency	Dec. 8-21	156	161
Turkey in Asia: Kharput	Nov. 26-Dec. 16	38	30
Mekka	Nov. 26-Dec. 16	153	165
Tor	Dec. 14-26	29	
YELLOW FEVER			
Brazil: Manaos	Dec. 19-23		1
PLAGUE			
Brazil: Para	Dec. 24-30.	5	1
Chile: Iquique	Dec. 10-23.	6	1
China: Hongkong	Dec. 9-16.	1	1
Egypt: Provinces: Assiout	Oct. 14-Dec. 27.	22	22
Behera	Oct. 15-Dec. 26.	3	1
Galioubeh	Oct. 5-Dec. 26	1	
India: Calcutta	Nov. 19-Dec. 9		16
Kurrachi	Dec. 3-16.	5	4
Indo-China: Saigon	Nov. 27-Dec. 3	1	1
Mauritius	Nov. 17-23.	7	3
Natal: Durban	Jan. 17		1
Siam: Bangkok	Nov. 1-Dec. 2		2
Straits Settlements: Singapore	Nov. 26-Dec. 2	5	5
SMALLPOX			
Arabia: Aden	Dec. 12-18		1
Brazil: Pernambuco	Nov. 16-30.		67
Canada: Ontario: Sarnia	Dec. 1-31.	41	
Toronto	Jan. 6-13		1
Quebec: Quebec	Jan. 7-13	17	1
Chile: Iquique	Dec. 10-16	2	
Talcahuano	Dec. 10-23	7	1
China: Hongkong	Dec. 3-16.	18	14
Nangking	Dec. 10-16.		Present
Egypt: Cairo	Dec. 10-16.	1	
France: Paris	Dec. 17-30.	17	2
Gibraltar	Dec. 24-31.	4	
India: Calcutta	Nov. 26-Dec. 2		1
Madras	Dec. 10-16.	5	5
Italy: Leghorn	Dec. 24-30.	8	
Naples	Dec. 24-30	5	1
Palermo	Dec. 24-30	313	90
Indo-China: Saigon	Nov. 20-Dec. 3	13	
Japan: Kanagawa, ken	Dec. 17-23	1	
Malta	Dec. 24-30.	2	
Mexico: Aguascalientes	Jan. 1-7		1
Magdalena	Dec. 24-Jan. 8	54	
Jan. 13, 76 cases in quarantine			
Mexico	Dec. 9-16	12	8
Santa Ana	Jan. 8	4	
San Ignacio	Jan. 8	3	
San Luis Potosi	Nov. 26-Dec. 2	1	
Portugal: Lisbon	Dec. 24-30.	7	
Russia: Odessa	Dec. 17-23	2	
Reval	Nov. 1-30.	1	
Warsaw	Nov. 5-Dec. 2		185
Spain: Malago	Nov. 1-30.		15
Valencia	Dec. 24-30.	10	1
Straits Settlements: Singapore	Nov. 26-Dec. 2	3	
Turkey in Europe: Constantinople	Dec. 25-31		3
Venezuela: Caracas	Nov. 1-Dec. 31	11	

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Original Articles.

ON THE PRACTICAL UTILITY OF THE DISTINGUISHED CONSULTANT.

By CECIL KENT AUSTIN, M.D.,

PARIS, FRANCE.

THE American physician to whose lot it falls to pursue his profession in foreign parts, and especially in such an important and favorite center as Paris, finds himself placed in circumstances that differ very materially from those encountered by his confrères at home. The particulars wherein the two careers vary are many, but the only one that need be referred to at present is this: for very natural reasons the practice of the man in Europe is limited almost entirely to his fellow-countrymen; and since either to live or to travel abroad presupposes a certain degree of ease in money-matters, temporary or permanent, it follows that his patients belong almost without exception to the well-to-do element of society, and that he sees nothing whatever of the poorer classes. The outcome of this situation is a twofold one: the poorer patients being often the most interesting and appreciative that one meets, the physician practising abroad is deprived of a very welcome consolation in his weary career; on the other hand, the American clients with ample means, and more especially the very rich, are, I think by universal consent, the least grateful and most trying individuals all around that can fall into a medical man's hands. On this point also there would be a great deal to say, but to-day I must limit myself to the aspect of the question that particularly concerns the present subject, which is that the wealthy patients have been so utterly spoiled by the power that is conferred by the possession of unlimited money, and are in general such confirmed sceptics in everything concerning medicine, that they are seldom satisfied with one professional opinion on anything that may be the matter with them, no matter how trivial the complaint may be, but at once clamor for farther advice. "Now, doctor, you say that this is an inflamed bunion?" "Yes." "Well, who then is the very best specialist in town on that disorder? I should like him to see the case with you and give it his closest attention." This is the cry we unfortunate exiles hear every day, until we get so sick of specialists and consultations that we frankly wish them and the patients comfortably in Hades. But the result of this state of affairs is a curious one: the American general practitioner in Paris thereby acquires a wider knowledge of such matters and becomes a better judge of consultants, their natural history and habits and their intrinsic merits, than any other medical man, I imagine, in the entire universe; and it is on the strength of an experience already long and checkered in this particular that I am making bold to say a few words on this subject to-day.

It will perhaps be well first to make quite clear the meaning of my title. Thus from the start many specialists have naturally to be excluded from the sort of consultants to which I refer, for the evident reason that no practitioner nowadays pretends to have more than a summary knowledge of certain branches of medicine, among which can be mentioned in the first rank mental, nervous, and ocular diseases; there are also medical men who do not care to handle nose, throat, and ear complaints, dermatology, venereal, and genitourinary diseases, or obstetrics, and to the physician of this category the specialist is of course a necessity, though this need not have been the case had his early training been more thorough and complete. Again, no one questions the utility of the consultant to the young practitioner not yet possessed of the age and experience necessary to impose respect for what he says; in such instances the presence of an older man with a well-established reputation will do wonders at a critical juncture by substantiating the junior's diagnosis, approving of the treatment followed, tranquillizing the patient, satisfying the relatives, smoothing down the feathers of the regular attendant, which were beginning to ruffle, and stand up at the lack of appreciation shown of his efforts—in a word, by acting as a lightning rod by which the heavy charge of electricity in the atmosphere is drawn off to one side and conducted harmlessly to the ground. It goes without saying, finally, that a consultant may be of very great service to the ignorant or incompetent physician. But, when all of these categories are set aside we remain with the one that I had in mind when this subject occurred to me: the men properly equipped with knowledge and experience who find themselves in presence of a difficult case not coming under the head of one of the more unusual specialties; under such circumstances, then, is there much likelihood of a consultation helping them out of their difficulties?

It is possible that opinions will vary on this score, on the ground of the traditional axiom that two heads are always better than one; but to this argument there is a ready reply: the whole affair depends on the quality of the heads in question, and I shall endeavor to show, farther on, that under ordinary circumstances the head of the consultant is not working at its best advantage by any manner of means. So far as I am personally concerned, the more extensive my experience has become the more open a question it is to me whether these consultations have any other merit than their moral effect on patient and entourage; I feel that if I myself were put to the test and forced to choose, I would rather place my reliance on one good, level-headed practitioner with the energy and time to buckle down to the case, than on any number of casual con-

sultants. There is also a side-aspect to this question that never seems to occur to the plutocrat. The only law that these people recognize and follow is that what they wish must go; what the other fellow is likely to think about it never enters into their heads, nor would it worry them much if it did. Now the constant demand for consultations on the part of the rich results in two things: (1) in wounding more or less the *amour-propre* of the regular adviser,—for it will never tend to increase the mental serenity of a good man who has put forth a special effort in a difficult situation to find his endeavors recompensed by scepticism; (2) in lessening the interest of the attending physician and in dividing up responsibility, for I will venture to affirm that never after the consultation-racket commences in a case is the medical man in charge as keen as he was before it.

I have said that I was doubtful as to the good of these consultations; but, bless you! if it were no worse than that! The trouble is that not at all infrequently they end in absolute disaster through the consultant's being entirely in the wrong. I have now seen so many and such gross errors made by the very best consultants that money could command that I really wonder that even the credulous public does not begin to prick up its ears. There is one man here in particular, concerning whom I can give no details, since to do so would be to designate him instantly, and I should be loath to do that, as he stands at the very top of his specialty and enjoys a well-merited reputation, with whom my ill-luck has been something phenomenal. I have seen him make mistake after mistake, and not little ones, but great, big errors; and of this I am absolutely certain, since years have since elapsed and the course of events has fully demonstrated that he was wrong. I have seen him walk right over a thing as big as a house without even suspecting its presence, or carry dismay into families by diagnosing cancer and tuberculosis when nothing of the sort existed, or tuberculosis when the trouble really was cancer. I am now referring to specific cases that occur to my mind. This sort of thing, when sufficiently repeated, rather dampens one's ardor; and yet, as I said above, this man's name is one of the greatest in the medical world.

After all, when you really come to consider this question, how could it well be otherwise than that these men should make mistakes? The big consultant is apt to be a man of sixty or over, who has all his life worked far too hard for any one individual, and whose existence, to put it plainly, is not very different from that of a prisoner condemned to the treadmill. He drags out his days in trying to sit on several chairs at once, with the well-known result that invariably follows that practice; yet his pride will not allow him to resign a single one of them, and his plight is rendered worse still by the almost universal practice in France of each physician attending to all his work alone, without partner or assistant. Such a man, for instance, will be professor at the Faculty, visiting physician or surgeon to the hospitals, and member of the Academy of Medicine and of other learned bodies, and will, in addition to all these calls on his energies, manage a more or less extensive private practice, besides writing a book now and then. He will start out by eight in the morning; see some cases, or possibly operate on a private patient before hospital hours; turn up at his wards between nine and ten and deliver a clinic and operate again, perhaps; race home to lunch, to be back at the Faculty in time for examination of candidates; return to his house again for office hours, and then attend the meeting of some Society or deliver a theoretical lecture at the Faculty—sandwiching in between all these duties other visits and consultations in different parts of the city when he does not have to go hours down into the provinces to see a patient there. How is it possible to expect anything of such a man? You have an appointment with him; he arrives on the gallop, late and harassed, conscious that he has other engagements ahead of him at which he is going to arrive later still; he is then farther irritated by the futile details to which the patient attaches such importance and by the idle theories propounded by the members of the family, who spare not an item and evidently think that theirs is the only client the poor man has to see in his day. Is it likely that any one driven in this manner is going to be able to really concentrate on your case or render you serious assistance? Is it a matter for surprise that, on seeing a difficult case one single time, without the possibility of studying it or of following its evolution, he should fail in his brief twenty or thirty minutes to straighten out a problem to which you have devoted in vain your best knowledge, reflexion and research for perhaps several weeks?

My personal experience, at any rate, in this matter has been disappointing, though other men may have fared better; but, in order that the latter may not think that I have been biased by exceptional instances, from which I have proceeded to unwarranted generalizations, I will endeavor to substantiate my thesis by two examples, which I consider to constitute the limit of possible things in the way of consultants' blundering. Into the particulars of the first of these it will not be necessary for me to enter, as its history was published with every detail in these columns on April 29, 1911. It was, in a word, a case of multiple myeloma, which during a period of nearly two years was seen by fully a score of physicians here, most of them excellent men, several of them consultants of the first rank, without one of them making the diagnosis. But the objection will of course be raised that this is an exceptionally rare disease, and one that appears to be practically unknown in France, and that it is unfair to draw inferences as to the utility of consultants in general from such an unusual occurrence as that. Granting, then, that this objection carries a certain amount of weight, I will proceed to give the details of my second example, which has never been published, and which is so perfectly extraordinary that I think it will shake the faith of even the most determined opponent. This second instance has in one way not quite the same value as the first one, unfortunately, in that I was not myself a witness of all its episodes. The myeloma case I followed personally from beginning to end, so that there is no possible doubt as to its incidents; whereas the following patient only came into my hands *after* the occurrence of the events that I am about to relate, so that I have had to go entirely by her own account of it. But from other points of view the second example is far more demonstrative, in that it concerned a very common disorder, lasted to our certain knowledge for nineteen years, and during that time was seen by a very large number of physicians. On account of this great length of time the patient's tale is naturally disconnected and deficient, and, for all the middle portion, altogether lacking in dates; but, in the main, it is manifest that her facts are

correct, and that the details and names that she does recall are all more or less to be relied on.

The case, then, was one in which a woman, with one renal pelvis filled with calculi and with constant hematuria, consulted many of the leading men in town *during nineteen years*, without one of them making the diagnosis; this duration is absolutely certain, for the patient knows exactly when her first hematuria took place, and also, naturally, when she met the surgeon who finally diagnosed the trouble and operated. This record of errors is not likely to be distanced in a hurry.

This lady, an American, now 47 years of age, was born in France and has always lived there. During her early years she had the usual disorders of childhood, including enteric fever. In 1874, at the age of nine, she underwent a rather startling experience, in that she was obliged to transship in midocean, at a moment's notice in the dark, in only a nightdress and peignoir; various rheumatic pains, from which she afterwards suffered for several years, were laid to this exposure. As a young girl she was always rather delicate, felt tired at the least exertion, and was subject to violent attacks of pain in her left flank, so severe as to cause nausea and to necessitate her retiring to bed. Her first hematuria did not occur until she was 25, but it seems fairly certain that these peculiar pains in her side were in reality nephritic colics; she says that they were quite a separate affair from the rheumatic pains previously mentioned. She married at the age of 21, in 1886, and had two children, in 1888 and 1890; there were no miscarriages. It was in the summer of 1890, shortly after her recovery from her second confinement, that she first noticed that her urine was stained with blood, without clots or pain; and she *positively affirms* that from that time until September, 1909, when she underwent operation, that is to say during nineteen years, her urine was never altogether free from blood, though its tinge would vary.

Her medical attendant at the time does not seem to have been much disturbed by this hematuria, and assured her that it was nothing of importance and would pass off. She was troubled with leucorrhea and metritis during that winter, and consulted a sage-femme about this condition in 1891. This woman, however, was not satisfied with her patient's general appearance, and turned her over to a well-known specialist here, an excellent man from every point of view. Incidentally, and to close this chapter of her history, she afterwards underwent local treatment at the hands of several gynecologists, two of them men of reputation, one of whom followed her case during an entire winter. But the story told about the first specialist, the man she saw after the sage-femme, is so remarkable that I have great difficulty in accepting it as it stands, for I know him well and am certain that he is the type of the conscientious, honorable practitioner. He is said to have had an analysis made of this red urine, and then, taking only into account the 2-3 gms. of albumen that it naturally contained, to have conceived a very pessimistic impression of the case, and to have told the family that it seemed to him a very serious matter, and one from which he doubted whether she would recover. He then put her on an absolute milk diet for upwards of a year, and in the spring of 1892 had a consultation with a confrère of excellent standing, the outcome of which was that the patient was advised to take a cure at Evian, where the local practitioner took an even gloomier view of the affair and informed the family that he did not think she would live three months.

One of the two children of the marriage died two months after birth, but the other one was in the meantime attended by a specialist who, when he withdrew from general practice in about 1895, recommended to the parents one of his younger friends, who became the family physician up to the time of the operation in 1909, consequently for about fourteen years. During this long period he did not come to any diagnosis, and every now and then a consultation would be arranged with some authority, the attending physician accompanying the patient on some occasions and not on others, the urine remaining constantly red and the side-aches reappearing now and then, though there were entire years when she would have none at all. So far as she can remember, at no time during all these years did she ever pass any solid concretions.

One of these consultants, a man who bears a very famous name indeed, is reported to have remarked, when the patient had finished giving her account of her symptoms: "Madame, votre récit manque absolument de vraisemblance!" and to have closed

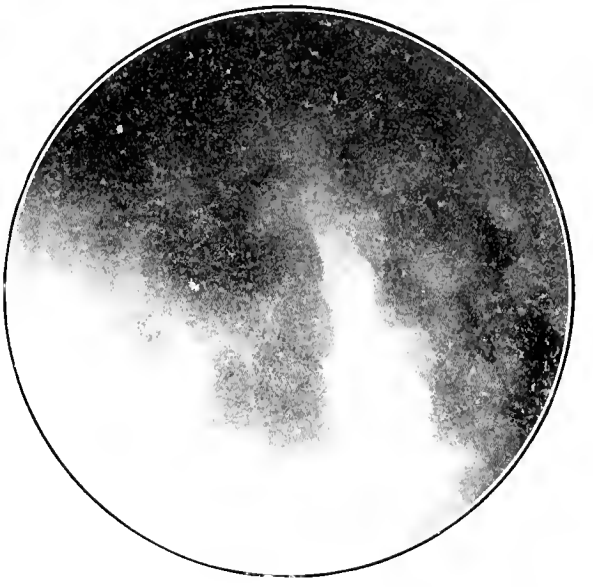

Fig. 1.—Skiagram of the left renal region from behind.

the interview by saying: "However all this may be, the case does not come at all within my province and you must see someone else." The dear man! if ever a case did come within his province it was that one! She also consulted a first-class specialist, an old friend of mine, very skilled in the use of the cystoscope, who is said to have reported that he could see blood coming from *both* ureters. Another famous and fashionable consultant is claimed to have told her frankly that he had no idea what could possibly be the cause of the trouble, and that he had never encountered anything like it. Still another renowned and very fashionable man took quite the contrary attitude; a little hematuria was not the sort of thing to scare him, and he had many ways of getting the upper hand of it; so that she remained under his care for quite a time while he experimented with a selection from his remarkable therapeutic armamentarium. During a trip she made one summer a prominent man at a German Spa was very pleased with himself at discovering that her right kidney was prolapsed; so he told her that that was the source of all her trouble, and had a bandage made to keep it in place. To the patient's mild

expostulation that the pains, when she felt them, were always on the *left* side, he replied that that was immaterial. The last eminent man whose counsels she sought seems really to have gone into the matter more thoroughly, though he was still as far wide of the mark as the others. He asked her whether she had ever lived in the tropics, wanted a blood-test made at midnight (filaria), and suggested a cystoscopic examination by a different operator; he finally gave her the address of a prominent surgeon, and advised her, in case the blood was really seen to come from *both* ureters, to do nothing, but, if from one only, to have an operation performed on that kidney (exploratory, I presume.

This closes, more or less, this long theory of consultants, all of whom seem to have been entirely in the clouds, and, however incredible it may appear, *no one of whom asked to have a skiagram made*, although during fully the last six or eight years before her operation this invaluable method of exploration was in current use! She is certain that in between times she consulted other physicians, but those that I have mentioned are all that made an impression on her. But, in the meanwhile, farther and more dramatic incidents had made their appearance. Thus she was suddenly seized one summer in the country—she cannot recall exactly when, but thinks it was quite a number of years before the operation—with a much more profuse attack of hematuria; a swelling rapidly developed in the left flank, the urine became very dark-red for several days, and she herself felt dreadfully exhausted from the loss, and experienced an awful sensation as of impending catastrophe. The same thing occurred a second time, in Germany, during the summer of 1909; profuse bleeding, although without clots, and fearful pain in the left side, worse than ever before. A third, final attack took place in September, about two months later, and the patient was then operated on *d'urgence*, as there was almost total suppression of urine, not more than 30 gms. in the 24 hours. For the correct diagnosis had at last been made in the spring of 1909, previously to the second severe hemorrhage in Germany, by an American surgeon in Paris, whose name I do not give, as I am not mentioning names, but whom every one *here* will recognize without further details. So soon as he heard the patient's story he asked to have a skiagram made, with the result seen in the first illustration that accompanies this article, and a short time later he had the great satisfaction of removing the remarkable collection of calculi represented in the second illustration. These calculi, eighteen in number, light café-au-lait in color when dry, about fill the hollow of the hand; they are all well flattened, weigh 55 gms., and the major diameter of several of the largest is 3 cm. Chemical analysis showed them to consist of granulations of uric acid englobed in a mass of tribasic phosphate of lime, together with traces of magnesia, each calculus having an outside coating of cystine.

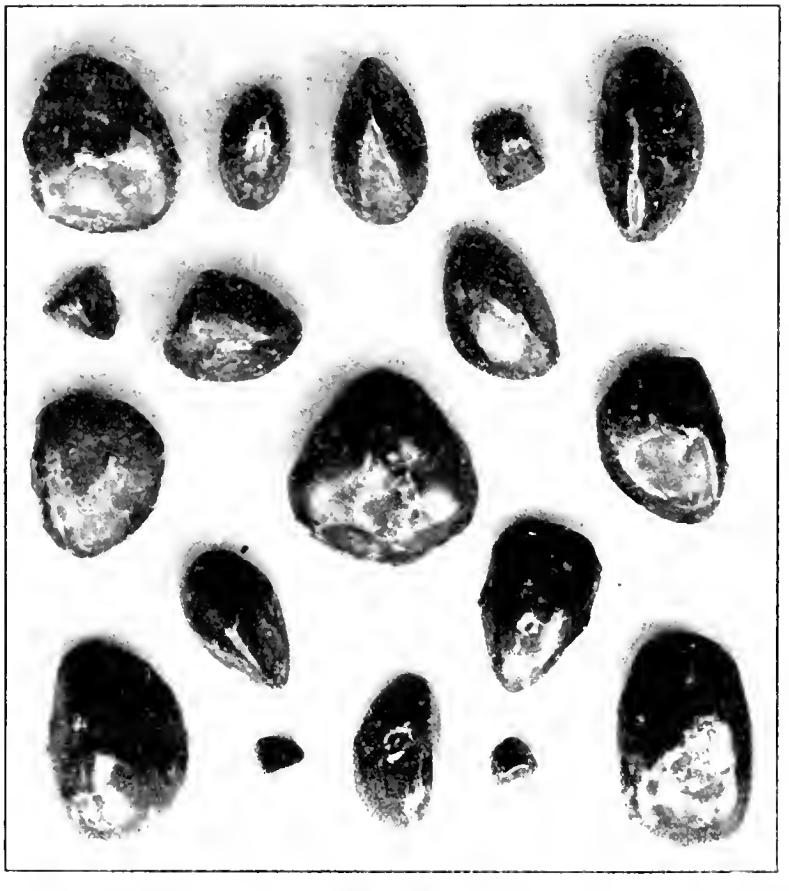

Fig. 2.—Calculi reproduced accurately in their natural size.

This, then, is the brief, though I am afraid necessarily incomplete and unsatisfactory, account of this remarkable series of blunders, which seems as though it must be almost without precedent. So near as the patient's memory serves her, the young surgeon who finally saved her life was the *twenty-fifth physician* whom she had consulted, not to count the queer folk, clairvoyants, homeopaths, and sage-femmes, of whom there were quite a series; and, when I add that this long list contains names that are recognized as authorities all the world over—it is really a pity that I cannot complete this tale by giving a few of them, but I am under promise not to do so—I think it will be admitted at all hands that this case does not reflect much credit on the leading representatives of the profession, as well specialists as consultants. Is it really, then, any wonder that, after the experiences that I went through with in my case of multiple myeloma, and after hearing of the vicissitudes of this second patient, I should be disposed toward pessimistic views, or that I should venture to place a mark of interrogation against the question of the practical utility of the distinguished consultant?

Glandular Fever.—W. H. Bowen reports a series of cases the main points of which were that they followed attacks of measles at varying intervals, they started as a cervical adenitis and periadenitis with variable fever, that the constitutional conditions were never severe, and that complete recovery occurred without any suppuration in any case. It seems probable that the measles prepared the soil and that a slight tonsillar inflammation led to the secondary glandular change. The chart of one of these cases showed three weeks of continuous fever, the temperature reaching 102° to 103° F. at the end of the second week.—*Proceedings of the Royal Society of Medicine.*

A SUGGESTION FOR AN IMPROVED METHOD OF USING RADIUM.*

By ROBERT ABBE, M.D.,

NEW YORK.

PARADOXICAL results are seen at times in the effects of radium, which challenge explanation. On superficial epitheliomata there is an almost uniform effect in causing retrograde change and usually a permanent cure. On the mucous membranes of the mouth and throat frequent disappointing effects follow its use, when the same dosage and time exposures are given as would be efficient on the skin. Sometimes a tongue cancer showing most luxuriant growth will yield almost to disappearance and then start up an extension as if it had not been touched. This transient improvement I have been inclined to attribute to the conquest of the secondary bacterial infection of the cancerous ulcer, but the lack of uniformity in action makes one discontented with this explanation. Even in large tumors elsewhere in the body, a considerable necrosis occurs about the applied radium tube, the more remote cells are often arrested and some parts stimulated. This uncertainty of time exposure, and distance, as well as the complicated problem of weak and strong specimens, makes the use of radium a constant puzzle to the uninitiated. Yet there is so much that is good and unique in its effect that even a small contribution will be welcomed by the growing number of those who have it to use.

The suggestions I have to make are in the direction of simplification. For ten years I have been on the lookout for cases where its use might be thought to have spread the disease. Such a suggestion was first made, I think, by Dr. Margaret Cleaves of this city from an experience in uterine cancer. I have seen a very small number of cases, like extensive cancer of the maxilla or the tongue, where its use was admittedly experimental, in which it seemed to me the disease progressed more fiercely after a brief respite, but these cases of advanced disease often take on this action without any treatment, so that I have been rather unwilling to argue from them. Nevertheless the demonstration has been made that, while radium electrons retard growth and finally kill the life of seeds, there is a stage of dosage, as one may call it, where plant life is stimulated. In all my early experiments with seeds, planted after exposure to radium, an illustration of which I showed to this society some years ago, I saw only this life-destroying action.

During the last summer I demonstrated, by two very complete methods, the stimulating effect of radium, and in this fact, I suspect, lies the solution of the problem of its use, at least in part. The stimulation of growth depends on the time exposure, the distance, and the kind of rays used. I believe we may assume the biological acts of living cells to be the same, whether animal or vegetable.

In these experiments I used oats for the first time, because of their rapid growth. In four weeks an oat may grow about one foot high. One hundred milligrams of pure radium bromide in fine glass tubes was placed in a bottle with two tablespoonsfuls of selected oats. To prevent inequality of action the bottle was strapped to the axis of a diminutive water wheel rigged up to run by a faucet at an even revolution, so that every oat was in turn brought in contact with the radium thousands of times during the two days exposure. At certain intervals I removed twenty-five oats and labeled them. At the end of two days I planted them in rows in special sifted soil and raised them first under glass. Alongside of them, under similar conditions, a row of unradiumized oats. The result at the end of four weeks is shown in this photograph. The plants were cut at the roots, tied in bundles, measured, and weighed. Compared to the normal growth, three bundles were above the normal, and three below, both in height and weight. (See Fig. 1.)

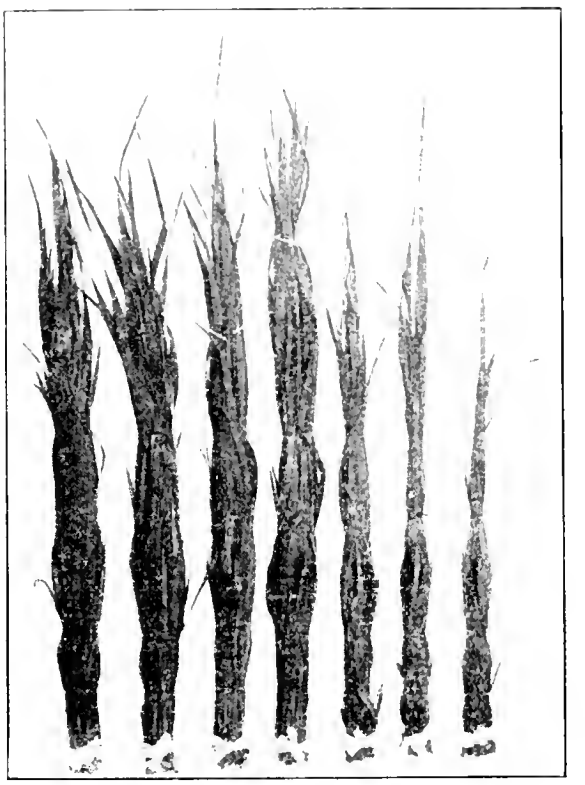

Fig. 1.—RESULTS OF EXPOSURE TO RADIUM

		STIMULATED			DEPRESSED		
Time Exposed	No Radium	2 Hours Radium	8 Hours	16 Hours	24 Hours	36 Hours	40 Hours
Height	100	111	107	111	84	71	53
Weight	100	111	120	116	48	44	32

The interpretation of this experiment is this: A deterrant effect on cell growth depends on time exposure, and must be a definite equation for every specimen of radium. The main value lies in the demonstration that, on seeds as well as tumors, the electrons may produce detrimental results, as well as mysteriously beneficial ones, and that probably all the beautiful effects so often seen result, in a measure, from accidentally correct time exposure. It is evident that the oats were alternately near and far from the radium tube, as they whirled about, so that twenty-four hours of exposure in the bottle would only represent part of an hour of close contact, such as takes place when radium tubes are applied on tumors.

A second experiment was, therefore, necessary to show the persistent action of radium at a fixed distance.

This was made as follows: (Fig. 2.) A series of twenty little shelves of mosquito netting, one-fifth

*Read at a meeting of the Practitioners' Society, November 3, 1911.

of an inch apart, were arranged by cutting a square hole in the center of thin boards laid on top of each other with netting sandwiched between. On each shelf were placed twenty-five oats, and a Wickham plaque of naked radium (25 mg.) was bound on top

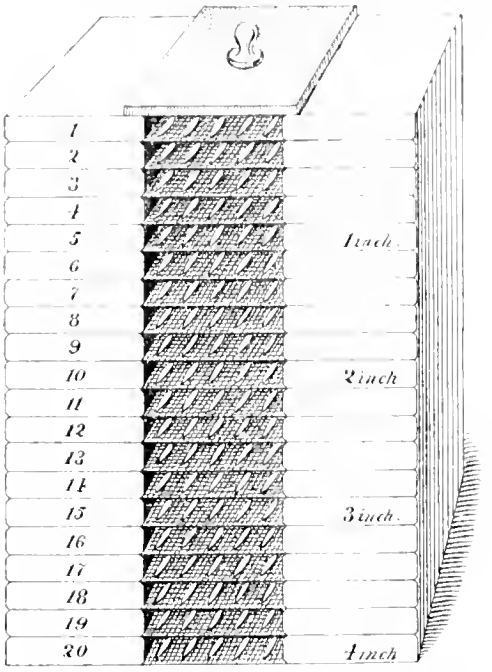

Fig. 2—Twenty shelves of mosquito net, each holding 25 oats; at the top is a plaque of 25 milligrams of naked radium.

of all, so that each shelfful received a given bombardment of radium at a uniform distance during a similar period. In this experiment I was also able to test the efficiency of all the combined rays emitted from naked radium compared with former work where the alpha rays are suppressed by the glass container. The exposure of these seeds was continued for six days with frequent shaking to change the exposure of all the oats on each shelf. The mosquito netting would offer no barrier to the alpha rays, which even tissue paper would have suppressed. This series was planted in twenty rows an inch apart, with two additional rows of unradiumized oats for comparison.

The results were more interesting than I had anticipated. The two rows nearest the naked radium, but not in contact, were one-fifth and two-fifths of an inch from it. They all germinated and tried to sprout, but died, before they were an eighth of an inch high, during the first week.

Those in the third row were now up 2 inches; the fourth row, 3½ inches; the seventh to the eleventh rows were outdoing all but the normal ones, which were 5 inches. At the end of four weeks the fourth, fifth, sixth, and seventh rows—which had been 1 to ½ inch from the radium—were now the finest of all, even exceeding the unradiumized rows, notably of a rich growth, darker green in color, and 12½ inches high. All plants were now cut at the roots, tied, photographed, measured, and weighed. (Fig. 3.)

Let us first remember that the seeds had been continuously played on for six days by a discharge of all the electrons issuing from the naked radium. Let us recall that alpha rays are known to be of slight penetrating power, of short area of travel, and subject to change into other rays.

The beta rays have relatively feeble penetrating power, and carry charges of negative electricity. The physics of these rays are credited with soft and hard qualities, the former of feeble penetration, the latter going deeper into the tissues. The gamma rays, swift, ultra-penetrating, of negative electric charge, are probably the ones more efficient in all use of radium in glass or metal containers.

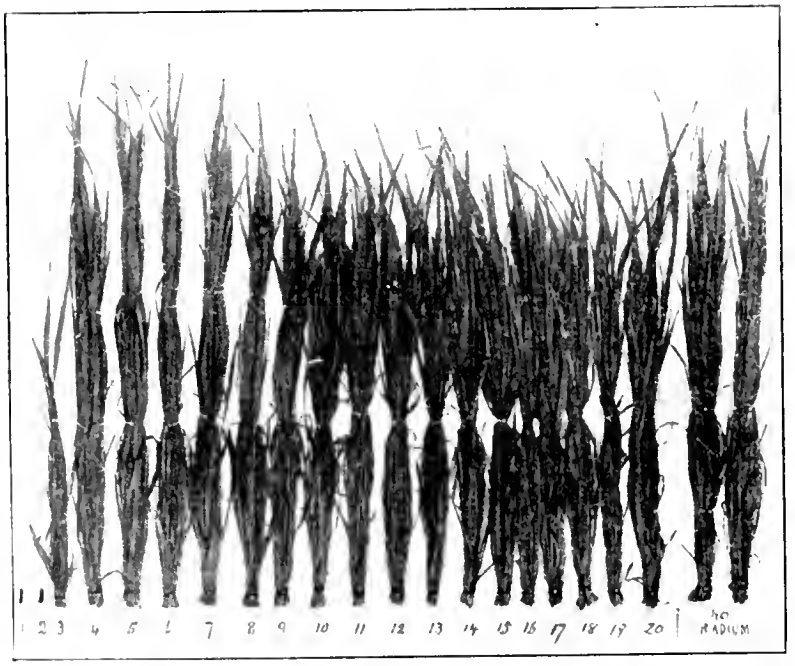

Fig. 3—Growth of oats, exposed to naked radium at distances from ¼ to 4 inches. Twenty rows. Two rows for comparison, without radium. Exposure six days. Growth after planting, one month. Nearest two rows killed. Fourth, fifth, sixth, seventh, stimulated. Beyond seventh (1½ inches) all retarded. The nineteenth most stunted of all.

The interpretation of the experiment on oats at fixed distances from the radium shows that the nearby cells, up to half an inch distant, were all killed. These had the combined rays, but, above all, were exposed to the alpha.

The seeds at distances from ½ inch to 1½ inches were greatly stimulated beyond normal growth. These had the combined beta and gamma rays, as well as any secondary ones emanating from the decay of the short alpha rays.

The seeds from 1½ to 4 inches were depressed in their growth, but singularly enough not in inverse ratio to their distance, as would be the case were the energy a losing one as the distance grew greater, or as it might be considered if it had lost by absorption in nearby seeds. On the contrary, the more distant seeds were most affected, so that from 1½ to 4 inches the growth represented by size, weight, and color of the plant showed most injury at the farthest end, the weakest plants being on the

	No Radium.		1 ¼ Inch							2 Inch.						3 Inch				4 Inch	
Row	N	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Weight, grains.	94	95	0	0	14	70	87	77	79	63	61	49	62	58	50	59	63	60	64	62	45	64
			Killed			STIMULATED						STUNTED										

nineteenth row, or about 4 inches away. One may interpret this phenomenon as he wishes, but as I had elaborately thought out the experiment to secure fair play for each seed in choice, planting, soil, moisture, nurture, sunshine, etc., I must attribute the inequality of growth to only one cause—radium

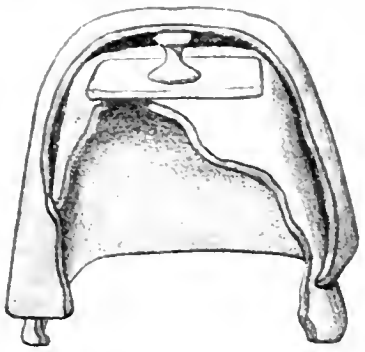

Fig. 4.—Lead device with lead cover for supporting the radium plaque at a proper distance above the diamond surface. (Partly cut away to show the interior.)

I am inclined to ascribe an irritating and stimulating quality to the alpha and soft beta rays, and a destructive force to the deep, penetrating, hard beta and gamma.

The twenty shelves of oats should represent twenty corresponding sections of a tumor subjected to the same experiment.

The importance of this experiment to me is the corroboration of the work of French observers, notably Wickham, that the best results have been obtained by enveloping a heavy charge of radium in lead of from 1/10 to 2 mm. thick, which suppresses the burning alpha and soft beta rays.

On this practice I have seen during the two years past some of the most hopeful results.

It has been a serious handicap that, in order to obtain massive doses of radium, one had to risk severe burning of the skin, so that, except for superficial growths where destruction by all rays combined was desired, one had to withhold the full value of the deep penetrating gamma rays in curative doses. Nevertheless one can demonstrate by photographic plates, laid upon the abdomen when a rectal or uterine application is made, that a strong discharge does penetrate the entire body, though this represents less than one wishes of these rays, while their burning effect prevents a longer use of them in the deeper parts.

If however, by suppressing the short, irritating, and burning rays one can apply big doses of rays to uterine and other internal cancer with benefit by enveloping the radium in heavy lead, or if on surfaces one can reach subcutaneous recurrences by distance applications without severe dermatitis, we have gained appreciably in its use. Such, it seems to me, is the present position of technical work.

I have certainly seen the best results since using thick lead filters, as advised by Wickham, and now am watching with amazement and pleasure the melting away of superficial recurrences which one can not successfully extirpate.

In some of the nodular subcutaneous and lymphatic recurrences about scars of mammary amputation we certainly see rapid disappearances, without dermatitis, by lead-protected radium application.

Perhaps we may hope by the logical extension of its use along the line suggested by the foregoing experiment to reach many of the parotid, deep thyroid and other glandular tumors, now inaccessible.

I illustrate herewith (Fig. 4) a simple device which I find most efficient in carrying out the above ideas. Exposure of the skin for one hour or of diseased masses for several hours is thus practicable. It is notably useful in evenly applying radium rays to large surfaces of nerves, lupus erythematosis, lichen planus, etc., thus avoiding the uneven scarred appearance of otherwise fine cicatrices, where radium has been applied in tabes.

13 West Fiftieth Street

PEDIATRIC MEMORANDA

TUBERCULOUS PERITONITIS. SARCOMA OF THE KIDNEY.

By HERMAN B. SHEFFIELD, M.D.,

NEW YORK.

The large abdomen of infants covers many diagnostic sins. Being quite common in early childhood, especially in association with intestinal indigestion and rickets, it is rarely taken seriously, so that grave intraabdominal affections are frequently overlooked or detected at a time when therapeutic measures are no longer available. This is certainly often true in the group of cases I am about to describe.

Fig. 1.—Tuburculous peritonitis

Tuberculous Peritonitis.—The fifteen-months-old little girl (see Fig. 1) was quite small and delicate at birth. Her father was suffering from pulmonary tuberculosis and had to leave home for the country when she was but a few months old. At about that time also she was taken off the mother's breast and put on cows' milk mixtures. She remained pale and puny, and was frequently subject to indigestion and "colds." Her abdomen was always

greatly distended, but received no particular attention, since, as the mother frankly put it, "every baby she knew had a large stomach." The many physicians she consulted apparently agreed with her views, for the treatment ordered was principally dietetic. When through the courtesy of Dr. Louis B. Sachs the little patient came under my observation at the hospital her abdomen was unusually voluminous and tense, barely compressible, and presenting considerable difficulty to reveal its contents by palpation. Although the parental tuberculous history strongly tempted the assumption that the child was afflicted with tuberculosis, either of the intestines or peritoneum, I refrained from committing myself to such a diagnosis, fully realizing that chronic abdominal enlargement only too often is the result also of nontuberculous enlargement of abdominal organs by neoplasms and otherwise, rachitis, congenital or acquired megacolon, ascites, and even simple indigestion. My hesitation to make a "snap-diagnosis" was amply justified a few days later, when, contrary to our expectations, the von Pirquet tuberculin reaction proved negative and several other characteristic "text-book" symptoms of tuberculous peritonitis, such as persistent diarrhea and colic, progressive emaciation and involvement of adjacent lymphatic glands, failed to materialize. Hence, with the meager symptomatology in view, there was nothing else left for me to do but to endeavor to arrive at a correct diagnosis by exclusion. As we gradually gained the good will of the little patient and she more placidly submitted to a more searching examination of her abdomen, we were soon enabled firstly to eliminate enlargement of the liver, spleen, and kidneys and tumefaction of the intestines, and, secondly, to detect an exudation within the abdominal cavity. Furthermore, we also learned that her temperature was almost invariably one or two degrees above normal, notwithstanding careful restriction of the diet and thorough intestinal cleansing. We thus had three well defined symptoms to base a diagnosis upon, *i.e.* an unusually large abdomen, free fluid within its cavity, and irregular fever—which in my opinion were ample to pronounce the case as tuberculous peritonitis, even though the tuberculin reaction proved negative. I promptly referred the patient to the surgical division for operation. The laparotomy very skillfully performed by Dr. A. Sturmdorf revealed the presence of about a pint of serofibrinous fluid in the abdominal cavity, firm adhesions between the peritoneum and omentum, and free distribution of small tuberculous nodules along the inflamed structures. The small abdominal incision healed by primary union within a few days and the patient made a perfect recovery soon thereafter. As far as I am aware she has remained well since.

Sarcoma of the Kidney.—Unfortunately such beautiful results are almost never obtained in malignant renal neoplasms, even if detected and operated upon early—which is so rarely the case! As a rule, they reach the consultant at a time when they are at death's door, when the growth, as it were, stares him in the face, and treatment, operative or otherwise, is utterly useless. I believe that the many failures to recognize the condition early, to a great extent, are due to faulty teaching of the symptomatology of the disease. Text-books often speak of hematuria and cachexia as pathognomonic symptoms of malignant renal growths, while, as a matter of fact, they are of little diagnostic value.

In the first place, blood in the urine may be detected microscopically only in the incipient stages, when the renal pelvis is still free. For as the tumor assumes great dimensions, the kidney degenerates and the ureter becomes occluded, so that the urine obtained for examination—coming as it does from the unaffected kidney—is entirely free from abnormal constituents. Secondly, hematuria is much more commonly characteristic of renal or vesical tuberculosis, hemorrhagic nephritis, purpura, and the like. Now, as regards the cachexia, it very rarely sets in prior to the last stages of the affection, *i.e.* at a time when the tumor can readily be palpated and hence the diagnosis established without much ado. Indeed, after a moderately extensive experience with these cases I am inclined to the opinion that the presence of the tumor—as demonstrable by palpation or also with the aid of the Röntgen rays—is the only reliable sign of renal neoplasm, and should always be looked for in children irrespective

Fig. 2.—Sarcoma of the kidney.

of the other affections they may be suffering from, more particularly when they give a history of arrest or loss in weight, persistent abdominal pain, and chronic intestinal indigestion without any apparent cause. These were the only early symptoms in the four cases of kidney tumors I reported on former occasions,* as well as in the case under discussion. This patient was 23 months old when it came under my observation. After the growth had reached a large size he was seen by several eminent clinicians in the city and the mother was thoroughly familiar with the diagnosis and prognosis of the case. Still she had some hope left that some one would perform a miraculous cure, especially with the "new blood medicine"—the daily press was at the time filled with exaggerated accounts of the marvelous cura-

*"Modern Diagnosis and Treatment of Diseases of Children," 1911, and *Jour. of Dermat. and G. U. Dis.*, Vol. XV, No. 5.

tive value of the mysterious 606, which has since proved a most prolific source of affluence to the keen professional quack. The history of the case was negative. The parents were in good health and had four additional, robust, older children. A mere glance at the child's abdomen (see Fig. 2) was sufficient to determine the presence of a large growth within it, but as it occupied the entire abdominal cavity, pushing every organ out of its way in its spread across from the right to the left side, it was next to impossible to trace its exact origin. The intense intraabdominal pressure upon the large blood vessels produced marked edema of the lower extremities and genitalia, and owing to displacement of the intrathoracic organs the lungs were congested, the breathing was very difficult, and the heart's action rapid and irregular. The patient was finally relieved of his agony about three weeks later.

Although a religious Hebrew the father permitted me to make a post-mortem four-inch incision in the right lumbar region, through which I was enabled to learn that the tumor originated from the right kidney, was very irregular in outline and firmly adherent to the adjacent structures, approximately between five and six pounds in weight, and of mixed hard and soft consistency, the hard portions predominating. Whether an early operation would have saved this child's life is, of course, problematical. As renal neoplasms in children are usually congenital and can readily be diagnosed within a few months after birth or earlier, it is imperative to recommend an operation immediately, if possible before secondary metastases have formed in the neighboring structures, and the uninvolved organs have become embarrassed in their functions.

127 West Eighty-seventh Street

SOME POINTS IN THE DIAGNOSIS AND TREATMENT OF INTRANASAL SUPPURATION.

By JAMES DONELAN, M.Ch., M.B.,

LONDON.

CHEVALIER OF THE CROWN OF ITALY, LARYNGOLOGIST TO THE ITALIAN HOSPITAL, LONDON, AND TO THE LONDON OPERA HOUSE, ETC.

The subject of intranasal suppuration is a very large one, and I shall therefore select only three of the diseases in which this symptom shows itself. These are selected on account of their common occurrence as well as of the more than usual importance of securing the earliest possible diagnosis so that no time may be lost in adopting the most efficient treatment. The diseases selected are: (*a*) Tuberculosis of the nose, (*b*) nasal syphilis, and (*c*) chronic suppuration of the accessory sinuses.

Tuberculosis.—Tuberculosis is here understood to include or rather to be pathologically identical with lupus, though on account of certain differences in the mode in which this disease manifests itself clinically it is convenient to preserve the terms lupus and tuberculosis. Moreover, the occurrence of any other form of tuberculosis than lupus in the nose is so rare that it may be looked on rather as a pathological curiosity than as something to be distinguished in the diagnoses of every-day practice.

We see almost without exception the slowly advancing lupus, certainly nothing at all comparable to tuberculosis as it occurs in the larynx. Whether this is entirely due to the greater resistance offered to an identical organism by the physiological defenses at the respiratory entrance or that lupus is always due to a less active form is a point much debated. It is at any rate remarkable that the deeper the lesion of the respiratory tract manifests itself the more rapidly progressive it is. Thus in the lungs we are always justified in classing the disease as tuberculosis, in the nose and nasopharynx very rarely so, while the larynx seems to occupy clinically as well as anatomically a middle position and may distinctly manifest the clinical signs of either, tuberculosis being far the more common form.

The usual point of attack is the lower anterior part of the cartilaginous septum just inside the vestibule, the floor, or the anterior end of the inferior turbinal. This septal seat of election may be determined by habits of picking the nose causing direct infection or because it is the point most exposed to the incidence of the air-stream to a degree varying with the form of the nostril in different individuals. On the septum it sometimes shows itself as a small sessile, reddish-brown or raspberry-like tumor, or it may be seen at a still earlier stage as a number of tiny scattered points of similar aspect. These latter are difficult to distinguish from the surrounding tissue, but may be "brought out" by use of adrenalin and cocaine. They may form multiple nodules or may coalesce into one, but in any case they are characterized by their tendency to ulcerate, break down, and perforate the septum. On the floor and turbinal the tendency to break down and ulcerate is not so marked. Respiratory obstruction varies with the degree of inflammation and the amount of pus and crusts. The pus has a faint, sour, unpleasant odor without the stench of ozena or syphilis. On clearing away the secretion it is found not to recur readily. If perforation of the septum has taken place the outline of the hole is irregular and serrated and surrounded by pale, pink granulations. The bony septum remains unaffected. There is no falling in of the nose, but where the tip is unaffected exteriorly it is often drawn down tightly by retraction of the cicatrices as the disease tends to heal in some places while advancing in others. The course of the malady is very slow and usually painless. The discharge is but little noticed until smell becomes perceptible to the patient or his friends or the constant formation of crusts annoys him.

Other points to remember as regards the diagnosis are that the disease most often occurs between puberty and thirty years and is twice as common in women as in men. It is distinguished from congenital syphilis, for which it is most frequently mistaken, by the absence of the pain so common in syphilis, especially at night, as well as by the immunity from bone disease and marked fetor. The very slow erosion of the tissues is also in marked contrast to the rapid destruction of syphilis. In doubtful cases von Pirquet's skin reaction should be sought for or antisyphilitic treatment may be tried. In the large majority, however, the presence of lupus nodules on the adjacent skin or of signs of infiltration or cicatrization in the nasopharynx or larynx will help to confirm the diagnosis.

The most reliable method of treatment in early cases is the careful use of the electrocautery at intervals of a week or ten days. It should be applied under local anesthesia around the margins of the

advancing ulcers and broken down nodules. If one is fortunate enough to see the case in the stage when there are only minute points of infection on the septum or elsewhere a fine cautery point at a cherry-red heat should be inserted into each. In the absence of the electrocautery chromic acid may be tried, but its action is scarcely intense enough to secure destruction of the infected tissue without unnecessary damage to the yet unaffected parts. After cauterizing nitrate of mercury ointment in soft lanolin or vaseline in the proportion of 1 in 8 or 1 in 10 should be applied daily during healing. If, however, the disease is already deep and extensive no time should be lost before thoroughly curetting the infected tissue under general anesthesia. Lupus is very apt to recur and cases should be kept under observation while measures to improve the general tone and vitality and especially to overcome the usually associated anemia are carried out. In this connection arsenic is perhaps the most reliable medicine. Some consider it almost a specific for the disease, but too much should not be expected of it. Tuberculin may also be tried, but experience up to the present has not been generally satisfactory. The same may be said of Röntgen rays and the Finsen light, however useful they may be in lupus of the skin. There is no doubt that if the case has been diagnosed sufficiently early, and especially if treatment has been begun before infiltration of the deeper parts has taken place, it can be cured. Where, however, deep infiltration has occurred the prognosis is more doubtful and even after the most energetic and careful treatment these cases should be kept under regular observation as quite new infiltration of previously healthy tissue may unexpectedly show itself. Though healing may take place in one place while the disease advances in another, there is no tendency to the spontaneous healing one often sees in the larynx.

Syphilis.—Suppuration in the nose may be also due to syphilis in some of its stages. As a rule, there is very little purulent secretion from the rare primary nasal chancre, though there may be a good deal of watery discharge when it ulcerates. At the same time mucopurulent discharge may accumulate in considerable quantity in the inferior meatus. This, however, does not readily recur when wiped away and is shown to be scanty and inoffensive in character. The diagnosis is often difficult and in persons over forty years of age has to be distinguished chiefly from malignant disease. The effect of mercury and potassium iodide is, it need scarcely be said, a most reliable as well as convenient criterion, but recourse may be had to Wassermann's reaction or the microscopic search for spirochetes.

Secondary nasal syphilis is attended merely with coryza, which is distinguishable from ordinary coryza only by its duration. Mucous placques may be observed on the septum and turbinals, but if pus be present it is not due to the constitutional infection at this stage. It will be more likely the result of coincident suppuration from other causes in some of the accessory cavities.

It is the tertiary stage of the disease that has chiefly to be taken into account in considering cases of nasal suppuration. Tertiary syphilis may show itself at first in one of two forms in the nose either as a gumma, usually on the septum, or in the form of diffuse gummatous infiltration. Both forms are liable to go on to ulceration with perichondritis, periostitis, and necrosis. It is rare to have the opportunity of seeing the dark-red resistant swelling on the septum produced by a gumma before it has broken down. Discharge and crusts usually fill one or both nasal passages. Careful inquiry will often bring out the point that there was a good deal of pain, especially at night, about the root of the nose before any discharge took place and that pain has been much less frequent since pus appeared in the nostril. On removing the accumulated secretion the irregular ulcer can be seen. The edges may be sharp cut or excavated and the floor is flat and covered with tenacious yellow matter, the degree of erosion varying from a single ulcer to the most extensive destruction of not only the nasal structures, but of those adjoining. If the nose has been regularly cleansed and the cartilage alone is affected the discharge is not specially offensive. The disease, however, unlike lupus goes on to attack the bones and then the discharge becomes horribly offensive. At close quarters the ozena of a neglected atrophic rhinitis may seem worse, but it has not the carrying power of that of tertiary syphilis. Necrosis may be looked on as the most characteristic sign of intranasal syphilis as there is practically no other disease in which it occurs. A swelling on the hard palate is often the first visible sign of necrosis low down on the vomer which could not be seen through the nasal passage as, for instance, owing to the projection of a deflected septum. The probe will detect bare cartilage, bone, or loose sequestra. The only things a sequestrum could be confounded with are a rhinolith or a foreign body. Sometimes the ulceration may closely resemble that of lupus, but in the latter there is no necrosis of bone and the effect of antisyphilitic remedies will settle the question even if no assistance is given by evidence of syphilis in other parts, while in the case of lupus external signs are rarely absent if the intranasal disease is at all advanced. There is only one treatment, namely, that by mercury and iodides. Mr. Colles of Dublin, who described Colles' fracture and who had an immense experience of syphilis, used to say in his clinical lectures: "Gentlemen, in syphilis the mineral is always useful." By the mineral he meant mercury. It is best given in the form of inunction and with ordinary precautions it is quite possible to carry out a most efficient inunction course without interfering with the avocations of the patient. I am told that at certain Continental centers where mercury is extensively used not merely as a simple and effective mode of treatment, but apparently for the exhibition of a most impressive ritual, it is thought necessary to have the inunctions done by a masseur, who is also a trained athlete. For my part I have never known a patient who could not easily produce the full physiological effects of the drug by his own unaided efforts. As a matter of fact, the precautions have to be against salivation occurring. At the hospital with which I am connected I have for a long time treated out-patients by means of inunctions. The patient is instructed to take if possible a warm bath and then to rub well into his groins and lower part of abdomen about a drachm of blue ointment on alternate nights, on the other nights he rubs the same quantity into his arm-pits. He sets apart a special set of underclothing to wear at night while carrying out the treatment. In the morning he washes off any external traces of the ointment. He is instructed as to the signs of salivation and to cease the treatment and report himself without waiting for the end of the week usually

prescribed. At the end of the week in most cases considerable improvement has been effected and salivation has not occurred. A mixture containing mercury, various idodides, and sometimes arsenic is then ordered for a week and the following week the inunctions are resumed either daily or on alternate days, according to the progress of the case. As many as 100 inunctions may be given in this way without other than beneficial effects. It is not within the scope of this lecture to go fully into the treatment of syphilis, but these hints based on a long and pretty extensive experience may have some practical value. A word or two on the use of salvarsan, or 606, may not be out of place. I have had the opportunity of using this new remedy in hospital and private practice in some twenty-five cases. Certainly the rapidity of the improvement in the symptoms is often very remarkable, but there appear to be no grounds yet for thinking that the results are permanent, while we have had only too many instances recorded of deaths from acute arsenical poisoning, heart failure, etc.—I believe some forty-two up to the present date. I was much struck with what Professor Neissner said in a recent lecture in London on this subject, that in mercury we had an efficient and safe remedy for syphilis and that it had been demonstrated over and over again that the disease could be safely cured by it. The experience already accumulated would seem to show that recourse to salvarsan should be had only after very careful consideration with the clearest possible explanation to the patient of the attendant risks and then only in those rare cases in which mercury is not tolerated in any form.

Chronic Suppuration of the Accessory Sinuses.—We now pass to the third, and on account of its prevalence, especially in chronic forms, the most important of the causes of intranasal suppuration we have to consider in this lecture.

Acute sinusitis need not detain us long. It is seldom that the symptoms are distinguishable from those of an acute coryza except in the case of the maxillary antrum. If there are neuralgic pains about the head with a unilateral flow of pus or mucopus from the nose there is probably inflammation of an accessory sinis; a bilateral flow is not so likely to be due to sinusitis. The pus may not appear in the nose in the case of patients who have taken to bed on account of acute coryza, but in these cases it may often be detected flowing down the back of the pharynx. As a general rule, these acute attacks do not come under observation as they so often end in spontaneous cure. Besides the neuralgia, headache, and presence of pus in the nose inflammatory swelling of the middle turbinal is one of the most certain signs of sinus inflammation. In the case of the posterior ethmoidal cells and sphenoidal sinus this is not so marked as these discharge over the convex septal surface of the turbinal, but where the frontal, anterior ethmoidal, or antral cavities are involved the looser mucous membrane on the concave exterior aspect of the turbinal becomes enormously swollen so as to block up the middle meatus and sometimes even to such an extent as to give the middle turbinal the appearance of being double. There will also be some tenderness on pressure over the superficial sinuses when these are involved, with sometimes lacrymation, intolerance of light, and usually a sudden rise in temperature with perhaps a rigor. The treatment consists of measures to alleviate the pain and hasten the discharge of the accumulated secretion or pus. The patient should be kept in bed or at any rate in a warm room. Pain is best relieved by warm fomentations and inhalations containing menthol or friar's balsam. A useful formula is 10 grains of menthol in an ounce of rectified spirit, of this a drachm to a pint of water at 140° F. should be inhaled for from seven to ten minutes from an inhaler in which the air is drawn through the medicament and not through a sponge, or a drachm of compound tincture of benzoin may be used in the same way in the inhaler. The nasal douche should not be used in acute sinusitis. Adrenalin or cocaine or a combination of both may be used in spray to diminish congestion and facilitate discharge. Most cases get well on this line of local treatment combined with general measures to reduce fever and promote metabolism. In a few resolution does not take place, and there may be danger of chronicity or threatenings of orbital cellulitis or of cerebral trouble. In these the question of operation may at once become urgent. When the antrum of Highmore is affected the slight operation of puncture and washing out by means of a trocar and cannula may be performed at once if the symptoms are severe, and this may be repeated with benefit several times. Occasionally the frontal or orbitoethmoidal cells may point externally, threatening the orbit, or the frontal inflammation may cause symptoms of meningeal irritation. In such cases the cavity concerned should be opened without delay. No radical operation should, however, be attempted in the acute stage, and this rule applies to exacerbations of chronic sinusitis. It will be best to merely open the affected cavities and enlarge the drainage through the nose, leaving the skin around open until the acute symptoms have passed off. The tendency to chronicity is chiefly determined by the size of the outlets of the various sinuses. Repeated attacks of coryza with suppuration may have little or no effect in causing chronic suppuration in the superior sinuses, frontal, ethmoidal, and sphenoidal, as long as the discharge can flow away freely. On the other hand, in persons in whom the nasal passages are cramped either from hereditary influence, neglected adenoids, chronic rhinitis, and so forth the danger of chronicity is very much greater, and even a single attack of sinus inflammation may eventuate in chronic suppuration.

Chronic sinusitis is much more common than may be supposed, and has been found in from 30 to 40 per cent. of all bodies examined post mortem by various investigators. Evidence of chronic suppuration is found more frequently in the maxillary antrum than in all the others taken together. In considering any case of chronic intranasal suppuration the first thing to do is to ascertain whether the antrum is the site of the disease. Next the anterior ethmoidal cells, then the frontal, the posterior-ethmoidal cells, and the sphenoidal sinus, though this order of frequency of attack as regards the smaller cavities is variously put by different observers. It is not proposed here to give a complete account of the general and local symptoms, which can be found in any text-book, but I should like to call attention to some points connected with them that are of importance. Nasal obstruction, occurring for the most part early in the day, and discharge from one or both nostrils are mostly complained of. Swollen mucous membrane, granulations, and polypi in the middle meatus are almost pathognomonic of suppuration in the cavities draining into the hiatus semilunaris: maxillary antrum, anterior ethmoidal cells,

and frontal sinus. Polypi are, however, more frequently associated with frontal suppuration. The amount of discharge, especially in this region, affords no reliable information as to which cavity may be affected. Another point that is made much of in some text-books is that suppuration from the frontal sinus appears more anteriorly in the hiatus semilunaris than when the antrum or ethmoidal cells are engaged. This is not borne out by universal experience, and a moment's consideration of the innumerable slight variations in the form of the confluence of these outlets will at once show how unreliable the direction of the final flow may be as an indication of its remote source.

Cacosmia Subjectiva is often, but not always, complained of; neither is the sense of evil smell always subjective, but may be perceived by others, though not at such a distance as that of atrophic rhinitis or syphilis. In late years more and more attention is being given to the ocular symptoms which so often arise in connection with sinus trouble. Apart from inflammatory lacrymal and conjunctival affections which chiefly arise in connection with acute sinusitis, there may be reflex troubles such as photophobia of intermittent character, keratitis, asthenopia, in various forms, iritis, and most frequently optic neuritis. This last has been found associated with more than three-fourths of the cases in which sinus trouble was present. Eye troubles should therefore always suggest a careful examination of the nose and nasopharynx, as many of these patients may have been swallowing discharge from the sphenoidal or other cells for years without being aware of it. As a rule there is little pain associated with chronic sinusitis, but when headache, faceache, or neuralgia are present they often proceed from an exacerbation of the inflammation and should suggest a rhinological examination.

In conducting the local examination, the first thing is to gently remove any secretion that may be present in the nose by means of cotton-wool pledgets. The next point is to note whether it recurs immediately and where. The discharge of lupus and syphilitic rhinitis recurs as a rule but slowly, and may be regarded as an oozing rather than as a flow. The site of recurrence should also be noted. If on the septal side of the middle turbinal the pus probably comes from the sphenoidal or posterior ethmoidal cells, though it may come from the maxillary or even the frontal in case there is an accessory opening to the antrum and the latter may be acting as a receiving chamber for discharge from a frontal abscess. Pus in the middle meatus, especially associated with swelling of the surrounding mucous membrane as already mentioned, is most suggestive of suppuration in one or more of the anterior group of sinuses. Whether pus is seen or not, what is known as Fraenkel's test should now be applied. The patient's head is bent forward between his knees and rotated so as to bring the suspected side uppermost. When the nose is again examined pus may be found in the middle meatus, and this is evidence that whatever its exact source it comes from one of the anterior group.

Transillumination may next be tried, but is so very unreliable, from various causes connected with the bones, the lining membrane, the light itself, or the intelligence of the patient, that its chief use appears to be to occasionally afford an interesting corroboration of evidence that can be obtained with more certainty by other means. It is fortunate that while the maxillary antrum is the cavity most often affected it is also that which can be most readily and conclusively examined. The methods consist in exploratory puncture of the nasal wall through the alveolus or through the canine fossa. The first is the method now generally followed. The inferior meatus is thoroughly cleansed and packed high up with pledgets soaked in a mixture of equal parts of 20 per cent. cocaine solution and adrenalin, or the tablets of adrenin and novocain will be found very convenient, especially in visiting practice. The packing should be left in for from 15 to 20 minutes. The anterior part of the septum should also be sprayed with a 5 per cent. solution of cocaine a few minutes before the puncture is made. Any long hollow needle of at least 2 millimeters bore will do, but one of the most convenient forms is that introduced by Watson Williams, as it is fitted with a handle as well as nozzle to which an india rubber tube can be attached. The point of the needle is placed high up under the inferior turbinal at about an inch and a half from the labial margin of the nostril. When it has penetrated the sinus, if no flow of pus takes place through it, the tube of a Politzer bag should be attached to the proximal end and air forced through. If pus is present it may bubble into the middle meatus. Some sterile normal saline solution should next be forced through if no pus is found, and this may loosen accumulations of thickened matter. If pus or even a distinct turbidity is observed in the returning fluid, the only question that remains open is whether the suppuration has taken place in the antrum or in the frontal sinus, the antrum serving merely as a passive reservoir. Should these methods fail to demonstrate pus, peroxide of hydrogen either as a ten-volume solution or some of this diluted with equal parts of sterile water may be syringed through, when, if pus is present, effervescence will be observed in the middle meatus. If no pus is expelled by any of these methods and it recurs in the middle meatus, it does not come from the antrum. This method is so simple and on the whole so certain that exploration through the alveolus or through the canine fossa need not be thought of. Possible errors may arise when suppuration occurs in connection with malignant disease, but in these cases the condition of the anterior and nasal walls as well as the age of the patient will help to clear up the diagnosis. It should be remembered that a dental cyst never communicates with the nose and cannot be washed through the maxillary outlet, though its contents may discharge through the exploring needle in the inferior meatus. Having washed out the antrum and found pus, we have now to determine whether it originated there. If we reexamine the nose, and, in spite of the thorough cleansing we have carried out, we find pus in the middle meatus, it can come only from the frontal sinus or anterior ethmoidal cells. If there is no reappearance of pus it is almost certain that only the antrum is suppurating. If pus was found on washing out the antrum, and recurs quickly in the middle meatus, both the frontal sinus and the antrum are probably affected, but this is one of the most difficult points to settle, and an exact diagnosis can sometimes be made only retrospectively after the operation on the antrum. Should polypi be seen in the middle meatus these are more often associated with suppuration in the higher cavities, frontal or ethmoidal. The pus from these also recurs more rapidly in the erect position,

and it may be taken as a general rule that the frontal sinus is not affected without some concurrent suppuration in the anterior ethmoidal cells. The pus from the frontal and ethmoidal cavities is rarely so fetid as that from the antrum. Having excluded the antrum, or decided that it shares with the superior cavities in the suppurative process, the anterior end of the middle turbinal should be removed. This will be required in any case as part of the treatment. The frontal sinus can then be catheterized and washed out. If no pus recurs after this, then only the frontal is affected. If it does appear, it comes from the anterior ethmoidal cells. Owing to the small amount of pus secreted by some of the ethmoidal cells, it tends to dry in yellowish-green crusts on the mucous membrane, interfering with the nutrition and producing erosions or atrophy. In patients so affected the appearance and symptoms closely resemble those seen in atrophic rhinitis with ozena.

Suppuration in the posterior group and in the sphenoidal sinus cause the same general symptoms. Diffuse headache or pain in the vertex is often sphenoidal, while pain felt deeply behind the eyes may be ethmoidal in origin. In all these sinus

Fig. 1—Rectangular chisel for opening the maxillary antrum.

troubles the subjective symptoms are of little help except as presumptive evidence. Pus from the posterior ethmoidal cells or from the sphenoidal sinus appears anteriorly in the olfactory fissure above the middle turbinal. Sometimes cocaine and Killian's long speculum may be used to force the turbinal outward, and so obtain a view of the sphenoidal outlet. The practical point is that, having excluded the cavities of the anterior group, the middle turbinal must be removed as a preliminary to treatment of the remaining group of cells. As regards treatment of the anterior group, no operation other than puncture and lavage should be undertaken in the case of the antrum until this has had a fair trial. When that has failed the cavity should be opened from the nose. The best site is in the inferior meatus, either with or without removal of the middle third of the inferior turbinal. The anterior third is too far forward from the usual site of the deepest part of the cavity and, besides, removal of the anterior third is often followed by inflammation and occlusion of the lacrymal duct. This operation was originally proposed by Mickulicz and has been modified or approved by various operators. I have myself for many years used the rectangular chisels (Fig. 1) and angular perforator (Fig. 2), and their use facilitates the

Fig. 2—Angular trocar for antral wall.

removal of any desired area of the inner wall in a few seconds. In the majority of cases the intranasal operation, followed by lavage, is able to bring about a cure. It is only where the mucous membrane is much thickened and polypous that operation through the canine fossa, with counter opening to the nose, need be thought of. In any case the intranasal operation provides the counter opening should the canine afterwards become necessary. Surgical treatment of chronic suppuration in the frontal sinus and anterior ethmoidal cells should begin by clearing the middle meatus of all obstruction. If this gives no relief the anterior end of the middle turbinal should be removed and the frontal sinus regularly washed out by means of Hartmann's cannula. Should this prove unsuccessful or impracticable, the question of external operation by Killian's, the Ogston-Luc, or other method has to be considered most carefully. The record of the past ten years shows that a very high mortality attends these operations from cerebral or orbital complications or from osteomyelitis. It has always to be considered whether the inconvenience suffered by the patient is worth the risk shown by an admitted mortality of 10 per cent. The anterior ethmoidal cells can be approached intranasally and broken down either by curette under general anesthesia or better at repeated sittings by forceps with cocaine and adrenalin. Where the cells extend far out or backward under the orbit these can be reached only by external operation. As a preliminary to all these operations, skiagraphs, which are latterly so much clearer than they used to be, will be found most useful in determining the position and limits of the various cavities. Sometimes the suppuration in the nose may be due to multiple sinusitis. The methods of diagnosis here are the same. As regards treatment, it should be remembered that here it may be very prolonged and that the prognosis is more doubtful than where only individual cavities have to be dealt with. If the palliative treatment, by puncture and lavage, removal of the middle turbinal, and regular attention on the part of the patient, fails to bring about a cure or an entirely tolerable condition, the question of radical operation again arises. Should more extensive operation be decided on, it is best, in case of multiple sinusitis, to deal first with the ethmoid and clear all the attainable cells thoroughly in the manner indicated. If the frontal sinus still suppurates and the patient decides to have the operation, it should next be opened, and, if pus has been found in the maxillary antrum, the intranasal drainage of that cavity should be established on the same occasion. If the sphenoidal sinus participates in the multiple inflammation, it should be opened in connection with the treatment of the ethmoidal, leaving always the frontal and maxillary cavities to be dealt with last.

6 Manchester Square, London.

TRICUSPID REGURGITATION, AND STERN'S POSTURE AS AN AID IN ITS DIAGNOSIS.

By LOUIS BERTRAM SACHS, M.D.,

NEW YORK.

There is no doubt that organic disease of the tricuspid valve is of relatively rare occurrence. But it is the opinion of many clinical observers that a structural change in this valve is more common than statistics show. Relative tricuspid incompetency is a comparatively frequent fact, since it occurs at some time in the course of a dilating right heart as a consequence of left-sided disease of the heart. Notwithstanding the frequent occurrence of this relatively common cardiac affection, it has been the wont of the general practitioner completely to ignore dextrocardiac murmurs and solely di-

rect his attention solely to the left side of the heart. This lack of knowledge of the dextrocardiac murmurs among the general practitioners can be attributed to the very slight attention which textbooks and clinical teachers pay to this important subject. The murmur of tricuspid insufficiency, when unaccompanied by any extensive dilatation of the right ventricle and when auscultated in the ordinary erect or recumbent posture, is very evanescent, and so has frequently escaped the attention of even very careful and experienced clinicians.

When accompanied by or due to advanced disease of the left side of the heart, the symptoms and physical signs of this condition are so evident and pronounced that it ought to be easily recognized by the average practitioner. The comparatively very common occurrence of the murmur of tricuspid regurgitation has led Mackenzie to the belief that normally the valves are barely able to close perfectly the tricuspid orifice. This same authority states that the absence of a murmur is no evidence that tricuspid regurgitation does not exist, for it is a frequent occurrence to find evidence of tricuspid incompetency in the character of the jugular and liver pulsations and the greatly widened orifice found post mortem, while during life there was no systolic tricuspid murmur. The absence in these cases of a murmur may be due to a weakened wall and a wide orifice.

Tricuspid regurgitation gives rise to a murmur which is soft and blowing in character, taking the place partially or entirely of the first tricuspid sound. The slighter forms of tricuspid murmurs are limited to a small area over the middle of the sternum, and may exist with little, if any, appreciable increase in the size of the heart. When there does exist an increase in the size of the heart the murmur may be heard over the whole of the anterior cardiac area. The point of maximum intensity is to the left of the sternum, although it may occasionally be heard to the right of the sternum. In cases of marked tricuspid regurgitation, the symptomatology and physical signs are very distinctive. The chief symptom is dyspnea, which ranges in intensity from breathlessness on exertion to orthopnea, even when the patient is at rest. Indigestion is present, distention of the abdomen is of frequent occurrence, and edema of the legs sets in early in the disease. Marked cyanosis is present, and the visible veins in the temples, neck, and arms are dilated and prominent.

The regurgitation of the blood from the right ventricle into the larger veins of the body results in the production of the venous pulse. This venous pulse, which is most distinctly observed in the jugular veins, differs from the pulse of simple engorgement by being more intense and by its rhythm, which is presystolic-systolic in time instead of diastolic-presystolic. Mackenzie has shown that in the tracing of a venous pulse due to tricuspid insufficiency the auricular wave disappears and the ventricular wave increases in size and occurs earlier in relation to the ventricular output than in normal cases. This is called the ventricular form of venous pulse. The venous-hepatic pulse is a characteristic phenomenon of tricuspid insufficiency. It occasionally appears earlier than the jugular venous pulse. This form of venous pulse corresponds to a presystolic-systolic dilatation of the hepatic-vascular net. The apex beat of the heart is diffuse and may extend into the fext axilla. Percussion shows that the transverse dulness is increased, extending more to the right than normal. Schwartz states that if this dulness is more than three fingers' breadth to the right of the sternum, it should be recognized as being due to relative insufficiency rather than to organic disease of the right ventricle or tricuspid valve.

From the above clinical symptoms and signs it is very evident that there should be no difficulty in the diagnosis of a marked tricuspid regurgitation It is in the slighter forms of the disease that systolic-tricuspid murmurs are overlooked.

In a paper published in the *Archives of Diagnosis* for January, 1910, Heinrich Stern calls attention to a new posture in the recognition of tricuspid regurgitation. With the aid of this posture it is possible to induce the characteristic murmur of tricuspid insufficiency when it has been absent, and to make it more distinct when it is vague and indistinct. When a patient is in the recumbent posture, if the head be lowered, the jugular veins become distended, and as a rule begin to pulsate. If the head be lowered beyond a certain degree the pulsation and engorgement recede. Lowering of the head in this manner produces a stretching of the muscles of the head and a stretching of the jugular veins. The stretching produced by the lowering of the head is reflected in the tricuspid area, and murmurs are now evident which were not heard before, or which were quite indistinct. It will also be noticed that the apex beat is now also more pronounced, and that any other accompanying murmurs are now more audible than when the patient was in the ordinary recumbent position. Tricuspid murmurs are audible on some days, inaudible on others. In Stern's posture a tricuspid murmur once audible is always audible. The venous-hepatic pulse, as before stated, is a characteristic phenomenon of tricuspid insufficiency, and in Stern's posture this phenomenon can very frequently be observed. Stern noted that the pulsations were more marked over the left lobe of the liver and in the epigastric region, and though they are apt to disappear suddenly they frequently return when the patient is in Stern's posture.

The following two case histories will show the great aid afforded me by Stern's posture in the recognition of tricuspid regurgitation:

Case I.—Mr. B., a banker, 53 years old, had never performed any hard physical labor and had had only slight mental strain, which was due to the responsibility of the education of his motherless children. I saw him in November, 1908. He had then been ill for about four months. He had been in a Western sanatorium, where he was treated without any benefit to himself, no positive diagnosis having been made. His previous history was negative. Present history: During the past two months, the patient had violent attacks of dyspnea, which finally developed into orthopnea. He was more or less cyanosed, nearly all the time. When the patient was placed in Stern's position a distinct ventricular form of venous pulse in the neck and temples and an hepatic venous pulse were present. Examination of the heart in this position elicited a slight dilatation of the entire heart, especially of the right side. Upon auscultation of the right heart in Stern's posture a soft blowing murmur over the middle of the sternum was heard, synchronous in time with the first sound of the heart. Auscultation of the left heart in Stern's posture revealed a marked accentuation of the apex beat, but no distinct murmurs could be heard. Upon

examination of the heart in the erect and recumbent positions at this time, there was no evidence, beyond a slight dilatation of the heart, of any valvular disease. Examination of the urine showed no signs of renal involvement. The liver was slightly enlarged, but all the other organs of the body were apparently not grossly affected. About two months after the first examination, the patient had all the symptoms and physical signs in a highly prominent degree. He succumbed soon after.

The prominent features of this case were: The presence of the characteristic signs of tricuspid regurgitation, *i.e.* great dyspnea, developing into orthopnea, and in Stern's posture a ventricular form of jugular venous pulse, an hepatic venous pulse, and the presence on examination of the right side of the heart of the soft blowing murmur over the middle of the sternum, systolic in time. The fact that the murmur was inaudible in any of the positions for the examination of the heart excepting Stern's is evidence enough of the great value of this posture in auscultation of the heart.

There can be no doubt that the primary illness was due to a tricuspid regurgitation, for a careful examination of the left side of the heart did not show a single lesion which could in any way account for the symptoms present.

Case II.—Mr. R., 58 years old, first seen by me on June 13, 1909. Had been rejected nine years previously by a life insurance company on account of the presence of albumin in the urine. The patient had been treated for mitral disease, but there was absolutely no evidence of any disease of this valve. Present condition: Patient complains of constant dyspnea, pressure in the abdomen, indigestion, headaches, and vertigo. The physical examination revealed the presence of ascites, of edema of the lower extremities, of slight enlargement of the liver, but no pulsation in the recumbent or erect postures, the spleen was not palpable, the lungs were slightly emphysematous, and the urine showed all the evidences of a chronic parenchymatous nephritis. Examination of the heart showed a distinct dilatation of the right side, and a slight increase in size of the left. The apex impulse was slightly outside of the left nipple. No arrhythmia was present. In the erect posture, the apex impulse was weaker than in the recumbent position. In Stern's position the apex beat was not accentuated. In this position examination of the right heart revealed the presence of a distinct murmur in place of the tricuspid first. No murmur of this valve could be elicited in the erect or recumbent postures. Examination of the aortic valve in the recumbent position showed both sounds to be but faintly audible. In Stern's posture, there was a probable accentuation of the second sound, as the first was not audible. In this position the ventricular form of venous pulse was present, while it was absent in the recumbent or erect postures. No murmur of the mitral valve could be heard. Under heart tonics and diuretics the patient improved to some degree, but he eventually died with all the symptoms and signs of cardiac dilatation.

In this case one of the most prominent symptoms was the presence of great dyspnea, which is a sign of cardiac asthma, thus pointing to disease of the right chamber of the heart. The ventricular form of venous pulse was present and the characteristic murmur was audible in Stern's position, while it could not be elicted in the erect or recumbent postures.

526 West One Hundred and Eleventh Street.

ABSTRACT OF TREATMENT OF ARTHRITIS DEFORMANS IN MONTEFIORE HOME.

WITH REPORTS OF CASES.*

By SAMUEL W. BOORSTEIN, M.D.,

NEW YORK.

For many years cases of arthritis deformans were considered incurable and after trying various methods, the general practitioner would say: "I can do absolutely nothing for the patient, send him to an institution." As a result of this, an institution like ours received many of these cases with the understanding that they were to remain there for the rest of their days. They were put in the wards and remained there till they died from some intercurrent disease.

Lately a great deal of work has been done in England on arthritis deformans and good results have been reported, but emphasis is put on "systematic treatment." The physician and the patient must have great patience in order that good results may follow.

About eight months ago, under the service of Dr. George R. Elliott, we started careful "systematic treatment" on our arthritis cases and the results have been so encouraging as to justify persistence in this line of treatment. We administered this treatment to ten patients only of a group of twenty-five. Three of the patients treated are walking and three others have improved so much that they will probably be able to walk in a short time. We have been able to relieve the distressing symptoms of the other patients.

The treatment is divided into (1) that of the general condition and (2) that of the joints. General treatment: Since infection plays an important part in bringing on the disease and aggravating the condition, we look first for the source of the infection and examine the mouth for carious teeth, pyorrhea alveolaris, and diseased tonsils and remove the source of infection when found. The digestive tract is very carefully attended to, since gastrointestinal disturbances aggravate the symptoms, and whenever patients are constipated they complain of marked pain and discomfort in the joints. The urine is examined two or three times a week and when indican is found in large quantities a high enema is given. As a routine measure each patient receives two or three enemata a week, as a result of which the pain in the joints is greatly relieved. Diet: We allowed the patients to eat whatever agreed with them and tried to have them gain weight in order to increase the nutrition of the joints and so improve the atrophied muscles. We did not try to diminish the uric acid unless the patient showed gouty tendencies. We made metabolic studies of the digestion in some cases; the nitrogen intake and output were carefully estimated and we found no change in the symptoms when a large amount of nitrogen was given. The results depended only on the form in which the nitrogen was administered. We studied each patient individually and gave him the diet that agreed with him. Milk, cheese, and buttermilk were given in large quantities since it is claimed that calcium has a markedly beneficial influence. The digestion was improved by this diet, but it had to be changed on account of the monotony. Lately we have

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started to use the calcimeter and where we have found a deficiency in calcium we have given food rich in this element. Hygiene: The patients were kept out of doors as much as possible, being wheeled out on the balcony even when the weather is cold, provided, however, that it is dry.

Hydrotherapy: Bathing is very useful. It increases the elimination of toxins. Three times a week we place the patients in steam boxes in a sitting posture for ten minutes at a temperature of 200 to 225°. The head is covered with a towel moistened in ice-water. This hot-air bath is followed by a spinal douche at a temperature of 90° and a pressure of 20 pounds, which increases the tone of the muscles in the back. Dry heat: Baking is found to be very beneficial. It produces an immediate and powerful stimulation of the vital functions and brings an increase of blood to the parts, and if this procedure is followed by massage the effect is doubled. We use the Turnauer hot-air apparatus, in which the limb is kept for 45 minutes at a temperature of 250 to 300°. The pain is markedly relieved by the baking and the increased amount of blood in the affected parts permits a more efficient massage. Light baths have lately been used in metabolic disturbances, the benefit being attributed to the promotion of the extensive elimination of the products of poor metabolism. Since most of our patients are bedridden we have constructed a special recumbent light bath. Active and passive hyperemia is very useful. We are using Bier's method of passive hyperemia—in the beginning for two or three hours daily and later for six or eight hours daily. Still later bandages are left on over-night. This method is very effective in stopping pain. We have used it before employing massage and have found that the patient had less pain during the process. Electricity: The faradic or galvanic current has very little effect. The static current is claimed by some to do good. We have applied the "wave current" to the joint for fifteen or twenty minutes, or the spark for five minutes. They seem to influence the pain favorably and have a good tonic effect. Probably some good is derived from the vibratory movements.

Massage: This, together with exercises, is the most useful part of the treatment and constitutes an important part of our program. Patients usually object to it in the beginning, but if one gains their confidence they will bear it. The massage is given only three times a week and not too vigorously. We have been accustomed to give massage after some hyperemic measure, such as baking, or the application of hot water, of Bier's hyperemia, steam boxes, or light boxes. Patients complain of less pain if the massage is given in this way. The massage increases the nutrition of the joints and diminishes the possibility of ankylosis, muscular atrophy, and contractures. The patients have done a certain amount of massaging themselves. Exercises: These have been found to be the most effective part of the treatment, but also the hardest to accomplish, since the patients are not very willing to perform them. A pulley-weight exereiser helped a great deal in cases in which the patients did the exercises themselves. The patients were compelled to roll the wheel chairs themselves and to do exercises with their hips with the aid of a pulley attached to the ceiling. They had to rock on a rocking-chair for several hours daily. For their fingers we used rubber balls which patients had to press hard. We made them walk as early as possible.

We paid great attention to prevention of new deformities and this was done by the exercises and by keeping some parts in splints for part of the day. We use plaster splints for the night since the voluntary control of the muscles is lost and contractures may increase.

Treatment of deformity when present: We have used gradual straightening of the limbs and putting them in plaster for a day or two. Recently we have not broken up joints under anesthesia. We have seemed to get better results by straightening them gradually in several sessions. For straightening the fingers we made wooden splints well padded and applied direct pressure over the joint. Operative treatment is advised by some clinicians, but we have had no occasion to use it. Medicinal treatment: After using most of the drugs recommended we have ceased using any of them, excepting occasionally, when we give aspirin or tincture of gelsemium to stop the pain. The mechanical treatment has succeeded in stopping the pain. For local applications we use ichthyol or chloral hydrate ointments.

Résumé of Routine Treatment.—Each patient as soon as he enters the orthopedic department has his casts, *x*-ray, and photograph taken and a careful description is made of the joints on the "question blank" so that a good record of the changes can be kept. Then the patients are given the following treatment: Baking followed by massage three times a week; "steam boxes" on the intervening days; light baths twice a week; Bier's hyperemia every day for six or twelve hours; enemata twice a week; exercises daily, and static electricity three times a week. Casts are taken every three to four months. For carrying out this treatment we have given nurses special training and have elicited their personal interest in this special kind of work.

The following is the outline of a case: M. H., age twenty-seven, teacher. Entered the Home in February. Bedridden for about two years. Knees swollen and contracted to an angle of 45 degrees. Marked pain in all the joints; unable to dress, undress, and feed himself. Received treatment for eight months. He now walks, although with a brace, and has no pain whatever. Dresses, undresses, and shaves himself, and writes well without any discomfort.

PLAN OF "QUESTION BLANK."

Name: Age: S. M. W. Date:

Arthritis Deformans.

1. Occupation: knitting, sewing, washing.
2. Atmospheric influences: exposure to cold and wet.
3. Financial condition:
4. Hygienic surroundings:
5. Hygienic surroundings:
5. Sex:
6. Age at onset:
7. Family history: rheumatism, gout, or any joint disease:
8. Predisposing causes: worry, anxiety, mental strain, etc.
9. History of preceding infections: intestinal, purulent, etc.
10. Associated diseases: tuberculosis, heart disease, Raynaud's disease, scleroderma.
11. Exciting causes: cold, dampness, reflex irritation, *e.g.* uterine.
12. Subjective findings: pain, history of redness, history of swelling, digestive system.
13. Objective findings: pulse; temperature; blood count and Wassermann reaction; Gastric Analysis; urine; examination of feces; examination of

heart; bloodvessels and blood pressure; lymphatic glands; nails; mouth, including teeth, gums, tongue, and tonsils; nasal examination; ear examination; emotion and temperament; fibrous nodules; tendon reflexes; muscular system, especially atrophy; joints first involved; ankylosis (fibrous or bony); condition of skin over joints (pigmented or not), (glossy or not); spine; x-ray findings; joint involved, description, etc.

1227 Boston Road, New York.

THE SIGNIFICANCE OF THE SPLASHING SOUND IN THE GASTROINTESTINAL CANAL.

By MARK L. KNAPP, M.D., LL.B., LL.M.,

NEW YORK.

In the physical examination of the abdomen in gastrointestinal diseases we make use of what is known as the splashing sound. This is a sound which is produced by the simultaneous presence in a hollow viscus of gas and liquid. The sound is elicited by sharply striking the abdomen with the tips of our fingers. It is also elicited by shaking the body back and forth or laterally. This physical sign has been made use of especially in connection with the stomach. Whenever the splashing sound is found in the region of the stomach it has been interpreted, first, to mark the boundaries of the stomach, and, second, to give us information as to the condition of the propulsive power, of the tonicity, of the stomach. We are taught that, once we find the splashing sound we must try for it as low down as we can get it and there, at the lowest point, mark off the lowest level as being the greater curvature of the stomach. There should not be any exception to this teaching, provided we are sure that the splashing sound is engendered in the gastric cavity, which latter must be proven as a fact and not be merely assumed. The history of the case I am about to narrate shows that, notwithstanding the presence of the splashing sound in the region of the stomach, the stomach was absolutely innocent; that the sound elicited in the region of the stomach did not originate in the stomach. Concerning the second proposition, we are told that the presence of the splashing sound in the stomach indicates atony of the stomach; this I deny unqualifiedly and I shall later prove the correctness of my contention.

In this contribution I wish to give the history of a case in which there was the splashing sound; but the splashing sound came not from the stomach, it came from the bowel.

Mrs. R. P., forty-two years, native of the United States, gave the following history on May 10, 1911: Sick for some time; pain in the left side which is often of such severity that she crawls on the floor; feels tired when getting up in the morning; feels very miserable after meals; belching after meals; at times there is a burning sensation in the stomach and a bitter taste in the mouth; she feels always dry and thirsty; has flashes of heat and cold and a sensation of weight and heaviness behind the sternum; she has very weak spells; suffers from constipation; has pain in the heart on walking; takes a long time to fall asleep, but then sleeps soundly; has left temporal and, quite occasionally, also occipital headache; there is frequent micturition of small quantities.

On physical examination I found a splashing sound in the left side in the region of the splenic angle of the transverse colon. The aspiration of the stomach brought forth no gastric contents. The test meal examination yielded only some 10 c.c. of chyme, which reacted to free hydrochloric acid (by tropaeolin 00), and the microscope showed budding, sporulating yeast cells. My diagnosis was incipient insufficiency of the pylorus and zymosia gastrica. Under treatment she began soon to feel well, and left the city for the summer. She remained well until she committed voluntary errors in her diet and again visited me on October 16, 1911. She came fasting, and again complained of pain in the left side, but this time she suffered no headaches; she blamed her diet for her present suffering. I again examined her abdomen and again found the splashing sound, which did not reach any lower than the greater curvature of the stomach, but it did spread laterally quite a distance to the right of the median line. I aspirated the stomach, but could not get any contents. I then introduced the usual quantity of fluid for the purpose of lavage, but the syphoning brought up more than I introduced into the stomach. Another examination of the abdomen after the lavage for the purpose of getting the splashing sound proved negative; no more splashing sound after the lavage.

What does this history teach? The facts are that we had here a splashing sound, that the splashing sound was limited to the area of the stomach as far as the greater curvature was concerned, and that the aspiration of the stomach proved that the stomach was empty and that therefore the splashing sound could not possibly have come from the stomach. Therefore, had I relied upon the splashing sound as indicating the limits and boundaries of the stomach, I would have had to assume the presence of a gastrectasy of the horizontal type. The events proved that such an assumption would have been highly erroneous.

Besides this, were I to follow the books, which, concerning atony of the stomach, have followed and copied the erroneous teachings of over two thousand years, I would have had to assume also here the existence of atony of the stomach, since the books teach that the splashing sound indicates atony. Now as to the diagnosis of atony. Atony of the stomach or of the intestines does not exist, all other teachings to the contrary notwithstanding. True, I have myself reported a case of "atony of the duodenum" (*New York Medical Journal*, May 23, 1903) and have always taken great pride in the diagnosis, which was corroborated by operation at the Presbyterian Hospital. But I have since changed my views, not as to the facts narrated in the article just mentioned, but as to the interpretation of the condition which we are taught to call atony. The calling of the stomach or any part of the intestine "atonic" is adding insult to injury, it is a gratuitous affront to the integrity of the muscular coat of the organ or part of the organ which is under consideration. Relating to the misleading term "atony of the stomach" I wrote, *in extenso*, in my first article on insufficiency of the pylorus (*Philadelphia Medical Journal*, May 24, 1902) and since then I have applied the same reasoning to intestinal conditions as well. The presence of liquids and gases simultaneously in a given area simply means that these liquids and gases are, at least for the time being, confined in such area and, for the time being, such confinement indicates an obstruction at both outlets of the viscus in which the liquids and gases are confined. This

obstruction may be quite temporary, such as an ordinary more or less spastic contraction, or it may be of a permanent nature. This latter condition obtains when there is an organic obstruction existing either within the organ or without it. So that the obstruction may be benign or of a malignant nature. Where the obstruction is produced by a spastic contraction merely, we are dealing with a benign condition and, with reference to the stomach, I have termed such obstruction "stenosis pylori ab irritatione." But where the obstruction is produced by a neoplasm within the lumen or by a cicatricial contraction following a previous ulcer, or where the obstruction is produced from without by a neighboring organ pressing against it, or by a kinking of the gut or by an adhesive band keeping two arms of a piece of intestine kinked and permanently matted together, we are dealing with a permanent obstruction. In any of these given conditions, it is highly illogical to blame the stomach or the piece of the bowel within which the fluid is contained, for lack of propulsive power and call the respective organ atonic. Pertaining to the stomach the physical appearance of the aspirated chyme in such "atonic" conditions not only proves that there was no atony, but that the very contrary condition is the fact, namely, that those presumed cases of atony in reality show "hyper-tony." If the doors are locked, how can the contents escape? If there is a stenotic condition of the pylorus, how can the chyme pass into the duodenum? Is it due to laziness on the part of the muscular coat of the stomach, is it due to atony of the stomach? No, the contents of the stomach cannot get away, not because the musculature of the stomach is atonic, but because there is a locked door, there is a stenosis of the pylorus. The same reasoning applies to the intestine. The splashing sound is produced under these circumstances not because there is an atonic condition of either the stomach or some part of the intestine, but because there is some temporary or permanent obstruction present which keeps the fluids and gases confined within the respective limits for the time being. The splashing sound proves only an evanescent or temporary obstruction, but never atony.

The second lesson this case teaches is that we must not assume that the splashing sound, although elicited from the area where the stomach is situated, comes from the stomach. This case teaches that the splashing sound in the region of the stomach may come from the jejunum. Had I here relied upon the splashing sound as indicating the boundary of the stomach I would have had to assume the existence of a gastrectasy of a horizontal type inasmuch as the splashing sound extended quite some distance to the right of the median line. I have been taught that such gastrectasies exist, but I assume no responsibility as to the correctness of such teaching. Indeed, I am inclined to doubt very much the existence of such a gastrectasy. In the light of my investigations dating back to 1902 and the now demonstrated fact of the existence of insufficientia pylori, it is easily possible that what has been assumed to be a horizontal gastrectasy in reality was an absolutely relaxed pylorus. Added to this condition an obstruction of the duodenum, which so often occurs at the site where it passes through the two prongs of the fork formed by the abdominal aorta with the superior mesenteric artery, we have a condition created which gave the mistaken picture of a gastrectasy of a horizontal type. When the stomach was inflated the inflated air passed beyond the stomach into the duodenum since there was no contracted pylorus to retain the air in the stomach and the inflation distended both the stomach and the duodenum. As insufficientia pylori at that time was unknown, the duodenal inflation shown by the distention reaching to the right of the median line was interpreted wrongly. The entire distended area was assumed to show the confines of the stomach while it might have been the distention of the stomach and of the duodenum. Viewed in this light, insufficientia pylori not being known, we can easily understand why a condition was called horizontal gastrectasy if the inflation caused bulging beyond the medial line.

The splashing sound is an interesting phenomenon, but it must not be used either to localize the stomach or to define its boundary, and most assuredly it does not prove any atony.

616 Madison Avenue.

The Halsted Operation in the Treatment of Mammary Cancer.—E. Tournier advocates the use of the Halsted operation for the extensive removal of the structures in the axilla and the pectoral muscles, on account of the lessened likelihood of recurrence. The objections that have been made to this operation are that it is unnecessarily mutilating and causes disability of the corresponding arm and shoulder. The author thinks that this disability is more due to adhesions which form from immobilization of the arm during healing; and injuries to the posterior circumflex nerve while cleaning out the axilla in the dark. If the arm is allowed to be moved after operation and the nerve is looked for during the open operation this disability will be avoided. That these muscles are not necessary to the movements of the arm is shown by the perfect results obtained after their removal and when they are congenitally absent. The fact that recurrences are rare in these muscles and that the lymphatics of the breast do not reach these muscles is not to be considered in this matter, since there are authentic cases in which recurrences have occurred between the pectorals in a few glands located there or in the interstitial connective tissues of the muscles.—*Gazette de Gynécologie.*

Senile Pleurisy.—Oppenheim and Crepin state that among 2,000 old people they have observed 41 pleural effusions, 29 of which have been diagnosed during life, and 12 have been revealed by the post-mortem examination. Among the last 4 had died suddenly, without any premonitory sign or symptom. The average age of the cases considered was 70, and the condition was about three times more frequent in men than in women. Both sides seemed to be equally often affected. In the vast majority of cases the general condition was very poor. After a study of several typical cases the authors allude to the extreme severity of the disease and to the great frequency of sudden death. The death rate was 65 per cent. The only rational treatment of senile pleurisy with effusion, according to the authors, is paracentesis, which must be performed as soon as the diagnosis is made.—*Progrès Médical.*

Paralysis of the Right Third Nerve Following Ethmoidal Operation.—H. J. M. Wright reports the case of a man, aged thirty-six, who was first seen in April, 1911, with a history of nasal polypi for about eight years. Following an intranasal ethmoidal operation on the right side he developed an orbital hematoma and complete right third nerve paralysis. The pupil is now, six weeks after the operation, smaller and reacting, and the ptosis is less, but the condition is otherwise unaltered. Vision of the right eye is unaffected.—*Proceedings of the Royal Society of Medicine.*

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A NEW THEORY OF THE MECHANISM OF SENSATION.

THE late Hughlings Jackson laid the foundation of all modern studies of cortical function by his observation of focal irritations of the motor zone, in cases which are now included under the name of Jacksonian epilepsy. The localization of sensory functions in the cerebrum has not been so definitely determined, although these functions have been supposed to reside in regions of the cortex nearly identical with those that are concerned with motor activities. But apparently a great step has just been taken in the interpretation of the mechanism that underlies the elaboration of sensory phenomena. In their third contribution on the sensory disturbances that result from cerebral lesions Henry Head and Gordon Holmes present in the *Lancet*, January 20, 1912, an ingenious theory of the mechanism of sensation. This theory is based upon the study of lesions situated in different parts of the brain, but more particularly upon the study of twenty-four cases in which a lesion of the optic thalamus was present. In these cases, in addition to the loss of sensation resulting from the interruption of the afferent paths to the cortex, there was added a phenomenon which was the result of the destruction of certain parts of the optic thalamus. This phenomenon was the tendency to react excessively to certain stimuli, whether painful or pleasurable. There was "an actual overloading of sensation with feeling tone." The prick of a pin, although less sharp and less distinct on the abnormal side of the body when compared to the normal side, nevertheless was decidedly more distressing and painful. The difference was one that concerned the affective phase of consciousness, the phenomenon of well-being or comfort as contradistinguished from that of pure sensation. It is this psychological principle which now finds an anatomical basis in the theory proposed by Head and Holmes, who place the seat of this affective faculty in the optic thalamus. This organ responds to all stimuli capable of evoking pleasure or pain, or consciousness of a change of state, and is the seat of the feeling tone associated with visceral sensations.

The optic thalamus plays a triple rôle with regard to sensory impulses. It contains the termination of all sensory paths, which are regrouped and distributed either to the cerebral cortex or to the essential gray matter of the thalamus. This essential gray matter is the center for the fundamental element of sensation, namely, the feeling tone, which resides exclusively in the optic thalamus. The lateral part of the optic thalamus contains the organ through which the cortex influences the essential thalamic activity, by controlling and checking it. If this region is injured the inhibitory influence of the cortex is removed, with the result that the thalamust reacts without restraint to all stimuli capable of arousing affective states.

All afferent impulses on their way to the cortex are regrouped at the thalamic junction and act upon two terminal centers. One is the essential organ of the thalamus, which, as we have seen, is concerned with the appreciation of pleasure and discomfort. From the other center the afferent impulses are transmitted by way of the internal capsule to the cerebral cortex. Thalamic and capsular lesions, with the consequent loss of sensation, show that there are five main groups of these impulses: (1) those underlying postural recognition and the appreciation of passive movement; (2) those underlying the appreciation of tactile differences; (3) those concerned with spacial discrimination; (4) those concerned with localization, and (5) those impulses underlying the appreciation of thermal differences. When these impulses reach the cerebral cortex the resulting sensory changes are brought into relation with one another simultaneously, and with experiences that have gone before. The center also has the power of focusing attention upon these sensory changes. But, to quote Head and Holmes, "in addition to its function as an organ of local attention the sensory cortex is also the storehouse of past impressions. These may rise into consciousness as images, but more often, as in the case of special impressions, remain outside central consciousness. Here they form organized models of ourselves which may be termed 'schemata.' Such schemata modify the impression produced by incoming sensory impulses in such a way that the final sensations of position, and of locality, rise into consciousness charged with a relation to something that has happened before. Destruction of such 'schemata' by a lesion of the cortex renders impossible all recognition of posture or of the locality of a stimulated spot in the affected part of the body."

All stimuli in daily life that pass to the cortex excite both the thalamic and the cortical centers, but one more than the other. Thus the stimuli that result in the recognition of posture arouse almost exclusively the discriminative sensory mechanism of the cortex, while visceral sensations may be entirely restricted to the activity of the thalamic center. All thermal stimuli arouse both the cortical and the thalamic centers; the sensations of warmth and of cold in addition to the purely thermal recognition contain a prominent affective element, one of comfort or discomfort, of pleasure or pain.

But the thalamic center is not an independent one. It is dominated by that of the cortex, just as the latter inhibits the motor or tonic impulses that emanate from lower levels of the cerebrospinal

axis. Loss of the cortical control, in the case of these impulses that have both a sensory and an affective content, results in a heightening of the affective tone, as has been amply demonstrated in the cases of thalamic disease presenting the "thalamic syndrome."

This theory, which is based upon ample clinical and pathological data, fills a wide gap in the present knowledge of the physiology of the brain. By assigning an organic substratum to the "affective" phase of consciousness, which has long been recognized by psychologists, it also helps to bridge the chasm between the physical and the psychical.

BRILL'S DISEASE AND TYPHUS FEVER.

Those familiar with both diseases have for some time suspected that the symptom-complex so clearly described by Dr. Nathan E. Brill, which has become generally known as Brill's disease, was a mild form of typhus fever. From Brill's reports it is apparent that he has recognized the similarity of the two diseases, for he says, "in the case of an epidemic of typhus, in my opinion, it would be simply impossible to say that those cases which I have described were not mild typhus fever." Nevertheless he refuses to admit the identity of the two diseases. Friedman, who had observed cases of typhus fever in Russia, laid special emphasis upon their similarity in a paper read before the New York Academy of Medicine in May, 1911. (Medical Record, September 16, 1911, p. 606). Louria of Brooklyn, in an article in the Medical Record of August 26, 1911, also notes the striking similarity of the two diseases, and quotes Goodall of London, who regards the two diseases as one and the same.

The recent findings of Anderson and Goldberger,* which seem to show that the two diseases are identical, will, therefore, cause little surprise. These workers in experimenting with monkeys found that an attack of Brill's disease which they were able to produce in these animals by inoculation rendered the monkeys immune to the strain of typhus fever now prevailing in Mexico, and that the reverse was also true, namely, that an attack of Mexican typhus fever produced in monkeys an immunity to Brill's disease. This seems to indicate that the typhus fever which has been prevailing in the plateau regions of Mexico and locally is called "tabardillo" is identical with the disease described by Brill. While the presumption is strong, it remains yet to be proven that the typhus fever of Mexico is the same as the typhus of Europe and Asia. This added information concerning a disease which had come to be recognized as a definite entity, but of which the etiology and relationship to other diseases were in doubt, has aroused much interest in New York City, where most, if not all, of the cases of Brill's disease have been reported. The disease is known to have been recognized, however, in other large cities and very possibly greater numbers of cases will be encountered in the future and the occurrence of typhus fever in many large cities may be found to be not uncommon.

*Anderson, John F., and Goldberger, Joseph, The Relation of So-Called Brill's Disease to Typhus Fever, Public Health Reports, Public Health and Marine Hospital Service, February 2, 1912.

Russian physicians recognize a mild form of typhus in that country and say the type of the disease is so modified that the mortality is very low and instances of evident contagion are rare. Goodall asserts that a mild type of the disease is encountered among the Russian Jews in London, and many physicians practising among the same class of the community in this city believe that modified typhus fever exists here also. It would be strange if it did not, and the experiments of Anderson and Goldberger seem to show quite conclusively that it does.

CULTIVATION OF SPIROCHETES.

Spiral microorganisms have been the object of careful study from the time when Schaudinn and Hoffmann described the occurrence in syphilitic lesions of *Treponema pallidum* and suggested that it might be the long-sought-for excitant of the disease. They and their immediate successors, however, could not absolutely prove the rôle of this organism in causing syphilis, artificial cultures being unsuccessful and thus Koch's classic cycle of proof not being complete. Mühlens later succeeded in obtaining fairly pure cultures of spirochetes, but apparently had only partial success in showing that his cultures were pathogenic for animals. In this country Noguchi has done a great deal of careful work in the study of the diagnosis of syphilis by means of the Wassermann and modified Wassermann reactions, and has recently announced the final step in the proof of the relation between *Treponema pallidum* and syphilis (*Journal of Experimental Medicine*, No. 1, Vol. xv), namely, artificial cultivation of the organism and the production of syphilitic lesions in animals by means of the cultures thus obtained.

Noguchi's technique is rather complicated, for he had to use solid media inoculated with a mixture of various bacteria and spirochetes. He succeeded in isolating the *Treponema pallidum* by making subcultures from the periphery of growths where the spirochetes were fairly free from other organisms. In addition, Noguchi found that pieces of sterile tissue had to be added to the nutrient media used before the spirochetes could be grown. His technique, however, is of less interest to the general medical reader than is the fact that the cultures he obtained proved pathogenic for two species of the lower monkeys. To clinch the result, Noguchi was able to obtain a positive Wassermann reaction in the blood of the monkeys successfully inoculated.

About the same time Noguchi studied the common spirochetes normally found in the human mouth and has succeeded in obtaining cultures of two varieties, for which he now proposes the names *Treponema microdentium* and *Treponema macrodentium*. These cultures proved of great interest in throwing light upon the biology of the spirochetes, their modes of multiplication, involution forms, etc. It may be that Noguchi's work will result in the preparation of a luetic antigen for use in the Wassermann reaction superior to the extracts of syphilitic or normal organs now used, and thus change this valuable test into a strictly specific reaction comparable to the Widal test in typhoid fever.

SUBDURAL INJECTIONS OF LEUCOCYTES IN EXPERIMENTAL TUBERCULOUS MENINGITIS.

The importance of leucocytes, especially of the polymorphonuclear type, in the defense of the body against the spread of infection has been recognized for a number of years, Metchnikoff's pioneer work on phagocytosis having been the origin of this explanation of immunity. About two years ago Hiss and Zinsser showed that such defensive action of the leucocytes may apparently be increased by providing the body with extracts of dead leucocytes obtained from animals by injections of aleuronat (*Journal of Medical Research*, XXII, 1910). Their extracts were tried out clinically and seemed to have met with partial success in the treatment of pneumonia, erysipelas, etc. Previous to their work Opie published painstaking studies of the effects of whole leucocytes, as opposed to extracts, in experimental tuberculous pleurisies of dogs (*Journal of Experimental Medicine*, X, 1908). In a recent number of the latter publication (No. 1, Vol. XV, 1912) Dr. Wilfred H. Manwaring communicates the results of similar work in experimental tuberculous meningitis. He produced this lesion by injecting various strains of tubercle bacilli through a trephine opening in the skulls of dogs. Paralysis and death followed in control animals thus infected and not further treated. On the other hand, several other dogs were treated by injections of canine leucocytes, following the inoculation with tubercle bacilli, the leucocytes being obtained by injecting turpentine into the pleural cavity and making suspensions of the cells in the resulting effusion. These animals showed uniform delay in the development of paralysis and life in them was much prolonged. In a few dogs inoculated with small doses of bacilli of low virulence paralysis had been prevented up to the time of publication of Dr. Manwaring's paper, a period of seven months, while in untreated control animals paralytic symptoms developed within four weeks.

Beyond the interest in this specific result, Dr. Manwaring's paper throws more light upon another important fact, and that is the difference between the cerebrospinal membranes and the true serous membranes of the body. The latter are very pervious and obtain protective substances from the blood proteins which easily reach them. The cerebrospinal membranes, on the other hand, are almost impervious to the blood proteins, and to help them fight infection biological protective substances must be brought into direct contact with them, that is, they must be introduced by means of trephine openings or a lumbar puncture.

Chemotherapy of Cancer.

The opinion has been expressed by one of the most eminent authorities on carcinoma therapy that if a suitable chemotherapeutic remedy could be discovered to act as a synergist to radium and the röntgen rays the conquest of cancer should be at hand. This synergism becomes indispensable because radio- and emanation-therapy exert at best but a local activity, and something is needed to attack the cancer cell through the circulation. At a recent meeting of the Naturhistorisch-Medizinischer Verein zu Heidelberg (*Münchener medizinische Wochenschrift*, January 16), held, however, before the publication by von Wassermann of his preliminary work with eosin and selenium, von Dungern expressed the belief that such a chemotherapeutic remedy may have been found in serpent venom, particularly in crotalin, which causes necrosis of rat sarcoma without injury to the host and which, tested in human patients hopelessly ill with cancer, in association with emanations, caused rapid regression of cancer nodes. In the discussion Czerny called attention to the toxin element which is essential to the activity of several biological substances recommended as hostile to the cancer cell. Here belong Coley's mixed toxins, Adamkiewicz's cancroin, and Schmidt's antimeristem. Crotalin should perhaps possess advantages over these artificial preparations. There is, however, considerable ambiguity involved in speaking of this class of remedies as chemotherapeutic, for these, along with trypsin, liver enzyme, etc., have not been thrown into the general circulation, at least in routine procedure. So that the new researches with eosin-selenium are alone to be regarded as strictly chemotherapeutic in type.

Ophthalmoplegic Migraine.

Under this and similar designations many cases have been described, all of which exhibit recurrent migraine accompanied by temporary paralysis of the oculomotor nerve. Other cranial nerves may or may not be involved. It is not often that opportunity is offered for determining the exact nature of these cases. At a meeting of the Tokio Medical Society, held last year, Shionoya reported a case with autopsy, from which it plainly appeared that the affection was something more than a mere neurosis (*Deutsche medizinische Wochenschrift*, December 14, 1911). The patient was a boy aged 16, who had suffered from recurrent ophthalmoplegic migraine for ten years. The interval, originally longer, gradually became of a month's duration, while in each crisis the paralysis persisted for two weeks, and at last became permanent. The patient, who was tuberculous, succumbed in time to his malady. Autopsy revealed a fusiform fibroma of the right motor-oculi nerve at its foramen of exit. There was a mild recent tuberculous meningitis. The attack of paralysis had been due evidently to periodical swelling of the affected nerve.

News of the Week.

Phthisis in Alaska.—According to the report of Dr. M. H. Foster of the Public Health and Marine-Hospital Service, nearly 50 per cent. of the population of Alaska are afflicted with tuberculosis. The report states that unless the ravages of the disease are checked both the white people and the natives will be wiped out ultimately. The report states that eye diseases are also prevalent.

Street Deaths Increase.—According to the report of the National Highways Association, deaths due to vehicular traffic during January, 1912, in the streets of New York City show an increase, as 29 persons were killed this January, whereas only 22 met death in this way last January. Statistics for

New York State show that 9 persons were killed in January, 1912, as against 7 for the same month of 1911. In New York City reports were received of 219 persons who were injured in street accidents.

Health of the Canal Zone.—The Department of Sanitation of the Isthmian Canal Commission reports that for the month of November, 1911, the total number of deaths from all causes among employees was 41. These were divided as follows: From disease 33 and from violence 8, giving the annual average per thousand of 7.85 and 1.90 respectively. The average death rate per thousand for whites was 6.62 and for blacks 8.27. For the same month during 1909 the annual average death rate per thousand from diseases among whites was 5.88 and blacks 11.31, giving a general average of 10.69. The deaths from the principal diseases were as follows: Amebic abscess of liver, 1; chronic nephritis, 1; dysentery, clinical, 1; hemoglobinuric fever, 2; lobar pneumonia 11; malarial fever estivo-autumnal, 3; tuberculosis, disseminated, 4; leaving 10 deaths from all other diseases and 8 deaths from external violence. No cases of yellow fever, smallpox, or plague originated or were brought to the Isthmus during the month.

The Tammany Antivaccination Campaign.—Although the Tammany Aldermen, at their meeting on January 30 again refused the appropriation requested by the New York Board of Health for $15,000 for the purpose of offering free vaccination to the people in the tenements, the Health Commissioner has renewed his application and announces that he will persist in the request until he receives the money. There have been nine cases of smallpox reported in Brooklyn thus far this year and an epidemic of smallpox may be expected if vaccination is not more generally practised. In 1902 and the years following when there was an outbreak of smallpox in the city, $115,000 was appropriated, and over 800,000 people were vaccinated, while for the past ten years there has been practically no vaccination in some sections of the city.

Health Reforms Demanded in St. Louis.—The Board of Health of East St. Louis, at its meeting on January 24, demanded that the city establish a garbage plant, erect and maintain a city hospital, and compel the physicians to report at once all births. The mayor was requested to have an ordinance drafted covering each of these demands and to have it presented to the council at once for approval.

Republican Club Discusses National Health Bureau.—The subject chosen for discussion at the Republican Club in New York on February 3 was the creation of a national bureau of health. Officers of the health boards of New York, Massachusetts, New Jersey, Pennsylvania, and Rhode Island, either by letter or in person, favored the creation of such a bureau. Among those who spoke in favor of the bureau were Prof. Irving Fisher of Yale, Dr. J. D. Bryant, Dr. Louis L. Seaman, President Polk of the New York Academy of Medicine, and Senator Owen of Oklahoma.

Lincoln Fund for the Negroes.—The Commercial Club of Omaha, Neb., has passed resolutions urging that the National Lincoln memorial fund, which amounts to about $2,000,000,, shall be expended for a hospital, industrial school, or model farm for negroes. The object of the resolutions is to head off a movement to use the money for the construction of a road from Washington to Gettysburg, to be known as the Lincoln Memorial Highway.

Gifts for Charity.—The will of Mrs. Catherine Neustädter of San Francisco, who died recently in New York, leaves $1,000,000 for the establishment of the Neustädter Home, an institution to be used for caring for convalescents and for the permanent amelioration of the condition of unfortunates by providing better housing conditions in model home dwellings within a radius of thirty miles from New York City Hall. The will also leaves $100,000 each to Mount Sinai Hospital and the United Hebrew Charities, $50,000 to the Educational Alliance, $10,000 to the Montefiore Home, $20,000 to the Home for Aged and Infirm Hebrews, $5,000 to St. John's Guild, and $20,000 to the Jewish Children's Sanitarium at Rockaway. The San Francisco institutions which are beneficiaries under the will are the following: Jewish Orphan Asylum, $20,000; Eureka Benevolent Society, $10,000; Children's Hospital, $5,000; Protestant Orphan Asylum, $5,000, and the Jewish Protectory and Aid Society, $5,000. An additional $5,000 has been subscribed toward the fund that is being raised for the new buildings of the Tuberculosis Preventorium at Farmingdale, N. J. Only $10,000 is now needed to complete the required $150,000.—The Julia F. Burnham Hospital at Champaign, Ill., has received a donation of $1,000.—A benefit for the hospital at Ware, Mass., has netted that institution $586.—The town of Springfield, Mass., has increased its annual appropriation for the Noble Hospital from $1,000 to $5,000.—The Melrose (Mass.) Hospital Association was given $5,000 under the will of Thomas W. Ripley. This has been filed in the Middlesex Probate Court at East Cambridge, Mass. The will of Edward O. Kinberg of Brooklyn leaves the bulk of his estate, valued at $75,000, to the Presbyterian Hospital. The twenty-second annual German Charity Ball, held at the Hotel Astor on the evening of January 24, netted $11,000, which will be divided among German charitable institutions. An anonymous donor has given $25,000 toward the fund that is being raised for the proposed hospital for animals in New York City. Of the $100,000 required $75,000 has already been raised. The Hospital Saturday and Sunday Association reports that the Dry Goods Trade Auxiliary has contributed $6,517 to the hospital fund. By the will of the late Anna Hertzog Carver of Philadelphia the sum of $50,000 is devised to the trustees of the University of Pennsylvania, the German Hospital, and the Jefferson Medical College, each in trust, and as a memorial to her husband, William Burton Carver, the income from the fund to be used for the endowment and maintenance of free beds in the hospital conducted in connection with the institution named with the proviso that these beds are to be utilized not only for the care of the sick but also for the instruction of students in medicine or others seeking medical instruction. Also the sum of $10,000 is bequeathed to the Hospital of the Protestant Episcopal Church. The Seney Hospital of Brooklyn, N. Y., has received $10,000 under the will of Roland D. Armstrong, the income of which is to be used for the maintenance of two beds. Mount Sinai Hospital, New York, has received a gift of $20,000 to be used for the extension of social service work. This makes $245,000 that has been received by this hospital during the past year

in the form of donations, legacies, and bequests. By the will of Thomas W. Ripley, the Melrose Hospital Association of Melrose, Mass., receives a bequest of $5,000. A bequest of $50,000 for the House of Mercy Hospital, at Pittsfield, Mass., is contained in the will of Mrs. Florence de Wolf Sampson. The annual Charity Ball has netted the Milwaukee Infants' Home and Hospital $2,500.

To Abandon the Columbia Hospital.—The House of Representatives has voted to abandon the Columbia Hospital for Women at Washington, D. C., because of the dilapidated condition of the building, which has been declared a firetrap, and instead places $20,000 in the hands of the Board of Charities to care by contract for indigent patients, who have hitherto been cared for by this institution.

The Boston Dispensary, probably the oldest in the United States, having been founded in 1796, has just issued its annual report, which shows that during the year 1911 41,591 patients were treated, and the district physicians cared for 10,865 patients in their homes. The pharmacy put up 87,180 prescriptions for 8,000 patients, for which no charge was made. The report contains a facsimile letter written by Dr. Oliver Wendell Holmes, applying for a position on the medical staff of the dispensary.

The Leominster Hospital in the town of Leominster, Mass., was opened on January 27.

State License Examinations in German Not Allowed.—The fact that in the State of Wisconsin Greek and Italian doctors are permitted to take examinations for license to practise through an interpreter and that the same privilege is not extended to German doctors has led to a discussion of the subject and to the adoption of resolutions by the local branch of the National German-American Alliance requesting the Governor of the State to take some action in the matter.

Assistant Registrar of Records Needed.—The Municipal Civil Service Commission announces that an examination will be held for the position of Assistant Registrar of Records in the Department of Health of New York City. The position requires not only that the incumbent be a duly qualified physician, but that he should have training and experience in statistical work. Information as to the time and place of the examination may be had by applying to the Municipal Civil Service Commission, 299 Broadway, New York City.

The International Congress on Hygiene and Demography will hold its fifteenth annual meeting in Washington, D. C., from September 23 to 28, 1912. President Taft is Honorary President of the Congress, Dr. Henry Walcott is President, and Dr. John S. Fulton is Secretary-General. In connection with the Congress, and in buildings especially erected for the purpose in Potomac Park, there will be an exhibit on public health in charge of Dr. Joseph W. Schereschewsky of the United States Public Health and Marine-Hospital Service. This exhibit will open early in September and will continue until after the Congress.

Medical Library Building Sold.—The Mott Memorial Surgical and Medical Library, which was the home of the late Dr. Valentine Mott and contains the books and instruments that were formerly Dr. Mott's, was sold on February 1 as the result of a friendly action brought by the heirs for a decree of sale in a partition action concerning the property.

Dr. Henry A. Christian has handed in his resignation as dean of the Harvard Medical School to take effect on September 1. He has taken this step in order that he may devote himself more fully to the work of the new Brigham Hospital.

Dr. Abraham Sophian of the New York Health Department, who went to Texas to assist in fighting the epidemic of meningitis in northern Texas, left for New York on February 3 bearing gifts in jewels and cash. The citizens and physicians of Dallas gave him a loving cup, and the citizens of Waco and several small towns presented him with various gits in acknowledgment of their gratitude for his services.

The Burlington County (N. J.) Medical Society held its meeting at Madison, N. J., January 17 and the following officers were elected: *President*, Dr. William P. Melcher of Mount Holly; *Vice-President*, Dr. A. L. Gordon of Burlington; *Secretary and Treasurer*, Dr. George T. Tracy of Beverly.

The Lee County Medical Society, which met at Opelika, Ala., on January 22, elected the following officers: *President*, Dr. George H. Cooper of Dothan; *Vice-President*, Dr. O. V. Langley of Camp Hill; *Secretary*, Dr. H. S. Bruce of Opelika.

The Spartanburg County Medical Society, at its annual meeting at Spartanburg, S. C., elected the following officers: *President*, Dr. A. I. Cudd of Spartanburg; *Vice-President*, Dr. W. H. Chapman of Whitney; *Secretary*, Dr. Rosa H. Gantt of Spartanburg; *Delegate to State Association*, Dr. W. W. Boyd of Spartanburg; *Censor*, Dr. D. R. Norman of Fairforest.

The Jefferson County Medical Society, at its annual meeting at Jefferson, Wis., elected the following officers: *President*, Dr. L. J. Bennett of Fort Atkinson; *Vice-President*, Dr. W. T. Clark of Fort Atkinson; *Secretary*, Dr. C. R. Feld of Watertown; *Delegate to the State Convention*, Dr. H. O. Caswell of Fort Atkinson.

To Educate East Side Mothers.—The statement of physicans that improper care and feeding are responsible for the death of 25 per cent. of the babies born on the East Side of New York City has led to the organization of a society to be known as the "After Care Circle." The work of the society will be done in connection with the Jewish Maternity Hospital and will consist in the instruction of mothers in their homes after they have left the hospital and in the feeding and care of their babies. A special nurse has been engaged for this work.

Talladega Infirmary Opened.—The new hospital at Talladega, Ala., was formally opened on January 16.

Milwaukee Hospital Addition.—The addition to the Milwaukee Hospital, which was built at a cost of $80,000, is about completed and will be ready for occupancy by May 1.

Civil Service Examinations.—The State Civil Service Commission announces that it will hold examinations on February 24 for the following positions: Bacteriologist to the Health officer of the Port of New York, for which women are eligible; first assistant veterinarian to the Department of Agriculture; veterinarian to the Department of Agriculture employed by the day; physician to the Erie County Lodging House; physician, homeopathic or regular. Application blanks and further information may be had by applying to the State Civil Service Commission, Albany, N. Y.

Mothers Begin Child Welfare Campaign.—The National Congress of Mothers will begin a

country wide campaign in the interests of the child. They have taken for their slogan "better babies, better parents, better country." Their work will be in the nature of a widespread educational campaign.

Boston Hospital Needs Funds.—Work has been halted on the new building of the Infants' Hospital which is in the process of construction near Harvard Medical School. It is stated that $90,000 is required to complete the building, which is very badly needed, as the old building is totally inadequate to meet the demands made upon it in the hot weather.

The Surgical Section of the Hartford Medical Society held its annual meeting on January 22 and elected the following officers: *Chairman*, Dr. Ansel G. Cook; *Secretary*, Dr. A. M. Outerson; *Treasurer*, Dr. Henry A. Martelle; *Fourth Member of the Executive Committee*, Dr. Arthur J. Wolff.

The First International Eugenics Congress will be held next summer at the University of London.

The Chattahoochee Valley Medical and Surgical Association, which held its semi-annual session at LaGrange, Ala., on January 10 and 17, elected the following officers: *President*, Dr. George M. Niles of Atlanta; *Vice-Presidents*, Drs. Velpeau Langley of Opelika, and C. S. Yarborough of Auburn; *Secretary and Treasurer*, Dr. W. J. Love of Opelika.

The Central Texas District Medical Society, which adjourned on January 10, elected the following officers: *President*, Dr. Edward Graves of Gatesville; *Secretary-Treasurer*, Dr. M. F. Connally of Waco.

The South Ontario and West Durham Medical Association, which met at Newcastle, Ont., on January 8, elected the following officers: *Honorary President*, Dr. S. J. Frotheringham of Toronto; *President*, Dr. D. Farncomb of Newcastle; *Vice-President*, Dr. Beith of Bowmanville; *Secretary-Treasurer*, Dr. J. F. Finnigan of Oshawa.

The Central Oklahoma Medical Association, which met at Enid on January 10, elected the following officers: *President*, Dr. S. N. Mayberry of Enid; *Vice-Presidents*, Dr. T. M. Adderhold of El Reno and Dr. C. R. Day of Oklahoma City; *Secretary and Treasurer*, Dr. W. W. Jones of Enid.

The Association Internationale de Perfectionnement Scientifique announces that its ninth Annual Congress will be held under the patronage of the French Government, from August 3 to 31, 1912, in the Balkans in Turkey, and in Greece. Further particulars may be had by writing to Head Office A. P. H., 12, Rue François Millet, Paris, XVI.

The Medical Society of the Missouri Valley will hold its twenty-fourth semi-annual meeting at Colfax, Iowa, on March 21 and 22, 1912. Dr. Charles Wood Fassett of St. Joseph, Mo., is secretary.

Obituary Notes.—Dr. Inslee Hopper Berry of New York City, a graduate of Cornell Medical College in 1890, died at his home January 30, at the age of forty years. He was visiting physician to the German Lutheran and Metropolitan Hospitals and the Northern Dispensary. He was also surgeon to St. Elizabeth and the Post-Graduate Hospitals.

Dr. Isaac S. Smith of Rodgers, Tex., died of cerebrospinal meningitis at his home January 16.

Dr. George Hemminger of Carlisle, Pa., a graduate of Detroit Medical College in 1860, died at his home January 20, at the age of 71. He was in the battles of Kelly's Ford, Brandy Station, the Wilderness, Spottsylvania, Cold Harbor, and Monocacy, and had been imprisoned at Danville and Libby. In 1865 he was paroled and was with Gen. Sherman in the grand review at Washington June 8, 1865.

Dr. Edward Fornias died at Philadelphia on January 22, at the age of 69 years. He was a native of Havana and was graduated from Hahnemann Medical College of Philadelphia in the class of 1880.

Dr. Peter H. Latham died of diabetes at Weatherly, Pa., on January 24, at the age of 62 years. He was graduated from the University of Maryland School of Medicine in the class of 1876. He was formerly Coroner of Carbon County and surgeon to the Lehigh Valley Railroad Co.

Dr. James S. Hickey died of endocarditis at Philadelphia on January 25 at the age of 57 years. He was graduated from Hahnemann Medical College of Philadelphia in the class of 1892. He was instructor of anatomy in Hahnemann Medical College.

Dr. George Friebis died suddenly at Philadelphia on January 26 at the age of 57 years. He was graduated from Jefferson Medical College in the class of 1879. He was a member of the Philadelphia County Medical Society, of the Medical Society of the State of Pennsylvania, and of the American Medical Association, and he was a Fellow of the College of Physicians of Philadelphia.

Dr. J. Miller Moore of Union, S. C., died in New York City January 29.

Dr. Ralph E. Starkweather of Chicago, Ill., a graduate of the College of Physicians and Surgeons, Columbia University, died as the result of an injury January 22, at the age of 69 years. He was well known for his study and work for improving sanitary conditions and procuring the enactment of laws for proper sanitation.

Dr. Nathan D. Tobey of Salina, Kan., a graduate of the University of Maryland School of Medicine, Baltimore, in 1863, died suddenly at his home, January 19, at the age of 75 years.

Dr. Jacob Gerstl of New York City died at his home January 21. He practised in Harlem for over twenty years.

Dr. Atwell William Swett of Bangor, Me., a graduate of Darthmouth Medical School, Hanover, N. H., in 1863, died at his home January 15, at the age of 72 years. He served as surgeon during the Civil War, being mustered out with the rank of First Lieutenant and Brevet Captain.

Dr. Edwin W. Bennett of San Francisco, Cal., died suddenly January 10, at the age of 65 years. The cause of his death was disease of the heart.

Dr. Jesse K. McAfee of Dalton, Ga., a graduate of Atlanta Medical College in 1888, died at his home January 14, at the age of 81 years.

Dr. Samuel LaGrande Crane of Hartford, Conn., a prominent dentist, died at his home following an attack of acute indigestion. He was 82 years of age, and had practised his profession for 65 years.

Dr. Robert Schuyler Black of Ottawa, Kan., a graduate of the Medical College of Indiana, Indianapolis, in 1875, at one time president of the Kansas State Medical Society, died January 11, at the age of 69 years.

Dr. Leopold Burgheim died at his home in New York on January 24, at the age of 68 years.

He was born in Germany and was graduated from the College of Physicians and Surgeons of Columbia University, New York City.

Dr. Mary E. Scott of Denver, Col., died at her home after a long illness on January 12, at the age of 70 years.

Dr. Henry D. Averill of Bar Harbor, Me., a graduate of the Medical School of Maine, Portland, died in Steuben January 16.

Dr. Samuel Short of New York City died of septicemia in Bellevue Hospital on January 24, at the age of 39 years. He was graduated from the Long Island Hospital Medical College in the class of 1903.

Dr. Willey J. P. Kingsley died at his home in Rome, N. Y., on January 26, at the age of 82 years. He was graduated from the New York Medical College in 1855, and was Mayor of Rome in 1895.

Dr. Walter W. Johnson of Rochester, N. Y., died in a sanatorium in that city on January 26, at the age of 53. He was graduated from the New York Homeopathic College in 1887 and was a charter member of the Röntgen Ray Society of America.

Dr. James Samuel Hickey of Philadelphia, a graduate of Hahnemann Medical College and Hospital in 1892, died at his home January 26, at the age of 56.

Dr. Lyman Watlins of Blanchester, Ohio, a graduate of Ohio Medical University, Columbus, died at the Seton Hospital in Cincinnati January 21, at the age of 59 years.

Dr. Gilbert C. Greenway of Hot Springs, Ark., a graduate of the University of Maryland School of Medicine, Baltimore, in 1867, died at his home January 19, at the age of 68 years.

Correspondence.

VACCINE TREATMENT OF PNEUMONIA.

To the Editor of the Medical Record:

Sir:—During the past year I have had an experience with my cases of pneumonia which, if confirmed by other observers, would tend to show that pneumococcic vaccine is of value in treatment of this disease. Six patients treated with this bacterine within forty-eight hours of the initial chill were practically well within three days. Two were habitual drinkers with the most unfavorable prognosis. One was an infant of twenty-two months. These patients furnished pure cultures of the pneumococcus both from blood and sputum.

Two cases in which an infecting agent proved on culture to be the pneumobacillus of Friedlaender were not influenced. One of these went through the following course: lobar pneumonia, appendicitis (operated), pleurisy (operated), alveolar abscess, arthritis, peritonitis, death from exhaustion but with original infection.

In the pneumococcic patients treated after forty-eight hours with pneumobacterin the disease was apparently unaffected, but they developed no complications and none died. Cases mixed or septic were not directly influenced, though in all recovery took place. As I have had years in which all cases recovered and others in which many patients died, I would like to get the experience of others. My treatment has been to place the patient in bed with the affected side strapped with zinc oxide adhesive plaster over which a hot water bottle is applied. Saline solution, eight ounces every hour, and eight ounces milk and lime water, equal parts, every two hours.

Contrary to the usual method of using pneumobacterin, I have given 400,000,000 bacteria on three successive days and then quit. I wish the profession clearly to understand that I make no claims for this treatment, but ask the experience of others.

H. H. Sinclair, M.D., C.M.

Walkerton, Ont.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

CANCER—X-RAY DIAGNOSIS OF PHTHISIS—HARVEIAN SOCIETY—SLEEPING SICKNESS—SATURDAY FUND—B. M. A. COUNCIL REFUSES GENERAL MEETING—OBITUARY.

London, January 19, 1912.

The Polyclinic resumed work after the recess on the 8th inst., when the members had the privilege of hearing Wassermann's recent research on cancer expounded by Dr. Bashford, who had just returned from Berlin. He reported that the German scientist had shown him the greatest courtesy and placed every information on the subject at his disposal. Following the line of thought associated with the name of Ehrlich, a direct attack on the cancer cells through the blood seemed to Wassermann a possibility. The rapid growth of cancer cells suggested that they must demand a great supply of oxygen and any interference with that supply would have a decided effect on the cells. For this purpose Wassermann proposed to employ selenium, introducing it into the neighborhood of the cancer cells and, if possible, into their very substance. Dr. Bashford thought that the idea of utilizing such an element as selenium in an eosin dye was characteristic of the Ehrlich school, and I agree with him that few not trained there would be likely to conceive it. It is on that idea that Wassermann has been working, and the results are interesting. The pink solution of eosin-selenium was injected into the vein of a mouse with a tumor. This colored the skin of the mouse, but in a few hours the pink had gone from the skin. The mouse was killed and examined, when it was found that the tumor was deeply stained—the tumor only. This result was constant. Further experiment proved that the injection can be repeated and in some instances the mouse may survive—for the solution is a virulent poison—and if it should survive the tumor may disappear in a definite manner. Wassermann experimented on mice before Dr. Bashford, who said the injection killed four out of the six, but the two survivors were cured, and this, he was informed, was the certain result in the mice which could bear the treatment. Wassermann makes no claim of having found a cure for cancer, but only to have proved that a chemical substance injected into the blood stream may kill certain diseased cells without injuring the other tissues. This is a step forward, as previously such a result would not have been deemed possible. I do not know the precise combination of eosin and selenium; still less can I send you a formula for it. Dr. Bashford seemed to know no more than that it was difficult to prepare. But chemists will no doubt give us all information and, if required, the preparation will soon be procurable. But for the present it is only the workers in the pathological and biological laboratories who will be wanting it. The effect on other animals may not be the same as on mice, and it is too deadly

a poison to be tried on man. But it may point the way for the discovery of some other chemical while the biologists are searching for some method of intensifying the susceptibility of tumor cells to interference with their supply of oxygen or increasing their avidity for that element.

Dr. Harrison Orton has contributed to the Medical Society of London a paper on the *x*-ray diagnosis of pulmonary tuberculosis. He believes this method may show the presence of the disease even in the early stage, but he does not pretend to rely upon it for that purpose. He puts it forward as a useful additional aid to other methods, no one of which can be regarded as by itself alone infallible. The *x*-rays bring into play the most highly developed sense of sight to control touch and hearing. He acknowledged that every detail of the examination must be carefully carried out by a skilled observer and followed by the equally skilled interpretation of a satisfactory negative. Perfunctory examinations and imperfect technique he held responsible for errors which had tended to discredit the method. This we may readily admit, not merely for chest examinations but for all cases in which diagnosis by *x*-rays has been employed. We must acknowledge that the technique requires time and the interpretation of the appearances is no less exacting, so that the busy practitioner cannot get as much assistance from the rays as specialists seem to anticipate. Dr. Orton described some of the normal appearances when the screen was placed on the anterior and posterior surface of the chest, the *x*-ray tube being, of course, on the opposite side. There were three vertically disposed zones—the middle one dark, corresponding to the shadows cast by the vertebral column, sternum, and mediastinal contents (including the heart). The lateral zones were clear and corresponded with the areas of the lungs. These were crossed by the curved shadows of the ribs and the rather denser ones of the clavicles bounding them above, while laterally were the walls of the thorax, and below two dark dome-shaped shadows, which rose and fell with the respiration, and corresponded with the diaphragm. With the screen the ribs form a prominent feature, hardly noticed when at the back on account of its distance. So the heart is more distinct in front as nearer to the anterior surface. In tuberculosis definite shadows were cast by diseased portions of lung, and here will be seen (1) dimness at one or both apices, with failure to brighten on deep inspiration; (2) restricted movement of diaphragm, as a rule in the lower part of the excursion; (3) in most cases the heart is smaller and more vertically situated than normally.

The Harveian Society held its annual meeting on the 4th, when the election of officers for the ensuing year took place. The retiring president, Mr. Ernest Lane, gave an address in which, having first referred to the work of the past year, he read an extract from a journal of 1835 on the appointment of medical officers for the poor, and then passed to consider the new Insurance Act, particularly as regarded the number of patients that every one taking office under it would have to attend and the proposed fee for the service. He also spoke of the financial prospects of the voluntary hospitals as they are likely to be affected by the new act. On concluding his address he vacated the chair and his successor to the presidency, Dr. H. J. Macevoy, was duly installed.

The Council of the B. M. A., acting on legal advice, has resolved not to call the special general meeting to discuss the proposed vote of censure. They say that the counsel who was consulted on the framing of the constitution is of opinion that the vote of censure does not come within the sort of questions that can be submitted to an extraordinary general meeting, but it was a matter that could be dealt with by the representative body. It is therefore intended to convene a meeting of this body about the last week in February—a month after the ordinary quarterly Council meeting of January 31. This will give time for the Council to reflect and resolve on its defence—and also to its constituents. The discussion of the matter goes on with unabated energy and no less strong language. It certainly seems a curious thing for an elected committee to fling counsel's opinion in the face of their constituents, instead of resignation—the more especially in reply to a requisition signed by more than 500 members. And what a light it sheds on the care taken in reorganizing the constitution to render its vaunted democratic character null and confine all power to the inner circle. The dispute about payment goes on in all the papers. Mr. Lloyd George has been trying to terrify the taxpayers by suggesting that to agree to the doctors' demands would oblige him to put another 6d. on the income tax.

Letters have arrived from members of the Chartered Company's Sleeping Sickness Commission now in Northwestern Rhodesia, which say that Dr. Kingborn has transmitted trypanosomiasis by means of the *Glossina morsitans*.

The Hospital Saturday's Fund collected last year £37,065, making 1911 the largest annual amount obtained in any year. A further sum, £8,456, was received for the Surgical Appliance and the Distribution Committees, which have separate bank accounts, making a total of £45,521.

The death of Dr. Sophia Jex-Blake on the 7th inst., nearing the close of her 72d year, forcibly recalls the stubborn fight made for the right of women to become practitioners of medicine. Miss Jex-Blake was one of the most active combatants in the campaign and, after years of struggle, came out victorious. She founded the Edinburgh and the London Schools of Medicine for Women. Though she had retired for some years, she was sometimes to be seen in medical meetings, and kept up her interest in the profession to the end of her eventful life.

Sir Ch. O'Grady Gubbins, M.D., Senator in the South African Legislature, was a Dublin graduate who went out with troops to the Zulu war and afterward settled in practice in Natal. Eventually he gave up medical work for politics, in which he quickly made his mark, and some six years ago was Colonial Secretary and Minister for Education in Natal, his term of office being signalized by the compulsory educational act and the establishment of the university. On the union of the colonies in the South African Parliament he became a senator and minister. Last year he was knighted.

Surgeon-General Sir J. Andrews Woolfryes, K.C.B., C.M.G., Honorable Physician to the King, died on the 12th inst., at the age of 88. He qualified in 1846 and entered the Army Medical Service the following year. In the Ashanti war, 1873, he was P.M.O. and present at several battles. He was also in the Kaffir war, 1877, and later in the Zulu campaign. He was often mentioned in despatches, and received medals and the orders stated above. He retired in 1883.

Dr. Ch. Warden, Justice of the Peace of Birmingham, where he was consulting surgeon to the Hospital for Women and Children, to the Orthopedic, and to the Ear and Throat Hospitals, died on the 13th inst., in his 85th year. He took the double qualification in London in 1850-51, and in the latter year proceeded to M.D., Aberdeen. He had occupied other important positions in Birmingham, both professional and public. He contributed occasionally to the medical societies and journals.

Dr. Edmund Downes, who died on the 11th inst., aged 60, at Eastbourne, where he practiced a few years but had been for some time an invalid, was better known for his work as a medical missionary in Kashmir. He contributed papers to the missionary conferences in Calcutta (1882) and London (1894). In his early days he served for a time in the Army Medical Department. He qualified in 1876, L.R.C.P. and M.D., Brussels. Later he took the F.R.C.S.

Mr. James Taylor, Justice of the Peace for Chester, in which city he died on the 14th inst., aged 72, after practicing there many years, retired about four years ago. He had served the infirmary there as surgeon and became consulting surgeon to that as well as the Wrexham Infirmary. He had been president of the Chester Medical Society, the Obstetrical and Gynecological Society, and held in turn all other offices his colleagues and fellow-citizens could confer. He qualified in 1864 and took F.R.C.S., England, in 1882.

Dr. Robert W. Ceely has died at the age of 65. He qualified in 1867, and after considerable experience of insanity as deputy medical superintendent of Worcester Asylum, and later as superintendent at Wandsworth, settled in practice at Kilburn.

Mr. Alfred Wolff, who died on December 26, had long enjoyed a large practice, chiefly among the Jewish community, of which he was a prominent member. He also found time for a good deal of occasional journalistic work. He retired about a year ago.

Progress of Medical Science.

New York Medical Journal.

January 27, 1912.

The Modern Conception of Medicine. R. C. Cabot, with an introduction by A. Jacobi.
Gastric Symptoms in Biliary Disease. H. Lilienthal.
Criminality and Morphinism. T. D. Crothers.
Where Shall the Line Be Drawn between Medicine and Surgery in Borderline Cases? J. E. Moore.
Further Advances in the Therapeutic Use of the Bile Tracts. L. L. McArthur.
The Nauheim Treatment of Heart Disease; Essentials, Indications, and Contraindications. H. Schoonmaker.
Traumatic Dislocation of Both Hips. A. E. Chace.
Arneth's Nucleoanalytical Method as Applied to the Eosinophiles. J. F. Hultgen.
Three Cases of Harelip and Cleft Palate in One Family. A. T. Hawes.
Report of a Case of Belladonna Poisoning in a Child, Seven Years of Age. R. E. Coughlin.

The Modern Conception of Medicine.—R. C. Cabot discusses six tendencies in modern medical service: First, the tendency to change from the individual point of view (in the relation of doctor and patient) to the social point of view; second, the tendency to change from a purely physical conception of man to a psychophysical conception; third, a tendency to split up into specialties and away from the conception of the general practitioner; fourth, a tendency to democracy in medicine, the democratic relation of the doctor to the public and to his patient; fifth, the tendency to be positive and not speculative in the study of the medical science, and last, the tendency toward a preventive and hygienic rather than a merely curative attempt in relation to one's problems. Every sick person is himself a symptom of something wrong in the community—either in the industrial, economic, or moral conditions surrounding the patient. The psychical elements of human nature cannot be disregarded without peril. Specialism in medicine calls for team work among specialists, and for much closer team work than has been customary. The doctor used to be more like a virtuoso, a great musician. He is to-day far less of a virtuoso, and far more of a reliable, efficient workman, of a type of which there are many, no one man being necessary for any one case. Many men are able to do about the same grade of work, are equally reliable, equally efficient. The exceptions are in surgery, where the virtuoso still holds his place, where a man may really save a life; and also in neurology, where there are still virtuosos, great personalities, whose personality counts for everything in relation to nervous patients and where another equally well-trained man will not do. There is a need for more speculative spirit in medicine, closely controlled by empirical findings.

Gastric Symptoms in Biliary Disease.—By H. Lilienthal. (See MEDICAL RECORD, January 27, 1912.)

Criminality and Morphinism.—T. D. Crothers states that morphinists are seldom seen in courts for brutal crimes like the alcoholics. The crimes usually committed by morphinists are against property and character, and are based upon impulse and selfishness. Kleptomania, forgery, swindling, and misdemeanors of a minor class, with or without purpose, are common. One of the most marked phases of morphinism, which probably appears in most cases, is the pleasure victims take in concealing their motives and conduct. They have a mania for leading a double life and enjoy the deception and mask which they draw about themselves. Often there is egotism which makes them dangerous as witnesses, because of their positive dependence on impressions that may be fleeting and uncertain. In addition to this, the morphinist has a constantly increasing diminished ethical sense.

Borderline of Medicine and Surgery.—By J. E. Moore. (See MEDICAL RECORD, January 13, page 88.)

Therapeutic Utilization of the Bile Tracts.—By L. L. McArthur. (See MEDICAL RECORD, January 27, 1912, page 188.)

Nauheim Treatment of Heart Disease.—H. Schoonmaker states that this treatment is indicated in any valvular disease except mitral stenosis, providing the functions of tonicity and contractility of both myocardium and arteries are tangible: that is, in cases in which myocardial compensation is not wholly lost, and arteries and capillaries are not stiffened or degenerated beyond the power to respond to external stimulation. It is indicated in mitral stenosis if the heart at its best, under the embarrassment of the stenosis, is able to maintain a fair cutaneous and pulmonary circulation. It is indicated in myocarditis without valvular lesion, under the same conditions as in valvular disease. It is indicated in angina pectoris if the same essentials are present. In a word, it is indicated in any case in which the cutaneous vessels are amenable to at least a fair degree of dilatation and at the same time the heart possesses sufficient reserve to adjust itself to such change in the blood current.

Traumatic Dislocation of Both Hips.—A. E. Chace points out the extreme rarity of this condition and adds a report of one case to the forty that he has found reported in the literature.

Study of Eosinophiles by Arneth's Nucleonalytical Method.—J. F. Hultgen concludes that the eosinophiles show no progressive development from monomorphism to polymorphism, except in leucemic conditions. The five classes of eosinophile nuclei occur constantly with remarkable uniformity under the most varied circumstances. One may accept class C, containing a distinctly bilobed, or hipartite, nucleus as the normal eosinophile, as the one

occurring constantly and with regular predominance in all persons, well or unwell. Arneth's neutrophile picture is applicable to the eosinophiles, but it merely indicates a constant percentage composition of the eosinophile contingent of the leucocytes. Arneth's eosinophile blood picture exists, but it is only a statistical fact and not of any practical biological significance. Ehrlich's theory that the adult eosinophile is derived from a prototypic eosinophilic myelocyte is not supported by the author's investigations. Commonly accepted criteria as to the youth of any given leucocyte must be amended. The morphological varieties of eosinophiles depend upon primordial, genetic causes. They are not a product of development. Since the morphology of the nucleus bears little or no relation to the origin, size, age, or function of these eosinophilic leucocytes, the nucleoanalytical method of Arneth lacks a biological foundation, and is, therefore, not applicable to these cells.

Inheritance of Harelip and Cleft Palate.—A. T. Hawes reports the case of a woman who had a child born with harelip and cleft palate. Subsequently she gave birth to two normal children, and then gave birth to twins, both having the deformity. There was the history of the deformity in a paternal uncle. The twins were attached to two separate placentæ. The cause could hardly be one that affected the placenta unless it happened to affect both. The theory of maternal impressions could hardly be held, because after the birth of the first baby with harelip the mother worried continually lest the second baby should have the same deformity. A normal baby came forth. After the second healthy baby she dismissed the subject from her mind and during this pregnancy had not worried or given the subject of deformity any thought.

Belladonna Poisoning.—R. E. Coughlin reports a case of this condition in a boy seven years of age, resulting from the administration for enuresis of the tincture of belladonna in ten-drop doses three times a day for one week. The symptoms of poisoning were nausea, hallucinations, dilatation of the pupils, and flushing of the face. Recovery followed twelve hours after discontinuance of the drug and the administration of a dose of castor oil.

Journal of the American Medical Association.

January 27, 1912.

Medical Ideals.—W. W. Anderson states that only in the department of major surgery is the medical art following closely in the footsteps of science, because its results are constantly reviewed and criticized by the profession, because it commands a fee that supplies the means for good work, and because of its limited field which can be cultivated. The same is true also to a certain extent of the other specialties, and, while a broad general knowledge is always necessary, the times demand even more insistently that, while the physician broadens his general vision, he should narrow his field of work.

Section of Posterior Spinal Nerve-Roots.—R. Winslow and I. G. Spear report two cases of posterior nerve-root section, one for the relief of tabetic gastric crises in which the posterior roots of the seventh, eighth, ninth, and tenth thoracic nerves were divided; the other of athetoid and choreiform movements in a boy aged seventeen years in whom several posterior roots from the lumbar enlargement on the left side were severed. In both cases there was uninterrupted recovery from the operation, and the vomiting was relieved in the first case and the athetoid movements were suppressed on the left side in the second, though they have, since the operation, increased on the other side.

Tonsillectomy with the Tonsillectome.—J. C. Beck describes a method of tonsillectomy which is performed with one instrument—the tonsillectome. This is a Pierce-Miller snare, modified by having a small but heavy fenestrum at the end, very much like the ordinary Vedder tip, through which the tonsil is pushed and everted. The wire loop is hidden in the slit of the fenestrum and is contained as a twisted stylet in the cannula.

Experimental Therapeutics.—T. Sollman states that the scientific pharmacologist is crippled by the paucity of exact scientific records of the effects of drugs on the human subject. These records must be supplied by the clinician, but the pharmacologist may aid him by valuable suggestions. Both clinical and laboratory studies are necessary, however, for the fullest results. Observations on the human subject cannot be as fully controlled and the problems analyzed as they can be in the animal. Experimental therapeutics is not a new subject. It is essentially the study of the effects of drugs under abnormal conditions, which is one of the ancient problems of pharmacology which has come lately more to the front.

Action of Drugs in Pathological Conditions.—W. Salant points out that the discovery that the reaction of the cell to chemical substances may be modified or even completely reversed by a change in one or more elements or radicals of the molecule is one of the leading advances influencing modern therapeutics. Experimental evidence of late years indicates that the reaction of the cells to foreign substances may be quantitatively and even qualitatively different under changed conditions of environment or morphological, chemical, or physical alterations, and these may bring about corresponding variations in pharmacological action. Facts are quoted showing that the selective action of drugs may be at least quantitatively modified by morbid changes.

Constitutional Inferiority and Its Psychoses.—C. P. Oberndorf classifies the conditions coming under the general head of constitutional physical inferiority. It does not include cases of mental debility or high-grade imbecility. The author recognizes two types as properly falling under this head—qualitative and quantitative. The qualitative inferiors possess many characteristics often found in men of genius and successful achievement, but they lack the determination and poise to complete their brilliantly though impulsively conceived plans. They are not mentally defective, but exhibit a defect of kind, not of amount.

Suprapubic Drainage Tube.—A. H. Peacock describes a tube for suprapubic drainage in cases of obstruction of the prostatic urethra when prostatectomy is refused. The tube is inserted through a brass plate fitting the abdominal surface over the bladder and held in place by tapes or elastics. The outer projecting portion of the tube is connected by a rubber tube to a bag, bottle, or other receptacle. The device cannot be compared, he says, in its results with a prostatectomy, but there are cases met with by every surgeon in which it can be resorted to. The suprapubic cystotomy required can easily be done under local anesthesia.

Hospital for Contagious Diseases.—A. C. Haven describes the aims that should be followed in planning such a hospital.

Poliomyelitis in California.—F. F. Gundrum reports

the epidemics of the disease that prevailed during 1910 and 1911, when there were 120 and five cases respectively. In 91 per cent. of the cases no history of contact with other cases could be obtained.

Delayed Diagnosis in Pulmonary Tuberculosis.—E. A. Gray emphasizes the facts that no certain diagnosis of pulmonary tuberculosis can rest on symptomatology; that error is bound to result in the absence of thorough physical examination, and that error means delay and disaster to the patient.

Pyloric Obstruction in Infants.—By W. B. Lewitt and L. Porter. (See MEDICAL RECORD, Vol. 80, page 108.)

Coleman-Shaffer Diet in Typhoid Fever.—B. R. Krohn states that this diet is one of high caloric value sustained in the main part by three articles of food, namely, lactose, cream, and bread and butter. The diet is a practical one and well borne by the patient. The nutrition of the patient remains in all but the most severe cases unusually good. Most cases show a slight loss in weight. The period of convalescence is shortened, the return of strength is rapid and the lassitude and enervation commonly seen after a serious illness are for the most part absent and replaced by a hopeful, well-nourished condition, rendering the patient anxious to return to his duties. In the thirty cases observed complications were rare and there were no deaths.

Blood Pressure in Patients with Relaxed Abdominal Musculature.—F. W. Birtch and T. G. Inman conclude that it may be normal to have a slight systolic fall of blood pressure on standing after lying down in healthy individuals who are not undergoing active muscular training. Patients with relaxed abdominal musculature and enteroptosis, not showing subjective symptoms, have at least the diastolic pressure sustained on change of position and it may be assumed that the vasomoter mechanism is competent. Patients with relaxed abdominal musculature and enteroptosis with circulatory symptoms show both a systolic and a diastolic fall on standing after lying. The neuropathic symptoms found in these cases are not due to the malposition of the viscera nor can they be placed among the neuroses. They are entirely dependent on the cerebral anemia. The circulatory changes, while the cause of the symptoms, are not the primary etiological factors, but are second to the great muscular atony, the cause of which is yet unknown.

Secondary Anemia in Panama.—J. P. Bates concludes from his study that the old idea of tropical heat producing anemia is incorrect and that anemias are almost always the result of several causes combined, such as malaria, uncinariasis, and malnutrition. The name to typical anemia is a useful one and should include all secondary anemias of the tropics. The term malaria cachexia should be given up, as it usually directs effort along wrong lines of treatment. Uncomplicated malaria, moreover, tends to establish a relative immunity and does not produce a severe secondary anemia unless complicated with semistarvation. Uncinariasis may cause a severe grade of anemia, but here malnutrition is largely a contributing cause. Malarial fever and uncinariasis together always produce a severe secondary anemia, uncinariasis being the more responsible. Insufficient food and food of poor quality are the most important contributing causes of tropical anemia, which causes are usually in direct proportion to the poverty of the people. Splenic enlargement is primarily due to malarial infection and the ultimate changes experienced are probably influenced by intercurrent disorders. Treatment of these secondary anemias should, regardless of previous malaria, be directed to the hookworm and to the improvement of food and nutrition.

Early Diagnosis of Tuberculosis.—C. W. Coutant makes a plea for the training of physicians in the ability to recognize tuberculosis in its earliest stages.

Iodine in Smallpox.—C. S. Rockhill reports that he has used a 10 per cent. iodine and 90 per cent. glycerine mixture painted over the pustules of smallpox with very satisfactory results. It dries the pustule, causes absorption of the toxin and arrests the destruction of tissue, thus preventing the usual disfigurement. It has shortened the duration of the hospital stay from twenty-five to thirty days under the old treatment to eight to fifteen days. The pustules on the face may be opened with a sterile instrument and touched up with tincture of iodine. Eighty-five patients have been treated by this method within the past year, with 100 per cent. of recoveries and an average stay in the hospital of twelve days.

Method of Incubation.—J. H. Schrup describes an incubating device which he finds satisfactory and which can be readily improvised. He pours into a vacuum bottle water heated a little above blood heat and suspends the incubating tube by a thread inside the bottle and keeps the bottle tightly corked. If advisable a thermometer can be inserted through the cork. Almost any of the vacuum bottles on the market will answer the purpose, providing the cork fits closely. The loss of heat can be easily corrected if necessary by adding a slight amount of hot water every twelve hours. It is advisable to have the temperature at 100° F. in the beginning and to have the usual rubber cap over the tube to prevent the entrance of moisture.

The Lancet.

January 20, 1912.

The Resources of Surgery in Certain Emergencies. C. A. Ballance.
Sensory Disturbances from Cerebral Lesions. H. Head and G. Holmes.
Salvarsan in Syphilis. W. Evans.
On the Practical Results of the Recent Advances in the Diagnosis and Treatment of Syphilis. J. H. Sequeira.
Intestinal Myiasis. E. A. Cockayne.
Double Coxa Vara with Other Deformities Occurring in Brother and Sister. L. E. Barrington-Ward.
The Functions of the Tonsils and the Appendix. K. H. Digby.

Surgery in Emergencies.—C. A. Ballance cites illustrative cases showing the urgent relief demanded of surgery in the following conditions: Intestinal obstruction, peritoneal infection, acute appendicitis, abscess of the brain, gangrene of the extremities, calculous anuria, renal hemorrhage, internal hemorrhage, ruptured spleen, hemorrhage of the heart, wound or tuberculosis of the pulmonary artery, and some cases of intracranial hemorrhage.

Sensory Disturbances from Cerebral Lesions.—By H. Head and G. Holmes. (See page 200.)

Salvarsan.—W. Evans concludes from his experience that salvarsan is a rapid, safe, and effective remedy in syphilis.

Advances in the Diagnosis and Treatment of Syphilis.—J. H. Sequeira states that the early diagnosis of syphilis is of the utmost importance (*a*) to prevent the spread of the infection and (*b*) for efficient treatment. Treatment should be begun in the primary stage. There should be no waiting for secondaries. A doubtful chancre should be examined for the *Treponema pallidum*. The Wassermann reaction is of the highest utility in the diagnosis of secondary and tertiary eruptions. Treatment by mercury is undoubtedly efficacious. Nearly every case is influenced. After eight or more courses of injections 21 per cent. of the patients still have a positive Wassermann reaction. As regards salvarsan the danger is not great in properly selected cases. With rigid precautions taken in the preparation of the injections and with an aseptic technique the intravenous method has many advantages. The use of redistilled saline eliminates the pyrexia, rigors, vomiting, and other unpleasant symptoms in nearly every case. The immediate effects of salvarsan both on the clinical manifestations of the disease and on the Wassermann reaction are far more rapid than are those of mercury. The ultimate effects in primary syphilis are remarkable; in early cases the secondary stage may be aborted. The effects in well-developed secondary syphilis are less

striking and relapses certainly occur, and it remains for time to show the permanence of the results. In tertiary syphilis healing is extraordinarily rapid, but the Wassermann reaction is difficult to alter and relapses are likely to occur.

Intestinal Myiasis.—E. A. Cockayne states that in this condition the larvæ of numerous species of flies have been found. Their presence usually causes only slight symptoms, and even in cases where thousands of larvæ are passed those symptoms most common are anorexia, nausea, colicky pain, and constipation or diarrhea. In the more severe cases there may be vomiting, hematemesis, and diarrhea of dysenteric character. Nervous symptoms such as headache, vertigo, and epileptiform convulsions, which ceased with the expulsion of the larvæ, have been observed in a few cases.

Double Coxa Vara in Brother and Sister.—L. E. Barrington-Ward states that the two children presented a peculiar collection of skeletal deformities for which it was difficult to find a satisfactory etiology. The girl, aged nine, came under observation for a well-marked double coxa vara. She had had pains in the back and an alteration in her gait dating back eighteen months only. It was found that besides the hip affection she had abnormally short arms, many joints that were enlarged or creaked on movement, and eversion of the feet. Systematic examination of the bones with the *x*-rays revealed deficient, unequal, and in some cases divided development of many of the epiphyses. Inquiry of the parents elicited the fact that a younger brother, aged six and one-half, had lately shown signs of lameness. He was admitted to the hospital and was found to have double coxa vara of a milder degree, and also a forward luxation of the upper ends of both radii. With the *x*-rays it was seen that ossification in most of the bones was considerably advanced for his age.

The Functions of the Tonsils and the Appendix.—K. H. Digby deals with a group of lymphatic structures whose antibacterial activity is not commonly considered, and, indeed, is hardly recognized. These lie close to the surface of the body and can be called the subepithelial lymphatic glands. In this group are included the tonsils, nasopharyngeal, faucial, and lingual; the solitary follicles of the intestine, Peyer's patches, and the vermiform appendix. The author advances the hypothesis that these particular lymphatic structures protect the body again chance infection by a process of continual autovaccinations. Any bacteria in the vicinity are attracted by positive chemotaxis through the overlying epithelium into the lymphatic nodule. The bacterial attack, having been invited in a region most favorable to the defensive mechanisms of the body, is nearly always repulsed. In accordance with that overproduction which is so characteristic of biological response, specially trained lymphocytes and a great excess of specific bacteriolysins and antitoxins are produced. These enter the general system and lessen the risk of a successful bacterial infection at a more vulnerable part. Thus more or less immunity against organisms is acquired by the individual without his obviously suffering from disease. On rare occasions the lymph nodule is overcome and the disease develops; but the body has meanwhile become better able to withstand a general invasion.

British Medical Journal.

January 20, 1912.

The Operative Cure of Ascites Due to Liver Cirrhosis. R. Morrison.
Recent Methods for the Radical Cure of Hernia. H. H. B. MacLeod.
A Case of Perforated Peptic Ulcer of the Esophagus Complicated by Pyopneumothorax. J. Miller.
A Case of Typhoid Fever Complicated with Cholecystitis. J. McMillan.
A Case of Fibromyoma of the Stomach. D. G. Cheyne.
A Method of Treating Damaged Intestine Without Resection. With Illustrative Cases. H. B. Angus.
Solid Carbon Dioxide in the Treatment of Hemorrhoids. H. G. Anderson.
A Case of Ruptured Liver and Right Kidney; Operation; Recovery. G. R. Girdlestone.
On Acetyl-salicylic Acid, with Special Reference to Its Value in Typhoid Fever. G. Chambers.
Passage of a Cast of the Bladder per Urethram. J. M. Barlet.
The Correction of Errors of Refraction for Microscope Work. Sir W. B. Leishman.

Omentopexy for Ascites Due to Hepatic Cirrhosis.—R. Morison states that the steps of this operation are as follows: 1. Open the abdomen from the ensiform cartilage to the umbilicus. 2. Introduce the hand into the abdomen and project a finger against the anterior parietes in the middle line three inches above the pubis. 3. Make a small incision on to the finger tip, and through this introduce a long, small glass drainage tube into the rectovesical or rectouterine pouch. 4. Dry the abdominal cavity and scrub the peritoneum with mops. 5. Suture the omentum to the anterior parietal peritoneum across the abdominal wall and close the upper abdominal wound. 6. Apply an antiseptic dressing over the wound and tube, and over this, from above down to the tube, a series of long circular strips of adhesive strapping, with the object of keeping the parietal in contact with the visceral peritoneum. 7. The tube, now exposed through the dressings, is surrounded with a sheet of dental rubber perforated to grasp it below the collar on it, and the separated tube dressing is wrapped up in the india-rubber sheet.

Radical Cure of Hernia.—H. H. B. MacLeod emphasizes the fact that the treatment of all forms of hernia is essentially the same, and that the great underlying principle is to find the neck of the sac and to occlude it thoroughly. One may then do what one pleases with the other parts, varying the detail according to circumstances, and putting in such supporting and obliterating sutures through canal and rings as one's experience may determine.

Perforated Esophageal Ulcer.—J. Miller reports a case of this condition complicated by pyopneumothorax. Probably at least forty-six have been recorded up to date, including the author's. The most typical and constant symptoms of the condition are: Pain, which is severe and comes on immediately after food, the site of the pain being at the lower end of the sternum and a little to the left of it. Pain is also felt between the shoulders. Vomiting is the next most constant symptom. Dysphagia is present in more than half the cases. It is due to reflex spasm of the muscle of the esophagus from pain and it is the main diagnostic point differentiating the condition from gastric ulcer. Hematemesis is also a very common symptom. Perforation has occurred in eight cases—thrice into the right pleural cavity, once into the left (author's case), once into both pleural cavities (in each case with pneumothorax), once each into the aorta, pericardium, and lesser omental sac. The ulcer is usually single. It may extend into the stomach, and independent ulcers may occur in the stomach or duodenum (author's case). The situation is usually close to the cardiac orifice, and the right posterolateral wall appears to be the commonest site. The condition is usually found in middle life. As regards sex, of forty-five cases in which the sex was specified thirty-one were males and fourteen females. This preponderance of the ulcerations in the male corresponds, Miller holds, to what one knows of duodenal ulcer.

Typhoid Fever and Cholecystitis.—J. McMillan reports a case illustrating this association. The more important points are summarized as follows: 1. The presence of almost continuous constipation throughout the whole course of an ordinary typhoid illness. 2. The development of inflammation of the gall-bladder during convalescence, about the eighth week of illness. 3. The development of peritonitis forming adhesions between the gall-bladder and the colon. 4. The presence of *Bacillus typhosus* in pure culture. 5. The presence of a few gallstones, consisting of cholesterin and mucin.

Fibromyoma of the Stomach.—D. G. Cheyne reports a case of this condition which produced no symptoms and was discovered at the operation performed for what was

thought to be a subperitoneal fibroid or an ovarian cyst with a long pedicle.

Treatment of Damaged Intestine Without Resection.—H. B. Angus notes that frequently when doing emergency work one meets with an intestine which is torn, gangrenous, perforated over a limited area; or, after separating adhesions, free oozing is so persistent as to necessitate immediate treatment. In many cases of this kind resection appears to be the only resource, but if the patient is old and feeble, exhausted, or suffering from severe shock time is an important consideration, and the following simple method will be found most useful: Where there is a perforation—for example, from a bullet wound—a suture or two of chromicized catgut passing through all the coats approximates the edges of the rent; then with Pagenstecher's thread the adjacent sides of the damaged area of intestine are brought together by means of a Lembert suture—either continuous or interrupted—thus enclosing the weak spot. At first sight it appears as though obstruction would result from the kinking of the bowel, but this complication has not ensued after repeated trials. The method is simple, and occupies a short time as compared with resection and subsequent anastomosis.

Solid Carbon Dioxide in the Treatment of Hemorrhoids.—H. G. Anderson recommends the use of solid carbon dioxide in the treatment of small uncomplicated internal hemorrhoids.

Ruptured Liver and Right Kidney.—G. R. Girdlestone reports a case presenting the following points of interest: (1) The severity of the injury: The kidney was ruptured completely away from its pelvis and vessels and partially split; and the liver was extensively torn, and a portion completely detached. (2) The fact that the renal vessels were only bleeding comparatively slowly suggested a wonderfully efficient reaction. (3) The slowness of the pulse at the time of admission and the slowness of its rise. This is accounted for by rupture of the suprarenal with absorption of its secretions. (4) The capability and activity of the peritoneum in dealing with a considerable quantity of blood and exudation.

Acetyl-Salicylic Acid in Typhoid Fever.—G. Chambers states that the exhibition of acetyl-salicylic acid in small doses, 3 to 5 grains every four hours, combined with tepid or hot sponging, is generally an effective means of lowering the temperature. The exhibition of the drug in this dosage to typhoid patients does not alter the blood pressure or produce any appreciable ill effects. The skin remains moist, and in some cases there is profuse sweating. The greatest effect on the temperature is obtained by sponging the patient about half an hour after the administration of a dose of the drug, in this way combining the antipyretic actions of the medicinal and hydrotherapeutic agents.

Cast of Bladder Passed per Urethram.—J. M. Bartlet reports the case of a woman who passed a cast of the bladder studded with calculi.

Correction of Refractive Error for Microscopic Work.—Sir W. B. Leishman has devised a means whereby the microscopist having a refractive error may work at the microscope without wearing glasses. The lens necessary to correct the error of refraction of the eye commonly used is fitted accurately into the center of an aluminum carrier, so constructed as to form a cap which may be placed over the microscope ocular. In the case of a lens with cylindrical correction for astigmatic error the vertical meridian is permanently marked on the carrier by means of an arrow. As most workers employ oculars of the same maker, the external diameter of which is approximately the same, the cap may be made to fit them all by arranging to have the internal diameter adjusted to fit the largest ocular used.

Berliner klinische Wochenschrift.

January 15, 1912.

The Photodynamic Action of Fluorescent Substances.—Nagelschmidt, apropos of the recent use of eosin in cancer therapy, sums up our previous knowledge in this province. Eosin is a fluorescent substance which is able to induce biological reactions in the light only. In general the behavior of fluorescent substances when activated by light differs markedly with the substance, and there is no parallelism between fluorescence and photodynamics. In 1900 the discovery was first made that if a mouse was injected subcutaneously with an eosin solution and then exposed to the light necrosis of the ears developed. Since that period eosin has been studied extensively from this viewpoint, and other fluorescent substances have been studied and found to possess similar properties. These substances include chinolin red, phloxin, erythrosin, and fluorescin. It was at first hoped that this property of fluorescent substances could be utilized in the light treatment of disease, and especially in radiotherapy and emanation therapy, but it was quickly learned that the outlook in this direction was barren. The changes which take place when tissue cells are thus sensibilized to light are extremely complex; so much so that some positive therapeutic effects occur only in the dark, just as others require light for their manifestation. It has been shown that oxygen must be present in the tissues before light is able to activate the cells of an eosinized animal. The use of eosin in cancer therapy is the result of a decennium of study.

Polyneuritis Luetica.—According to Plehn, genuine polyneuritis due to the toxins of syphilis is a phenomenon of very rare occurrence. He himself has never seen but six cases. In one case there were flaccid paralysis, paresthesiæ, abolition of tendon reflexes, atrophy and quantitative diminution of galvanic irritability—at least in the area of the facialis. A general diagnosis of polyneuritis was therefore in evidence. The symptoms promptly and decisively disappeared under specific treatment. The diagnosis could also be made from coincident phenomena of syphilis and further by exclusion. In alleged polyneuritis the real condition may consist of a poliomyelitis or a nerve root neuritis, and differentiation may be difficult or impossible. An essential isolated and strictly peripheral polyneuritis is now known to be of rare occurrence, probably under all circumstances.

Thorax Phthisicus and Tuberculous Disposition.—Stiller states that the relationship between these two common factors is still obscure despite years of effort to illuminate the relationship. From a very common viewpoint the mechanical impossibility of ventilating the apices of the lungs in the so-called thorax phthisicus is sufficient to explain the clinical phenomenon of pulmonary tuberculosis. From the opposite viewpoint it may be insisted that the so-called phthisical or paralytic thorax is a much less sharply defined entity than has been believed. It is also asserted that there are two separate types of insufficient thorax, in one of which there is involved chiefly a skeletal deformity, while the other is merely due to muscular subdevelopment or insufficiency. The two, of course, have more or less tendency to coexist in the same subject, but subjects with either type of thorax are not necessarily candidates for consumption. Stiller regards it as impracticable to distinguish between the two forms. The dualist would perhaps treat the thorax with contracted apex by division of the first rib and the paralytic thorax by muscular exercises, but in neither case does such special therapeutics appear to modify greatly the pathogenic substratum which really underlies both forms of thoracic anomaly.

Deutsche medizinische Wochenschrift.

January 11 and 18, 1912

Abdominal Injuries.—Riedel concludes a serial article with many practical aphorisms, including the following: The most certain sign of a visceral injury is rigidity of the muscles, which is the result of effusion of blood or escape of intestinal contents. The earlier this rigidity sets in the greater the escape of fluids. Only in rare instances is rigidity absent. When to rigidity are joined a rapid, small pulse, pallor, sunken face, and vomiting the seat of the hemorrhage is the liver, spleen, pancreas, or mesenteric vessels, and operation is urgently indicated. After rupture of the stomach rigidity sets in more rapidly than after intestinal rupture because in the former there is little or no tendency for the rupture to close spontaneously; however, even in minimal rupture of the intestine we cannot feel assured of any actual closure of the wound. It takes at least six hours for escaped intestinal germs to begin to proliferate in the peritoneal cavity. Hence, doubtless, delayed peritonitis often originates from minute ruptures. In any rupture of the canal we should operate within this six-hour period whenever possible. We have always to make allowance for the delayed effects of lacerations in the mesentery, serosa and muscularis, submucous effusion, etc.; these include gangrene of the intestine, fecal abscess, kinking or stricture of the gut. When the nutrition of a portion of peritoneum has been impaired through contusion or injury in general it loses its ability to absorb. An effusion of blood may then suppurate from diapedesis. The resulting abscesses contain no fecal matter. In rupture of the liver hemorrhage is best arrested by suturing the omentum into it. The spleen, however, must be extirpated outright for rupture. The kidney, on the contrary, should be treated conservatively unless hemorrhage quickly threatens life. Slight abdominal injuries not involving a visceral lesion are followed by tympanites in a few hours. Such injuries may lead to severe symptoms, such as vomiting, small pulse, and sunken face—in other words, shock may be present. Conversely, in severe visceral lesions shock need not be present.

Fatal Cachexia Without a Gross Anatomical Substratum.—Rindfleisch reports a case in which autopsy failed to reveal any trace of tuberculosis, cancer, or Addison's disease, although clinically one or the other of these affections should have been present. There were chronic intestinal gastritis corresponding to the achylia gastrica found clinically and intestinal hepatitis with cirrhosis, but, severe as these finds were, they could not explain the notable cachexia which had been present. Some emaciation is readily intelligible, but not the high degree of this case nor the deep brown pigmentation such as often accompanies extreme cachetic states. There was neither diabetes nor amyloidosis. Tuberculosis was readily excluded, likewise carcinoma, but by no means readily, for there was absence of gastric acidity. The exclusion was made chiefly by constant absence of blood in the stools. Addison's disease then seemed to be the only possibility, but there was no pigmentation of the mucosæ. To physical exploration the liver seemed normal in size and consistence. In the present state of our knowledge some autointoxication is absolutely necessary to account for the pigmentation. Cases like the author's have doubtless been described before, notably by Grawitz, and the author chooses to term the affection "Grawitz's cachexia" for the time being, until it can be better comprehended.

Nature of Fever.—Aronsohn takes exception to a recent discussion of this subject by Rolly (noted at the time in the MEDICAL RECORD). He wrote a monograph on the subject in 1906, and as a result of whatever may have since been added to our knowledge concludes that fever is due not to the action of an ordinary toxin, but to that of an anaphylatoxin. Fever is ordinarily a salutary process, but may become the converse if defensive substances fail to be produced. The seat of fever is chiefly the muscles, not the liver. Rolly had evidently overlooked the author's work on "ferments and fever," in which he showed that the proteolytic muscle enzyme had its power trebled in fever, while the proteolytic enzyme of the liver had its activity correspondingly diminished. Further in neurogenic or puncture hyperthemia the increased oxidation of protein agrees with that resulting from infectious fever.

The City Asylum Poisoning Cases (Berlin).—Strassmann publishes the first routine article on this episode, earlier reports having appeared as medical news items or letters to the various journals. Up to December 30 the probable diagnosis was ptomaine poisoning from sausage, or more accurately botulism, a form recognizable from the presence of a specific bacillus. As time passed, however, it was found that the latter could not be detected anywhere and that the antiserum employed in treating such cases was inert. The next possibility was wood alcohol poisoning. It was by no means unlikely that the derelict victims of the poisoning had drunk cheap spirits adulterated with this poison, and the examination of the optic nerve and eyeball for the characteristic changes induced by the latter is still in progress. Clinically there were none of the ocular symptoms which accompany methylism, but aside from these the symptoms would be even better accounted for by the latter than by botulism. Beyond this conclusion data do not go. If methylism should be the final diagnosis our conception of the pathogenicity of this substance must be widened and otherwise modified. Methylism as a type of wholesale poisoning seems unknown in Germany, although it has occurred in parts of Russia, Hungary, and other Continental localities.

Serodiagnosis of Cancer.—Pinkuss sums up recent developments in this field as follows: The antitrypsin reaction is clinical rather than specific in character, although in one case cited it behaved like a specific, and a diagnosis of cancer was made in a patient whose only symptom was sciatica. Since there was nothing else which could have given rise to the increased antitrypsin content of the blood a diagnosis of cancer was made, and the sciatica was found to be due to an osteoblastic carcinoma, which in turn doubtless represented a metastasis from some internally situated primary growth. The antitrypsin reaction has a decided positive or negative value after a cancer has been extirpated, for its appearance then not only shows that a relapse has occurred but that a secondary operation must at once be performed. Other recent efforts in serodiagnosis of cancer, while discussed freely in the text, are not deemed worthy of mention in the author's summary.

Wassermann Reaction and Plumbism.—Hilgermann denies that a positive Wassermann is obtainable in subjects with lead poisoning. He has tested thirty-four cases of the latter—acute, subacute, or chronic—for the reaction, and his results have been practically negative. He believes that the Wassermann when properly made is truly specific for syphilis, and that its occurrence in other affections is the result of employing various modifications of the original technique. It is admitted, however, that modifications may be useful negatively in excluding the possibility of syphilis.

Treatment of Insidious Diphtheria Intoxication.—A. Lingel characterizes as the latter the vomiting and psychic disturbances which may occur in the wake of an attack of diphtheria. To counteract this intoxication he recommends the intraspinal injection of antidiphtheritic serum.—*Deutsches Archiv für klinische Medizin*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

FAMILY HISTORY.

THE examiners in the field will more fully understand the importance of securing accurate family histories if they possess some knowledge of the ideas entertained at the home offices on this subject. It would not be strange if many examiners were laboring under hazy impressions when there is some difference of opinion even among medical directors as to the precise bearing of family records upon the selection of risks, some regarding the family history as highly important while others prefer to be guided mainly by the personal history and physical condition of the applicant. On the whole, as will be seen later on, there can be little doubt as to the advantage gained from the consideration of the average length of life of the ancestors and collaterals and of any decided mortality among them from certain diseases, and it is, therefore, a safe plan to regard both the family and the individual traits.

Undoubtedly many individuals defeat their baneful inheritance through the subjugation of their desires and passions for excesses of all kinds, by living in a favorable environment and following a suitable vocation. If all men could and would observe these and similar wise precautions in a thorough and conscientious way the question of family history might be largely disregarded, but as long as the uncertainties of fortune, environment, and domestic relations continue, the majority of even those anxious to escape their tainted inheritances will find themselves more or less prevented from leading appropriate lives. On the other hand, some men who have not lived prudently do reach advanced age though their families have been almost annihilated by some disease; the survival under these circumstances may be attributed to a reversionary inheritance from some vigorous and robust ancestor.

Tuberculosis plays the chief rôle in the transmission of the tendency to disease, but even in these cases precautionary measures when open to contagion, favorable surroundings, freedom from exposure, a healthy occupation, and strict temperance will greatly modify the danger of contraction of the disease. Volumes of statistics in regard to the relation between family history and the contraction of consumption have appeared. Those compiled by Dr. Marsh (article read at the sixth annual meeting of the Association of Medical Directors) will clearly illustrate the question at issue. Dr. Marsh gives an estimate of the liability to consumption based upon an analysis of 1994 deaths of persons with a tainted record and 2706 cases with an untainted record. With the consumptive mortality among the non-tainted class as a basis, the proportion was increased 30 per cent. in the tainted class. There were only a few cases in which both parents had been consumptive and in these the experience had not been particularly unfavorable, probably on account of the fact that the wife or husband contracted the disease in many instances while nursing the other; the same result was shown when a parent and a brother or sister had died. The proportion of consumption was greatest when two or more brothers or sisters had died. The table of cases with tainted record showed a larger amount of consumption in both those above and below the average weight, but there were twice as many consumptive deaths in those below as in those above the average. Dr. Marsh's diagrams indicate that a good weight overbalances a tainted family history to a marked degree. It may be added that these estimates may fall short of the mark because they consider only those dying from consumption, while it is generally conceded that there is a greater tendency to die from other diseases as well as from consumption among those who have that taint in their family record.

Another class is composed of those who acquire consumption, though no tendency to the trouble is indicated by the family history. It must be remembered, however, that some persons wilfully misrepresent the causes of death, and others have no accurate knowledge or give the causes as they understand them from the family traditions, the real cause of death having been consumption but gradually changed by members of the family to some less dreaded disease.

Childbirth is frequently offered as a cause of death. It has been found from the records that the death of the mother from childbirth has as unfavorable an influence upon the longevity of her children as when the death is said to have been consumption. The best explanation of this is that the mother was really a victim to tuberculosis with the consequent inability to go through the ordeal of labor. This is so well understood by the medical staffs at the home offices that they will usually regard childbirth in the same light as tuberculosis in such cases, whenever the risk is a doubtful one otherwise.

It is common to find that families in which the members lived to good ages bring forth individuals possessing a high degree of vital elasticity and increased resistance to disease which no amount of personal care can give them. On the other hand, poorly bred men yield to some disease, not so much because their ancestors died from that particular trouble as that they inherit a weak power of resistance and a low vitality through which they succumb readily when exposed to the bacilli of tuberculosis, or are attacked by some other disease. A study of death claims shows that a large number of men with tainted family record do not die from the diseases they were expected to inherit from their parents or grandparents, but that many of them die, nevertheless, at a more or less immature age. Consumption, cancer, Bright's, cardiac disease, apoplexy, epilepsy, insanity, diabetes and the alcohol or drug habit are disorders which carry off these descendants, and which occur as interchangeable inheritances. So it is that a family record showing a poor longevity affects the decision at the home office in doubtful cases such as those with an impaired personal history or with weight outside the normal limits and may afford sufficient justification for rejection or for the issuance of an endowment policy in which the contract terminates at a certain age.

The family history has been discussed as far as space allows in order that examiners will fully realize the importance of a searching inquiry into the causes of death. The following suggestions are offered:

1. In eliciting the family record always question the applicant carefully and *specifically* as to whether there was any suspicion of tuberculosis,

insanity, epilepsy, paralysis, or cancer in any member of his family, and the ages at which each one of them died. This inquiry should only extend far enough to include grandparents, parents, brothers and sisters, as this will provide sufficient data for all practical purposes.

2. The statement that parents, brothers or sisters have died of "old age," "exposure," "childbirth," "change of life," "don't know," and similar ambiguous causes of death so often given to gloss over the real troubles should only be accepted in the few cases where the applicant is really ignorant of the nature of the diseases and the exact ages of his near relatives at the time of their death. In such instances the examiner should explain this fact explicitly.

3. A special effort should be made to ascertain the true cause of death when the applicant is under the standard weight or there is a personal history of hemoptysis or pulmonary troubles. If it is admitted in these cases that one or more members of the family died from pneumonia, childbirth, or some chronic ailment, the direct and specific question should be asked as to whether there was any suspicion of tuberculosis in the illness. Even then some doubt will remain occasionally and may be cleared up by drawing out further details concerning the condition previous to death, *i.e.*, whether there were gradual wasting away and other symptoms of consumption.

Moreover, negative as well as affirmative answers should be indicated in the medical report to show that these specific questions have been asked and in this way obviate the necessity of correspondence from the home office to clear up the doubtful points.

4. Half brothers and sisters should always be included in the family record and such relationship stated.

The Social Engineer in the Field of Public Health.—In an address delivered at the fifth annual meeting of the Association of Life Insurance Presidents, held in New York December 13 and 14, 1911, Dr. Luther H. Gulick said that Society at present lacks an efficient organization that would help to apply the vast medical knowledge gained in the last few decades to actual human needs. Our equipment for securing facts, as illustrated by the numerous research institutions, are more adequate than that for securing action upon these facts. Health and longevity of the people can be increased by obtaining pure water, effective sewage systems, pure air in dwellings and workshops, reasonable hours of work, protection against infection, etc., etc. Adequate vital statistics should be obtained in all States. The various organizations now existing, such as the Federal laboratories, State health departments, etc., need strengthening rather than increase in number. They must be provided with sufficient finances, must work for better public support, and must have more freedom from political influences.

Public opinion on health matters is to a great degree individualistic, while the needs are nowadays primarily social. People think deeply and spend much money for health, but it is mainly for individual and not social health, and the individual suffers from the sins and omissions of society in this matter.

The Sage Foundation during the past few years has studied the broad question of child hygiene, and its activities are illustrative of needed activities in other similar fields. In 1907 there were 111 cities having medical inspection of school children; there are now 411. The number of Fourth of July casualties steadily increased until 1909, when it reached 5307. Since then it has gradually decreased because of well directed agitation, and last year it was reduced to 1603 for the entire country. Playgrounds have been introduced in a great many cities. The Sage Foundation, in working toward these results, cooperated in developing a National Playground Association, which now coordinates and stimulates various public activities in this field. An effectual press service has been organized, city officials have been enlisted in the movement, model plans have been prepared and persons interested in the matter have been kept in touch with the work. Thus any money now given for the purpose of establishing playgrounds is much more effective than many times a similar amount in the past.

Dr. Gulick proposed the following principles of action for securing results in other similar fields of social welfare. Existing channels for reaching a desired community should be utilized, that is, newspapers, magazines, clubs, medical societies, lecturers, school officials, etc. Scientific information, well formulated, should be furnished. Subjects should be promoted only when they are ripe; they must occupy the stage, if not the very center of it. A subject must be pushed agressively when once taken up by the public, for public attention cannot be retained very long. Only a few subjects should be promoted at a time. Public attention must be concentrated to be effective, for distraction is deadly. Only such schemes as are reasonably promising of success should be pushed, for failure hurts every other similar project.

These principles are stated not because they are exhaustive, but because the social work can be no more left to chance for success than any other work. The "social engineer" needs a knowledge of individual and mass psychology; he must be a man of science as much as a modern structural engineer.

A body for promoting social health must be philanthropic and absolutely non-commercial. The public must feel that there are no ulterior motives back of its teachings. The Association of Life Insurance Presidents should promote public health in some such way as proposed above.

Increase of Death Rate Above the Age of Forty.—Since 1880 the American death rate per 1,000 population has been reduced about 25 per cent. This is due chiefly to the spread of knowledge as to the cause and the means of prevention of tuberculosis, typhoid fever, diphtheria, smallpox, etc.; to the increase of interest in sanitation and to the adoption of more healthful living habits by the people. Yet the death rate above the age of forty has increased heavily, the causes of mortality above this age being chiefly the common chronic affections of non-communicable type. These affections are for the most part diseases of the kidneys, of the heart and of the blood-vessels; against them no such war has been waged as against diseases of infancy and childhood and the infectious diseases of the adult. Yet these diseases of advanced age are likewise to a great degree preventable or postponable. It would seem as if the time was ripe for a campaign of education in reference to the causes of mortality above the age of forty similar to the campaigns against infant mortality and against common infections. Certainly, a life saved from Bright's disease or from heart disease is as valuable as a life saved from typhoid fever or from an accident.—*The Human Factor*, December, 1911.

State Invalidity Insurance in Germany.—According to official statistics just published there were at the end of 1910 in the German empire 23,188 *krankenkassen* with 13,069,375 members. In the year 1910, 5,107,089 cases of sickness occurred among the members, amounting to 104,708,105 days of illness. The income amounted to $94,875,000 and the ordinary disbursements to $87,512,500. Among the latter are included the costs of illness, $80,000,000.—*Journal Am. Med. Assn.*

Book Reviews.

A Mother's Guide. A Manual for the Guidance of Mothers and Nurses. By Francis Tweedie, M.D., Alumnus Bellevue Hospital, New York; Fellow of the New York Academy of Medicine; Assistant Physician to the Babies' Hospital Dispensary, New York. Price $1.00. New York: James T. Dougherty.

Mothers, and prospective mothers, often ask a physician to recommend them some small book dealing with the nursing and feeding of infants, and with the management of some of the more common ailments incident to child life. The present volume is well adapted for this purpose; it is written in clear and simple language, and the directions are complete and safe. Most books of this kind tell a great deal too much, and are often as dangerous as they are useful; this little work is an agreeable exception.

Aids to Histology. By Alexander Goodall, M.D., F.R.C.P. Edin., Lecturer on Physiology, School of Medicine of the Royal Colleges; Examiner in Physiology to the Royal College of Physicians, Edinburgh. Price 2/6. London: Baillière, Tindall & Cox, 1912.

This is the latest of the Students' Aid Series of manuals, the previous issues of which have been reviewed from time to time in this column. It presents all the essential facts of histology in small compass and serves excellently both as an introduction to this subject for the young student and as a review book for the advanced student or the recent graduate preparing for examination for the degree or for a licence to practise. The matter is well arranged and the student is led on gradually from the simpler to the more complex tissues. The final chapter is on histological technique and contains brief directions for the fixing, staining, and mounting of specimens. The illustrations are schematic but clear and will serve as models for the drawings the student is expected to make of what he himself sees under the microscope. This book, like the other manuals of the series, is well adapted to the purpose for which it is intended.

Dritte Bericht über Salvarsanbehandlung, aus dem Kaiserlichen Marinelazarett Kiel-Wik. Von Dr. Gennerich, Marine-Stabsarzt. Mit zwei Kurventafeln. Price, 2.40 marks. Berlin: Verlag von August Hirschwald, 1911.

This pamphlet of eighty pages gives the result of treatment of some 340 patients with Ehrlich's salvarsan. Numerous clinical histories are given, the intoxication phenomena following salvarsan are discussed and a comprehensive study of the Wassermann reaction in the patients treated is given. Gennerich's opinion of the new remedy is, in general, a very favorable one. He agrees with Wechselmann that impure saline solutions are responsible for most of the untoward reactions after intravenous use of salvarsan and not the remedy itself.

The House Surgeon's Vade-Mecum. By Russell Howard, M.B., M.S. (Lond.), F.R.C.S. (Eng.), Surgeon to Poplar Hospital; Assistant Surgeon London Hospital; author of "Surgical Nursing," etc. Illustrateed. New York and London: Longmans, Green & Company.

This is a small but useful work on minor and emergency surgery. It is written for the use of hospital internes; and it will doubtless be of service not only to them, but also to the general practitioner, who, while not professing to be a surgeon, has often to do much surgical work. The author has made a judicious selection of topics and has handled his subject in a masterly way. It is gratifying to note that, in the list of books used for reference, the author makes mention of several well-known American text-books.

Untersuchungen über die Struktur der Blutzellen. By Alfred v. Decastello, M.D., and Alexander Krjukoff, M.D. With eight colored plates. $4.00. Berlin and Vienna: Urban & Schwartzenberg. New York: Rebman Company, 1911.

There has been in the last few years a greatly increased interest in the study of the finer morphology of the cells of the blood and not a few researches, the object of which has been to clear up the genetic relations between the leucocytes and their parent cells in the bone marrow and lymph nodes, have been published.

Some of the methods employed have been chemical, as in the well-known indophenol reaction which serves to separate cells of the bone marrow group from cells of the lymph node group. Other studies, like the present work, are based simply upon the extensive histological investigations of a large quantity of material, using the more or less conventional methods of fixing and staining the cells. The conclusions reached are not wholly in accord with those generally held by the majority of workers with the blood. The authors hold that the idea that the blood cell, especially the nuclear portion of the cell, is surrounded by a sort of membrane, through which osmosis takes place, is incorrect and instead they regard the nucleus and cell body as composed of a net work of fine, interlacing fibers; that these fibers are continuous between the nucleus and the protoplasm of the cell; that the granules seen in the leucocytes are not secretion particles, but nodes in the fibrous net work; that the blood plates arise from the cytoplasm of the leucocytes and show differences of structure depending upon the type of cell from which they have arisen. Some of these views are not wholly original. For example, the idea that the azur granules found in the lymphocytes are fragments of nuclear material which is broken off from the nucleus and lies free in the cell body has long been held. The assumption that the whole cell is a network of fibers will certainly not be generally received. The origin of blood plates is also probably not from leucocytes, but from the megacaryocytes of the bone marrow, as has been shown by J. Homer Wright. A series of eight colored plates adds very much to the value of the book.

Vorlesungen über Frauenkrankheiten. Aus der Praxis fur die Praxis. By Dr. Karl Abel. With ninety-three illustrations, some in color. Price, 14 marks. Berlin: Oscar Coblentz, 1912.

This book presents a series of lectures delivered by the writer to medical students, which are based on an experience of twenty years in gynecological practice. The entire subject-matter of the diseases of women is delivered in a very complete and easily read form, including all the known and adopted facts. The desire of the author is to present the most practical aspects of the subject as they would come under the notice of the general practitioner, so that the descriptions, except when necessary, are not burdened with detailed references to etiology, pathology, or treatment. The accounts given of most of the usual gynecological conditions are very complete, however, and the section devoted to the subject of abortion is particularly so. The author does not advocate any radical treatment of this condition as regards curettage, advising dilatation and removal of the remnants with the finger rather than an instrument. There is also an excellent concluding chapter on appendicitis in the female. The doctor states by way of introduction that gynecology should be considered as the study of woman and not exclusively as a study of the diseases of the female genitals. This attitude is consistently followed throughout the book and may be regarded as almost a new departure in text-book literature. The work is satisfactorily printed and illustrated, but the presentation of the subject-matter in lecture form will scarcely appeal to American readers.

Surgical Applied Anatomy. By Sir Frederick Treves, Bart. G.C.V.O., C.B., LL.D., F.R.C.S., Sergeant Surgeon to H.M. the King; Consulting Surgeon to the London Hospital; late Lecturer on Anatomy at the London Hospital. Sixth Edition, revised by Arthur Keith, M.D., LL.D. Aber., F.R.C.S. Eng., Hunterian Professor and Conservator of the Museum, Royal College of Surgeons of England; formerly Lecturer on and Senior Demonstrator of Anatomy at the London Hospital; Examiner in the Universities of Aberdeen, Cambridge, etc. Illustrated with 137 Figures including 58 in color. Price $2.50. Philadelphia and New York: Lea & Febiger, 1911.

After a book has enjoyed a successful career for more than a quarter of a century it is hardly necessary to do more than announce a new edition. There are several reasons why this work has been so popular. Its intrinsic merits, attractive style, small size and price, and the skill and reputation of its distinguished author all contributed to its early success, and all still remain in connection with this new edition. The chief alterations relate to the glands of internal secretion, to the lymphatic system, to the anatomy of the abdomen, and to new facts which have been discovered by the use of the *x*-rays in examining the human body. Thirty-five new illustrations have been introduced. Many a busy practitioner finds his recollection of anatomical facts growing dim; the present volume is admirably adapted to encourage a survival of the fittest of these facts, and also to refresh the memory on such anatomical details as have the most direct bearing on practice. In spite of recent competitors (all more pretentious and higher priced), Treves' Applied Anatomy continues to lead; and it is one of the very few books, in any field that has held undisputed supremacy for nearly thirty years.

TEXT-BOOK OF OPHTHALMOLOGY. By Dr ERNST FUCHS, Professor of Ophthalmology in the University of Vienna Authorized Translation from the Twelfth Revised and Greatly Enlarged German Edition, with Numerous Additions. By ALEXANDER DUANE, M.D., Surgeon, Ophthalmic and Aural Institute, New York. With 441 Illustrations. Fourth Edition Price $6.00. Philadelphia and London: J. B. Lippincott Company, 1911.

THIS new translation of Professor Fuchs' well-known treatise on diseases of the eyes is made from the twelfth edition of the German original. It contains a very interesting and valuable introductory chapter, prepared for that edition, on the general physiology, pathology, symptomatology, and therapeutics of the eye. There are also numerous changes and shorter additions in the other sections, and throughout the work the brief but judicious and helpful comments and additions by the translator add very greatly to the value of the treatise as a textbook for general practitioners as well as ophthalmologists. A number of the illustrations also (some of them excellent colored plates) have been inserted by Dr. Duane.

MINOR AND EMERGENCY SURGERY. By WALTER T. DANNREUTHER, M.D., Surgeon to St. Elizabeth's Hospital and to St. Bartholomew's clinic, New York City; ex-House Physician and Surgeon Jersey City Hospital, etc. Illustrated. Philadelphia and London: W. B. Saunders Company, 1911.

THIS book has been prepared expressly for hospital internes and ambulance surgeons, and is devoted to some of the details of minor surgery. The work is of a very elementary character, and, as a rule, an interne in our best hospitals would be expected to know much more than is contained in this volume. It might possibly be used as a handbook by medical students who are beginning to attend surgical clinics in the out-patient department. Some of the advice given is good, but some of it is in poor taste; *e.g.* "Don't fail to respect a patient's religion, *especially if he is a Catholic*;" why these last six words? Gibney's dressing, if applied as shown on page 54, might lead to disastrous results.

LEHRBUCH KLINISCHER UNTERSUCHUNGSMETHODEN FÜR STUDIERENDE UND ARZTE. By THEODOR BRUGSCH, M.D., and ALFRED SCHITTENHELM, M.D. $4.25. Berlin and Vienna: Urban & Schwarzenberg. New York: Rebman Company, 1911.

THE prompt appearance of a second edition of this textbook of clinical methods of investigation is an index of its popularity and, to some extent, of its usefulness to the medical public. The custom in Germany has been to include in one volume not only the physical methods of examining patients, but also a good deal of what is commonly designated clinical pathology. As a result both phases suffer from necessary compression in order to keep the book within the limits of a size which can be conveniently handled. The danger is that such a book becomes a mere quiz compend, reviewing everything, but teaching little. The authors evidently appreciate this dilemma, as they state in the preface that they have been compelled to assign to another volume, to appear later, a large number of special methods of investigation, which can only be carried out by trained workers in especially equipped laboratories.

This is the first acknowledgment from Germany that the problem which for some time past has occupied physicians and laboratory workers of the larger hospitals must be ultimately solved by a division of labor. Until recently the chief of a great German clinic usually felt himself quite competent not only to direct the physical diagnosis of the ordinary routine examination of the patients, but also to direct the themes for investigation in chemistry and pharmacology; an attitude which has not infrequently added but little to the subject so studied. It is manifestly impossible at the present day for any physician, even if he devotes himself entirely to the study of the ward patients, to be in any way in touch with the details either of chemistry, pathology, or bacteriology, or to be able to direct research in those lines. He will have enough to occupy his time if he keeps up with the improvements in physical diagnosis based upon the discoveries in physiology. The inevitable split then between the laboratory and the wards is coming in Germany as a mere part of our increased specialization in internal medicine. The separation must never be complete, but there is room for a number of coordinated workers in clinical medicine, each with his special laboratory training, the advantages of which he must apply to the investigation of his cases.

This attempt to cover too large a field limits the value of this otherwise excellent volume. As a book to recall the main points of knowledge already acquired it is excellent; but it is evident to any one that, for example, it is difficult to become an expert in the interpretation of *x*-ray plates of the viscera by reading forty-two pages devoted to the *x*-ray. For example, the quoted work of Holzknecht on the form of the normal stomach is already being questioned. Nor will to-day the statement be accepted that the tapeworm. *Tænia nana* chiefly occurs in Italy and Egypt The American reader will be disappointed in finding nothing, in the part on infection and immunity, on the immunity induced by dead bacteria, the so-called vaccines.

On the other hand, these defects which have been pointed out are largely compensated from the student point of view by the extremely clear and compact way in which facts are presented, so that the work affords a survey of scientific medicine in most compact form and therefore should enjoy a very wide popularity.

THE BACILLUS OF LONG LIFE. A Manual of the Preparation and Souring of Milk for Dietary Purposes, Together with an Historical Account of the Use of Fermented Milk, from the Earliest Times to the Present Day, and Their Wonderful Effect in the Prolonging of Human Existence. By LOUDON M. DOUGLAS, F.R.S.E. With 62 Illustrations. Price $1.50. New York and London G. P. Putnam's Sons, 1911.

ONE may read this book with interest, even though he may not have an unquestioning belief in the theory expressed in the title, for it gives much information regarding the use of milk, especially soured milk, by the Arabs and the peoples of southeastern Europe. The chapter on the preparation of soured milk in the house contains minute directions for the preliminary treatment of the milk as received from the dairy, the inoculation with cultures of lactic-acid bacilli, the maintenance of the proper temperature, and the preservation of the soured product. Objection may be taken to the recommendation to sterilize the milk by boiling in preference to pasteurization, for the taste of boiled milk remaining even after it is soured is objectionable to many persons, and moreover boiling is believed by many to impair the nutritive value of the product. Pasteurization requires but little more care than boiling, and a properly pasteurized milk will sour as readily after inoculation with an active culture as will boiled milk. The advice to use only separated milk is good; if the fat is desired in individual cases it can be applied by adding pasteurized cream to the soured milk at the time of taking.

RETINOSCOPY (OR SHADOW TEST) in the Determination of Refraction at One Meter Distance with the Plane Mirror. By JAMES THORINGTON, A.M., M.D., Author of Refraction and How to Refract: The Ophthalmoscope and How to Use It; Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmic Surgeon to the Presbyterian Hospital; Ophthalmologist to the Elwin and Vineland Training Schools for Feeble-Minded Children. Sixth Edition, Revised and Enlarged. Sixty-one Illustrations, ten of which are colored. Price $1.00 net. Philadelphia: P. Blakiston's Son & Company, 1012 Walnut Street, 1911.

THE fact that this work is now in its sixth edition is sufficient evidence of its worth and popularity. The book is well printed and well illustrated. The subject is presented in a clear and concise manner, devoid of much theory and abstruse formulæ. It is very well adapted for the use of the student, as the facts presented can be readily understood.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; Assisted by LEIGHTON F. APPLEMAN, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. December 1, 1911. Price $6.00 per annum. Philadelphia and New York: Lea & Febiger.

THE current number of Progressive Medicine contains articles on: Diseases of the digestive tract and allied organs, the liver, pancreas, and peritoneum, by R. S. Lavenson; Diseases of the kidneys, by J. R. Bradford; Genitourinary diseases, by C. W. Bonney; Surgery of the extremities, shock, anesthesia, infections, fractures and dislocations, and tumors, by J. C. Bloodgood; and Practical therapeutic referendum, by H. R. M. Landis. The present number completes the thirteenth year of this publication, and it is second to none in its usefulness to the general practitioner who would keep abreast of the advances in medicine and surgery.

Society Reports.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, Held January 15, 1912

THE PRESIDENT, DR. REYNOLD WEBB WILCOX, IN THE CHAIR.

Election of Officers.—The following officers were elected: *President*, R. W. Wilcox; *Vice-President*, R. E. Van Gieson; *Corresponding Secretary*, F. C. Raynor; *Treasurer*, A. E. Gallant; *Chairman for the Borough of the Bronx*, N. B. Van Etten; *Chairman for the Borough of Brooklyn*, R. E. Coughlin; *Chairman for the Borough of Queens*, L. H. Moss.

Some Ocular Conditions Dependent Upon Gastro-intestinal Disturbances.—DR. J. SCOTT WOOD, in this paper, said it was now an accepted belief on the part of many ophthalmologists, amounting almost to a feeling of certainty, that a large number of affections of the eye were directly due to gastrointestinal fermentation and putrefaction, and that the resultant product of this action in the alimentary tract was a toxin which, upon being liberated into the general circulation, caused pathological phenomena in the eye and elsewhere. Autointoxication in its relation to the eye had, however, received little or no attention in our text books, and we had to go to the general ophthalmic literature for anything definite regarding it. Having quoted from De Schweinitz and various other authorities, he went on to say that the lids, conjunctiva, cornea, sclera, iris, retina, choroid or optic nerve might be attacked, and while we did not know what they were, yet, when analysis of the urine and examination of the end-products of digestion were made, we found many evidences of imperfect metabolism, faulty assimilation and elimination and putrefaction. Sties and blepharitis, occurring in those showing evidences of intestinal putrefaction with persistent indicanuria, might be regarded as resulting from a state of autointoxication; while phlyctenular conjunctivitis was a disease dependent more upon diet and bowel irregularities than anything else. Many of these cases, he believed, were amenable to appropriate measures, without any local treatment whatever. While in a high percentage of cases of affections of the cornea and sclera the condition was due to trauma, infection from without, syphilis, tuberculosis and malaria, many of the types of so-called nutritional disturbances accompanied by corneal inflammation and ulceration apparently had back of them a toxic condition of the alimentary tract; so that the eye trouble persisted as long as the toxemia remained. Condensed milk, candy, crackers, cake, pastry, and other indigestible foodstuffs were the direct agents of fermentation and putrefaction, and it seemed to him that we were too prone to rely upon local treatment here, and not pay sufficient attention to the physical condition. Scleritis and episcleritis were said to depend frequently upon some form of autointoxication, and in every case where gout, rheumatism or syphilis were excluded the cause was to be looked for in the intestinal tract. As to the ocular muscles, he knew of no authenticated cases of paresis or paralysis due to this cause, but if ptomaine poisoning could give rise to such paralysis it seemed reasonable to suppose that autotoxemia might also. That many of the so-called tobacco-alcohol amblyopias were associated with intestinal putrefaction seemed beyond question, and the part played by gastritis and the accompanying catarrhal inflammation was interesting, although our present knowledge regarding it was somewhat vague. In this connection the speaker related a case of his own which indicated that simple autointoxication was capable of causing amblyopia. Since the discovery of the Wassermann and von Pirquet reactions for syphilis and tuberculosis the etiological classification of affections of the uveal tract ought to be much simplified, and he was convinced that it would now be found that here syphilis and tuberculosis would not now occupy such prominent places as etiological factors as heretofore. That some, and perhaps many, cases of iritis, iridochoroiditis and choroiditis were due to gastro-intestinal disturbance seemed beyond doubt, for in this class of cases perhaps more than any other were gastro-intestinal symptoms prominent. By way of illustration a case was related presenting a type of central choroiditis in which the patient was markedly neurotic, dyspeptic and constipated and gave evidence of intestinal putrefaction. In another instance of central choroiditis, in a patient of Dr. Kirkendall of Ithaca, the eye trouble was proved to be due to chronic fibroid degeneration of the appendix resulting from colon bacillus infection; the choroiditis disappearing after the removal of the appendix.

THE PRESIDENT, DR. WILCOX, said that Dr. Wood's paper was a scholarly and masterly presentation of the whole subject, and one which deserved most careful consideration by practitioners generally, and particularly by those paying special attention to affections of the gastrointestinal tract. It contained a vast mass of material which could be obtained only with great difficulty, and from a great variety of sources, and he therefore thought the author deserving of much praise for his painstaking labors, as well as of an adequate discussion of the paper.

DR. NELSON L. NORTH said there was one practical point which was worthy of consideration, the enormous increase of late in the consumption of chocolate. This article was, no doubt, a good thing in itself, but in the very great quantities in which it was given to children at the present time it was certainly productive of much evil as one of the sources of the troubles under consideration. Another point: In adults why was it that the malt liquors especially were responsible for this trouble? We sometimes found it necessary to forbid patients the use of beer, but it was plainly not on account of the alcohol in this beverage, since the spirituous liquors contained so much more of this agent yet did not cause so much reflex irritation of the cornea and conjunctiva.

DR. WILCOX suggested that it was perhaps the picrotoxin now so often substituted for hops in the manufacture of beer which was responsible for the trouble. It was certainly a fact that picrotoxin was capable of playing many pranks with the nervous system.

DR. ANTHONY BASSLER said that of late the ophthalmologists, laryngologists, dermatologists and other specialists were paying distinctly more attention than formerly to states of excessive chronic intestinal putrefaction, on account of the recognition of their etiological importance. From the nature of the various substances manufactured in the gut, which were reabsorbed into the circulation, it was plain that functional and structural change must take place in the body. Having enumerated some of them, he said that in these chronic intestinal conditions more than the diet had to be considered, for errors of motility and secretion might have much to do with a bacterial change. It was naturally to be expected that the delicate structures of the interior of the eye, being of a highly specialized type of neurovascular combination, would sometimes be severely affected.

DR. FRANCIS VALK said that in a number of the conditions mentioned in the paper he did not believe that gastrointestinal disturbances had anything to do with the etiology. He would certainly leave out all affections of the lid, the conjunctiva, and the cornea as due to autointoxication. On the other hand, he did recognize that many cases where the retina and other interior structures were involved were dependent upon this condition. Here we first had to exclude tuberculosis and syphilis, and thus,

by a process of elimination, we were compelled to attribute the trouble to the gastrointestinal tract.

Dr. A. Ernest Gallant said he had made it a rule to refer the patient to an ophthalmologist for examination whenever he found any eye trouble present, and in nine-tenths of the cases the report was that no condition was discovered which would not be improved by the treatment of the affection for which she had consulted him (Dr. Gallant). Autointoxication was very apt to occur from the retention of feces too long in the intestinal canal, and this was largely because the feces did not have sufficient bulk; a result due to the exclusion from the food of the husks of the wheat, the skins of grapes, and other similar material. To correct the condition he had for some time been employing bran, and with very satisfactory results.

Dr. Wilcox said that Professor Mendel of Yale had suggested agar agar for the same purpose for which bran was employed, and clinical experimentation in the matter was carried on by Dr. Gompertz of New Haven. The results had been excellent, after two years' trial, but the difficulty was to get the agar agar into the patient. Gompertz recommended that it should be used in the same manner as a breakfast cereal, but its extreme glutinousness rendered this objectionable, and the only way in which he (Dr. Wilcox) could get patients to take it at all was in the dry form.

Dr. Bassler said he had used a great deal of agar agar, giving it in half-ounce doses. He was accustomed to have an ounce and a half of it cooked in a steamer with perhaps six ounces of oatmeal. This served for three doses, and was eaten with cream or fruit juice.

Dr. Wood, in closing, said he could not doubt that the lids, conjunctivae and other coats of the eye were affected by gastrointestinal conditions. He knew of no more striking disappearance of a pathological condition than was frequently to be observed in the phlyctenular conjunctivitis of children when strict regulation of the diet and prompt bowel evacuation had been instituted. The scleral types of disease were on more debatable ground, though in cases in which neither syphilis nor tuberculosis could be detected, and in which increased amounts of indican, urobilin, skatol and other waste products were to be found in the urine, he thought they should be logically considered as of gastrointestinal origin.

Eye Training for the Cure of Functional Myopia.—Dr. W. H. Bates, in this paper, arrived at the following conclusions: 1. Functional myopia occurred frequently. It was associated with many other eye defects and, when it disappeared, these were usually benefited. 2. Functional myopia was produced in all normal eyes by improper efforts to see. 3. School teachers, physicians and others had relieved functional myopia by eye training or education. 4. The Snellen test card was found to be the best distant object for training the eye for the cure of functional myopia. In functional myopia, he said, the eye was adjusted for near vision without permanent elongation of the optic axis, as was the case in true myopia. The diagnosis had been made with the air of the ophthalmoscope, but many cases had been recognized with less difficulty and more accurately by retinoscopy. The local and prolonged use of atropine had not always relieved the condition. Functional myopia had been found, in varying degrees, in more than ten thousand school children, where it was responsible for nearly all the eye pain, asthenopia, defective vision, headaches and irritability of the children. It was frequently found among farmers, day laborers, mechanics, sailors and professional men and women. When they regarded large objects most persons with normal eyes were unconsciously functionally myopic, but when regarding small objects clearly, or reading the 20 line on the Snellen card at twenty feet, the normal eye was adjusted accurately for distant vision and was at rest. These facts were demonstrated by simultaneous retinoscopy. When entering school, children usually had normal vision, but in a short time acquired functional myopia. In one class-room of 40 pupils, 6 to 8 years old, the eyes of whom were first examined in the spring of 1903, it was found that all had difficulty in reading the Snellen card. Thirty were relieved in less than five minutes, after they had been shown, with the aid of the test card, how to regard distant objects without an accommodative effort. Relapses were prevented and the remaining ten defectives were cured by the teacher by means of similar exercises in distant vision. This teacher used the card continuously for eight years afterward, and had reported that in consequence of this training no more children in her room acquired defective vision. The same success in relieving or preventing functional myopia was also achieved by more than fifty other teachers. Numerous other benefits were observed, and the teachers themselves found relief from eye-strain by the use of the card. A Snellen test card was placed permanently in all the class rooms, and the exercises in distant vision required less than half a minute daily. The directions given to the children were: Read the smallest letters you can see with each eye separately at a distance of more than ten feet. Most persons with functional myopia were unconscious of the effort made to see distant objects, and they were benefited after they understood that an effort lowered vision. The exaggeration of the unconscious effort was usually followed by a greater relaxation of the effort to see distant objects, and the simultaneous use of the retinoscope indicated improvement. A large amount of compound myopic astigmatism 4 D. in a normal eye had been observed with the retinoscope during the time the patient made the effort to read the Snellen card with the lids partly closed. With each succeeding effort the myopia became less, until it disappeared, and the patient no longer made an effort to read the card with the lids partly closed. The patient was instructed in eccentric fixation; when the normal eye read one letter of the line marked 20 on the card, at twenty feet, the eye was directed straight to the letter. In functional myopia eccentric fixation was frequently found either in one or both eyes, and such cases were not benefited until after it was corrected. In order to teach the patient how to regard objects by central fixation he was first shown how to exaggerate it. An illustrative case was cited, that of a girl of 14, whose left eye was normal, but with right vision, four fingers at 4 feet, amblyopia exanopsia, convergent squint, and functional myopia. Under training with the aid of the Snellen card she obtained binocular vision, and was cured in two weeks; the result being permanent after eight years. Other cases also were described by Dr. Bates, and he stated that a number of physicians had visited the eye clinic at the Amity Dispensary and, after diagnosing functional myopia, had observed the prompt relief afforded by the eye training mentioned.

Dr. Wilcox said that all must have observed the large number of children now wearing glasses. Among the poor it seemed to be an object of pride that these should be of the best, and it was not an uncommon thing to see a poorly clad little girl with gold spectacles and carrying a large bundle of books. Now, if anyone could obviate this state of affairs, he would certainly deserve a great deal of credit.

A. H. Yoder, lecturer on Child Sociology in the New York School of Philanthropy, said that as a sociologist he was in entire accord with the sentiment expressed by the President. Most children were long-sighted before they went to school, but if their eyes were examined some time after they had been there it would be found that a change had occurred and that they had now become myopic. Therefore, it seemed to be evident that there was something in the school situation producing this result. Accord-

ing to his observation this eye defect reached its maximum about the age of ten years; after which it began to decrease, though it might not disappear. For the purpose of correcting the myopia and its attendant evils a method had been tried in a city of North Dacota, and the evidence in its favor was positive as far as it went. The eyes of over 8,000 school children were examined three times, and the results were found gratifying. If, then, Dr. Bates had offered a simple method of teaching children how to see, we were certainly under obligations to him.

Dr. C. Ward Crampton, Director of Physical Training in the New York City public schools, said he had to confess that at first he was not very much impressed with Dr. Bates' ideas, but on becoming practically acquainted with his method he had become more and more convinced of their probable importance. If the "if" to which the president had given expression were done away with we had here something of exceeding great importance, and he wanted to be one of the first to recognize this. In New York there were 700,000 school children, for whose physical condition he was in a measure responsible. If all were well when they first came to school, and if later from 30 per cent. to 60 per cent. were found to be suffering from defective vision, then we wanted to do something to remedy this condition of affairs. The question therefore arose, Shall this new method be put into operation in the schools? Dr. Bates said that half a minute a day was sufficient for carrying it out; but the aggregate time spent would amount to 133 years, while the teachers' pay would sum up $31,000. Here again, the "if" which has been mentioned presented itself, and he wanted advice from the medical profession on this subject.

Dr. J. Scott Wood said that it was practically impossible for him to discuss this subject, as it was one about which he knew nothing. He had been somewhat confused by the term "functional myopia" and was at a loss to know just what the writer of the paper meant by it. In one place he spoke of the effort on the patient's part to see, whereby frowning and wrinkling the brow were indulged in, thus inducing a "functional myopia," as he termed it; and, again, from other parts of the paper, one might infer that in some way accommodative spasms might be held to be the cause of it. At any rate, he would ask Dr. Bates if he ascribed this induced "functional myopia" to pressure of the lids upon the eyeball and bringing about an elongation of its anteroposterior diameter, or to an accommodative spasm, or to both. In reading his paper, that at least would seem a reasonable inference. In order that Dr. Bates' contention might be proved or disproved, he thought the patients in public institutions or elsewhere, upon whom this method was to be applied, should be examined by competent and disinterested ophthalmologists, both before and after Dr. Bates had them. There was one point, however, which he could not understand, namely, why should a normal eye, under conditions of illumination, look in an abnormal manner at a small object (which it could readily see) at 15 or 20 feet away? One might just as well expect to see a man with sound legs limping down Fifth Avenue. The claims of Dr. Bates were certainly novel in the extreme, and we should investigate them with an open mind and in a spirit of fairness.

Dr. Aquin S. Kelly said that Dr. Bates' paper was eminently a physiological one, treating of an aspect of ophthalmology which most eye men were prone to disregard, and it would surely shake the theories of many who read it. After listening to his statistics one could not help wondering whether a thoroughly conscientious refraction was possible without the use of atropine (1 per cent. for a week or more), whether we were justified in depending on the employment of homatropine in any case of refraction, and what would be the effect of this paper on the "refractory" villains who prescribed glasses for their patients, young and old, without the use of any mydriatic. The statistics on the prevalence of functional myopia were most surprising. Every year he himself saw hundreds of school children refracted, and he did not recall meeting with more than three cases of functional myopia, or what was commonly known as spasm of accommodation, in the past six years. He could not see, therefore, how more than a very small proportion of children could derive any benefit whatever from Dr. Bates' method of treatment. It seemed to him, judging from his observation of boys at play at the present time, that 90 per cent. of them pitched, batted, and caught, and directed the flight of a snowball quite as well as we ourselves used to do. The discussion of the question of eccentric fixation, Dr. Kelly said, was beyond him, as in all his experience he had never met with a person who was so lazy or stupid as to permit himself to see double if he could avoid it.

Dr. B. W. Key said that given school children with eyes nearly normal, known process from 12 to 18 D. of accommodation, and placed under conditions necessitating constant accommodation for near objects, living in cities where their home surroundings seldom allowed twenty feet for relaxation of the accommodation, and add to this the increased requirements of the modern school, with its stress of close application and competition—and it would not be difficult to appreciate that the development of functional and axial myopia was tending to increase. It was rather surprising to learn, however, that there had been observed so many cases of functional myopia as reported by Dr. Bates, and especially that these cases had been relieved in so short a time; the mere regarding of the Snellen test chart at twenty feet for half a minute daily being the only treatment necessary. More astonishing still was the report of the relief of cases of axial myopia as high as 2.50 D. when tested by the retinoscope under the influence of atropine. In fact, he was quite sceptical in regard to some of the cases reported. Having in mind the simple treatment for functional myopia advocated by Dr. Bates, he had during the last ten days made some observations on those cases with nearly normal myopic eyes, about ten in number, which he had had the opportunity of examining in that time. He confessed he could not report very satisfactory results; but one case was worth mentioning. It was that of a strong healthy boy of sixteen, a student at Lawrenceville, who was wearing for each eye a 1.25 sphere, prescribed for him by a well-known ophthalmologist of this city. He complained of photophobia, asthenopia, and twitching. At first on regarding the Snellen chart he saw O. D. 20/200 and O. S. 20/100, without his glasses, and on being instructed how to read without making any effort he gradually obtained O. D. 20/70 + 1 and O. S. 20/40 + 1. He regretted that it was not possible in this case to use atropine at the time of the examination, but the patient was obliged to return to school. He felt sure that this was the type of case Dr. Bates referred to as being so common among school children, but he also felt confident that the proper use of atropine with retinoscopic, ophthalmoscopic, and perhaps ophthalmometric agreement would relieve this boy of his symptoms.

Dr. Bates, in closing, said that as a rule children when they entered school had normal vision, but later acquired myopia. He had seen many functionally myopic children of eight or ten become normal or emmetropic under the treatment described, and entirely without the aid of glasses. The eyes of a young child were usually normal when looking at its mother, but were apt to become functionally myopic if it looked at a stranger. In any child myopia could be produced by an improper effort to look at a distant object. He had tested the eyes of school children by having them look at all sorts of objects, stationary and moving, and at various colors. To arrive at correct conclusions in this matter it was necessary to make repeated observations

In the kindergarten we usually found normal eyes, but children in the first, second, and third grades at school were almost all functionally myopic at times. Moreover, astigmatism was acquired by them just as the myopia was. The people of uncivilized countries had normal vision, because they needed to practise distant vision in order to provide food and to protect themselves from enemies. He had endeavored to find out the cause of myopia so that he might devise means for its prevention, and he had succeeded. Exercise in distant vision with the aid of the Slennen test card had been successfully employed continuously for eight years in the public schools of Grand Forks, N. D. This was the first success in the prevention of myopia to be published. In reply to Dr. Wood he would say that he had not made the assertion that functional myopia was caused by pressure of the lids upon the eyeball.

NEW YORK ACADEMY OF MEDICINE

SECTION ON MEDICINE.

Stated Meeting Held December 19, 1911.

DR. HENRY STUART PATTERSON IN THE CHAIR

Adrenal Transplantation, Followed by Symptoms of Adrenal Hypersecretion.—Dr. ROBERT T. MORRIS presented a case report of a patient with Addison's disease, for whom he had transplanted an adrenal gland.

The patient was admitted to the medical service of Dr. Quintard at the Post-Graduate Hospital on October 1, 1911. Dr. Pfletschinger had asked Dr. Morris if he could transplant an adrenal gland for the purpose of furnishing internal secretion, to take the place of the patient's glands, which were supposed to be undergoing destruction from tuberculosis. The patient presented the customary symptoms of a rapidly progressing case of Addison's disease. Dr. Morris believed that transplantation of suprarenal glands from a monkey would not be desirable because of the tissue antagonism existing between species, a condition familiar to experimenters in the field of transplantation of structures. Antagonism being less between individuals of a species, it was decided to obtain a human suprarenal gland for transplantation, and some time was lost waiting the opportunity. Two or three men who had been suddenly killed were not desirable as subjects for furnishing adrenal glands, but on the morning of October 25 a suprarenal gland was removed aseptically by Dr. Otto H. Schultze from a girl, twenty-two years old, whose throat had been cut the night previously. Dr. Schultze placed the gland in salt solution. It was kept in the refrigerator until 6:30 P. M., and Dr. Morris transplanted it to the omentum of the patient with Addison's disease. The endothelial covering was brushed away from a suitable space on the omentum, and the suprarenal gland sutured snugly into a pocket at this point. The entire operation was done quickly, twenty minutes being consumed in the entire process, and with little handling of viscera. At midnight the patient's temperature was 98°, pulse, 104, respiration, 24, indicating very little disturbance from the operation, and the following day at 4 P. M. the temperature was 98°, pulse, 100; respiration, 32. At 8 o'clock there was a marked change in the vital signs—the temperature was 100.8°, pulse, 136; respiration, 32, and at 11 o'clock the patient died.

Dr. Morris asked if this change in the vital signs, and rapid dissolution, meant a sudden liberation of internal secretion from the transplanted gland, through saprophytic or other destructive processes, resulting in giving the patient an overdose of contents of the gland. He wished to know if in the opinion of the members the operation might be repeated in a stronger patient, without anticipating such a result as occurred in this case.

Dr. HAVEN EMERSON could not see what evidence there was to show that the patient's death was caused by anything that had to do with adrenal gland products. Patients who died of Addison's disease had a very poor supply of blood to their vital centers. The operative procedure, however, might have hastened the death of this patient.

A Case of Septic Endocarditis.—Dr. NATHANIEL BOWDITCH POTTER presented specimens and a chart to illustrate what he wished to report. The specimens were an hypertrophied heart, showing vegetations upon the aortic valves; the kidneys, showing a chronic productive nephritis, and sections from the brain. The patient had a septic endocarditis with clinical manifestations of an acute uremia. He was admitted to the City Hospital last October. He was fifty-eight years old. He had been a hard drinker and had syphilis thirty years ago. In childhood he had diphtheria and scarlet fever. He first began to complain six months before admission to the hospital of shortness of breath and swelling of his legs. He had an ulcer on his leg which had healed; and later an eruption on his legs. When admitted to the hospital he complained chiefly of shortness of breath. His blood pressure ranged from 150 to 180. No blood culture was taken. He soon developed Cheyne-Stokes' respiration, and ten days later died in coma. The ventricles of the brain were dilated, contained a large amount of serum, and over the convexity of the brain was found an accumulation of fluid; there were also flattened convolutions and a great many hemorrhages and thromboses in the vessels of the pia arachnoid.

Noguchi's Luetin Reaction: A Brief Description and Estimate of Its Practical Value.—Dr. H. F. L. ZIEGEL said that the theoretical conception on which the luetin test was based was one which many investigators must have had in mind before Noguchi made its realization possible by discovering a means of growing the *Treponema pallidum* in pure culture. For instance, in an article on "allergy" von Pirquet had prophesied: "I personally feel quite sure that it will be possible to make the diagnosis of syphilis by cutaneous and subcutaneous inoculation as soon as the syphilis virus can be obtained in pure cultures." Dr. Ziegel offered the following summary: "(1) The luetin test is a simple, harmless procedure, consisting essentially of the intradermatic injection of a carbolized emulsion of sterile cultures of *Treponema pallidum*. (2) The reaction is negative in normal and nonsyphilitic individuals, and in various diseases, including tuberculosis, pneumonia, typhoid fever, malaria, carcinoma, eczema, and psoriasis. (3) The test can already be accepted as of considerable negative value. As compared with the von Pirquet reaction, the latter gives more than 50 per cent. positive reactions in apparently nontuberculous adults, whereas the luetin test is constantly negative in both adults and children who are clinically and serologically nonsyphilitic. (4) The positive value of the test appears to be more limited. A positive reaction is rarely obtained in primary syphilis and seldom in secondary syphilis." Noguchi found the test unsatisfactory in parasyphilitic conditions. Whether the negative reactions usually obtained in patients practically cured of syphilis indicated lasting suppression of the disease remained to be determined. In hereditary and tertiary syphilis, however, Noguchi obtained positive reactions in more than 90 per cent. of the cases.

A Limited Typhoid Epidemic Traced to a Typhoid Carrier.—Dr. C. N. B. CAMAC reported this epidemic because it presented what to him were several valuable lessons in regard to a typhoid carrier and the transmission of the typhoid bacilli through drains. In 1910 there was a sharp epidemic of the disease which broke out in a convalescent home at Murray Bay, Canada. Convalescents were taken there from Quebec and from Montreal. During the month of July there were eleven cases. The home was supplied with water that came largely from

a spring, although some came from a source higher up. The question of the origin of the infection brought up was: "Did water or did milk cause the outbreak?" The water was found to be contaminated, and the supply was cut off; the cases then ceased to appear in the home. This spring was on the high road, and it was possible to contaminate the stream from passers-by. The ground was examined very carefully. Dr. Camac drew a diagram of the water supply, showing how the infection was carried. Two summers before, in 1909, Dr. Henry had a cook who gave signs of having a colitis and had a femoral phlebitis. The cook was sent to the Montreal General Hospital, and did not return until October. During the time in the hospital she had a positive Widal reaction. The cook went back to the home and there had two attacks of colitis. The following summer the cook again returned to Murray Bay and occupied a house on the hill just above this spring. A drain ran across the road and under it; most of the village had a submerged drain. The spring supplying the home lay on the opposite side, where it ceased to be a surface drain. There was no doubt but that the woman contaminated the drain during the summers of 1909 and 1910. In July, 1910, there developed eleven cases of typhoid fever. When the water supply was cut off from the home no more cases developed. The town and house supply of water was good; that from the spring was bad. The water above the spring and below the spring was good. But the trouble was found to be in a break in the drain. There was quite a large crack found. There were three communicating exits in this drain, and in any one of them the typhoid germ could gain access from the house which was occupied by this typhoid carrier for two summers. Among the valuable features reported were (1) that contamination could come about by means of a surface drain for thirty-five or forty feet; (2) the attacks of colitis were capable, through the discharge of the bacilli, of acting as an active agent in producing this epidemic of eleven cases and one death.

An Automatic Device for Reading Systolic and Diastolic Blood Pressures.—Dr. B. RAYMOND HOOBLER presented and described this device. (See MEDICAL RECORD, December 30, page 1323.)

Report of a Case of Septic Endocarditis, Thrombosis of the Aorta, and a Bicuspid Aortic Valve.—Dr. LINSLEY R. WILLIAMS reported this case because it presented unusual difficulties in diagnosis from a clinical and bacteriological standpoint, an unusual congenital cardiac defect, and unusual pathological conditions. The patient was a girl 13 years old, admitted to the hospital August 29, 1911. She complained of headache, fever, and dyspnea. Her father died of tuberculosis four years previously; a brother died at the age of eight of meningitis. The patient had had measles and scarlet fever. As long as the mother could remember the patient had had a discharge from the right ear. Ten days before admission she had complained of headache and fever and had had a slight nose-bleed. Since then the child had had some fever in the evening. The days before admission she had an attack of weakness and faintness and a physician said that she had some heart trouble and should go to the hospital. When admitted she had a temperature of 101.6° F., which fell to normal during the day. The heart was not enlarged, though there was a forcible impulse in the fourth left space within the nipple line. There was a distinct diastolic murmur in the third interspace transmitted toward the apex. The spleen was readily palpable. No positive diagnosis was made, but the following were suggested: malaria, typhoid fever, tuberculosis, endocarditis. There was a moderate leucocyte count with 78 to 82 per cent. of polymorphonuclears. No malarial organisms were found. On September 5th the temperature rose to 104.4° F. On the following day a few drops of pus were removed from the attic. The patient, however, continued to run an irregular fever, hectic in type, with a rapid pulse. On September 16 the patient was examined carefully and there was no evidence of any pus or infection in the mastoid wound, nor any discharge from the ear, nor any indication of infection from the ear or mastoid. The Widal reaction was negative. On September 18 the patient had a small petechial spot in the conjunctiva of the lower lid of the left eye. There was some pain in the lower half of the abdomen, more on the left than on the right. The abdomen was held rigid. The pupils were equal, reacted normally, and there was no neck rigidity. The knee-jerks were normal and there was no Kernig sign. On September 27 the patient was restless and had considerable pain in the lower abdomen. There were a number of petechiæ over the arms and legs. The patient gradually went into coma and died on September 28. A diagnosis of malignant endocarditis was made from the presence of the heart lesion, high irregular fever, leucocytosis, petechiæ, and the presence of an unknown lesion. At autopsy the heart was found to be but little enlarged. The aortic valve contained but two cusps. Vegetations were found on the valves. There were a number of petechiæ scattered through the heart, as well as through the viscera. The upper respiratory tract looked somewhat like the eruption in measles. The right kidney contained a small anemic infarct. The aorta was smooth and free from any sign of degeneration. Just at the bifurcation there was a thrombus the size of the distal phalanx of the little finger, this rested upon the bifurcation, completely blocking the left iliac artery and partially blocking the right, and extended backward to a point just below the origin of the last lumbar artery. The left iliac artery below the thrombus was contracted down to a thin cord. This case was of unusual interest on account of the masking of the diagnosis by the presence of an ear discharge; although malignant endocarditis was suspected, the continued negative blood cultures cast an element of doubt upon the diagnosis.

Abscess of the Lung, Secondary to New Growth of the Esophagus.—Dr. ROBERT ANDERSON COOKE reported the case of a German, forty-eight years old, whose trouble began three months ago with what was believed to be an ordinary cold. The condition was not very acute. The cough and the expectoration persisted and he gradually became worse. There was no rise of temperature. Three weeks after the development of his trouble he coughed considerably, had intercostal pain which had no relation to his respirations, nor was it associated with any gastric disturbances. During six months prior to his admission to the hospital he lost fifty pounds in weight. He was admitted on June 4. The physical examination did not impress one that he had lost so many pounds in weight. He breathed rapidly, and his expectoration was very profuse and very foul and putrid. The chest examination was negative except for a little area of dullness over the posterior lower lobe. There were both crepitant and subcrepitant râles present. Corresponding to the eighth interspace were a small area of bronchial breathing and many mucous râles. The upper right quadrant was quite rigid. The patient ran a continuous temperature of about 100° F. in the morning and 101° or 102° in the afternoon, sometimes going to 103°. The pulse averaged from 100° to 110°. His breathing was from 34 to 44. The urinary examination was negative. There was a moderate leucocytosis and a slight increase in the polymorphonuclears. He expectorated from six to eight ounces of foul material. No tubercle bacilli were found and no tissue fibers. No stain was made for elastic fibers. There was no question but what they were dealing with an abscess of the lung. He was placed on a general treatment, given urotropin, placed in the open air, given the regular hospital diet and

so on. He had a moderate appetite and had no difficulty in swallowing at any time. On June 15 the chest was explored with a needle but no cavity was found. He continued to grow worse. On July 4 the chest was again explored and then he satisfied himself that he had gotten into an abscess cavity. On July 10 the patient suddenly complained of intense epigastric pain, bled from the mouth and nose, passed into collapse, and died. The autopsy revealed an abscess of the lung about 3 cm. or 4 cm. in diameter. There was also found an epithelioma of the esophagus which had given no symptoms whatsoever. There had never been any interference with swallowing. This abscess lay in apposition to the epithelioma and showed that there was a direct extension, not of the new growth but merely of the abscess cavity with its hard organized tissue around it. Death was caused by a rupture of one of the larger intercostal branches of the aorta. The rupture almost ruptured the aorta itself, only being separated from it by a thin membrane. The stomach contained about a quart of blood.

Dr. LINSLEY R. WILLIAMS reported a similar case. A man had been transferred from another hospital and entered with the diagnosis of tuberculosis. He gave a history of never having had any difficulty in swallowing until two weeks before admission or four weeks before his death. He had, however, pain in deglutition. The autopsy revealed a primary epithelioma of the lower one-third of the esophagus, which was twisted around itself. The esophagus was twice the size of the closed fist. This was another instance in which there were no suggestions of carcinoma of the esophagus at all until a short time before death.

Dr. HENRY STUART PATTERSON said that he had had a case under observation which was probably one of new growth of the lung. Autopsy was refused. The *x*-ray picture showed a round shadow with its convexity to the right of the heart shadow. The question arose whether this new growth was a secondary one, or was there an abscess of the lung resulting from a carcinomatous fistula of the esophagus. It occurred to him that the *x*-ray picture could exclude the latter. A bismuth picture was taken at the same time.

Election of Officers.—*Chairman*, Dr. Walter B. Niles; *Secretary*, Dr. Linsley R. Williams.

SECTION ON SURGERY.

Stated Meeting, Held January 5, 1912.

DR. LUCIUS W. HOTCHKISS IN THE CHAIR.

A Case of Stab Wound of the Heart.—Dr. JOHN F. ERDMANN reported this case, and presented the patient. (See MEDICAL RECORD, December 17, 1910, page 1095.)

Radiography of the Ureter.—Dr. CHARLES H. PECK reported this case and presented the radiograph. The patient was twenty-five years of age and was admitted to Roosevelt Hospital on December 11, 1911, complaining of pain in the region of the right kidney and ureter. The pain was more or less constant with exacerbations, catchy in character, and radiating downward toward the bladder at times. The pain began about three weeks before her admission and was apparently brought on by coughing during the course of an acute cold. There were no other symptoms of importance. The physical examination showed nothing abnormal except a moderate degree of tenderness over the right kidney region, and even the prolapse of the kidney was not detected by palpation. The radiographs of the kidney region were negative. The cystoscopic examination was made by Dr. E. F. Kilbane, and he reported that the bladder tolerance, trigone, mucous membrane, and ureteral orifices were all normal. The rate and character of the flow of urine from the right kidney were normal, and the catheter passed to the normal distance. The capacity of the pelvis of the kidney was 19 c.c., which was practically normal. Fifteen c.c. of a 10 per cent. solution of collargol were injected into the kidney pelvis and a radiograph was taken by Dr. Edward Leaming. The plate showed that the pelvis was normal in size and in contour, that the kidney was displaced downward, and that there was a sharp twist in the ureter about one and a half to two inches below the pelvis. Operation was performed on December 16, 1911. The kidney was prolapsed but otherwise was normal in size and appearance. The pelvis was not dilated. When the kidney was delivered, and the ureter exposed for several inches, at first nothing abnormal could be seen as the kink had evidently been straightened out by the traction used. Closer inspection, however, revealed a small tense band crossing the ureter obliquely at the site of the kink; this proved to be a blood-vessel over which the ureter hung when the kidney descended in prolapse. This band was ligated and divided. Nephrotomy was then performed and a good sized, firm ureteral catheter was passed downward to the bladder, where it was left for the purpose of splinting the ureter in a correct position after replacement of the kidney. A small cigarette drain was passed into the kidney pelvis alongside the catheter, and secured with catgut suture. Nephropexy was then performed by the Edebohls method. The ureteral catheter was left in place for five days; the wound healed promptly and convalescence had been uneventful. Urinary leakage persisted only two or three days after the removal of the drain and the patient was out of bed sixteen days after the operation. The chief interest of this case was in the collargol radiograph obtained by Drs. Kilbane and Leaming, which showed so beautifully the lesion which readily accounted for the symptoms, a lesion which could not be detected by ureteral catheterization alone, nor by radiography without collargol injection. Moreover, it was a lesion which could not readily be detected at operation, as the delivery of the kidney and traction on the ureter straightened out the kink, and the vessel crossing it was very small and might easily have been overlooked.

A Case of Ankylosis of the Jaw.—Dr. ARTHUR S. VOSBURGH presented a little girl operated on for the above condition. The patient was admitted to Bellevue Hospital last summer with the meager history of a burn on the leg a year previous. This was followed by an "abscess of the face." As this "got well" she had greater and greater difficulty in opening her mouth, and her parents brought her to the hospital for this condition. Examination on admission disclosed a complete ankylosis of the jaw. A cicatrix of almost cartilaginous hardness involving the mucous membrane of the mouth occupied the left alveolabial sulcus above and below. A portion of the cicatrix extended to the right lower alveolabial sulcus. A preliminary anesthetic was given to determine the extent of the cicatrix and whether the articulation was involved. A periosteal elevator was inserted between the cheek and the bones of the upper and lower jaws. It was thus possible to open the jaws about one-half inch. In doing this three or four teeth were dislodged and were found to be carious at their roots, the crowns being intact. It was explained to the parents that any operation undertaken for the relief of this condition would involve considerable mutilation of the face and neck. Consent having been obtained the following method was pursued: The left cheek was split to the anterior border of the masseter muscle. An effort was made to avoid the branches of the facial nerve and the course of Stenson's duct. It was impossible to make any flaps of mucous membrane as the cavity of the cheek was entirely obliterated by the cicatrical condition. A flap was dissected from the neck designed to occupy the space from the anterior border of the masseter to the angle of the mouth. Its base was over the angle of

the jaw. An elevator slipped between the parotid fascia and its base enabled the flaps to be rotated into place, with the skin side to the cavity of the mouth. Here it was sutured to the indeterminate mass of tissues left from freeing the cicatrix from each alveolabial sulcus. As the cicatrix did not involve the skin of the face, the latter was sutured in place. The object of the whole procedure was to reconstruct the mucous membrane of the mouth. A paralysis of the lower branches of the facial nerve was observed a day or two after the operation. This quickly disappeared, evidently having been caused by trauma and not by severance of nerve fibers. The first results of the operation were disappointing, as owing to pain or fear of pain the patient could only open the mouth about an inch. About a week later, under cocaine anesthesia, the base of the flap was severed, thus completing the entire turning over of the flap. The edges of the large gaping wound in the neck had been undermined and drawn together, uniting by primary union all except a small triangular area at its upper limits. At this date the patient has good use of the jaws and returns to the hospital for the closure of a minute sinus at the base of the flap, probably a salivary fistula from wounding Stenson's duct.

Dr. WALTER M. BRICKNER said that Dr. Peck's case strikingly illustrated the value of collargol pyelography in patients with renal colic where no calculi or other cause had been demonstrated. Had the blood-vessel described by Dr Peck as causing the kink in the ureter any relation to the aberrant renal vessel described by the Mayos as a cause of hydronephrosis by constricting the ureter? They recommended a division of the artery as a means of curing hydronephrosis. In one case in which this was done Dr Brickner had seen this cause a complete slough of the lower end of the kidney because of its separation from its blood supply; nephrectomy became necessary. He asked Dr. Peck where the vessel ran to and where it ran from. Did this vessel rise from the renal artery or not? With regard to the introduction of the ureteral catheter during the postoperative treatment in order to keep the ureter straight, he kept a catheter in the bladder without any fear of infection until a year ago, when he had an uncomfortable experience. In performing a hysterectomy for large fibroids of the uterus he punctured the bladder; he sewed up the opening made in this viscus and, as a precaution, left a catheter in place for a few days. It was not really necessary and he was sorry he did so for an ascending pyelonephritis followed. One kidney became infected with multiple abscesses and the patient ultimately died. In the corresponding ureter, just below the pelvis, there was found at autopsy a fibroma entirely within the walls of the ureter which probably interfered with free drainage from the kidney pelvis.

Dr. W. H. LUCKETT reported a case of intermittent hydronephrosis of the left kidney. The patient had a tumor the size of one's head in the region of the left kidney that had in the last two years been appearing about every two weeks, lasting two weeks, then disappearing. The left ureter was catheterized; the pelvis accommodated 3¼ ounces of collargol. A fine *x*-ray picture by Dr. Stewart showed the dilated pelvis. He could not tell from the picture where this ureter originated. The pelvis was round and globular the calices had disappeared. At operation this kidney was delivered; a transverse incision was made in the anterior surface of the pelvis and the ureter exposed; a valve-like flap was found at the ureteral opening; the ureter left the pelvis laterally and obliquely from the anterior surface of the pelvis. The flap was split and sutured with three sutures to hold it open. The transverse incision in the pelvis was three and one-half inches long and was sutured in an opposite direction in such a manner as to lower the ureter opening. It was very difficult to catheterize this patient. One could locate a little tumor which was just above the ureteral orifice in the bladder; it appeared to be about one-quarter by one-eighth inch in size. It would appear and disappear about every ten seconds. There was a sort of valve-like action or stricture which had in all probability something to do with this obstruction at the uretheral orifice. It was hard to believe that the pelvis could be so dilated as to accommodate so much urine from such an obstruction at the ureteral opening in the bladder, and admitting the presence of this stricture it seemed that the valve-like flap in the pelvis was the chief etiological factor.

Technique of Heart Suture.—Dr. EUGENE H. POOL read this paper and made the following summary: (1) Careful preparation of the operative field was essential since many cases which had survived shock and hemorrhage had died later as a result of infection. (2) The anesthesia should consist in the sparing administration of a general anesthetic, preferably ether, when the patient showed signs of sensibility. (3) It was important to recognize that in a large proportion of heart wounds the pleura was opened and that an extrapleural cardiorrhaphy was rarely possible. (4) Differential pressure offered marked advantages chiefly by eliminating the dangers of immediate and minimizing the dangers of late pneumothorax. Its use expedited the operation by allowing a free transpleural exposure. But prior to the control of bleeding from the heart wound, positive pressure should be used with great care because it might increase the hemorrhage. (5) (*a*) A transpleural exposure with long intercostal incision was ordinarily the best because it afforded free exposure of the heart, could be applied much more quickly than other procedures, and caused less hemorrhage. This exposure should be employed when differential pressure was used, when speed was important, or when pneumothorax was present. (*b*) An effort to do an extrapleural operation was warranted in exceptional cases. These indications were: differential pressure not available, pneumothorax not present, no injury to pleura such as would render the effort useless, adequate assistance and relatively good condition of the patient. Under these conditions the flap with pedicle outward, according to Kocher, appropriately modified, was favorable. (*c*) In some cases in which the diagnosis was in doubt extrapleural exploratory pericardiotomy might be performed by resection of the sixth costal cartilage as in the primary incision of Kocher's flap operation. (6) Fine vaselined silk on a curved intestinal needle was the best material for heart suture. (7) The pericardium should be closed with interrupted catgut sutures. (8) Pericardial drainage might be dispensed with in some cases when there was short exposure and little trauma. A drain should enter the pericardium to a slight extent when the nature of the wound rendered infection probable. But in doubtful cases it was best to insert a drain down to but not into the pericardial wound, a small part of which should be left unsutured. In this an exit was provided for the large accumulation of serum which was likely to occur as the result of traumatic pericarditis, and no irritation of the pericardium was caused by the presence of the drain. (9) Pleural drainage was a prophylactic step which was often unnecessary and likely to be harmful. Unless there was a strong probability of infection it was better to delay drainage until infection had occurred and then do a secondary thoracotomy.

Radiographs Showing Adhesions Obstructing the Transverse Colon.—Dr. SINCLAIR TOUSEY presented this radiograph. The patient was 41 years of age. She was referred to Dr. Robert Coleman Kemp, the gastroenterologist, and Dr. Parker Syms, the surgeon, with a history of having had an amputation of the cervix 18 years ago, hysterectomy 13 years ago, and an operation for adhesions and removal of the appendix 7 years ago. Subsequent to the last operation she had suffered from constipation and prolapsus ani to such an extent as to suggest a

ink at the sigmoid or an invagination into the rectum. Dr. Tousey was asked to make a radiograph to determine the nature and seat of the obstruction. The stomach and intestines were empty and an enema was given which filled the rectum and large intestine with an opaque emulsion of bismuth oxychloride, 2 ounces, and white bole, ½ pound, in water, 2 pints. This was sufficient for one injection per rectum. The patient lay supine upon the plate and an intensifying screen was used. The exposure lasted 30 seconds. The radiograph showed no abnormality except a strikingly empty part of the transverse colon where the latter crossed the spine. This meant that a certain portion of the transverse colon was permeable but subject to such pressure as not to be distended with the bismuth mixture. It did not seem probable that this pressure could be due to a large enough tumor without the latter giving other signs. Another possibility to be considered was that the pressure was due to the convexity of the spine, but no compression was applied over the abdomen and no such appearance had been noted in other cases. The diagnosis became narrowed down to pressure by a band of adhesions. Dr. Syms performed a laparotomy so as to expose this portion of the intestine instead of the lowest part as had been anticipated. He found an area of the omentum three inches wide bound down and firmly adherent to the transverse colon for about two-thirds of the circumference of the gut. This caused both compression and angulation, which were relieved by separating the adhesions. The patient made a good recovery and was now having movements without a cathartic. He had brought two other radiographs of interest in this connection. One was of a man who was referred to him by Dr. Kemp with gastrosuccorrhea as the principal symptom. The stomach was always found full of gastric juice. The x-ray showed that the bismuth meal passed through the stomach and small intestine in a normal manner but that a splotch of bismuth remained adherent after the rest of the stomach was empty. This indicated an ulcerated area near the œsophagus which had not secreted enough pus to show in the stomach analyses yet still was a constant source of irritation. This had been accompanied by sick headaches which had been only temporarily relieved by an operation upon the gall-bladder and by fasting and catharsis. The stomach would frequently fill up with bile. Acting upon this diagnosis the patient had been put upon a bismuth treatment for gastric ulcer and Dr. Kemp reported the greatest improvement. Another radiograph was of a man, aged 58, also referred by Dr. Kemp. He had had a weak stomach all his life but became worse two or three years ago and lost 25 pounds. Food was found in the stomach seven to 18 hours after taking. After fasting and purgation, a bismuth meal was given consisting of 1 ounce bismuth oxychloride, a dish of mashed potato, and a glass and a half of water. A fluoroscopic examination made with the patient standing up showed the bismuth meal a shapeless mass, a hand's breadth below the umbilicus. Radiographs made 20 minutes and 6 hours after ingestion showed the stomach vertical and confined to the left side of the median line and extending below the level of the umbilicus. The second radiograph showed most of the bismuth still in the stomach, none in the duodenum but some in the ileum. The radiological diagnosis was pyloric obstruction, possibly cancerous. An exploratory operation seemed to be urgently required. Dr. Kemp reported that there were two or three old ulcers of the stomach and duodenum, all of which had perforated. Leakage was prevented by adhesions to omentum and pancreas, but these adhesions had dragged the stomach down and obstructed the pylorus. The operation of separating these adhesions was a severe one and the patient died.

Resection of Stomach in a Dog with the Help of the Surgical Stitching Machine (Heultl).—Dr. WILLY MEYER said a few weeks previous he had attended a meeting of medical men where this new surgical stitching machine was demonstrated and those present were asked to get and try it. The gentleman who brought it stated that it had been used in at least fifty cases in Budapest, Hungary; they were all human beings and the results were excellent, only two or three patients having died after the operation. Dr. Meyer said he had a case of cancer of the stomach, with obstruction at the pylorus, the patient being reduced to 85 pounds in weight, and he was tempted to use this machine because of the necessity of saving every minute of time. But he concluded to try it first on a dog, which he did, and the results obtained were shown by him. The instrument was rather a cumbersome one and consisted of two large jaws which were closed by a clamp. The arrangement was such that the turning of a crank five times introduced four rows of sutures, a double line of catgut. This was a very ingenious way of introducing four rows of sutures by the mere turning of a crank handle five times. After all he believed that surgeons would still adhere to the needle and thread and not resort to this new method. One obstacle to its use was the price, $300. It was, however, an instrument about which it was well worth knowing. The beautiful specimen shown was mounted by Dr. Sondern. It was claimed that in the use of this instrument there would be a saving of at least fifteen or twenty minutes.

Apparatus for Intratracheal Insufflation Anesthesia.—Dr. H. H. JANEWAY demonstrated this apparatus.

A New Apparatus for Administering and Warming General Anesthetics, Methods of Administration and Special Advantages.—Dr. RAYMOND C. COBURN described and illustrated this apparatus which was designed primarily for the administration of nitrous oxide and oxygen; the chief aim was simplicity, utility, and portability. He claimed to have perfected two methods of administration, the closed drop method and the warm vapor method. A light stand was provided for holding two cylinders, each of gas and oxygen. Special fittings for connecting with large cylinders might be inserted in the cylinder yokes instead of two of the small cylinders. The opening of the anesthetic chamber was quite large and loosely filled with coarse gauze. To the top of this chamber was attached an anesthetic cup, which had a needle-point valve controlling the flow of the liquid anesthetic to the chamber containing the gauze. As the anesthetic dropped from the cup upon the gauze it could be plainly seen and the amount accurately regulated by the needle-point valve. The liquid anesthetic was added by the mechanical drop method, thus insuring it to be regular and constant, and at the same time the flow was in sight and under complete control of the anesthetist. The other end of the chamber was attached to the inhaler, which had an expiratory orifice which was open when the exhalations were allowed to escape and closed when there was rebreathing. The inhaler carried an inner tube; here there were two light and delicately constructed valves, so arranged that they were thrown out of action when there was rebreathing, and when the exhalations were to escape one valve prevented breathing back into the bag during expiration, and the other prevented any air from being inspired through the expiratory orifice during inspiration, the change from one form to the other being easily and quickly made by simply turning the knob through an angle of 90 degrees. The expiratory orifice always directed the exhalations away from the patient's face and field of operation. To the other end of the inhaler was attached the face mask, which fitted the face accurately; it was quite necessary that this mask should form an air-tight fitting of the patient's face. A small and light electric heater might be connected to any lamp socket and it

thoroughly warmed all the anesthetic vapor. As the chamber and heater were attached to the inhaler, the heat was conducted along the metal connections so that the anesthetic vapor had no chance whatever to cool and consequently could be delivered to the patient at practically body temperature. Its special advantages were: (1) Simplicity. The design, construction, and operation were reduced to the basic principles of simplicity. (2) Utility. Each and every one of the inhalation anesthetics could be administered by all the different methods in common usage. It could be easily, quickly, and thoroughly sterilized, and above all else it was practical. (3) Portability. Being complete in design, light in construction, and easily assembled the entire apparatus, together with sufficient nitrous oxide and oxygen for two hours' anesthesia, could be readily carried in an ordinary handbag. (4) Economy. The whole apparatus was not expensive. It covered the entire field for general anesthetics by the oral-nasal route, and no other equipment was needed for the highly specialized methods. It saved one-third of the cost of all anesthetics administered by the open method and reduced to an absolute minimum the cost of the anesthetic by the rebreathing method. In closing Dr. Coburn said that for nitrous oxide administration it furnished a light and compact stand for holding the proper number of cylinders, and placed the rubber bag close to the patient's face. The stand was absolutely rigid with slip connections. It afforded practical means for administering ether by a new method, the closed drop method, which was the logical and scientific complement of the open drop method. For ethyl chloride administration by the open method it insured that the anesthetic would always be completely vaporized and diluted before being inhaled. It thoroughly warmed the vapor of ether by the open drop method. It always showed whether the patient was actually breathing, no matter what anesthetic was used or method employed. It warmed the vapor of all anesthetics to practically body temperature at the time it was inhaled. It reduced the administration of ether to a scientific basis, semi-open or closed methods, and maintained with absolute constancy. In the open method it prevented the waste of the anesthetic from vaporization by the expirations. It afforded the utmost possible conservation of the patient's energy.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS

Delaware Medical Examining Board.

December 12, 13, and 14, 1911.

ANATOMY.

1. Give shape, size, and number of segments forming os hyoides.
2. Give shape, location, and articulations of sphenoid bone.
3. Give origin, course, and insertion of pectoralis major muscle.
4. Give origin, length, and insertion of sternothyroid muscle.
5. Origin, course, and distribution of left subclavian artery.
6. Origin and distribution of innominate artery.
7. Origin and distribution of superior laryngeal nerve.
8. Origin and distribution of pneumogastric nerve.
9. Explain origin, course, and distribution of right internal jugular vein.
10. Describe formation and structure of superficial cervical lymphatic glands.

PHYSIOLOGY.

1. What four chemical elements enter most largely into the composition of animal bodies?
2. Give an outline of the circulation of the blood in the human body (omitting portal circulation).
3. Discuss the function of the spleen.
4. What is accomplished by pulmonary respiration?
5. Describe the gastric juice.
6. Discuss the function of the kidneys.
7. What is meant by the term metabolism?
8. Name the types of muscle tissue and outline the part played by each.
9. What is meant by a reflex movement or action?
10. Trace the optic nerve from its origin to its distribution and state to what forms of stimuli it will respond.

CHEMISTRY.

1. To what group of metals does potassium belong, where found, and is it indispensable to the animal organism, and why?
2. Does ammonia belong to the same group as potassium, and how is it used in making ice?
3. To what group of metals does magnesium sulphate belong, where found in nature, and how prepared?
4. How are the effervescing solutions made more palatable?
5. What is the difference between hard and soft water? State what takes place chemically on boiling hard water.
6. What are amylopsin and trypsin?
7. What are benzine and toluol, giving symbols?
8. From what are the phenol acids derived?
9. What is uric acid, and where found in the human system? Give its chemical symbols.
10. How are the two chief bile pigments formed?

MATERIA MEDICA.

1. Name the officinal liquid preparations.
2. Name and give the dose of eight of the most important preparations of iron.
3. Name the digestive ferments and define the action of any two of them.
4. What are the physiological effects of phosphorus?
5. Name the incompatibles of cinchona and its alkaloids.
6. What are alteratives? Mention some drugs of this class.
7. How is iodine obtained? Make a list of the iodide salts.
8. Name the preparations and doses of belladonna.
9. Define the physiological actions of scilla.
10. Name one cardiac stimulant and one cardiac sedative, with preparations and doses of each.

THERAPEUTICS.

1. What is serum therapy? Mention the serums that are official.
2. What are the therapeutic uses of the simple bitters?
3. Mention the more important medical uses of the preparations of mercury.
4. Define fully the therapeutic uses of arsenic.
5. What are the medical uses of the phosphates and the hypophosphites?
6. Name the local anesthetics and tell something of their use.
7. Mention conditions which would influence the dose of drugs when prescribing.
8. Describe the routine treatment in a case of poisoning by free iodine.
9. What are the medical uses of the nitrites?
10. In the practice of our profession what uses can we make of adrenalin or the suprarenal gland?

PATHOLOGY.

1. Name the morphological types of pathogenic bacteria and give an example of each.
2. Describe the *Bacillus tetani*.
3. How does an antitoxin differ from a vaccine?
4. Differentiate between fatty infiltration and fatty degeneration.
5. Describe the process of repair in a superficial uninfected wound.
6. How would you proceed in securing and preparing a specimen of blood to be examined for the malarial organism?
7. Describe a section from a so-called fibroid tumor of the uterus.
8. Describe a typical specimen of urine from a case of diabetes mellitus.
9. Differentiate pathologically between bronchopneumonia and lobar pneumonia.
10. Discuss the diagnostic value of the Wassermann reaction.

PRACTICE OF MEDICINE.

1. Give symptoms, including physical signs, of acute lobar pneumonia.
2. Give your treatment in full of bronchopneumonia in children.

3. Differentiate diabetes mellitus from diabetes insipidus. Give treatment of former.
4. Give symptoms and treatment of chorea.
5. Diagnose follicular tonsillitis from diphtheria. Give treatment of latter.
6. What is meant by cardiac compensation? Give illustration.
7. Etiology and symptoms of cirrhosis of the liver?
8. Symptoms and treatment of acute nephritis?
9. What is uremia? Give symptoms and treatment.
10. Give clinical history and treatment of acute catarrhal enteritis.

OBSTETRICS.

1. Name the contents of a well-equipped obstetric outfit.
2. Describe the physiological process in the impregnation of the human ovum.
3. In what manner does the female pelvis differ from that of the male? Name the pelvic bones.
4. Name five anomalies of the umbilical cord and the possible effect of each.
5. Into how many stages is labor divided? Define each stage.
6. Define (*a*) abortion, (*b*) miscarriage, (*c*) premature labor.
7. Give the mechanism of labor in face presentations.
8. What are the causes, modes of prevention, and treatment of rupture of the perineum?
9. Name the possible sources of puerperal hemorrhage and treatment of each.
10. What directions should be given as to the hygiene and management of the newly born?

SURGERY.

1. Explain technique of laryngotracheotomy. Give physical conditions that make the operation necessary.
2. Give symptoms and treatment of fracture at acromion end of clavicle.
3. Differentiate tuberculous and syphilitic synovitis.
4. Explain method of reduction of dislocation of the several forms of displacement of the head of the humerus.
5. Give three popular methods of amputation of foot.
6. What are the structural changes that induce strangulated inguinal hernia? Give method of operating for its relief.
7. Give causes and explain treatment of lacrymal abscess.
8. Differentiate congestion and compression of brain.
9. Explain method of operating for radical relief of inguinal hernia.
10. Give etiology, diagnosis, and treatment of strumous synovitis.

HYGIENE.

1. What do you understand by the predisposing and exciting causes of disease?
2. Name some of the principal animal and vegetable parasites which produce disease.
3. What are connate conditions? Define temperament, idiosyncrasy, and diathesis.
4. Define ventilation, state, in cubic centimeters, the quantity of air taken into the lungs by an adult person at each ordinary inspiration.
5. What method or system of removal and disposal of sewage and garbage would you recommend?
6. Name four essential alimentary principles in food, and the quantity of water required daily by an adult.
7. What meats are most easily digested, and why is the flesh of most fish white?
8. What diseases are conveyed through milk?
9. What insects convey microorganisms and disseminate disease? Give methods of preventing the action of pathogenic bacteria by means of the sera of immune animals.
10. State the value of disinfection and isolation in contagious diseases, and what disinfectants would you employ?

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

DELAWARE MEDICAL EXAMINING BOARD.

December 12, 13, *and* 14, 1911.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 145; or Gray's "Anatomy" (1910), page 153.
2. The sphenoid bone is in shape like a bat with extended wings; it is situated at the anterior part of the base of the skull; it articulates with:—two malar, two palate, vomer, occipital, two parietal, frontal, two temporal, and ethmoid bones.
3. See Cunningham's "Anatomy" (1909), page 323; or Gray's "Anatomy" (1910), page 457.
4. See Cunningham's "Anatomy" (1909), page 406; or Gray's "Anatomy" (1910), page 387.
5. See Cunningham's "Anatomy" (1909), page 822; or Gray's "Anatomy" (1910), page 627.
6. See Cunningham's "Anatomy" (1909), page 801; or Gray's "Anatomy" (1910), page 585.
7. See Cunningham's "Anatomy" (1909), page 692; or Gray's "Anatomy" (1910), page 1009.
8. See Cunningham's "Anatomy" (1909), page 690; or Gray's "Anatomy" (1910), page 1006.
9. See Cunningham's "Anatomy" (1909), page 875; or Gray's "Anatomy" (1910), page 716.
10. See Cunningham's "Anatomy" (1909), page 911; or Gray's "Anatomy" (1910), page 780.

PHYSIOLOGY.

1. Carbon, hydrogen, oxygen, and nitrogen.
2. "The right auricle receives the venous blood as it returns from the tissues, and transmits it to the right ventricle. The function of the right ventricle is to pump the venous blood through the pulmonary arteries into the lung capillaries, where the venous blood becomes oxygenated. The oxygenated blood returns by the pulmonary veins to the left auricle, and the arterial blood is then received into the left ventricle. The left ventricle pumps the arterial blood through the large arteries, the small arteries, and the arterioles into the systemic capillaries. For the most part between the capillaries and the tissues is the tissue fluid, and across this the tissues acquire the oxygen from the arterial blood, and return carbon dioxide to the blood in the capillaries. The blood which leaves the tissues is venous. The venous blood returns from the capillaries through the small veins into the larger veins, and the largest veins pour the blood back into the right auricle. It will thus be seen that the right side of the heart is occupied with the pulmonary circulation, and the left side of the heart with the systemic circulation." (Lyle's *Physiology.*)
3. The *function of the spleen:* The following theories have been held: (1) It is a source of production of the white blood corpuscles; (2) it is a source of production of the red blood corpuscles during fetal life; (3) it is a place where the red blood corpuscles are destroyed; (4) uric acid is produced in the spleen; (5) an enzyme is produced in the spleen and is carried by the blood to the pancreas, where it converts the trypsinogen into trypsin.
4. *Respiration* is the process by which an interchange of gases takes place in the lungs; so that oxygen is introduced and carried to the tissues, and carbon dioxide is expelled.

The changes produced in the *air* by respiration are:

	INSPIRED AIR.	EXPIRED AIR.
Oxygen	21 per cent	16.6 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	0.04 per cent	4.4 per cent.
Other gases	Rare.	Often present.
Watery vapor	Variable.	Saturated.
Temperature	Variable.	That of the body.
Volume	Varies.	Diminished.
Bacteria	Always present.	None.
Dust	Always present.	None.

5. *Gastric juice* is a thin, colorless fluid; acid in reaction; specific gravity about 1002 to 1010; and containing about 1 per cent. of solids. The daily secretion amounts to 10 or 15 pints. It contains: Water, pepsin, rennin, hydrochloric acid, chlorides (of calcium, sodium, and potassium), and phosphates (of calcium, magnesium, and iron). Its function is to change proteids into proteoses and peptones, and to curdle the casein of milk; it is also slightly antiseptic, and inverts cane sugar into dextrose and levulose.

The pepsin and rennin come from the central cells in the cardiac glands and from the cells of the pyloric glands. In both of these glands the pepsin preexists as pepsinogen. The hydrochloric acid is formed by the oxyntic cells. Just how a free acid is formed from the alkaline blood and lymph is not known. It has been suggested that it may occur as follows:

(1) $2Na_2HPO_4 + 3CaCl_2 = Ca_3(PO_4)_2 + 4NaCl + 2HCl$

or (2) $Na_2HPO_4 + H_2O + CO_2 = NaHCO_3 + NaH_2PO_4$;

and then $NaH_2PO_4 + NaCl = Na_2HPO_4 + HCl$.

6. The *functions of the kidneys* are: (1) To excrete water, urea, and other waste products; (2) to form hippuric acid; (3) to control the reaction of the urine, by forming acid sodium phosphate. The main function is the secretion of urine. The mechanism of the *secretion of*

urine by the kidneys is twofold: (1) By filtration, most, if not all, of the fluid is eliminated, and also morganic salts; this depends upon blood pressure, and takes place in the glomeruli. (2) By cell activity and selection, in the cells of the convoluted tubules the urea and principal solids are eliminated.

7. *Metabolism* is the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds: (1) Assimilative or constructive (anabolism) and (2) destructive (katabolism).

8. Muscles are divided into two great classes: Voluntary and involuntary. *Voluntary* muscle is striated, has long narrow fibers with cross striations and many nuclei beneath the sarcolemma. *Involuntary* muscle is non-striated, has spindle-shaped fibers, one nucleus centrally located, and no sarcolemma. The great exception is cardiac muscle, which is involuntary and also striated. *Voluntary* muscle is, as a rule, under the control of the will. *Involuntary* muscle performs its contractions independently of the will; it is also characterized by periods of rest and activity, or rhythmicality; it is further characterized by peristalsis.

9. *Reflex actions* are involuntary or unconscious movements, due to suitable stimuli. They depend upon the integrity of the *reflex arc*, which is a complex made up of: (1) A surface capable of receiving an impression; (2) an afferent nerve; (3) a nerve cell capable of receiving and also of sending out impulses (4) an efferent nerve, and (5) a surface capable of responding in some way to the impulse conveyed by the efferent nerve. Reflexes are classified as: (1) Superficial, (2) deep, and (3) visceral.

10. For origin and course of optic nerve, see Cunningham's "Anatomy" (1909), page 675; or Gray's "Anatomy" (1910), pages 977 and 911. The optic nerve responds to the stimulus of waves of light falling upon the retina.

CHEMISTRY.

1. Potassium belongs to the group of alkali metals; it is found in rocks, and minerals, and in plants; it is indispensable to the animal organism, because it is a constituent of the red blood corpuscles and of other cells and tissues.

2. Ammonia is neither an element nor a metal, and so cannot belong to the same group as potassium. Under a pressure of more than six atmospheres it is condensed to the liquid used in ice machines to cause a freezing temperature by its evaporation.

3. Magnesium belongs to the alkaline earths. Magnesium sulphate is found in sea water and in the water of certain bitter mineral springs. It is prepared by the action of sulphuric acid on magnesium carbonate.

4. Effervescing solutions are made more palatable by the addition of citric and tartaric acids.

5. Hard water contains an excess of calcium and magnesium salts; soft water does not. When hard water is boiled the bicarbonates are decomposed, carbon dioxide is given off, and insoluble carbonates are precipitated.

6. Amylopsin and trypsin are ferments found in the pancreatic juice. Amylopsin converts starches into dextrin and maltose; and trypsin converts proteids into proteoses and peptones.

7. *Benzin* is a petroleum product. *Benzene* or *benzol* is an aromatic hydrocarbon with the formula C_6H_6. *Toluol* is methyl benzene, or benzene in which one atom of hydrogen has been replaced by the univalent radicle methyl; formula is $C_6H_5.CH_3$.

8. The phenol acids are derived from benzoic acid.

9. Uric acid is trioxypurin. It is found in the urine, blood, and other tissues. Its formula is $C_5H_4N_4O_3$.

10. The two chief bile pigments (bilirubin and biliverdin) are formed by the breaking up of hemoglobin.

MATERIA MEDICA.

1. The *official liquid preparations* are. Vinegars, waters, solutions, infusions, decoctions, syrups, honeys, mucilages, emulsions, mixtures, oleoresins, wines, fluidextracts, tinctures, spirits, elixirs, liniments, collodions, and glycerites.

2. Reduced iron, gr. j; ferrous carbonate, gr. iv; Basham's mixture, 3iv; syrup of ferrous iodide, ♏xv; tincture of ferric chloride, ♏viij; iron and ammonium citrate, gr. iv; ferrous sulphate, gr. iij; and ferric chloride, gr. j.

3. There are only two *official* digestive ferments, viz., pepsin and pancreatin. Trypsin is also a digestive ferment.

Pepsin is indicated as an aid to gastric digestion in gastralgia, gastric cancer and ulcer, atonic dyspepsia, and the vomiting of pregnancy.

Pancreatin is indicated as an aid to digestion, and for the predigestion of food, in convalescence, in wasting diseases, and in intestinal dyspepsia.

4. Phosphorus acts locally as an irritant; internally it is a stimulant to the nervous system and also to the bone-forming cells, a tonic, a repairer of waste, a circulatory stimulant and an aid to the formation of red blood corpuscles. It is partly oxidized into phosphorous acid or phosphoric acid, of the oxygen in the red corpuscles. In large doses it increases the urea and other nitrogenous products, raises the body temperature, diminishes the glycogen of the liver, and may cause fatty degeneration.

5. *Incompatible with cinchona and its alkaloids* are. Mineral acids, alkalies, carbonates, ferric and ferrous salts, lead acetate, lime water, magnesia, mercuric chloride, silver nitrate, tartar emetic, zinc sulphate, picric and tannic acids, borax, ichthyol, oxalic acid, salicylates, sodium phosphate.

6. *Alteratives* are drugs which, in some unknown way, alter the course of morbid conditions. *Examples:* Arsenic, antimony, sulphur, mercury, colchicum, iodine, sarsaparilla, cod liver oil, phosphorus.

7. *Iodine* is obtained from the ashes of seaweed and from the mother liquor of Chili sodium nitrate. *Iodides:* Of ammonium, potassium, sodium, strontium, lead, mercury, and zinc.

8. *Preparations and doses of belladonna:* Extract, gr. 1/5; tincture, ♏viij; fluidextract, ♏j; liniment, and plaster.

9. *Physiological action of scilla:* Expectorant, diuretic, gastrointestinal irritant, emetic, slows the heart, strengthens and slows the pulse, and raises arterial tension.

10. *Cardiac sedative*, aconite; fluidextract, ♏j; tincture, ♏x.

Cardiac stimulant, sparteine; sparteine sulphate, gr. 1/10

THERAPEUTICS.

1. *Serum therapy* is the prophylaxis and treatment of certain infectious diseases by the administration of a blood serum containing an antibody specific to the particular disease. *Official serum:* Antidiphtheritic serum.

2. *Therapeutic uses of simple bitters:* To stimulate the nerves of taste, promote appetite, increase the flow of saliva and of gastric juice, and aid digestion.

3. *Mercury* is used in syphilis, tuberculosis, tonsillitis, parotitis, irritable stomach, nausea, vomiting, dysentery, gastric ulcer, enteritis, diphtheria, cholera, iritis, biliousness, constipation; as an antiseptic, antipruritic, parasiticide; as a caustic for chancroids and venereal warts.

4. ARSENIC. *Physiological action:* Escharotic; irritant, tonic; increases cardiac action, respiratory power, intestinal secretions, and peristalsis; produces edema, itching, diarrhea, epigastric pain, irritable and feeble heart. *Therapeutic uses:* In stomach disorders, bronchial and pulmonary affections, diabetes, diarrhea, anemia, and chlorosis, chorea, malaria, and chronic skin diseases.

5. "Calcium phosphate and the hypophosphites are used with benefit in all diseases of malnutrition, and where the repair or development of the bones is required. They are particularly useful in protracted suppuration, osteomalacia, rachitis, caries, scrofulosis, chronic phthisis, and in anemia and bone-softening of lactation. The hypophosphites are much employed in nervous and general debility and in chronic lung diseases, and are supposed to act in the same manner as free phosphorus, but without irritation. They are probably converted into phosphates in the stomach, and hence may be expected to promote the growth and healing of bones, to stimulate the hepatic and intestinal secretions, and to affect the lymphatic glands and adenoid tissue. The compound syrup of the hypophosphites is an excellent remedy in acne indurata. Sodium phosphate in doses of 3j-ij thrice daily for adults (gr. x-xxx for children) is extremely useful as a laxative in conditions depending on catarrh of the bile-ducts and duodenum, as headache, jaundice, and chalky stools. Gallstones may be prevented from forming by scruple or drachm doses before meals for months at a time. It is an efficient agent in obesity, hepatic diabetes, incipient hepatic sclerosis, chronic infantile diarrhea, cerebral debility, bilious sick-headache, and the pasty, white stools of ill-conditioned children."—(Potter's *Therapeutics*, etc.)

6. *Local anesthetics:* Cocaine, eucaine, ice, ether spray, ethyl chloride, chloretone, phenol. They are used to impair the conductivity of the sensory nerves, and to depress the end organs in the skin. Their chief use is in surgery.

7. *The dosage of drugs* is influenced by: Age, sex, weight, nationality or race, disease, pain, idiosyncrasy, body temperature, drug habits, method of administration, and the cumulative action of the drug.

8. Solution of starch should be given in case of poisoning by iodine.

9. *Nitrites* are used medicinally: To lower arterial pressure; to dilate the arterioles; to relieve angina pectoris, epilepsy, eclampsia, dyspnea, chronic nephritis, and arteriosclerosis.

(1) *Adrenalin*, is used to check hemorrhages (nasal, pulmonary, gastric); also in bronchitis, edema of glottis, diabetes insipidus, congestion of lungs; as a hemostatic after operations on the nose and throat, and in coryza, laryngitis, etc.

PATHOLOGY.

1. *Morphological types of pathogenic bacteria:* (1) *Cocci*, which are round, or oval, and may appear singly, in pairs, in groups of four, in chains, or in bunches. (2) *Bacilli*, which are rod-shaped, with the longer sides parallel, and the short ends either straight, rounded, or concave. (3) *Spirilla*, which are spiral. *Examples.* (1) Gonococcus, (2) bacillus of typhoid fever, (3) spirillum of relapsing fever.

2. *The bacillus of tetanus* is characterized by its peculiar spore, formed at one end of the bacillus, and giving it the appearance of a pin; it is purely anaerobic, and cannot be developed at all in the presence of oxygen. It generally comes from the soil, and is found in penetrating wounds. It appears in two forms, the spore-bearing form, as described above, and the vegetative form, which is a short bacillus with rounded ends, and which may occur singly or in pairs, or may form long filaments. It grows in gelatin stab cultures in the middle of the medium, and the colonies look something like a fir tree; its growth is slow, and a disagreeable odor is at the same time emitted. In bouillon it grows near the bottom of the tube and produces gases.

3. An *antitoxin* is a substance formed in the body, of a protective character, and capable of rendering inert the poisonous products of bacteria.

A *vaccine* is an emulsion of dead cultures of specific bacteria.

4. In *fatty infiltration* the tissues contain fat brought from without; there is no change in the cell protoplasm, and such damage as the tissue undergoes is due to the mechanical pressure caused by the fat.

In *fatty degeneration* the cell protoplasm undergoes change; the fat is in the cells, and not between them.

5. See Rose and Carless' "Surgery" (1911), pages 253 and 249; or Da Costa's "Surgery" (1908), page 110.

6. *In examining for malaria:* "Prepare some perfectly clean and very thin cover slips, and remove all traces of grease. Cleanse the skin of the finger-tip or ear with soap and water, and then with alcohol and ether. Make a *small prick* in the skin. Wipe away the first drop of blood, leaving a perfectly dry surface, so that subsequent drops will not run. Squeeze out a tiny drop about the size of a large pin's head. Touch the apex of this drop with the center of a cover glass, and immediately drop it, face downward, on a perfectly clean slide. Make several such preparations, and reject all those in which rouleaux are present. It is absolutely essential that the red corpuscles should lie flat. Examine with a 1/12 immersion lens and rather feeble illumination. Look in the red corpuscles for the presence of small black specks, often rod-like and showing slow movements of translation. These are surrounded by clear areas. One may also see in the center of some of the red cells clear ameboid areas which show no pigment. Rosette forms may also be visible. These forms of the parasite are always present in cases of malaria which have not had quinine. Other varieties are only met with in some chronic cases. Of these there are two chief forms: (1) The crescentic, (2) the flagellated. These are easily recognized. The crescentic bodies are highly refractile, rather longer than a red blood corpuscle, and about 2μ in diameter. Particles of pigment may be recognized in the parasite and also in some of the ordinary leucocytes."—(Hutchinson and Rainy.)

7. Uterine fibroids "present themselves in the form of rounded and usually well-circumscribed masses, from the size of a grape seed to that of tumors weighing forty or fifty pounds. They are generally multiple; are very hard; and on section have the appearance of concentric or irregular lamellæ. Microscopically the tumor is composed of smooth muscle-fibers and of fibrous tissue arranged in bundles or layers running in various directions. The muscle-fibers are frequently found arranged concentrically about small blood-vessels, and in some instances the vessels are telangiectatic."—(Stengel's *Pathology.*)

8. See French's "Practice of Medicine" (1910), page 971; or Osler's "Practice of Medicine" (1909), page 415.

9. See French's "Practice of Medicine" (1910), pages 154 and 687; or Osler's "Practice of Medicine" (1909), pages 170 and 622.

10. The *diagnostic value of the Wassermann reaction* is well summed up in a recent number of *Progressive Medicine:*

(1) The test should only be used in the light of the clinical findings. 2. Its real value depends upon its interpretation and a knowledge of its limitations. (3) The reaction is not specific in the ordinarily accepted sense of the term, but depends upon biochemical phenomena as yet not understood. (4) While a positive reaction means infection with syphilis in 99 per cent. of the cases, it cannot be regarded as conclusive without knowing the character of the work done by the serologist. The test is so delicate and its technique must be so rigorously carried out that one examination should not be relied upon in doubtful cases. (5) A negative reaction has even less weight, and should be repeated and unimpeachable to be accepted. (6) Its chief diagnostic value is in obscure cases; as an indication as to therapy it is valuable, but less so than other symptoms. (7) The test can never supplant competent and exhaustive clinical observation, but can aid it greatly. (8) In case of difference between definite clinical signs and the serum test the former has the preponderating weight as evidence.

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), page 156; or Osler's "Practice of Medicine" (1909), page 172.

2. See French's "Practice of Medicine" (1910), page 690; or Osler's "Practice of Medicine" (1909), page 626.

3. See French's "Practice of Medicine" (1910), pages 971, 973, 978, and 974; or Osler's "Practice of Medicine" (1909), pages 419, 425, and 420.

4. See French's "Practice of Medicine" (1910), pages 1154 and 1150; or Osler's "Practice of Medicine" (1909), pages 1048 and 1052.

5. In *diphtheria* the onset is more gradual; the temperature rises to about 102° to 103° F.; the tonsils are not much enlarged; there is an exudate of a thick, grayish membrane which is very adherent, is removed only with difficulty, and leaves a bleeding surface; this membrane soon re-forms and may be found on the fauces and pharynx as well as on the tonsils; in the exudate the Klebs-Loeffler bacilli may be found. In *follicular tonsillitis* the onset is more sudden; the temperature may be a little higher than that of diphtheria; there is no membrane, but the tonsils are red and swollen, and in the crypts are seen white, cheesy spots or plugs, which consist of broken-down epithelium and are easily brushed away; Klebs-Loeffler bacilli are never found.

For treatment of diphtheria, see French's "Practice of Medicine" (1910), page 195; or Osler's "Practice of Medicine" (1909), page 207.

6. *Compensation.*—"The alteration in the systemic blood supply caused by the valvular defects of chronic endocardial inflammation are such that, if continued, the integrity of the body is threatened. To overcome the impaired functions of the valves and to maintain the general circulation, the heart increases in size and strength (*compensatory hypertrophy*). The period in which this occurs is called the *period of compensation;* its duration is indefinite. It may be recognized by the physical signs of valvular disease without any symptoms of disturbed circulation. Anything which disturbs the equilibrium as it now exists, such as acute diseases and excessive work, leads to *ruptured compensation*, a condition attended by cyanosis, dyspnea, edema, gastric, hepatic, and renal disturbances, and often death. The object in the treatment of all forms of chronic valvulitis is to obtain compensation and to prevent its failure or rupture."—(Hughes' *Practice of Medicine.*)

7. See French's "Practice of Medicine" (1910), pages 842 and 845; or Osler's "Practice of Medicine" (1909), page 556.

8. See French's "Practice of Medicine" (1910), pages 912 and 915; or Osler's "Practice of Medicine" (1909), pages 556 and 558.

9. See French's "Practice of Medicine" (1910), pages 905 and 909; or Osler's "Practice of Medicine" (1909), pages 683 and 702.

10. See French's "Practice of Medicine" (1910), pages 790 and 791; or Osler's "Practice of Medicine" (1909), pages 498 and 503.

OBSTETRICS.

1. The contents of the obstetrical bag will vary with the requirements and experience of its owner, and the preparations already made by the patient. In any case the following articles should be taken by the accoucheur to a confinement: Tablets of bichloride of mercury, or some other material for making antiseptic solution; forceps; ether or chloroform, with inhaler or mask; fluidextract of ergot; hypodermic syringe, with tablets of strychnine, morphine, etc.; needles, sutures, and needle holder; nail-brush and nail-cleaner; umbilical scissors; carbolized vaseline; stethoscope; male catheter (rubber); a 1 per cent. solution of nitrate of silver, with eye dropper.

In addition to the above some would also include: A sterile apron or suit; a Kelly pad; solution of cocaine, soap, boric acid, and gauze, all sterilized, absorbent cotton, iodoform gauze, chloral hydrate; dilators, and other instruments.

A bag or grip made of canvas, or a metal case covered with canvas, is better than a leather bag, as the former can be sterilized.

2. See Jellett's "Midwifery" (1910), page 70; or Hirst's "Obstetrics" (1909), pages 71 to 74.

3. The chief differences between the male and female pelvis are thus tabulated in *Morris's Anatomy*:

MALE.	FEMALE.
Bones heavier and rougher.	Bones more slender.
Ilia less vertical.	Ilia more vertical.
Iliac fossæ deeper.	Iliac fossæ shallower.
False pelvis relatively wider.	False pelvis relatively narrower.
True pelvis deeper.	True pelvis shallower.
True pelvis narrower.	True pelvis wider.
Inlet more heart-shaped.	Inlet more oval.
Symphysis deeper.	Symphysis shallower.
Tuberosities of ischia inflexed.	Tuberosities of ischia everted.
Pubic arch narrower and more pointed.	Pubic arch wider and more rounded.
Margins of ischio-pubic rami more everted.	Margins of ischio-pubic rami less everted.
Obturator foramen oval.	Obturator foramen triangular.
Sacrum narrower and more curved.	Sacrum wider and less curved.
Capacity of true pelvis less.	Capacity of true pelvis greater.

The *pelvic bones* are: Two ossa innominata (made up of ilium, ischium, and pubes), and the sacrum and coccyx.

4. See Jellett's "Midwifery" (1910), page 529; or Hirst's "Obstetrics" (1909), page 138.

5. Labor is divided into three stages: The *first stage* begins with the commencement of labor, and ends with the complete dilatation of the os uteri. The *second stage* begins with the complete dilatation of the os uteri, and ends with the birth of the child. The *third stage* immediately follows the second, and ends with the expulsion of the placenta and the beginning contraction of the uterus.

6. *Abortion* is delivery of the product of conception before the twelfth week.

Miscarriage is delivery of the product of conception between the twelfth and twenty-eighth weeks.

Premature birth is delivery of the fetus between the twenty-eighth week and full term.

7. See Jellett's "Midwifery" (1910), page 372; or Hirst's "Obstetrics" (1909), page 410.

8. See Jellett's "Midwifery" (1910), pages 919 and 344; or Hirst's "Obstetrics" (1909), pages 334 and 609.

9. The following (from Gould and Pyle's *Cyclopedia of Medicine and Surgery*) is a useful classification of the hemorrhages in question:

A. Hemorrhages of Pregnacy: Caused by (1) placenta prævia; (2) premature separation of a normally situated placenta; (3) apoplexy of the decidua or placenta.

B. Hemorrhages of Labor: Caused by (1) placenta prævia; (2) premature separation of a normally situated placenta; (3) relaxation of the uterus; (4) laceration of the cervix; (5) rupture or inversion of the uterus.

C. Hemorrhages of the Puerperium: Caused by (1) retained secundines; (2) displaced uterus; (3) displaced thrombi; (4) fibroid tumors; (5) hypertrophied decidua; (6) carcinoma.

For treatment see index in Jellett's "Midwifery" or Hirst's "Obstetrics," under heading "Hæmorrhage," or "Hemorrhage."

10. See Jellett's "Midwifery" (1910), page 1143; or Hirst's "Obstetrics" (1909), page 928.

SURGERY.

1. See Rose and Carless' "Surgery" (1910), page 922; or Da Costa's "Surgery" (1908), page 771.

2. See Rose and Carless' "Surgery" (1911), page 494; or Da Costa's "Surgery" (1908), page 484.

3. For *tuberculous synovitis* see Rose and Carless' "Surgery" (1911), pages 652 and 654; or Da Costa's "Surgery" (1908), pages 550 and 548.

Syphilitic synovitis: "In the secondary stage, during the prevalence of skin eruptions, ulcers of the tonsils, plastic, iritis, etc., one or more of the joints (most usually a single articulation, and that either the knee or the elbow) may be the seat of an affection consisting of gummatous induration of the subsynovial tissue and effusion into the synovial cavity. In these cases thickening of the periarticular tissues in the form of ill-defined indurations, or sometimes of distinct nodular deposits, may sometimes be detected. In their general character, however, these affections present little to distinguish them from ordinary chronic synovitis, and their true nature is suggested only by their origin apart from the common causes of synovitis, and the fact that the subjects of them have had, or are still suffering from, other forms of syphilitic disease. Their main features are their persistency and their strong tendency to relapse. Pain, heat, and stiffness are usually but little marked."—(Treves' *Manual of Surgery.*)

4. See Rose and Carless' "Surgery" (1911), page 921, or Da Costa's "Surgery" (1908), page 590.

5. See Rose and Carless' "Surgery" (1911), page 1339, or Da Costa's "Surgery" (1908), page 1215.

6. See Rose and Carless' "Surgery" (1911), pages 1115 and 1121; or Da Costa's "Surgery" (1908), pages 992 and 995.

7. LACRYMAL ABSCESS. "*Causes.* Chronic dacryocystitis is always the forerunner of abscess, infection is the immediate cause. *Treatment* consists in treating the dacryocystitis. When the abscess is forming hot fomentations or poultices are indicated. When the tumor softens it should be promptly and freely incised through the skin and the cavity syringed and packed with gauze. The wound is then dressed daily on general surgical principles. If excessive granulations form, they may be treated by scraping or by nitrate of silver stick. When all reaction has subsided the canaliculus should be slit and the nasal duct probed if possible, in order to prevent recurrence, which is liable to take place."—(Alling's *Diseases of the Eye.*)

8.

CONCUSSION OF THE BRAIN.	COMPRESSION OF THE BRAIN.
Unconsciousness is incomplete; patient can be made to answer, though it may be briefly, and in simple words.	Complete unconsciousness; may scream into patient's ear at the top of the voice, but will receive no answer.
Special senses, though greatly blunted, are not abolished.	Special senses entirely suspended.
Power of movement not destroyed; if the position of a limb be changed the patient will resist or bring it immediately into the original position.	Complete or partial paralysis; in most cases hemiplegia.
Respiration is quiet and feeble.	Respiration full and noisy.
Pulse feeble, frequent, and intermittent.	Pulse full and slow, and sometimes laboring.
The stomach sickens; and rejects its contents.	The stomach is insensible to any impression; no nausea or vomiting.
The feces may be discharged incontinently, as may also the urine, though not usually.	Bowels are torpid, and the bladder incapable of emptying itself, though the urine may escape by overflow.
Deglutition little impaired.	Deglutition difficult or impossible.
Pupils variable, though generally contracted; the eyelids somewhat open.	Pupils variable, though generally much dilated, and the eyelids closed.
Temperature of the body less than natural.	Temperature almost natural, a little below the normal standard.

—(Treves' *Manual of Surgery.*)

9. See Rose and Carless' "Surgery" (1911), page 1100; or Da Costa's "Surgery" (1908), page 978.

10. See Rose and Carless' "Surgery" (1911), pages 652 and 654; or Da Costa's "Surgery" (1908), pages 222, 548, and 550.

HYGIENE.

1. *Predisposing cause* of disease is anything which affects the body in such a way as to render it susceptible to the action of the exciting cause.

Exciting causes are such as immediately precede and precipitate an attack of disease.

2. *Animal parasites which produce disease:* Tapeworms, trichina, echinococci, filaria, acarus; and see French's "Practice of Medicine" (1910), pages 8 and 50.

Vegetable parasites which produce diseases. All the

pathogenic bacteria (see French's "Practice of Medicine" (1910), pages 65, etc.; or Rose and Carless' "Surgery" (1911), pages 120, etc.).

3. *Connate conditions* are congenital conditions, or those which are born with a person.

Temperament: "The physical organization peculiar to the individual which influences one's metabolic processes, manner of thought and action, and general views of life."

Idiosyncrasy: "An individual mental or physical characteristic or peculiarity." Or "a susceptibility peculiar to the individual to the action of certain drugs, articles of diet, etc."

Diathesis: "A constitutional state predisposing to any disease or group of diseases."—(Stedman's *Medical Dictionary.*)

4. *Ventilation* is a process by which a constant supply of fresh air is furnished and impure air is banished. The quantity of air taken into the lungs by an adult at each ordinary inspiration is about 350 to 500 cubic centimeters.

5. For *garbage* the cremation system is to be recommended; for *sewage disposal* either the water system or the biological process.

6. *Four essential alimentary principles in food:* Proteids, fats, carbohydrates, and salts. The quantity of water required daily by an adult is about four pints, in addition to the fluid contained in solid foods.

7. *Meats most easily digested* are: Oysters, soft-cooked eggs, sweetbread, white fish, chicken, lean roast beef, mutton.

The flesh of most fish is white because of the deficiency of hemoglobin and also of muscle pigment in fish.

8. *Diseases conveyed through milk:* Tuberculosis, typhoid, cholera, diphtheria, scarlet fever, measles, gastro-intestinal disturbances.

9. *Insects which can disseminate diseases* Flies, fleas, mosquitos, ticks, bugs.

"Serum-therapy proper is the prophylactic and curative treatment of certain infectious diseases by the subcutaneous or intravenous administration of a blood-serum containing an antibody (antitoxic, bactericidal, etc.) which is specific to the particular disease. As generally used, however, the term includes also the treatment of some of these affections by the toxic products (toxins) of attenuated cultures of their respective microbes; but these toxins, though sometimes grown on blood-serum, may be produced on other media, and are never administered in a serum, as the antibodies invariably are. Pfergey classifies these agents as follows:

Toxins: Including tuberculin and other bacterial products employed for immunizing purposes. The attenuated virus of rabies and the toxins of streptococci, *Bacillus prodigiosus, Bacillus mallei, Bacillus lepræ*, and the cholera spirillum have been used for their respective diseases.

Antitoxic sera: Including those of diphtheria and tetanus, the only ones in general use; though antitoxins for cholera, typhoid, tuberculosis, and other diseases have been used with more or less benefit.

Bactericidal immune sera: Including those for typhoid, dysentery, tuberculosis, and cholera.

Immune but not bactericidal: Including the anti-pneumococcus, anti-streptococcus, and anti-staphylococcus sera.

This separation of the products of immunity is wholly artificial, and it may be that the sera act upon the toxins or upon the microorganisms, or upon both."—(Potter's *Materia Medica*, etc.)

And see French's "Practice of Medicine" (1910), pages 60 to 62; or Rose and Carless' "Surgery" (1911), page 20

10. Disinfection and isolation, if properly carried out, effectually prevent the spread of contagious diseases.

For *disinfection of:* (1) *Rooms*, use formaldehyde gas; (2) *clothing*, use solution of phenol (5 per cent.) for an hour, then boil for an hour; (3) *hands*, wash in soap and water and immerse in cresol or carbolic acid solution; (4) *urine and feces*, etc., should be passed into vessels containing dilute solution of formalin, of greater quantity than the expected excretion; *water closets*, dilute formalin solution

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Pituitary Extract in Uterine Atony.—P. Kroemer reports excellent results following the use of pituitary extract in cases of labor in which the pains are weak. It is particularly valuable in cases of secondary atony in which the use of forceps has the disadvantage of favoring the continuation of this atony during the third stage of labor. Another indication for the use of this drug is as a preliminary to the performance of cesarean section, in which it markedly controls the hemorrhage.—*Zentralblatt für Gynäkologie*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended February 3, 1912.

	Cases	Deaths
Tuberculosis Pulmonalis	509	187
Diphtheria	248	22
Measles	722	11
Scarlet Fever	314	17
Smallpox	3	
Varicella	356	—
Typhoid Fever	52	13
Whooping Cough	65	8
Cerebrospinal Meningitis	4	3
Malarial Fever	—	—
Totals	2,273	267

Pathogeny and Treatment of Puerperal Eclampsia.—Bar has made a careful study of the causes of puerperal eclampsia and has arrived at the conclusion that the cause is a complex toxemia. The nature of the primary poisons is unknown. Their action causes secondary poisoning of the kidneys and liver, and the poisons thus produced add to those already acting and cause the pre-eclamptic state. Hypertension, although the immediate cause of the attacks, is not the primary causative factor. Thus there is a complex condition of toxemia of the blood serum, acting on the liver, kidneys, and brain, resulting in the phenomenon which is called puerperal eclampsia.—*Annales de Gynécologie et d'Obstetrique.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended February 2, 1912.

Places	Date	Cases	Deaths
CHOLERA			
Arabia: Ras-el-Ketub	Dec. 27.		2
In the military hospital			
India: Rangoon	Nov. 1–30.	4	4
Indo-China: Saigon	Dec. 4–17.	173	144
Java: Batavia	Dec. 12–18	4	2
Turkey in Asia: Juddah	Dec. 11–24	246	264
Total Dec. 2–24 Cases, 323, deaths, 310.			
YELLOW FEVER			
Brazil: Manaos	Dec. 24–Jan. 6		3
Mexico: Espita	Dec. 31–Jan. 6	1	
Maxcanu	Dec. 31–Jan. 6	1	..
Merida	Dec. 31–Jan 6..	3	..
Temax	Dec 31–Jan. 6..	1	..
PLAGUE			
Brazil: Para	Jan 1–6	3	2
Pernambuco	Oct 16–Jan. 16	.	4
Rio de Janeiro	Dec. 10–23..	3	2
India, Bombay	Dec. 10–23...	19	16
Karachi	Dec. 17–23.	1	1
Rangoon	Nov. 1–30...	12	12
Indo-China Saigon	Dec. 4–17	2	2
Java: Pasoeroean Residency	Dec. 12–18...	10	3
Peru: Salaverry	Dec. 25–Jan. 9	.	
Present in vicinity.			
Straits Settlements Singapore	Dec. 3–9	5	4
SMALLPOX			
Argentina Rosario	Nov. 1–30..		6
Austria-Hungary Galicia	Dec 24–30.	1	..
Brazil: Para	Dec. 31–Jan. 6....	1	1
Pernambuco	Dec. 1–15.	..	74
Rio de Janeiro	Dec. 10–23.	4	..
Canada Montreal	Jan. 14–20	1	..
Ottawa	Jan. 1–13	9	..
China: Canton	Dec. 1–16.	10	1
Shanghai	Dec 11–17	.	1
France: Paris	Jan 1–6	10	..
Germany	Dec 31–Jan. 6..	1	..
India Bombay	Dec. 10–23	15	9
Rangoon	Nov. 1–30..	11	3
Indo-China Saigon	Dec. 4–10.	3	..
Italy: Leghorn	Jan. 1–6	15	..
Java: Batavia	Dec. 12–18.	2	..
Malta	Jan. 1–6	.	1
Mexico: Chihuahua	Dec. 19–Jan. 14..	32	13
Juarez	Jan. 7–20	4	2
Magdalena	Jan. 9–20	..	.
80 cases in quarantine, 11 in city.			
Porfirio Diaz	Jan 7–22	5	6
Tampico	Dec. 21–31.		1
Portugal Lisbon	Jan. 1–6	4	
Russia Moscow	Dec 10–23	5	2
St. Petersburg	Dec. 17–30.	54	2
Spain: Madrid	Dec. 1–31.	..	1
Seville	Dec. 1–31.		5
Valencia	Jan. 1–6	8	2
Straits Settlements Singapore	Dec. 3–9	2	1
Teneriffe Santa Cruz	Dec. 15–30	.	7
Turkey in Asia Beirut	Dec. 24–30	10	3
Turkey in Europe Constantinople	Jan 1–7	..	5

Medical Record

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Original Articles.

PATHOLOGY OF CHILL AFFECTING LOCALIZED AREAS OF THE SKIN.

BY WILLIAM HANNA THOMSON, M.D., LL.D.,

NEW YORK.

OUTSIDE of hot, moist climates, the most common cause of disease and of death is from "*catching cold.*" I first drew attention to the etiology and mechanism of this derangement in my inaugural as president of the New York Academy of Medicine in 1899. Yet it should be clearly understood that this disorder, however local, is always caused by an interference with the supply of arterial, and not of venous, blood to the part. This fact was plainly illustrated by the experiment of Overbach, who found that clamping the renal arteries for only forty minutes, so as to obstruct the flow of blood through the kidneys, was followed by albuminous urine for twenty days. We may conclude, therefore, that any local shutting off of arterial blood will promptly induce nutritive changes in the territory of that arterial distribution, which are at least analogous to the local inflammatory changes which we trace to "catching cold."

Now the arterial flow, in distinction generally from the venous, is under the regulation of a special department of the nervous system called the vasomotor nerves. This is well shown in the circulation of organs which are in symmetrical pairs, such as the two eyes, the two ears, the two hands, and the two feet, but this association does not obtain in the pair organs which are not symmetrical, such as the two lungs and the two kidneys. As to the symmetrical organs, if thermometers be placed in the axillæ, and then one thermometer be held in the left hand, while the right hand is plunged in ice water, the thermometer in the hand will fall 2° to 5° F. from arterial contraction in it, while those in the axillæ are unaffected. If the semi-translucent ears of a rabbit are held up to the light the readily seen pulsation of the arteries in one ear is found to cease at once when the other ear is pinched. Now, Overbach's experiment shows that the integrity of the tissues of a most important organ can be seriously deranged by only a very temporary withdrawal of arterial blood.

In the first place it is evident that catching cold is a very different thing from being chilled by cold; that is, from a general cooling of the body, for its most typical, as well as disastrous, results may occur while a person sits with his entire body wrapped carefully in winter clothes, but the feet meantime soaked, because he went out without his rubbers into melting snow. A cold draught on the back of the neck, however induced, may, according to individual susceptibility, cause a rhinitis, a pharyngitis, a laryngitis, a bronchitis, a pneumonia or a pleuritis. How does such purely local impression of cold occasion such widely distributed organic mischiefs? As we have remarked, we must look to the nervous system for our chief explanations. One of the first clews toward the solution of this problem was furnished by an observation of Cohnheim that, after long-continued anemia of the rabbit's ear by ligature, the blood vessels became so permeable that the restoration of the normal circulation was followed by pronounced edema of all the tissues and degenerative changes in their cells.

The principle, therefore, which we would elucidate here is that the integrity of the tissues of the body depends upon the constant circulation through them of arterial and not of venous blood. Whatever interferes with the circulation of arterial blood, though it be but a short interference, nevertheless produces serious damage to the tissues. Guided by this principle, we can understand what "catching cold" means, because every organ of the body, particularly if it be very vascular, is sensitive to the withdrawal or interference with its arterial circulation, and hence this leads us to inquire into the special mechanism of the arteries as they are governed by their vasomotor nerves.

The vasomotor nerves are but rarely acted upon by a general stimulus. Instead, such stimuli are definitely local, and yet subject to certain special laws. A study of these laws will throw much light upon our subject of "catching cold." Thus, as we have seen, the first law is illustrated by the intimate association of the vasomotor nerves supplying symmetrical organs in pairs. In the case of the hands I once made use of this property in a boy who had a pistol shot perforate the palm of his hand so as to sever the palmar arterial arch. This necessitated both the cut ends being ligated, but the hemorrhage was so troublesome that I could not secure the vessels until his other hand had been dipped in ice water, whereupon the bleeding was checked enough for me to find and tie the vessels without difficulty.

A second law is the intimate association between the vasomotor nerves of any area of the skin and those of the internal parts underneath that area. This is an important law, as it affords the explanation of a great many clinical facts. Thus, external applications, according to their nature, can produce marked stimulant or else sedative impressions upon the circulation of the parts underneath that area. This explains why poultices may so relieve pain and inflammatory irritation when applied to the skin, but likewise we find this law operative where it is important to stimulate the circulation in the stage of venous stasis.

Thus, after the subsidence of the acute stage of inflammation, we have a powerful stimulant to the internal circulation by dry cupping, which is especially useful in the bronchitis of adults. Likewise the application of a blister is actively stimulant to

the internal circulation, but should not be applied in the first stage of the inflammation.

These considerations lead directly to the whole subject of counter irritation. Thus the effect of local blood letting is always sedative. I have relieved the agonizing paroxysms of dyspnea from a thoracic aneurysm by a single leach applied at the notch of the sternum. A further illustration of this law is found in the saving of life from a quickly fatal post partum hemorrhage by dashing cold water upon the abdomen, or, better yet, by the sudden, intense cold of the ether spray. Of course, this arrest of the hemorrhage is not due to the general cooling of the parts involved, but acts only through reflex vasomotor association.

But this law has also an obverse application of much practical importance. Every internal inflammation causes a marked hyperesthesia of the skin over the inflamed organ, which leads to any irritation of it being reflected inwards to the aggravation of the inflammation. I once saw a distinguished clinician expose the chest of a woman with pericarditis for nearly an hour, so that each of his students might successively listen to the pericardial rub. The result was that in a very few hours the patient's life was despaired of from a spread of the inflammation to the whole pericardium.

Another important law is that through the vasomotor system special associations occur between certain widely separated parts of the body. All vasomotor nerves are particularly susceptible to the irritant impression of cold. This is illustrated in the case of the association existing between the feet and the circulation of the pelvic viscera. So girls can have recourse to a very dangerous suppression of the menses by putting their feet into cold water. It is surprising how long this injurious impression is retained by the pelvic nerves, so as to cause long-continued amenorrhea. On the other hand, I have found no agent so effective in restoring the function of menstruation as that of dry (not moist) heat, applied for prolonged periods to the feet. Likewise, no patient with an irritable stricture of the urethra should allow his feet to get wet and cold, and the same may be said of cases of cystitis. Also due to the same vasomotor association, if profuse bleeding occurs during operations about the rectum, the hemorrhage may be largely controlled by immersing the feet in cold water.

But the vasomotor nerves of the feet form another association which is of much importance, and that is with the circulation of the pharynx and the larynx. Every one knows that getting his feet wet may quickly produce a sore throat, if not an attack of hoarseness, extending finally into bronchitis.

Still another important association is between the nerves arising at the nape of the neck and the whole arterial circulation of the head and face—in fact, we may say that at the nape of the neck is the chief executive office which presides over the whole circulation above the diaphragm, including, of course, the circulation of the mucous membranes. One domestic remedy, for example, was to check nosebleed in a child by slipping a cold key down the back of its neck. How local the primary excitation may be is shown by the results of exposing the back of the neck to a cold draught of air. The most extensive inflammation of mucous membranes may result from a prolonged exposure, though the rest of the body may be warmly clad. Nasal catarrh, or, in fact, catarrh of the whole respiratory tract, may soon follow from thus catching cold.

But a fact of the highest moment connected with catching cold is that by the local damage to an internal part the way is opened for infecting microorganisms of the most varied kind to enter the system. Many of these infecting agents may be found throughout life, occupying the mouth and throat, but doing no harm so long as the epithelium lining of the mucous membrane is intact, such as the case with the pneumococcus, and a whole host of similar and powerful infecting agents. The demonstrated seasonal relationships of pneumonia show this very clearly. These infecting microorganisms are as little able to penetrate a healthy mucous surface as the streptococci and staphylococci, which always swarm on the skin, but can do no mischief until the surgeon ventures to make an incision in it.

These vasomotor associations have their widest illustrations in the causation and course of bronchitis. Sometimes getting the feet wet begins, as we have explained, a cold which first makes the voice hoarse, and then from the larynx proceeds steadily down the trachea and larger bronchi until the smaller air tubes become involved. Oftener than that, however, the vasomotor centres at the nape of the neck set up a catarrhal inflammation of the nasal passages, and then, with this derangement in the beginning of the breathing apparatus, it progressively invades the whole respiratory tract. Yet just this sequence occurs also when this tract is directly invaded by the specific infections of influenza, measles, and whooping cough. But what we particularly wish to explain here is the mechanism of the many fatal complications of bronchitis.

We begin with the disasters which follow upon the plugging of a main bronchus by the accidental lodgment in it of a foreign body. If this be not removed, death inevitably ensues from a most disorganizing pneumonic process of the part supplied by the bronchus, in which not only are all the air vesicles wholly destroyed, which they are not in croupous pneumonia, but the interlobular, as well as the intervesicular connective framework is rapidly damaged. No ruin of pulmonary tissue compares with this for completeness.

Now, it should be borne in mind that both the larger and the smaller bronchi should never contain anything but air. Their walls are simply moistened by a bland, slightly saline fluid, and in no part of the body is the saying more true that no mucous membrane should ever secrete mucus. When, instead, its surface is coated with mucus, it is already in a morbid condition, denoting inflammation. In the bronchi this is doubly true, for secretions there, no matter how fluid, are to all intents and purposes foreign bodies, and must be got rid of. If they cannot be got rid of, the part supplied by that bronchus is subject to the same disorganization as that described following the plugging of a main bronchus. It is then that we have a localized, but ruinous bronchopneumonia, however small its area may be.

Bronchopneumonia, therefore, occurs in every disease accompanied by bronchitis whenever, as in children, the powers of expectoration are feeble, particularly in measles and whooping cough, and is the most common cause of death in all such affections. But its initial mechanical cause should not be lost sight of, the practical aim always being to make the secretions so fluid that they can easily be coughed away. In adults this is usually accomplished with ease. If the secretion, however, is very

viscid, the coughing is hard, and in chronic cases leads to emphysematous over-distention, if not rupture, of the air vesicles. In infants, as already explained, the immediate results are very serious. The small occluded bronchi now lead to the same disorganizing process in the little lobules supplied by the bronchus, which occurs as the result above described accompanying occlusion of a main bronchus. Scattered pneumonic processes are therefore found through both lungs, for bronchitis, unlike croupous pneumonia, is a bilateral affection. In some cases, however, the plug in a small bronchus may act as a valve, interfering with the inspiration, but not with the expiration, thus leading to atelactasis of the lobule, so that in bronchopneumonia we find both pneumonic consolidation of lobules along with collapsed lobules, either condition, of course, equally interfering with the breathing. In infants, therefore, this whole process leads to most distressing efforts to get air. The little patients toss from side to side in their vain endeavors to breathe until signs of carbonic acid poisoning show the last effects of gradual suffocation; but we meet with practically the same conditions in aged patients from their feeble powers to expectorate. Remembering, however, the purely mechanical operation of their respiratory obstruction, I once had an old lady eighty-four years old, mother of a prominent New York judge, raised feet upwards by her nurses, while her head touched the floor, and while in this position I assisted her expectoration by pressure on the sides of the thorax during expiration. She thus got rid of large quantities of mucus, and was soon restored to bed quite comfortable, ultimately recovering.

In no disorder of the lungs does the morbid condition so facilitate infection by every variety of microorganism, including tuberculosis, a not uncommon sequel, especially after measles.

Treatment.—The various conditions above described afford many indications for treatment. Thus chronic nasal catarrhs point to a weakened susceptibility to the vasomotor centres at the nape of the neck. Now nothing so restores the tone of these weakened centres as cold properly applied. Thus a cold bath or shower bath invigorates the circulation, provided always that the reaction from the impression of cold is complete, but if no, or equally imperfect reaction occurs, the patient is worse off than ever; hence chronic nasal catarrhs are best treated by sudden and very brief douching of the back of the neck with cold water, to be followed by active dry friction to assist or to promote the restoration of the circulation in the parts. During the douche the hair should be carefully protected from the water, for wet hair would only prolong the injurious effect of chill. Meanwhile, the nose itself may be treated with insufflation of a fine powder composed of two drams of subcarbonate of bismuth with six grains of aristol.

Bearing in mind what we have said about internal inflammation causing hyperesthesia or great sensitiveness of the corresponding area of skin over the seat of the inflammation, any area of chronic inflammation should have the corresponding cutaneous surface carefully protected. In health, if a cold hand suddenly be placed over the precordium, the heart will give a bound, but so all cases of heart trouble, whether the result of pericarditis or endocarditis, are very sensitive to surface impressions, which would not normally be felt. This explains the beneficial results following applications of large belladonna plasters, which should cover the whole area of the skin over the heart, but these facts are equally applicable in all chronic inflammatory conditions, whether of the lungs or of the pleura. Chest protectors on that account are reasonable. I prefer the application of cotton batting to any other such measure. Similarly every patient with chronic diarrhea should have his abdomen covered by some equivalent protection. In chronic, long-standing bronchitis I have the patients wear both shirts and drawers made with perforated chamois skin, worn just over a light undergarment. I have often been told by such patients that they could spend their winters at home, when before they used these protections to the skin they were unable to do so. Osler says in his Practice of Medicine: "Thus, in the convalescence from measles and whooping cough, it is very important that the child should not be exposed to the cold, particularly at night, when the temperature of the room naturally falls. In a nocturnal visit to the nursery—sometimes, too, I am sorry to say, to a children's hospital—how often one sees children almost naked, having kicked aside the bedclothes and having the night clothes up about the arms."

In my practice I have all such children, while tossing about, struggling for breath, and those exposing themselves, put into bags of canton flannel, drawn about the neck so as to prevent them from exposing the skin to the cold air.

70 East Fifty-fourth Street.

GENERAL MEDICAL EDUCATION: THE ONLY RATIONAL PREVENTIVE MEDICINE.

By A. L. SORESI, M.D.,

NEW YORK.

Preventive medicine is almost entirely limited to the suppression of infectious diseases, which are by no means the worst ones affecting human beings. We must consider as disease any condition differing from the physiological harmonious constitution and functions of all the organs essential to the physiologically perfect human being. Therefore we must consider as diseases such conditions as premature old age, imperfect human beings, showing a more or less marked degree of monstrosity caused by lack, distortion, misplacement, or excess of any part, organ, or functions, such as the blind, deaf and dumb, cripples, hermaphrodites, hypospadiacs, etc., psychic derangements, imperfect functions of the eliminatory organs, all organic diseases, tumors, etc.

That little has been accomplished by preventive medicine up to the present time, is proved by the fact, that diseases are raging and claiming their victims almost in the same manner as before our knowledge of their nature was as advanced as it is now—not to accept the ideas of some observers, who think that diseases are on the increase. The questions therefore arise: Whose fault is it, that not more has been accomplished? Is our knowledge insufficient? Are our sanitary regulations incomplete? Is it impossible to eradicate diseases and is then preventive medicine only a dream?

Diseases are attacking human beings in so many open and insidious ways and there are so many coefficients which help their diffusion, that we must not look upon the problem of their eradication as one concerning and of interest only to the medical profession, but a problem which must be of the highest interest to every intelligent human being.

With this thought in mind, I will try to demonstrate that there will never be real preventive medicine, not even against infectious diseases, if the medical profession is left alone in the fight; that the only way of attaining success is to have the intelligent cooperation of every intelligent person; that in order to have such indispensable cooperation, every one should know what diseases are and how to fight them; *that a general compulsory medical education, based on a good practical knowledge of anatomy, physiology, pathology, and hygiene, beginning with the elementary training of children, together with a general diffusion of such knowledge through all grades of society, is necessary to this end.*

I will take up, first, the subject of prophylaxis against infectious diseases, because it is the part of preventive medicine best understood by the medical profession. We know that infectious diseases are caused by microorganisms of different species; we know how these microorganisms grow and attack human beings. In theory, infectious diseases could be eliminated in a very short time, by destroying or making harmless their agents. When Pasteur demonstrated the life of microorganisms and Lister proved how disinfectants killed them, the doctors of that time had visions of exterminating all infectious diseases with more or less powerful disinfectants. We saw the futility of fighting infectious diseases, with disinfectants, because by killing the microorganisms we were also killing the living cell of the organism which was invaded by the infecting agent, so that the results were exactly the same as if one, seeing a person attacked by a ferocious animal, should fire at both; the animal would be killed, but so would the person attacked. The wonderful progress of late years has brought forward inoculation of toxins, antitoxins, sera, etc., and the almost miraculous results obtained against diphtheria by Behring's and Roux's antitoxin and the more dubious against typhoid fever and other diseases, have given to the medical men and the cultured laymen the idea that we are on the right path and very shortly all infectious diseases will be prevented by such means. But in a few years from now the medical men will see that we were as mistaken as the men of the antiseptic period, and sera and vaccines will be used as we now employ antiseptics, that is to say, they will be used only in certain cases and without the illusion of eradicating all infectious and contagious diseases with them. The reason for this is apparent. If we admit the realization of the most rosy dreams—the possibility of finding the specific for each infectious disease, or a specific which would kill or prevent the vitality of all microorganisms—we would, in the second case, also kill or prevent the vitality of microorganisms which are indispensable to some processes of metabolism, such as fermentation. In the first case to obtain real, actual results, we should inoculate each human being with many different active principles, which are not found in the normal healthy human body; and who can foresee the possible damage that such active principles, which are and should always be foreign to the normal human body, would produce, if not immediately, in the future, either on the present or on the coming generations? To fight infectious diseases through vaccination, inoculation of sera, etc., is only a moderate improvement over the old way of fighting them with drugs and antiseptics, if their cause is not removed.

But the medical profession has not limited its activity to the preparation of sera and vaccines; it has other prophylactic measures, so let us briefly examine some of those proposed and adopted by the medical profession in some of the best known infectious and contagious diseases and study the results obtained.

Tuberculosis. We know its agent, how it enters the human body, the lesions it produces, how it multiplies itself, what its conditions of life are. We know practically everything relating to this terrible disease and thousands of persons are engaged in preventing its diffusion and an enormous amount of money is being spent to this end. Sanatoria, preventoria, and special open-air schools have been built and more are contemplated. We have proposed sanitary regulations. Almost all modern cities have made it a misdemeanor to spit in cars and public conveyances. Lectures and exhibitions are given freely to the public; we have done what we think is in our power to stamp out this plague. In theory we could eradicate tuberculosis in a few years, but we must admit that the progress we have made since our knowledge has been accepted by the medical profession, has not been in accordance with what was reasonably to be expected; some even claim that tuberculosis is on the increase. With all our precautionary measures and labor expended, we find that it has spread to every inhabited part of the world, and even old villages in remote parts of the country, which were some twenty years ago immune, are now infected with tuberculosis.

Why does this happen? Because the social value of our sanitary regulations is not understood by the public and therefore the social causes on which tuberculosis grows are not removed. Nobody, even in towns where it is a misdemeanor, takes very much notice of persons who spit in the streets, and, in fact, I would like to know how many people refrain from doing so, where the air dries much more quickly than in any public conveyance and where the winds carry with the dust the tubercle bacilli into every house, every corner, and on everything exposed to the atmosphere.

But that is not the only strange thing one can observe about these sanitary precautions. In every city children are playing in the streets and often in clouds of dust which, entering their mouths and nostrils, is ingested and forced through the bronchi and lungs by the rapid inspiration which takes place while they are running or playing games. The quiet observer can then candidly inquire what is the use of taking so many precautions to build sanitary houses, schools, etc., to teach mothers how their children should sleep, how to keep the house clean, etc., when a child breathes and ingests more impurities in an hour while playing in the street than during all the time he is at school or in his home eating and sleeping. If everyone knew what health really means it would be easy and not at all expensive to prevent the majority of infant tuberculosis, besides many traumatic injuries, by compelling builders to make the roof of every house a playground, safe and sanitary for every child. A city would then have, at very little cost, an enormous playground as large as the city itself that would be as desirable as if it were in the open country and the outlay would be so insignificant that it need not be taken into consideration. But the first to protest would be, in all probability, the mothers who would prefer to have the roof at their entire disposal to dry the laundry than to have their children play and breathe pure and healthy air, as

well as saving their lives by not running the risk of being injured by street cars, trucks, and automobiles.

A child is attacked by diphtheria or scarlet fever, measles, etc. The disease is, so far as the morbid entity is concerned, exactly the same whether he is the son of a millionaire or the poorest laborer, but the contagion, that is, the danger to society, is quite different in the two cases. The son of a millionaire will have a doctor who will take the necessary care not to carry the infection from one house to another, because he can devote time and money to personal care by changing his clothes and not coming in too direct contact with the patient, having a good trained nurse who attends to all details of the disease and simply reports them to the doctor. The trained nurse also knows how to take the very necessary precautions so that the disease is not communicated to other members of the family. A well-ventilated room is provided for the patient; whatever science has devised for the treatment and prevention of the spread of the disease is applied, and the case will remain an isolated one. Nobody else will be infected by him.

Let us examine the condition in the other case—the poor man's son. The doctor is very likely a lodge physician who has to visit an enormous number of patients daily and, being in a hurry, he does not have time even to wash his hands, often because there is no water in the room. The place where the patient lies is, in all probability, a dark room, without air and in which other members of the family have to live and sleep. The poor mother certainly does not know how to take the necessary measures against the spreading of the disease.

The family of the sick child is composed, besides father and mother, of some boys and girls. One of the girls is a saleswoman in some store where ladies' wearing apparel is sold. The girl has been sleeping in the room with the patient and attending the little brother or sister after working hours: her hands and wearing apparel certainly become infected. The next day she goes to the shop and helps ladies try on, for example, a pair of gloves, choose a muff, a hat, a corset, or any of the accessories of a woman's wardrobe. Still better for the propagation of the disease, she will help madame choose some garments for her little son or daughter. She will pet and caress the child in order to keep him quiet and look pretty to induce the mother to buy. Can one imagine a better means of diffusion of infectious diseases? Such examples could be multiplied and are all well known to the physicians, but the point here is not how infectious diseases diffuse themselves so much as the social conditions which make such infection possible and which are not appreciated enough either by the medical profession or by the public. The same disease among the wealthy and educated people is limited to one case, but among the poor it is the origin and cause of numerous other infections entailing the unavoidable loss of life, health, and money.

Typhoid fever is known to be diffused mainly by water, milk, fruits, and vegetables, as well as by direct contact. Thousands of books, articles, and lectures have been written on the subject. Well, many cities supply their citizens with water that is unfit, not only for drinking purposes, but, in many cases, even for bathing or washing.

Cholera is making thousands of victims in Oriental countries and, although we are lucky to escape it on account of the distance from the countries where it is endemic, it gives us another good illustration of what modern prophylaxis is accomplishing. In many Eastern countries and Mediterranean ports the streets are used for toilet purposes; bodies of dead animals are left to putrefy, and the "sanitary squad" is unknown. The medical men have been trained in the best colleges and have proposed the best sanitary laws and yet the spread of cholera is almost as bad as it was before the medical profession knew anything of its nature. Even in southern Italy it has spread, notwithstanding the very best sanitary measures taken by one of the foremost medical bodies of the world—the Sanitary Council of Italy. One sees there that soldiers and policemen have had to be called out to help the medical men carry out their sanitary precautions; continuous and violent demonstrations against the authorities have taken place very often and, instead of applying the sanitation advised and imposed by the government, the people burn candles to some saint for protection.

But one does not have to go to the far Orient to see that sanitary laws are not enforced as they should be. The Board of Health requires that some infectious and contagious diseases be reported; that a sign be placed on the door of the place where the affected person lives. How many persons object to having such a sign on their door and ask the doctor not to report their case to the Board of Health? How often does some member of the family where the affected person lives even threaten the doctor if he reports the case?

I have already referred to the laws forbidding expectoration in the streets and public conveyances. Now these sanitary laws are perfect and rational and of not difficult application, but they are enforced about as much as the elementary Oriental laws mentioned above, that is, they are not enforced at all, or so very slightly that the benefit derived from their enactment is small. Very few would take the trouble of having a person arrested for expectorating on the street and even the magistrate is very lenient and applies the minimum penalty. In the popular mind the offense is not a very grave one; the importance of the laws is ignored and they cannot appreciate it.

Consider for a moment the way the glasses are washed in many of the so-called ice cream parlors. The water is generally dirty and of such a color, that there can be no doubt about its being unfit for cleaning. Nevertheless, thousands of people drink and delight themselves with the beverages and refreshments served in those unclean dishes. Stand on a corner and look at a man selling hot frankfurters and you will see that cleanliness is not regarded as a factor to help the sale.

Is, then, prophylaxis useless and are we wrong in advocating it? The idea of prophylaxis is as good as any human idea can be and the wonderful success obtained in fighting some diseases is the best proof that we are on the right path. We have been very successful in preventing certain diseases, which some years ago were thought to be incurable and unpreventable and malaria is the best illustration of what a really scientific prophylaxis can accomplish. I will consider, for brevity, only what has been accomplished in the prophylaxis against malaria and what has not been accomplished against tuberculosis, because I think the success in the case of malaria and the unsuccess in the case of tuberculosis will give us the indication of what we should do in the other infectious diseases.

On account of malaria, people used to die by the thousands or lead the most unhappy life after having been infected. Thousands of square miles of land were uninhabitable. Quinine was discovered to be the specific for malaria, but people and lands were in the same condition. Grassi discovered that the essential element for the prosperity of malaria was a kind of mosquito. Following this discovery he started the most brilliant campaign in the history of medicine to prove that the only possible means for the diffusion of malaria was through the anopheles; that it was possible to live in the most infested place without contracting malaria, provided one was not bitten by the anopheles. Grassi and others proved that by eliminating the anopheles malaria would disappear, but still malaria was as prevalent as before its manner of infection was so mathematically proven.

The thousands of victims, who by, either losing their lives, or becoming cachectic, were lost to society, the immense acreage of land that was lost for profitable cultivation, aroused the interest of the legislators and financiers who saw it was a good investment to save these lives and make cultivable the large tracts of land. So they asked the best engineers to study the problem and the result was that they did not try to kill the mosquitos, but they tried and succeeded in making the life and proliferation of the mosquitos impossible. They saw that the mosquitos were living and proliferating because of stagnant water. They asked millions to drain the ground and where formerly there was nothing but marshes, death, and misery, now, after a few years, those places are inhabited by thousands of healthy and prosperous people.

Tuberculosis is the most quiet and insidious disease. It attacks its victims by the millions, one by one. It does not make its victims suddenly, only in certain localities and at certain places. It is always among us, winter and summer, and it makes its victims quietly, without éclat or alarm. We are accustomed to it and we grow very careless. We physicians understand perfectly well the great damage it is causing in our ranks, but we can do nothing. Social conditions favor tuberculosis and are against our campaign. Legislators and financiers, who have seen the good investment in prophylaxis against malaria, fail to appreciate as they should, that some social conditions are the real cause of diffusion of tuberculosis and we have resorted sometimes to prophylactic methods which are not only ineffectual but really terribly injurious. Our systematic examination of people before being admitted to factories or public offices, or after they were employed, has shown how common tuberculosis is, but too often the unhappy person affected by the disease, after having been discovered to be consumptive, did not obtain the desired position or has been discharged. The effect of our prophylactic examination has then been, in many cases, the loss of the means of earning a decent living, with the inevitable resulting malnutrition, which we know favors the culture and diffusion of tuberculosis. It is plain, therefore, that if we could create a medium, such that people could understand the value to society of a healthy population, it would be possible to drain out of the social ground, the conditions which make possible the existence and diffusion of infectious diseases, because they would understand how good an investment of money and energy it would be.

The problem of infectious diseases is not only a microbic one. I would dare to say that it is more a social than a medical problem. Medical science will never be able to prevent the existence of infectious diseases, until social science has been able to eliminate the conditions which create the favorable ground, where infectious diseases grow and multiply.

How many, even among the medical profession, realize that overcrowding in small flats and in poorly ventilated factories is one of the great causes of diffusion of a number of diseases, and not only the infectious ones, but the nervous and psychic, and that such conditions are a menace to the community? How many have the conviction that poverty is one of the most dreadful diseases and that any law bettering the financial condition of the poor is a better and more valuable step toward public sanitation, health, and human happiness than the best and most efficacious serum? Do we try to convince the wealthy class and, first, are we convinced ourselves that the condition of half-starvation, overwork, unsanitary conditions, and lack of rest of a large number of human beings is the cause of the greatest number of diseases and that it is the duty of the dominating class, if only in their own interest, to put a stop to such a condition, because their own health is endangered? Disease is no respector of persons—the poor, the rich, the intellectual—all are attacked alike and one as savagely as the other. Tuberculosis, diphtheria, pneumonia, and many other diseases would not make so many victims, and finally would disappear, if the sanitary condition of the poor was what it should be, and by sanitary condition are meant all the conditions leading up to a healthy life—good food, rest, good homes, and proper clothing. Are the medical profession and the intellectual class convinced as they should be, that all the laws made to protect the workman are in the end of benefit also to themselves? Laws regulating child labor and the sanitary condition of factories are of benefit not only to the working class but equally to the higher classes. Children and working people in poor health are more liable to be victims of diseases and to become the means of diffusion of them.

What makes then such a social condition possible? Nothing but social ignorance. How many of those constituting the human family have definite ideas about diseases? It is safe to say about one or two to a thousand; that is, those connected with the medical profession. The vast majority do not know anything, or have so little and incomplete knowledge that complete ignorance would better express it. The poor medical man, therefore, is left not only alone in devising and applying means to fight diseases, but too often his work is badly hampered by the ignorance of others. The sanitary laws which he proposes, if approved by the legislators, remain in the great majority a dead letter, because people, not understanding them, do not appreciate their importance, making such laws effectual by insisting on their enforcement. No law that has not the appreciation and the strong approval of the majority of the people is really a law; it is nothing but a practical joke, or the expression of the wishes of a few. And it is almost useless to work for the advancement of medical science, when our knowledge is not taken advantage of, when people do not understand that disease cannot be considered as a private affair. It concerns the public welfare when a person suffers from a physical or moral disease. He must be

regarded as a disabled member of the large human family, not only becoming a charge when he is no longer able to perform the work which he is expected to do, but a menace either because the disease can be communicated to others, or because he can procreate human beings who will in their turn become a charge and a menace.

It must be understood by the public that every animal can be a danger to the community and that any wrong idea about diseases is favorable to their diffusion. I say intentionally every animal, because, for instance, a dog or a cat, in a flat where there are children, can diffuse more diseases than a child suffering from diphtheria, whereas very little or nothing is thought of it.

The importance of the ignorance of the vast majority of the population, as the greatest factor for the diffusion of diseases, can be appreciated when the fact that diseases are the worst enemies of the human race is taken into consideration. To fight successfully an enemy one must know who his adversary is, his habits, his strength, his weak points; in a word, one must have all the possible information about him. As every individual can be attacked at any moment by diseases, it is only logical that every one should know as much as possible about them.

Some claim that diseases could be completely eradicated if people had more confidence in the medical profession. The so-called distrust of the public toward the medical profession is perfectly understandable and excusable. We have for centuries kept medical subjects out of public discussion. We have now broadened our views by coming into more direct contact with the people, but we must go further, if we want to obtain good results. We have shown our progress, but we have hidden our shortcomings, we have promised things that we could not give, and, although we have acted in good faith, we have failed and must stand for our failures. We have not to forget, that the public will brag more about one of our failures than talk about thousands of our successes and we must show to the public our good faith and willingness to do our best for their benefit. We must teach them that medicine is not a mathematical science; that we really do the best that can be done and that nobody can do any better. We must give people confidence in ourselves by educating them to appreciate our work and cooperate with us. We must convince them that there is no such thing as a medical trust; that what we ask, is that nobody should take care of the infirm, who has not a certain degree of general culture demonstrating that he has the right mental attitude to study medicine; that nobody should practise medicine, who is not trained in a certain course of studies, but that there is no necessity of more freedom because the medical profession is free and open to all. We have to educate the people to understand that, if we ask restriction in the practice of medicine, it is only to the advantage of the people themselves. The more quacks there are the more business for the good physician. That our restriction requires only the necessary knowledge to be able to practise medicine; that we do not impose on each M.D. the doing of certain things. We want the M.D. to learn the elements and then he has to use his brain and he has the broadest liberty to do as he sees the case requires. That we know our shortcomings and we are trying to have a higher standard of education for the persons, who intend to devote themselves to the practice of medicine; that we want to make it more difficult to become an M.D. because we try to have the best fitted as far as intelligence and morality are concerned. And if we can convince ourselves that the cooperation of the people is indispensable and then convince the people that a good knowledge of the human body is absolutely necessary to keep one's health, and that health is the most necessary factor of human happiness, we will have done more for the advancement of preventive medicine that if we study only for the advance of medical science. What we need immediately is not additional, new medical knowledge; we need people who can understand and appreciate what we already know and put into practice our present knowledge.

But if social ignorance has made impossible the prophylaxis against infectious diseases and created a medium where the medical men cannot accomplish their duty as they should, it has done even more harm in regard to the other diseases of non-infectious origin. Nothing or little is done as prophylaxis against diseases, which are perhaps more easily preventable than the infectious ones.

Constipation, which is very little thought of, is claiming more victims and doing more harm than the white plague. Any physician has only to examine his records and he will be surprised to find that the majority of his patients are suffering from constipation, which had predisposed them to a number of other ailments, for which they consult a physician. A mother will never think of consulting a physician because her children are constipated. In fact, it is seldom that she notices that they have that difficulty and, if she does, no attention is given to it. She has been constipated and never did anything, except take occasionally some purgatives. She does not understand that constipation is really a disease which predisposes the body to a great number of other diseases. The slow and continuous absorption of poisonous products of decomposition of the intestinal contents, is more dangerous than the absorption of alcohol or any other drug, because it works on the system continuously and unnoticed. For a long time I have followed the most celebrated crimes, the so-called passionate crimes caused by women, and I have always found that the woman in the case, with very few exceptions, was suffering from constipation. This trouble, which is the root of so many evils, should be completely eradicated, except where there is organic disease, if mothers and teachers had a better knowledge of the functions of the alimentary canal. How many diseases can we trace from the habit of drugging with patent medicines, antifats—medicines which will cure all ills, as kidney, liver, lung, and stomach troubles, without the person's knowing whether the trouble exists or not? Does the public help us in our campaign for pure and sanitary foods?

What is done to prevent the coming into this world of human beings, who are unable to stand the strain of life, because imperfect, as the blind, deaf and dumb, or sickly at birth? We all know that not more than one-third of all human beings are not as healthy as they should be, therefore unable to give society a full share of work and enjoy life as every human being has the right to. We hear people talking about the decadence of the race and of race suicide. Among the many foolish things that have been said by prominent men is that the reduction of the birth rate means the suicide of the race.

Nobody seems to think that race suicide is not the limitation of birth rate but the bad crop of new human beings caused by the unscientific way in which human beings come into this world. Venereal diseases are ignored by our legislators who talk about race suicide. Giving birth to beings unfit and imperfect is thought to be only an unavoidable accident, and the intelligent legislator asks for a limitation of marriage, by giving the prospective bride and groom a clean bill of health, as if to procreate children it were necessary to have the approval of a parson or of a judge.

Race suicide is putting into this world human beings unfit. Race suicide is a problem of quality and not of quantity, and the quality will never be improved until the ones who can procreate human beings, that is, all men and women, know the best way of doing so. In this respect, we are as scientific as were our forefathers of the stone age, who at that time did not have, very likely, the many diseases that are now torturing the human race.

Real race suicide is infant mortality, a condition which could and should be prevented. What is the use and advantage to the present and future generations of a woman putting into this world six children, for instance, when only one or two of them reaches the age of being useful to himself and to others? It is a terrible tax put on the human family to have children die. The mother, while pregnant, is unable to accomplish much work; money, time, and energies must be spent to keep a life which is going to be extinguished before it is of any use. We would hear less foolish talking about race suicide, if we teach every man and woman that the genital organs must be in the best of condition to produce a healthy human being; that the production of a human being that cannot enjoy life is the worst crime, because it is committed against one's own creatures.

Another element, absolutely neglected by the ones talking with so much authority about race suicide, is the fact that in relation to sexual questions we have not made the slightest progress. We still think chastity a virtue and we honor the ones who have made vows of chastity and, further, we allow them to talk about race suicide. Chastity is not only not a virtue, but in relation to race suicide it is the blackest crime against society. If we were all chaste there would be not attempted race suicide; there would be absolute race destruction. And when we hear men and women, devoted to chastity, preach against scientific limitation of birth, we have to wonder, why people talking that way are not sent to the insane asylum, instead of letting them preach the principle of morality and pretend to be an example to other human beings.

The study of medicine in a logical way, if necessary for every human being, should be absolutely essential for anyone who is taking care of children and who is to advise, even if only in a moral way, his fellow beings. How can a teacher, for instance, take care of a youngster, either boy or girl, at that critical age of puberty, adolescence, when the genital organs are developing and waste more energy than the majority of observers seem to believe? He feels that something is working in his system, like a worm would under ground. He does not know what is the matter with him and the teacher, minister, or parents will tell him to study more or to say more prayers. No one seems to understand what is going on. The parents are ignorant themselves, and, even if they notice something, they believe it is better not to say anything. The girl or boy will know all about it soon enough. And how will the adolescent know? Usually through some one, who is perverted and corrupted and through sleepless nights without rest, at the very time when rest is most essential.

But how can teachers and a part, at least, of the clergy be expected to understand this phenomenon when even in our modern civilization here in New York, we ask that a young woman teacher should not get married because if she does and has children she will lose her position? So that the majority of the ones devoted to the instruction of children are men and women vowed to chastity or "old maids"—thus violating the first and strongest law of nature—the necessity of reproduction. Teachers should be fathers and mothers and no one who did not develop all his physiological powers in the very best physiological way, should be a teacher. People who are compelled to repress the most physiological feeling—the feeling of reproduction—should not be teachers. They will never understand the age of puberty. To thoroughly understand an adolescent, it requires not only tact—tact alone would not make one a good diagnostician, a good surgeon, a good lawyer, a good minister, or a good singer. It requires unbiased knowledge of the anatomy, the physiology, and the pathology of the human body, and certainly a great number of youngsters have been ruined, sexually and morally, by the ignorance of their teachers and parents. I remember the case of a young boy, who was expelled from school to be sent to a reformatory as being incorrigible and upon physical examination, I found that his genital organs were abnormally developed and kept very unclean. By performing a circumcision and giving him good advice, the boy went back to school and was as good, or as bad, as the average boy.

Often teachers and parents scold an adolescent and punish him, never thinking that he might be ill. It is as necessary to have a knowledge of anatomy, physiology, and pathology to understand and appreciate the phenomena of life as it is to know a language in order to understand a book written in that idiom.

So much is said about the future of the race and the necessity of a good, sound education which will leave a mark on one's personality during all his life, but who knows the physiology and physiopathology of children? Teachers and parents have not enough knowledge of the human body and mind, to be able to detect some facts which would so help the cause of first education, as to put it on a real scientific basis. If the teachers are already doing so much good, what would they not be able to accomplish, if they had the necessary, unbiased knowledge from understanding the physiology and pathology of children's actions?

There should be no laymen about medical questions, as there should be no analphabet, that is, every one should be able to understand the problems of health and understand and appreciate what the professional medical men do, just as every one should be able to write and read. Some will say that hygiene is taught in our schools, but hygiene is not a science *per se*. It is the result of knowledge gathered from a number of sciences, such as anatomy, physiology, pathology, therapeutics, and to teach hygiene *per se* is the same as teaching law, architecture, engineering, archeology, or any other of the modern branches of science to a per-

son who has no elementary culture. It would be absolutely impossible for him to understand. Hygiene is not appreciated; it is an empty science and a bore.

Of all the things we studied in school, when we engage in any profession in practical life, we have forgotten at least 90 per cent., because they are of very little use to us. But we live every day with our mind and body; we need them every minute. Without health we can accomplish nothing, so that it is easily seen that a knowledge of the elements necessary to maintain health is the most necessary.

In our schools many branches of science are taught more or less thoroughly, some as indispensable and necessary elements to acquire other knowledge, some as practical knowledge useful in civilized life, some to give the student a special culture, and some for mental discipline. I do not think that there is a knowledge more indispensable, besides writing and reading, than the knowledge of the human body. Its anatomy and functions are the most complex, highest, and interesting of all the manifestations of nature, because all the manifestations of nature refer to us, as we are built and as we act. I cannot imagine a person who is called cultured, that does not know himself. As for developing the powers of the mind, I would like to know if there is any science that compares with it.

The result of a general medical education would lift the standard of morality by making plain, that human happiness is based on a sound and physiological balance between the powers of the mind and of the body. That it is foolish to make laws which are not in accordance with the fundamental laws of physiology; that nobody can be happy and make others happy unless he is healthy and physiologically developed; that diseases can not be cured, but can be prevented; that every human being has the right to be healthy and strong and, therefore, parents who, through ignorance, do not take the proper care of their offspring or reproduce imperfect human beings, are guilty not only against society but also against their own creature; that the welfare of every human being as an individual, is strictly connected with the welfare of the community.

There are sentimental feelings opposed to the teaching of anatomy, physiology, and hygiene in a practical way. It is said that it would tend to make men and women skeptical and that they would lose the poetical side of life. This is the grossest and most stupid argument that could be offered. From a religious point of view—and I have to mention it because, unfortunately, religion has taught a very false sense of modesty—to know what the Lord has done, is to admire the greatness of the complicated human machine, and I cannot see any reason why, as long as the Lord has made us as we are, students of religion should not take the matter in their hands and teach, along with the moral, the physical basis of life.

We have to understand well ourselves and teach others that there is only one morality and that is physiological morality; that what we call morality is an empty word if we do not mean the acts which are the result of a body physiologically perfect; that all laws should relate to the physiological functions of the body as the body is built; that no one is better than his physiology, and that only sound morality is what should be termed physiological morality. The perfect man, therefore, is one who thinks and acts according to his physiology, for any human being when the physiological support and *rapport* of his organs are broken, becomes a pathological subject and will act accordingly. A dissemination of the knowledge of anatomy, physiology, pathology, and hygiene would make a better class of people, because they would care more and take better care of their health, and they would understand that there can be no sound mind, where the body is not physiologically perfect. The ignorant moralist who said that the body is the slave of the mind and based his morality on that principle, has done more harm to the human race than all the diseases combined. There is no healthy mind in a body which is not physiologically in good order and we know well enough now, how the sweetest girl can be changed into the most irritable person imaginable by ovarian trouble. We know that a little growth on the skull can make a human being an epileptic and therefore irresponsible. We know that the so-called case of gall-bladder, is always an unhappy being, who makes everybody living with him unhappy. We know how harmful for the mind and for the body is constipation with its slow absorption of poisonous ptomaines.

And I think that it is an insult to Divinity even to think that the knowledge of the human body and its functions would make men and women less respectable in the eyes of each other. Ignorance is not respectability. Ignorance only leads to prejudices, which make human beings more like animals of lower species. Only a fool must be afraid of knowing himself and how he acts. Ignorance has created a most false sense of modesty relating to some important acts of metabolism, as urination and defecation, and has made a kind of sanctum of the genital organs, especially the female, with the result of enormous suffering from diseases of digestive, urinary, and reproductive organs, which, in their turn, lead to a number of mental diseases, wreck many lives, and make many homes unhappy.

So far as the poetical side of life being lost and the hardening of one's feelings, by studying well the human body, we have only to answer that the greatest surgeons, who are thought to be heartless all the world over, are generally the gentlest human beings with their fathers, mothers, daughters, sisters, and friends, and one has only to observe the conduct of persons connected with the medical profession—nurses and doctors—with children and old people, who often tax to the utmost the patience of the most patient relative and who are absolutely nothing to them, to see that if there is any result from the study of medicine, it is to refine the sense of kindness which is inborn with every normal being.

But the strongest objection comes from the medical profession. Some say that unfortunately we already have a great number of quacks and people taking care of themselves, without consulting a regular physician, and therefore, if every one had a knowledge of medical science, quacks would be innumerable, and the spread of disease would be dreadful. This objection is absolutely worthless, because the ones who go to the quacks, or who treat themselves, without the advice of a competent physician, are the more ignorant, and therefore are the ones who need more to be instructed and then, having a general medical education, would understand, that the very best man to give medical advice is the man, who makes his only business the medical profession, after having had a special training.

Now we have a certain limitation to the practice of medicine, but we see that a great number of per-

sons who are not in any way, or in a slight way, connected with the medical profession—as the medical profession should be understood—give advice and administer remedies with the certain danger of having anything administered or advised by incompetent persons. When everyone had benefited by a general medical education, he would be better able to appreciate the services of his physicians, would be able to help him in making his diagnosis and in administering the proper treatment, and would appreciate much more the good work his physician was doing. The medical profession would then be in exactly the same position as far as public appreciation is concerned as are now the professional singers, professional writers, professional ball-players. Every one of us is able to sing, to write, to play certain games, but we leave to the professional ones and pay them for giving us the very best that can be had, for the very reason that we are able to appreciate who is the good writer, the good singer, and the good player, because we know the elements of these manifestations of human activity, and nowadays writers, singers, and professional players are certainly making more money and enjoying more reputation than they were in the past centuries, when only a few had the privilege of a general education, which was not high enough to make people appreciate the work of professional singers, writers, or artists. And that that is the plain truth is easily seen when we examine the condition of some of the other professional people of former times. Dentists were considered only as charlatans, while nowadays we have as much consideration for them, as we have for any other professional people. Actors, singers, and players were all considered more or less as belonging to the class of beggars, while now they are enjoying the greatest consideration and every country is proud of them. Not only the moral but the financial condition of all these professional people has been bettered. Homer, Virgil, Dante, Shakespeare, Goethe, Cervantes, Le Fontaine, Michelangelo, Voltaire, etc., have certainly not been able to make one hundredth part of what a second rate professional writer or inventor is making nowadays, since knowledge is more generalized.

Scientific reasons tell us that we must diffuse medical knowledge. Medicine, although as old as human beings, as a real science is only in its infancy, and we must well understand that the more rapidly it will progress the more people know its elements and are interested in it. Often it is not the professional man interested in a special branch who, by his genius, will open up a new path to the progress of science. Frequently it is an outsider and we have the best proof in our own science. No individual has ever been such a striking factor in the progress of any branch of science, as Pasteur has been to the medical one. Pasteur was not a physician; he was an outsider.

Medicine should be divided in this way—the science of medicine open to all, while the practice of medicine should be limited to the ones who, after a regular course of studies, intend to take it up as a profession, having the moral and physical qualities for it.

This limitation should not be understood as an indication that physicians think to be the only ones, who have the intelligence to understand medical subjects and have honest intentions, but only because, as in every other profession, the man who makes his specialty any kind of work, is in that special line better than people of even more intelligence, but lacking the necessary daily training. No one would say, for instance, that the engineer of any of the trains running at high speed by the hundreds every day, has more intelligence or is more honest than the President of the United States or the Chief Justice of the Supreme Court, or of any of the presidents of the big colleges; and, at the same time, no one with enough brains to be considered a man, would prefer to have a fast express run by any of the most honest and intelligent people of the country, as the above mentioned, than to have it under the control of an experienced engineer, for the only and obvious reason that it is the engineer's business. The same considerations should prevail with regard to medical subjects. Every one should be welcomed and be able to show his ideas, the same, as anybody can present before the public and patent anything he thinks worth while, but it is the province of the professional men who make a specialty of it, to apply those patents when found valuable.

It would be exactly the same, to continue the example of the engineer, as if anyone should think that he had invented a faster and better engine than the ones now in use. Nobody would consider it a limitation of one's liberty if the directors of a railroad should ask that their best engineer should try it, and, when found valuable, adopt it, instead of letting the inventor run himself, for the first time, his engine attached to one of the trains carrying passengers. The question of having the public take an interested part in medical subjects has two sides, which must be considered very seriously and impartially. It is true in medical science, as in any other part of human knowledge, that laymen can sometimes see certain sides of a question in a better way, than the man who has spent all his life studying it; but, at the same time, it very often happens that laymen think that they have made the greatest discovery, which, in their minds, should revolutionize the world, whereas, when presented to a man who is competent to judge the merits of the invention, it is found out, that it is based on a false and impracticable principle and, therefore, the discovery is absolutely of no value. So that only the intelligent cooperation and mutual assistance of the layman and the expert are necessary to make any progress in medicine, as in any other branch of science.

And the fact that the medical man alone can accomplish absolutely nothing, I hnk, I can prove with a few examples. Every time we have been successful in preventing any disease, we had the cooperation of a number of men, who had no connection with medical science. Malaria has completely disappeared where, and only where, the engineer has been able to drain the soil. Scurvy has disappeared as the result of better steamship accommodations. Typhoid fever has almost entirely disappeared, where engineers have given a good and abundant water supply, and is still making victims by the thousands in cities where the financiers and engineers have been unable to do so. It is said that the country is more healthful than the city, and in part it is true, but the city can be made as healthful as, if not more healthful than, the country, with the cooperation of legislators, architects, engineers, etc. Why is the city not as healthful as the country? The only reasons are the dust, laden with millions of microorganisms, and the numerous factories. In the country houses are,

on the average, not as sanitary as in the city. The water, milk, bread, meat, and vegetable supplies cannot be inspected as in the city. Then the dull life of the country has a depressing influence on the development of one's brains and energies. In the city there is too much of an accumulation of undesirable things, which are, in the country, I should say, diluted. We have succeeded in keeping the streets of the city free from human excrements, but we have accomplished little more than nothing, when we have thousands of animals—horses, dogs, cats—that leave wherever they go their excrement, to infest the air and be carried by the wind into our nostrils, mouths, and on our hands and clothes, eating and drinking stuffs. What will then be necessary to make the city more sanitary than the country? Dustless and noiseless streets, elimination of all unsanitary buildings and factories, and the substitution of automobiles for horses, no more people spitting everywhere, and elimination of cats and dogs, which are absolutely of no use and out of place in the city. This sanitary condition will be attained in the near future, but the ones who will deserve more credit than the physicians, will be those who have been able to build economically sanitary houses, to develop the automobile to such a point, that it will be more convenient and economical than the horse, and to the ones who will have invented a noiseless and dustless way of paving the streets. With the existense of the present conditions medical men are unable to do anything, because they are constantly running up against economical and social conditions which render their knowledge of what should be done absolutely useless. The only thing left for the medical man to do, is to educate the people up to the immense value of health, so that the ingenious ones may devote their intelligence and brains to the solution of the sanitary problems, as we understand them and everyone should understand them.

And do we know so much about medical subjects that we do not need more knowledge, wherever that may come from? It is only necessary to open any medical book and see how often the words "Very little is known about the nature of the disease," or, "Its etiology is not yet established," to see that we know very little. To the ones who are overproud of what they know, it would be proper to refer to a little story about a very proud man in the eighteenth century, who was thought to know almost everything, and thought so himself. One day, while he was speaking to a very intelligent lady, he asked her what she would give to know all he knew. The lady smiled at him, and, after a moment, answered: "Well, Mr. Casanova, I would certainly give very much to know all you know, but I would give ten times more to know what you do not know."

So very few facts relating to medical science are established in such a way, that there is no doubt, that we need all the knowledge we can gather from all sources. Many obstacles are in the way of medical progress, caused by social ignorance and the medium resulting from it. We need experimental work on animals and autopsies, not only in order to progress, but in order not to regress. A horrible name full of awful meanings has been invented to designate animal experimentation, and in some of the most civilized countries the so-called vivisection is not allowed, as in England, and we have to fight hard to be allowed to experiment on animals right here in New York. As for autopsies for the study of anatomy, normal and pathological, operative surgery, etc., we have to rely on the poor patients dying unclaimed in the public hospitals, and, owing to the bettering of the financial condition of the public, bodies are claimed so often, that the material is very scarce. Social ignorance, and the medium resulting from it, will make my statement sound strange, when I say that we physicians, who claim that we need bodies for the progress of our science and that the dissecting of the cadaver does not mean lack of respect for the dead person, should give the good example and show that we mean what we say, by pledging ourselves to leave our bodies to the dissecting room, as a condition of entering a medical college; so that people, encouraged and stimulated, should not only not oppose autopsies of their relatives, but should ask for them.

As a conclusion, we must put the medical problem in this way: We want to make every human being as happy as it is possible to be, by being perfectly developed physiologically. We want to prolong, as far as possible, the period of full physiological enjoyment of life. We want to keep the body in perfect working order as long as possible. We want to give everyone the physiological basis of a healthy body and mind, so that he can develop all his mental and bodily powers in the most perfect way.

The medical problem of the future, as presented above, is so broad and, I think, full of seduction for every intelligent and ambitious man, that there is work for every one, who feels inclined to do something in this direction; it is plain that a general medical education is indispensable to this end.

Of course, I do not mean that we should stop working for the progress of medical science, but we have to keep in mind that the greatest and final progress will be the abolishing of medical science itself. I mean, and I want to emphasize it, that, if the people had sufficient medical education to appreciate what we know about diseases, preventive medicine would be a fact of the present time, and not only a hope for a distant future. What we know about diseases is sufficient to give us the possibility of eradicating most of them, even if the knowledge is not thorough in every detail. The obstacles to such eradication are the ignorance of the people about medical subjects, which make them underestimate the individual and social value of health, and the resulting medium which does not allow the medical men to put in practice their knowledge.

75 West Fifty-fifth Street.

DEGENERATION OF THE POSTERIOR COLUMNS OF THE SPINAL CORD IN A NON-TABETIC INDIVIDUAL.

By ALFRED GORDON, M.D.,

PHILADELPHIA,

ASSOCIATE MEMBER OF THE SOCIÉTÉ MÉDICO-PSYCHOLOGIQUE, PARIS, FRANCE.—NEUROLOGIST TO MOUNT SINAI, NORTHWESTERN GENERAL, AND DOUGLASS MEMORIAL HOSPITALS.

Non-tabetic degeneration of the posterior columns of the spinal cord may occur in various organic affections of the cerebrospinal axis in association with other lesions, but as a primary and isolated condition it is extremely rare. The case reported here presents such an occurrence. It is exceedingly interesting from a clinical standpoint, as, apart from the loss of the patellar tendon reflex,

it did not exhibit a single symptom of the classical tabes dorsalis during the entire course of the disease. It was associated with a deformity of the spinal column and a thickening of the lower dorsal vertebræ, at which level the characteristic pathological changes of tabes were present. Clinically, it was not therefore a case of tabes. The case is as follows:

Mrs. E. G., aged thirty-two, formerly telephone operator, was always in poor health. From infancy up to the age of eighteen she was laid up eleven times with various infectious diseases. Married at twenty-three, had three children, all born at term after an easy labor and all now living. No miscarriages. In spite of her general weak condition she was, nevertheless, able to enjoy life and did most of her own housework. When she was sixteen everyone remarked that she carried herself unusually straight, and she herself noticed that there was a tendency for the trunk to draw backward. This tendency gradually kept on increasing, and at twenty-eight was very much pronounced. At that time, *i. e.* four years before she died, she commenced to suffer from paroxysmal pain in the epigastrium. She was taken to the Woman's Hospital, where lavage of the stomach, practised during three weeks, gave her complete relief. At that time she noticed a gradually oncoming weakness of the lower limbs. The latter progressed to such an extent that since then she never was able to leave her bed. At the end of nine months the pain returned, but it occurred only occasionally, and was always accompanied by vomiting. Attacks of vomiting and pain occurred at first only every two or three months, but later every three or four weeks. The diagnosis of tumor of the stomach was then made.

When she came under my observation her condition was as follows: The lower extremities were cold and cyanosed. Raising of the legs was done with great difficulty and not above an angle of 45°, less on the left than on the right side. Patient was unable to overcome the slightest resistance to the movements of the leg. The patellar tendon as well as Achilles tendon reflexes were all abolished on both sides. Babinski's toe phenomenon was present at the first examination, but further test gave no response at all, neither extension nor flexion of the toes. The sense of touch was normal, but the sense of pain was diminished more on the left than on the right side. The temperature sense was normal in both thighs, but diminished in the legs, more on the left than on the right side. It was reversed in the feet—namely, cold was taken for heat and *vice versa*. Patient was almost unable to sit up in bed, but when kept in a sitting position an extremely marked lordosis was noticeable in the lower part of the dorsal spine. There was also a scoliosis of the lower cervical and upper dorsal region, the concavity being directed to the right side. When the patient was placed on her back the lower part of the spine did not come in contact with the bed, and a hand could easily be placed between them.

The examination of the abdomen revealed an interesting symptom. In its upper portion over the median line a distinct hard mass of the size of a small orange was discernible on palpation. It was tender to the touch. The pulsation of the aorta in front of the mass was marked, and, as the sounds on auscultation were quite loud and somewhat prolonged, an aneurysm of the abdominal aorta was thought of. However, other characteristic symptoms of the latter affection were absent, and this diagnosis could therefore not be relied upon. An *x*-ray examination, made by Dr. M. Fisher, showed no discernible osseous lesion, but a faint cloud about as large as an orange was seen at the level of the last three dorsal vertebræ.

Further examination showed no involvement of the sphincters of the bladder or rectum. The pupils were equal and normal in size and shape, their pupillary and other reflexes were normal. Opthalmoscopical examination by Dr. Swindells showed normal eye-grounds. Vision was normal in both eyes. There was no palsy of the ocular muscles. The upper extremity and thorax presented no significant symptom worth mentioning. All the viscera were found to be normal, with the exception of the kidneys. Traces of albumin with a few hyalin casts were present. The blood presented a slight degree of anemia: Hemoglobin 85 per cent. and erythrocytes 4,000,000. A Wassermann test was made several times and it was invariably negative.

To sum up, the patient presented a gradually developing deformity of the spine, with a very prominent forward protrusion of its lower dorsal portion. This was accompanied by attacks of vomiting and pain in the abdomen. Finally the vomiting ceased. Weakness in the lower extremities then made its appearance, which rapidly developed into a complete disability. The tendon and cutaneous reflexes disappeared. At no time was there any involvement of the eyes or of the sphincters. Objective sensory disturbances were present in a mild degree with regard to pain and temperature. Subjective pain occurred in a paroxysmal manner at the level of the protrusion in the abdomen. In view of the skiagraphic picture, and in view of the palpable mass in the abdomen, an exploratory operation was indicated. Dr. J. T. Schell accordingly explored the abdomen, but no evident mass or aneurysm was found. He then thought of a retroperitoneal involvement, which he did not consider wise to remove. The patient made an uneventful recovery from the operation.

The condition remained unaltered. The patient gradually grew weaker and weaker. She finally developed pneumonia and expired.

The autopsy was performed eight hours later. The heart was pale and dilated. The lungs were deeply congested and showed marked evidences of chronic bronchitis; the right lung was bound down by adhesions. The liver and spleen were enlarged. The kidneys were enlarged, and on section the surface was pale. The uterus contained a small fibroid. The right ovary was cystic. The spinal column was markedly protruding in the lower dorsal region and the bodies of the vertebræ at this level appeared very large and thick. The contrast between these vertebræ and those above and below was very striking. Permission was obtained to open the spinal canal and remove only a portion of the cord. A complete examination of the thickened vertebræ for the purpose of determining its nature could therefore not be made. The brain and medulla could equally not be examined.

The removed portion of the cord was placed at first for three days in 10 per cent. formalin and small portions of it were studied for cells. The remainder was placed in Müller's fluid for a period of three months. A histological study revealed first of all no changes in the cells of the cornua. The white matter presented a degeneration of the posterior columns, such as we find in tabes dorsalis

(see Figs. 1 and 2). At the level of the lower lumbar segment, in addition to the sclerosis of Goll's columns, there was also a thickening of the meninges, also of the walls of the blood-vessels. This segment of the cord evidently presents the maximum of the pathological changes, as in the segment

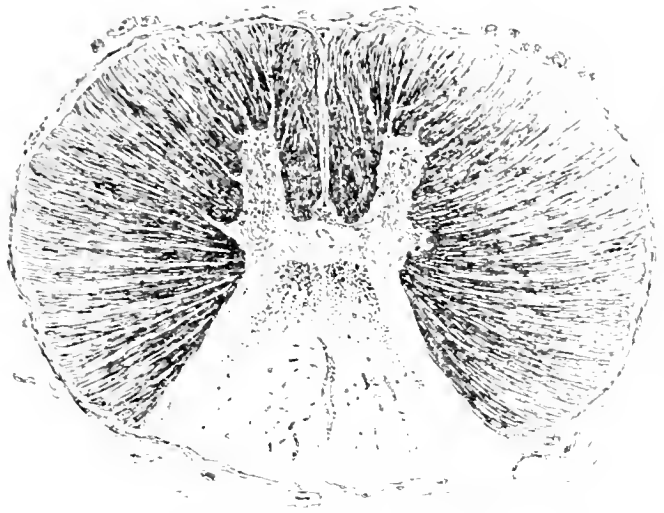

FIG. 1.—Middorsal segment of the cord; degeneration of the posterior columns; stained after the Marchi method; the black dots anteriorly indicate recent degeneration.

above the meninges do not show any alteration. The changes in the cord were confined to the lumbar enlargement. Above it no degenerative condition could be seen. This corresponds to the clinical picture of the case: the patient's disability was limited to the lower extremities.

The pathological condition of the cord is that of posterior sclerosis such as we find in typical tabes. But does the clinical aspect of the case permit a diagnosis of tabes? In favor of the latter speaks the loss of the knee-jerk and of the Achilles tendon reflex on both sides. On the other hand, we do not find here an involvement of the sphincters of the bladder and rectum, nor symptoms referable to the pupils, to the eye-muscles, or to the eye-grounds. Besides, the characteristic course of the disease,

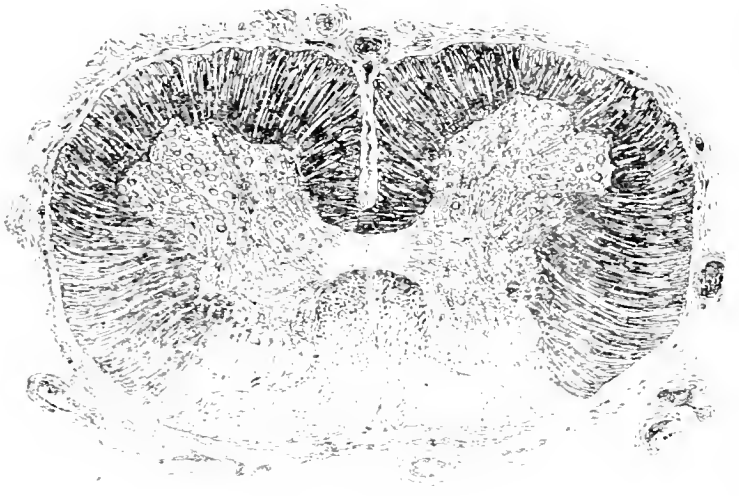

FIG. 2.—Lower lumbar segment of the cord; degeneration of the posterior columns; thickening of the pia mater and of the vessel walls; Wiegert stain.

viz., the long and successive development of preataxic, ataxic, and terminal periods of the malady, is entirely wanting in this case. The disease was confined exclusively to the lower extremities, and very early in its course they became rapidly disabled. It is true that in tabes a division of the course of the disease is arbitrary, as the evolution of the affection is very variable from individual to individual. In certain tabetics some symptoms make their appearance before ataxia, in others only after the latter is definitely established. In the case under discussion there was no other symptom, but a paraplegic condition of the lower limbs. As is well known, paraplegia is an extremely rare condition in the course of tabes, unless as such is considered the motor disability which is observed in very advanced cases. It is remarkable that this extreme motor disability was almost complete in the patient from the beginning of her affection and remained unaltered during the remaining few years of her life. A genuine flaccid paraplegia, such as is seen in myelitis, was evident during the entire course of the disease to the exclusion of other symptoms of tabes, such as Argyll-Robertson pupil, optic neuritis, radicular pain in the limb, and disturbed function of the sphincters of the bladder and rectum. Pathologically, the affection proved to be that of tabes, but clinically it could not be considered typical of the classical tabes, as not only some of the constant and characteristic symptoms were present, but also the course of the disease did not correspond to that of the syndrome, originally described by Duchenne. Besides, there was no history of specific infection, and the Wassermann test repeated at various intervals was invariably negative.

Have the marked deformity of the spinal column and the thickening of the lower dorsal vertebræ any influence on the development of the posterior sclerosis? Unfortunately, permission could not be obtained for the removal and examination of the affected bodies of the vertebræ. Nevertheless, the thickening of the bony tissue can reasonably explain the pathological condition of the cord. It is probable that an initial inflammatory condition of the vertebræ led gradually to its thickening and subsequently to an irritation of the posterior nerve roots and of the meninges with the result of a final involvement of the posterior columns of the cord.

The severe lancinating pain in the epigastrium, from which the patient suffered during the four years of her illness, are explained by the diseased condition of the meninges and of the roots. As the affection was confined only to those structures and only to one segment of the cord, other characteristic symptoms of tabes were entirely absent. It is therefore with a mechanical production of meningitis and radiculitis with a subsequent sclerosis of the posterior columns that we are dealing here, but not with a specific affection in which the meninges, roots, and posterior columns of the cord are primarily attacked by a special agent which, we know now, is of syphilitic nature.

The slight anemia the patient presented, viz., 85 per cent. of hemoglobin and 4,000,000 erythrocytes, can hardly be taken into consideration in the search for an explanation of the pathological findings. In the first place all the cases reported show that the anemia must be quite pronounced and associated with actual blood destruction in order to produce degeneration of the white matter in the cord. In chlorosis, for example, cord changes do not occur. Secondly, the process of degeneration in the cord associated with pernicious anemia is usually not

systemic in character; it is only quasisystemic (see A. Gordon: "Histological Changes of the Spinal Cord in Pernicious Anemia." *New York Medical Journal*, July 3, 1909, p. 8). Besides, in none of the cases reported the posterior columns alone were involved. Either the lateral columns are associated in the pathological process or else the degenerative changes are diffuse.

An analysis of the symptoms of the evolution of the disease of the morbid condition of the vertebræ and the spinal cord, finally of the unusual paraplegic condition of the extremities from the beginning until the end, and especially of the absence of the majority of the cardinal symptoms of the classical locomotor ataxia, naturally leads to the conclusion that we are dealing here with a degeneration and sclerosis of Goll's columns of a spinal cord in an individual who was not tabetic. The rarity of such an occurrence warranted my placing the case on record.

I wish to thank Dr. Boyer for the privilege of examining the spinal cord. The patient was in his service at the Stetson hospital during the last two or three weeks.

THE TREATMENT OF SCIATICA BY PERINEURAL INFILTRATION.*

BY WILLIAM M. LESZYNSKY, M.D.,

NEW YORK.

NEUROLOGIST TO THE LEBANON AND HARLEM HOSPITALS.

THIS method of treatment for sciatica was first introduced to the medical profession by Dr. J. Lange of Leipsic in an article read before the Congress for Internal Medicine held at Wiesbaden April 15, 1907. It consists in the injection of large quantities of fluid under high pressure directly over the sciatic nerve or in its immediate vicinity.

Lange claimed that the favorable results obtained were entirely due to the mechanical action of the fluid in loosening, stretching, or breaking up adhesions in the neighborhood of the nerve. He reported fifty-six cases, 65 per cent. of which were completely cured. In 1909 Dr. D'Orsay Hecht of Chicago described this method in detail and suggested several valuable modifications and improvements in the technique. (*Journal A. M. A.*, Feb. 6, 1909.) During the last year I have adopted the plan as outlined by Dr. Hecht with the most gratifying results.

Sciatica, whether a symptomatic neuralgia or the result of a perineuritis, is admittedly a very intractable and painful affection, often persisting for months or longer, under the usual forms of treatment.

After many years of experience with all of the available and conventional remedies I have found, in confirmation of the reports of other clinicians, that the injection of saline solution as herein described is a valuable therapeutic acquisition. From an economic standpoint it is often superior to many other forms of treatment, for, in the majority of instances, it rapidly relieves the pain, and the sufferer is soon enabled to return to his customary vocation. A striking illustration is the case of a man forty years of age (Case I) who had suffered from sciatica for one year. Many drugs and applications had been unsuccessfully utilized at the various clinics and at home. He had been in the general medical service of the hospital for six weeks without relief, during which time he had been confined to bed, unable to move without great pain. Immediately after one injection, he walked from the operating room back to his bed, a distance of 100 feet. The relief from pain was prompt, improvement in his general condition was rapid, and in the course of ten days he walked out of the hospital perfectly well. He has remained free from pain, a period of one year having elapsed since the first and only injection.

In mentioning to physicians the successful and brilliant results obtained from this form of treatment, I have often been asked if alcohol injections would not be preferable, as in trifacial neuralgia. The reply to this question is that alcohol promptly produces motor paralysis and degeneration of the nerve. Such cases are well known, a number having been reported, and one has recently come under my observation in which the paralysis has lasted a year and has not yet shown any signs of improvement. For these reasons the use of alcohol in such cases has been discontinued as unsafe. In the treatment of trifacial neuralgia, however, we are dealing with a nerve which is almost purely sensory in function, and it is our aim to produce an acute degeneration in the nerve with the accompanying sensory paralysis.

The earliest period of the disease in which I have had the opportunity of using this remedy was in Case XIV, duration one week, and in Case X, of two weeks' duration. Both of these patients recovered promptly.

In these acute cases the relief must have been due either to a blocking of the sensory impulses or to the pressure and absorption of the fluid producing some change in the circulation and nutrition in the perineural structures. It would be too early in the course of the trouble to assume that the pain was caused by the presence of adhesions.

During the application of the treatment the patient should lie on the abdomen with the legs fully extended and the feet projecting beyond the edge of the table. A firm pillow is placed under the lower part of the abdomen in order to favor relaxation of the gluteal muscles. For the purpose of locating the nerve the following measurements are made: A line is drawn from the sacrococcygeal articulation to the postero-external border of the great trochanter; at the junction of the inner one-third and the outer two-thirds of this line is found the spine of the ischium. One inch to the outer side of this point we locate the point of puncture. An area of the skin about 4 cm. in diameter is then painted with iodine, the point of puncture being in the center. The syringe used is all metal holding 60 c.c. It has a slip tip which allows the needle to fit the barrel directly. The needle is of steel, 12 cm. long, with a caliber of 1.5 mm., and provided with a sharp point, which is protected by a dull-tipped stylet projecting 1 mm. beyond the point of the needle. In puncturing the skin and subcutaneous tissue the stylet is withdrawn beyond the cutting edge. It is then replaced and the needle pushed in perpendicularly. When the sciatic nerve is reached, at a depth ranging from 6 to 12 cm., the patient may feel either a sharp pain radiating from the point of contact to the popliteal space or down to the foot; or a sharp pain in the corresponding heel; or there may occur a jerking movement of the leg; or a sudden twitch in the calf muscles. Some patients complain only of diffuse pain in the buttock. It is unnecessary and unsafe to penetrate the nerve sheath. The stylet is then removed. The syringe having been filled with sterile normal saline

*Read before the Section on Neurology of the New York Academy of Medicine, February 13, 1912.

Case	Date 1911	Sex	Age	Duration	Side Affected	Number of Injections	Results
1	March	M	40	1 year	R	1	Cured
2	May	M	36	8 mos	L	2	"
3	June 23	M	24	14 "	L	2	"
4	July 10	F	47	9 "	L	2	"
5	July 12	M.	33	7 "	L	3	"
6	" 24	M.	40	4 "	R.	4	"
7	" 24	M.	35	15 "	L.	5	"
8	" 24	M	27	10 "	L.	4	"
9	" 31	M.	35	8 "	R	3	Much Improved
10	Aug 2	M.	35	2 weeks	R.	2	"
11	" 5	M.	44	12 mos.	L.	1	Cured
12	" 26	M.	23	7 "	L.	1	Unimproved
13	Sept. 2	M.	40	18 "	L.	3	"
14	" 10	M	44	1 week	L.	1	Cured
15	" 11	F	50	2 years	R.	5	Much Improved
16	" 13	M.	54	3 weeks	L.	2	" "
17	Oct. 8	F.	55	6 "	R.	2	Improved
18	" 11	F.	19	8 "	L.	1	Unimproved
19	" 11	F.	60	3½ mos	R.	1	Improved
20	" 14	M	35	6 weeks	R.	1	"
21	Nov. 14	M	35	4 mos.	R.	1	Cured
22	" 25	M	39	6 "	R.	3	Improved
23	" 29	M.	42	5 weeks	L.	3	Much Improved
24	Dec. 20	M.	28	8½ "	R.	2	" "
25	" 26	M.	35	7 "	R.	1	" "

solution at a temperature between 95° and 100° F., the fluid is slowly injected. The quantity used is from 80 to 120 c.c. The needle is quickly withdrawn, the iodine washed off with alcohol, some collodion applied over the point of puncture, and this is covered with a small strip of sterile adhesive plaster.

The patient is then instructed to lie abed and rest for twelve to twenty-four hours. No anesthetic is required. In the administration of this treatment strict aseptic precautions are absolutely essential.

Soon after the injection some aching pain with a sensation of heaviness and numbness in the limb usually follows, but this lasts only a short time. In some cases the sciatic pain in the thigh disappears within twenty-four hours, but the patient complains of pain continuing in the leg in the course of the peroneal nerve. This is often promptly relieved by an injection of 10 to 20 c.c. in the region of the nerve at the head of the fibula. The interval following the first injection, before another is given, will vary according to the degree of relief obtained. I have been in the habit of waiting from thirty-six hours to one week before repeating the injection. I have given more than sixty injections without encountering any unpleasant symptoms. Under proper technique and strict asepsis it has proved an absolutely harmless procedure.

Up to December 26, 1911, I have treated twenty-five patients with sciatica by this method, with the following results: Thirteen cured, ten improved, and in two there was no improvement. There were twenty males and five females. The duration of the disease varied from one week to two years.

In nine of these who were cured perineuritis was assumed to exist, for the three cardinal symptoms were present, *i.e.* pain on extension of the leg with the thigh at a right angle with the abdomen; tenderness and pain on pressure at the sciatic notch and over the trunk of the nerve, and diminished or lost Achilles reflex.

Two were cured after 1 injection, the duration of the disease being 4 months, 12 months; three after 2 injections, duration, 2 weeks, 8 months, 10 months; two after 3 injections, duration, 7 months, 18 months; two after 4 injections, duration, 4 months, 18 months.

The four others who were cured did not show such pronounced signs of neuritis. Two received 1 injection, duration, 1 week, 12 months; one had 2 injections, duration, 14 months; one had 5 injections, duration, 15 months.

In ten the improvement was pronounced. Although complete relief was not obtained, nearly all of these patients were enabled to resume their former occupation. Three received 1 injection, duration, 3½ months, 6 weeks, 7 weeks; three had 2 injections, duration, 3, 6, and 8½ weeks; three had 3 injections, duration, 8 months, 6 months, 5 weeks; one had 5 injections, duration, 2 years.

In two patients there was no improvement. Each received a single injection. One discontinued treatment as she lived out of town, and the other was a case of tuberculous disease of the hip-joint associated with sciatic pain.

145 West Seventy-seventh Street.

ADENOIDS IN SCHOOL CHILDREN AND THEIR EFFECT ON THE GENERAL SYSTEM.*

By G. B. TAYLOR, M.D.,

CAMERON, TEX.

In 1868 Meyer of Copenhagen first drew the attention of the medical profession to the clinical importance of adenoid growths. Patients receive the greatest immediate and permanent relief by the removal of the growths. An incalculable number of individuals at this present moment are useful members of society, who, but for this operation, would have become permanently deaf, and besides would have suffered great inconvenience and discomfort. Those who have been neglected frequently betray in their faces ample evidence of the permanent mischief done by adenoid growths in their childhood.

Adenoids are found in varying degrees of frequency in at least three parts of the world, namely, Europe, America, and Asia. A warm climate seems to be less favorable to their development than a cold one. Along the equator, where the temperature never varies between 75° F. to 80° F., and where it is dry and mountainous, only 5 out of 717 school children were found to have adenoids, and not one out of 100 adults who were examined. On the contrary, in Greenland only 16 out of 60 Esquimaux children between the ages of four and twelve were found to be free from adenoids. These growths probably have been recognized from a very remote period of human history. Several ancient Roman statues and busts show evidence of their existence. The numerous likenesses of the famous sculptor,

*Read at the Milan County School Teachers' Institute, October, 1911.

Canova, show the artist with open mouth, narrow nose, and dull, stolid look, and there is further testimony of his being deaf.

Adenoid growths, which are met with at all ages from birth to seventy years, consist of an hypertrophy of the lymphoid tissue in the vault of the nasopharynx, known as the2 pharyngeal tonsil, which is especially well developed in children. It has been calculated that 90 per cent. of children who have enlarged tonsils also have adenoid growths, but adenoid growths are frequently present without enlarged tonsils. Statistics of school children indicate that from 20 to 30 per cent. suffer from adenoids. The greater number of these display no symptoms sufficiently definite to attract general attention. Examination of 13,458 school children in Chicago showed that 5,826, or about 42 per cent., had adenoids.

Energy, ambition, noble impulse, and high ideals all succumb to pain and ill health and are frequently usurped by idleness and vice. Inability to apply themselves comfortably drives multitudes of children from school and thus reduces the intellectual and moral index of communal and national life. A larger percentage than generally imagined possess adenoids. These are a potent menace to hearing, Cavanough of Chicago regarding them responsible for 88 per cent. of deafness. Tydings of Chicago states that in at least 90 per cent. of cases of adenoid vegetation there is involvement of the Eustachian tube with deafness in varying degree. If the deafness is marked and occurs before the child has learned to talk, he will remain dumb; if he becomes deaf at the age of five or six after he has acquired the faculty of speech, he will soon forget how to talk. There is no faculty upon which mental development is dependent to such an extent as upon that of speech. Thought in its higher functions exists only through expression by means of language, of which articulated speech is the most important manifestation. It is impossible for the child to reproduce what he has never heard; consequently two great stimulants are lacking, the power of understanding spoken language and the faculty of expression by means of speech. When to these are added the aprosexia and nervous instability usually present in adenoid subjects one need not wonder at a diagnosis of idiocy or imbecility.

When the deafness is complete after the removal of the primary cause the treatment should be the same as that accorded any other deaf and dumb child. When there is even a slight vestige of hearing remaining it is often possible by persistent and careful effort not only to develop speech, but also to improve greatly the ability to hear. The condition resulting from adenoids may be a slight deafness from middle ear disease, preventing the child from hearing all sounds, except those of a certain pitch of intensity, which he will, of course, reproduce as he hears them, or may be due to faulty subjective audition, the objective hearing being normal. In the latter case he hears words correctly and believes that he reproduces them as heard. His subjective auditory center has become accustomed to receive faulty word impressions, and has lost or fails to develop its power of differentiation. This is dependent upon faulty kinesthesia derived from the peripheral vocal musculature which is impaired by the presence of adenoids. For this reason, after the removal of adenoids, a special course of training directed toward the development of the kinesthetic and auditory word centers is necessary.

The aprosexia resulting from adenoids is probably responsible for more cases of backward and deviated mental development than any other cause. Unable to apply himself to his studies the child soon falls hopelessly behind his classmates, casts about for other means to keep his mind occupied, thereby getting himself into mischief of various kinds, and soon becomes a nuisance to his teacher and to his schoolmates. His school duties becoming hateful to him, he becomes a truant with an enlarged field for his unrestrained activities, and finally coming into conflict with the authorities through his desire for constant change and excitement, ends in the juvenile court and the reformatory. If he is of the phlegmatic type, content to plod without results, to stay where he is put, he becomes the dunce of his class, remaining in the same grade until, either outwearing the overstrained patience of the teacher or outgrowing his seat, he is advanced to the next grade, there to repeat the process. These are extreme cases, but they are to be found in every school and many others less only in degree in every classroom.

The hypoplastic child, fundamentally unstable, and still further handicapped by adenoids, with their attendant train of evils, is prone to respond to an exaggerated degree to faulty environmental influences of all kinds and requires the most careful study and attention to ensure the advancement of which he is frequently capable. Many cases of pigeonbreast and anterior transverse depressions are found in adenoid breathers. There is no doubt that children suffer in health owing to the mucopurulent discharge from the nasopharynx entering the stomach, deranging the digestion, and destroying the appetite. Headaches and other nervous symptoms are not uncommon and are possibly due to pressure on the blood and lymphatic circulation in the nasopharynx owing to the hyperemia that usually results from adenoids. These are undoubtedly a factor in the production of convulsions in young children through imperfect oxygenation of the blood.

W. A. Fisher, ophthalmic surgeon to the Eye, Ear, Nose, and Throat Hospital of Chicago, has drawn attention to the following eye effects, which he believes are secondary to adenoids: (1) Phyctenular conjunctivitis, the most common. (2) So-called weak ulcer of the cornea, the non-inflammatory ulcer, which looks as if a small piece of the corneal surface has been gouged out. (3) Eczema of the cornea. (4) A peculiar irritability or sensitiveness of the retina, so that, in the absence of corneal ulceration and all unusual causes of photophobia, there is considerable difficulty in opening the eyes in a bright light. These troubles are brought about by the lowering of the general health by the extension of the inflammatory process up the nasal duct to the eye, in much the same way that adenoids produce deafness by extension of the inflammation through the Eustachian tube to the middle ear.

Adenoids occur in individuals who present symptoms of hypoplasia resulting either from hereditary or developmental causes. They are factors in retardation by their mechanical action as a source of reflex irritation and as an impediment to the proper development of the cerebral centers concerned in speech. The removal of adenoids is not sufficient in cases of marked defect to bring about restoration to the normal. Special training and the institution of measures directed toward the amelioration of the underlying hypoplastic condition are necessary.

THE TREATMENT OF SIMPLE CATARRH OF THE RESPIRATORY PASSAGES WITH BACTERIAL VACCINES.

By A. PARKER HITCHENS, M.D.,

GLENOLDEN, PA.

THE theory explaining the beneficial effect following the administration of bacterial vaccines supposes that the invaded tissues are weaker than normal in their resistance to the growth of bacteria. This is due primarily to conditions which permit either local multiplication or increased virulence of the bacteria, or both; and secondarily to the local and general effect of the products of the bacterial growth. This effect is evidenced by a diminished antibacterial power of the blood and tissue-juices generally, and to a still weaker condition of the fluids locally. In order to bring about recovery from infection, it is necessary to improve the antibacterial power of the blood, and to bring this blood of better quality in as close contact with the infecting elements as possible, and in as great an amount as possible.

It is a fundamental principle of bacterial vaccine therapy that, unless the blood of improved quality is able to reach the focus of infection, improvement from the use of bacterial vaccines may not be expected; and that, if the condition under treatment is one in which the body fluids may be made to flow freely through the diseased area, improvement should be uniform and rapid.

When we consider the pathogenesis and pathology of simple catarrh of the respiratory passages we see immediately that this is a disease which theoretically should be ideally amenable to treatment by bacterial vaccines. The etiology and pathogenesis of simple acute rhinitis are not well understood. Various organisms have at various times been credited with being the specific cause, but there is little uniformity of opinion in this regard, and the idea that there is a "cold germ" has been long abandoned.

As in practically all other infections, there are predisposing causes of lowered general resistance, such as diminished vasomotor tone due to anemia and the various dyscrasias. The more immediate influences which are followed by a disturbance of tonicity of the mucous membranes result first in a local anemia, and then a congestion of the mucous membranes; these are generally mentioned as the causes of common colds. Such influences are draughts, especially on those parts of the body closely connected with the nerve supply of the nasal mucous membrane through the sympathetic system.

Chilling, draughts, wet feet, etc., are the traditional causes of acute coryza, and few medical writers are willing to risk an opinion which, when translated into common English, says more. To the bacteriologist, however, these influences, resulting in a hypersecretion of mucus, merely supply a culture medium upon which the bacteria commonly present are able to grow very rapidly; and, as the culture medium is so favorable, increased virulence is not improbable. Were it not for the development of the bacteria the vasomotor equilibrium would soon be reestablished and a return to normal conditions would be a matter of only a few hours. This would be the case even though a suspension of the insensible perspiration of the chilled part of the body should have caused the nasal mucous membrane to attempt compensatory labor, resulting in the secretion of an abnormal irritating mucus.

The copious watery discharge characteristic of acute coryza is an admirable culture medium for the growth of the many organisms commonly present in the nose and throat. As a result of the rapid bacterial growth the watery fluid quickly changes its character to a yellowish, purulent, viscid mucus. A vicious circle is now established, the bacteria grow in the mucous secretion and produce poisons which, irritating the membrane, cause it to produce more mucus: mucus—bacteria—toxic substances—irritation—mucus—and so *ad infinitum*. This condition may continue until there is a permanent hyperplasia of the membrane or other pathological change characteristic of chronic catarrh.

If the person afflicted with an ordinary cold is in fairly robust health the cold will last but a relatively short time even without treatment. If treatment is instituted the most successful is that directed against the secretory function of the mucous membrane and such drugs as opium and atropine are used. And they may be supplemented by methods to deplete the fluids of the body and restore the vasomotor equilibrium. Local antiseptics are sometimes recommended. If the cold has run on to the subacute stage, these lines of treatment are dropped and alteratives are indicated. Until recently such methods of treatment have been almost entirely empirical or their secondary effects have been erroneously credited with beneficial influences. That they have a reasonable scientific explanation we see as soon as we apply the theories resulting from a study of bacterial vaccine therapy to the phenomena of ordinary catarrh.

I think that the determining factor in simple catarrhs is a bacterial infection of the mucous membrane and its secretion. It is primarily a surface-infection, and the bacteria with their poisons are present in such quantities that they are able to overcome the resistance of the tissues. The methods used to dry up the secretions are efficacious only in the early stages of the cold, and they act really by removing the culture-medium. Frequently such methods merely postpone the attack. Revulsive measures such as purging and sweating reestablish the nervous equilibrium, relieve the local stasis, and restore a more vigorous and healthy circulation locally, thus using the antibacterial power of the blood to the best advantage of the local tissues. Local antisepsis is obviously of little value either theoretically or practically. Later, when the cold has reached the subacute stage, the proper treatment is to apply measures to improve the quality of the blood by building up the general health. Medicinal tonics and personal hygiene are commonly used to accomplish this. What actually happens is that the normal resisting power of the blood is restored, and as it nourishes the overworked cells it is able to offer them greater assistance in neutralizing the toxic substances attacking them; when this happens the cold rapidly disappears. If it is possible for the patient to take a vacation the locality selected should be one free from street dust and other sources of reinfection.

With these facts before us the rationale for the use of bacterial vaccines in catarrhs of the respiratory passages is plain. The proper bacteria are injected in suitable dosage beneath the healthy skin. The usual reaction takes place, resulting in the production of specific antibodies which find their way into the blood and tissue juices. There is no difficulty in bringing the blood of better quality to the infected surface (except possibly in the hypoplastic stage of chronic catarrh) on account of the characteristic blennorrhea which constantly demands more

fluid. The ideal condition is present. The focus of infection is being constantly flooded with fresh lymph, and much of that used up does not get back into the body, but is thrown off.

The kind of bacteria to be used as the vaccine is important. A few years ago many attempts were made to determine the particular organism responsible for colds. We now believe that there are many germs pathogenic to the mucous membrane of the respiratory passages, and that any one of them, or a combination of any or all, may be responsible. That different types of colds are caused by different bacterial species there can scarcely be any doubt. Further study may identify the exact relationship. It has been said that certain individuals are more susceptible to one type than another. However this may be, the thought suggested itself to me long ago that the attempt to immunize persons against common colds by the use of special single vaccines was inadequate. Each individual is probably at periods susceptible to the whole list, and if we wish satisfactorily to immunize him against catarrhs we should immunize him to all the more common germs known to be pathogenic to the mucous membranes. And until such a plan is adopted immunization against colds will be inadequate and unsatisfactory.

With this conception of the pathogenesis of and recovery from catarrh in mind, it was decided to make a mixed vaccine and use it for the treatment of an acute catarrh in a person who had had chronic catarrh for twenty years. The results were so encouraging that similar treatment has been started in several other persons suffering with acute and chronic catarrhs, and I am offering this preliminary communication as a suggestion for the routine specific treatment of acute and chronic catarrh.

The vaccine used contained in each cubic centimeter the following bacteria, which were chosen as representing those species most frequently found in the infected respiratory mucous membranes:

Staphylococcus aureus	150 million.
Staphylococcus albus	150 million.
Streptococcus	50 million.
Pneumococcus	50 million.
Members of the *Micrococcus catarrhalis* group.	50 million.
Members of the bacillus of Friedländer group	50 million.

In robust persons in the chronic stage of the disease the initial dose of this vaccine has been from 0.25 to 0.5 c.c., administered subcutaneously, generally about the insertion of the deltoid muscle. The subsequent doses have been given at five-day intervals, and the amount has not been increased above 0.5 c.c. A few persons receiving the initial dose during the acute stage were given 0.25 c.c., and this dose was repeated at shorter intervals.

It has been noted that on the third or fourth day after the injection of the vaccine the absence of the usual secretion makes the nose feel very dry. In such conditions an oil spray has been agreeable.

Following the injections there are the usual redness and slight swelling at the point of injection. A few patients have had slight symptoms of a negative reaction on the day following the injection, but this has in no case been severe.

In conclusion, it is my belief that the treatment of catarrh of the respiratory passages by a mixed bacterial vaccine is simple, direct, and specific. To get the best results the vaccine should contain those organisms most commonly pathogenic to the respiratory mucous membranes. The treatment must necessarily include the removal or other surgical treatment of obstructions and growths of various kinds between attacks. It is certain that a number of patients will be found who will not be benefited beyond a certain point by the mixed vaccine. In such cases the mucus should be examined bacteriologically, and the mixed vaccine supplemented by the other pathogenic organisms found.

The Bordet-Gengou Reaction in Scarlet Fever.—J. A. Berannikov, employing as antigen extracts made from the organs of patients that have succumbed to scarlet fever, and from the secretions and excretions of scarlet fever patients, obtained the Bordet-Gengou reaction in scarlet fever cases from two to forty days after the beginning of the disease.—*Casopis Lékaru Ceskych.*

Examination of Butter in Human Milk by Centrifugation.—E. Pleuchu and Robert Rendu believe that centrifugation is the best method of estimating the amount of fat to be found in human milk, and far more correct than the method of chemical estimation. They base their statement on 3,450 examinations of milk made in forty-six nursing women on 530 consecutive days. These women were chiefly primiparæ between the ages of twenty and twenty-five years, staying in the Ramond Nursery. Although these results are not absolutely correct they are sufficiently so for all practical purposes. The authors found that there are daily variations in the quantity of fat, and this shows how incorrect a single estimation may be. In general there is an average of 34 grams of fat per liter, the specimen being taken at the beginning of each nursing. The influence of multiparity, the age of the nurse, and the duration of lactation are quite variable. The influence of feeding, of galactogogues, and of menstruation are almost nil. There are four factors that do affect the amount of fat; these are the quantity of milk secreted, the larger the amount of milk the smaller the amount of cream; the time of nursing, the morning milk being richer in fat than the evening; the phase of nursing, the first milk drawn being richer than the last; and the asymmetry of the breasts, the smaller breast giving the greater amount of cream; milk too rich or too poor in cream may cause diarrhea, especially in the prematurely born.—*Lyon Médical.*

Radiotherapy and Glandular Atrophy in the Treatment of Fibromata.—F. de Courmelles believes that the penetrating affect of the *x*-rays is shown by the atrophy which they cause in the ovaries, mammary glands, and lymphatic glands. He finds the *x*-rays of the greatest value in the treatment of fibroids. They relieve the hemorrhages, make the intervals between the menstrual periods longer, lessen the pain and pressure symptoms, and reduce the size of the tumors, in some cases causing them to disappear entirely. *X*-rays should not be used in the treatment of vaginal fibroids, of those undergoing malignant degeneration, and of cases in which the symptoms are rapidly culminating, and must be treated more rapidly than can be done by means of the rays. With proper technique, the employment of penetrating rays, the use of a proper filter, and the separation of the treatments by proper intervals there will be no bad symptoms, such as burns, and only a tanning or a slight erythema of the skin over the abdomen, and epilation of the hairs. In disorders of menstruation with hemorrhage, especially at the menopause, this treatment is valuable. In cases in which sterilization is necessary the use of the rays will avoid a mutilating operation. In cases of ovarian pain not due to tumors the pain may be relieved by this method of treatment.—*Gazette de Gynécologie.*

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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JOSEPH LISTER.

ONE of the greatest men of the nineteenth century—of the world in any age, if we may measure a man's greatness by the lives he has saved rather than by those he has destroyed or by the misery he has caused—has gone. On Sunday last, at his home in London, Baron Lister—Sir Joseph Lister was the title by which he was known at the height of his professional activity—died at the ripe old age of 84 years and 10 months. He was born in Essex, April 5, 1827, and educated in medicine at the London University. He passed his early professional life in Scotland, being assistant surgeon to the Edinburgh Royal Infirmary in 1850, professor of surgery at Glasgow University in 1860-1869, and professor of clinical surgery at Edinburgh University in 1869-1877. In the latter year he was called to London as professor of clinical surgery at King's College, and retained this chair until 1893 when, broken by the death of his wife, a daughter of James Syme, the celebrated Scottish surgeon, he retired from active work.

It was while he was professor at the University of Glasgow that Lister devised his system of antiseptic surgery, to which he was led by a study of Pasteur's work on fermentation and putrefaction. He applied to animal tissues the principles enunciated by Pasteur in the case of plant derivatives; he showed that inflammation and suppuration were of the same nature as fermentation and putrefaction, and reasoned that, as fermentation could be avoided by preventing the access of germs so might inflammation and suppuration be avoided by the same means. The various steps by which this object was obtained and the gradual evolution of the present day asepsis from the original antiseptic surgery with its carbolic spray have been followed by many surgeons not yet old, and are known to all, yet it requires an effort, even for those who have lived the history of the development of aseptic surgery, to picture the difference between the modern surgical ward and that of less than forty years ago. Who knows to-day of hospital gangrene? Who sees the strong man brought to death's door by the drain of prolonged suppuration from an operation wound, which heals now with barely a drop of moisture on the dressings? Who remembers the time when to open a knee-joint was to commit murder, or to cut into the abdominal cavity required more courage than most surgeons, even the most intrepid, could boast of? Yet such things were within the lifetime of many now living, and they have been relegated to the limbo of the spinning wheel, the stage coach, and the flintlock pistol by the genius of Joseph Lister.

Many years ago, on the occasion of a celebration at which Lister was honored by a great assembly, the American Ambassador, Mr. Bayard, said: "My Lord, it is not a profession, not a nation, it is humanity itself which, with uncovered head, salutes you." So now, it is not medicine, not Great Britain, but the world which mourns not his death, for he himself welcomed it, but gives thanks for his life and for the immense boon he conferred on mankind.

HOSPITAL SOCIAL SERVICE IN NEW YORK.

WHEN in 1791 Sir William Blizzard of the London Hospital organized a society for the purpose of improving the home conditions of hospital patients and of following up the patients who have been discharged from the hospital, he planted the seeds of a philanthropy which attracted little notice until after the lapse of a century it took vigorous root on American soil. The Massachusetts General Hospital provided the nursery for this new growth, and, since the first report on this phase of hospital activity by the Massachusetts institution in 1905, the service has been established in between forty and fifty hospitals in different parts of the United States. Miss Mary E. Wadley, Executive Secretary of Bellevue and Allied Hospitals, who has had charge of social service in Bellevue Hospital, points out the above facts in an article on hospital social service in the *American Journal of Nursing*, November, 1911. She states that the chief aims of this service are (1) to aid the physician in his diagnosis and treatment by the investigation and relief of social conditions; (2) to make available the philanthropic resources of the community and to coordinate medical agencies in restoring a patient to complete physical efficiency; and (3), not least in importance, to carry the educational influence of the hospital to the homes of the community.

In Bellevue Hospital a strong advisory board has been formed to aid the development of the service. This committee includes the representatives of the governing bodies of the hospital—the trustees, medical board, dispensary board, managers of the training school, the general medical superintendent of the hospital, the general superintendent of nurses, the chairmen of special subcommittees, with the head worker as executive secretary. The enthusiasm that has attended the enlistment of many individuals and of many phases of hospital activity during the five years since social service was established at Bellevue Hospital has rendered possible an extraordinary extension of this form of enlightened philanthropy.

The division of labor that is necessarily associated with any large undertaking is strikingly seen in the multiple phases of activity that form part of Bellevue's Social Service Bureau. Patients who are discharged as cured but who need after-care are placed in convalescent homes; they are provided with clothing and with railroad fare if neces-

sary, and efforts are made to restore these patients afterwards to self-support. Incurables, defectives, epileptics, deaf-mutes, soldiers, and the aged are placed in permanent homes. Some individuals may require reformatory care or temporary homes. Home visits are made to investigate the domestic environment of patients. Temporary care is secured for children whose parents are in the hospital; tuberculous patients are specially provided for; and aid is secured for destitute families by reference to relief societies. In the case of children a system of follow-up work is carried out, together with instruction in home and individual hygiene. Special class work is provided for cardiac patients. Among the many other activities of the Social Service Bureau may be mentioned the securing of employment, legal aid, and loans; the accompanying of patients to homes, trains, and court; the transmission of messages to relatives and friends; the provision of dental treatment; the investigation of the identity of unknown patients; and cooperation with other social workers regarding patients in the hospital.

The personnel of this most comprehensive scheme of social relief includes in addition to the special committees a general welfare division with two salaried workers; a tuberculosis division with eight salaried workers; a child-welfare division with three salaried workers; a maternity division with one salaried worker, and a Jewish division with one salaried worker and volunteers. There is also one salaried worker for each of the allied hospitals, Harlem, Fordham, and Gouverneur. Among the classes of patients provided for are the homeless, immigrants, boys, crippled children, deserted or unmarried maternity cases, prisoners and attempted suicides, alcoholic and drug habitués, neurasthenics, and the insane.

One cannot better epitomize the aims and methods of hospital social service than by quoting the language of Miss Wadley: "The great awakening sense of social responsibility which is spreading over the world in these days has reached the hospitals and is creating a new order of things there. Now when the hospital, by medication, has relieved the cardiac's attack, for instance, it looks into his home conditions and the nature of his employment. If we find that his home is at the top of a tall tenement, we see the wife or mother before his return home, and persuade her to look for the lightest, airiest rooms she can find on the ground floor, and we shall not stop with that advice, but if she has not the means for moving we will help her to secure them. We must see the case through to a practical conclusion, for again half measures are a sheer waste. If the patient's former employment requires great physical exertion, our duty is not fully done until we have seen him installed in more suitable work and supplied with good living rations until he has gotten fairly to earning. We may not need to do all these things for him ourselves, but we must see that they get done. Finally, we should urge him to attend our weekly evening class for cardiacs, that we may continue our oversight of him. Maladjustment to home conditions, monotony —perhaps of the all-work-and-no-play kind— worry, overwork, or lack of work, poor cooking, or insufficient food, cheerless or unsanitary surroundings, hidden poverty, or unhygienic habits— often to help a patient to change some one of these conditions will be to touch the button that will entirely transform the sick person into a well and normal one."

NATIONAL CONTROL OF QUARANTINE.

Among the Society Reports in this issue of the Medical Record our readers will find a full presentation of the arguments in support of the transfer of the New York Quarantine from State to Federal control, advanced at the meeting of the Academy of Medicine held the first of this month. That an agitation in favor of this obviously necessary move was not begun earlier is only an evidence of the implicit trust which the medical profession of the State and the country has reposed in the skill and integrity of Dr. Doty. While Dushkind and Bulger last summer were eagerly inviting the testimony of a few ignorant immigrants in their futile attempt to discredit the quarantine administration, they failed to note the fact that the sanitarians and physicians of the entire country were content to leave what is manifestly a national task in the hands of a State official simply because he was discharging it so well. This silent testimony of an army of creditable and competent witnesses was wilfully ignored by the prejudiced investigators and by the Governor as well. But the latter has overshot the mark and made clear why neither he nor any other governor of this State should have anything to say regarding the New York Quarantine. If Mr. Dix's charges are true then it is fearful to think of the peril to which the country has been exposed these sixteen years through the incompetence of the State quarantine officer, and it is high time the national government placed its own officers in charge at the Port of New York. On the other hand, if the charges are not true, as of course they are not, the fact is now patent that the country cannot permit the most vulnerable point in its sanitary defences to be exposed to the maladministration of any incompetent or inexperienced man the politicians may direct the Governor to appoint.

No doubt Mr. Dix is sorry now that he took such a roundabout way of trying to get rid of Dr. Doty. If he had simply appointed a new quarantine officer, without the farce of an investigation, the act would probably have passed nearly unnoticed and the Governor's position would have been impregnable from the spoilsmen's point of view. But now he has focused the attention of the whole country on quarantine and any move that he makes will be closely watched. He did not dare to make an outrageously bad appointment, and has done as well as he could under the circumstances. There was but one man of all those mentioned as candidates for the place who had had any experience in the work, and him the Governor was apparently not permitted to appoint. At the present writing the appointment of Dr. O'Connell has not been confirmed by the Senate; whether it is or is not, the situation will not be changed. The only argument in favor of State

control is the $12,500 salary of the health officer, and that is an argument that appeals to only one physician in the State and to none outside of it.

VACCINE TREATMENT OF PERTUSSIS.

In 1906 Bordet and Gengou described an influenza-like bacillus which they believed to be the cause of whooping-cough. They were able to find it, almost in pure culture, in the bronchial secretions expelled during the paroxysms of the early stages of the disease. Agglutination tests seemed to be of little value in testing its pathogenicity as cultures of the organism early developed spontaneous agglutination. The complement deviation reaction, however, proved to be almost uniformly positive and at present it furnishes the strongest evidence of the etiological relation of the bacillus to this disease. Efforts to produce a serum by the immunization of animals have, so far, been unsuccessful.

Attempts to influence the course of the infection by the use of vaccines have been attended with some slight success. Bächer and Menschikoff (*Centralbl. f. Bakt.*, I. Abt. Bd. 61, Heft 3, p. 218) prepared a vaccine from one of the original strains of Bordet's bacillus and with it treated a series of twenty-four cases. The initial dose ranged from five to twenty million and the subsequent doses, given at intervals of from four to seven days, ran up to 200 million. One-half of their cases were not at all affected by this treatment, while the improvement observed in the remainder could not be ascribed to the effects of the vaccine. They are inclined to believe that the paroxysms are the result of absorption of toxins produced by these bacilli growing on the surface of the bronchial mucous membrane.

In this country Graham (*Am. Jour. Dis. Children*, Vol. III, p. 41) treated twenty-four cases with doses of from twenty to forty million administered every two or three days. Of these seventeen "were apparently benefited by the treatment." Under the circumstances judgment is difficult, but Graham and his associates all seemed to think that this mode of treatment had a real value.

Bächer and Menschikoff found it necessary to sterilize their vaccine by heating at 60° for several hours, a treatment which may have had its effect upon the therapeutic value of the product. Unfortunately Graham gives no details of the manufacture of the emulsion which he used so that exact comparison is impossible. The seriousness of the disease and the fatality attendant upon its frequent complications make one hope that the investigation will be pursued vigorously.

HYPERTROPHIC CIRRHOSIS AND ACUTE YELLOW ATROPHY OF THE LIVER.

Works on pathology describe acute yellow atrophy of the liver as an acute destruction of the parenchyma of the organ, which results in notable diminution in its bulk, the appearance of leucin and tyrosin in the urine, and well-known clinical phenomena. Hypertrophic cirrhosis seems to be in some ways the very antithesis of the first named affection, for the parenchyma is increased in amount, not only the hepatic cells but the bile ducts showing proliferation. In cases of hypertrophic cirrhosis which eventully end in atrophy we should not be surprised to see acute yellow atrophy supervene, but that the latter could develop in the florid period of hypertrophy seems almost a physical impossibility. Nevertheless, at a recent meeting of the Allgemeiner ärztlicher Verein of Cologne (*Münchener medizinische Wochenschrift*, December 26) Auerbach describes a case of this association which, despite its unique character, seems to have been readily diagnosticated during life. The patient was apparently a healthy man of fifty-four years, who in a few weeks developed marked gastric disturbance followed by jaundice, somnolence, and fatal coma. There was no leucin or tyrosin in the urine. The clinical picture was that of icterus gravis, such as is commonly associated with rapid destruction of the liver; but upon autopsy the latter organ was seen to be very large and hard, corresponding to the physical signs. There was nothing to throw light on the intimate nature of the case—no history or evidence of lues or alcoholism. The final chapter cannot be written until after a most thorough histological study, after which the case will, doubtless, be reported in great detail. Nothing seems to have been stated as to the probable duration of the hypertrophy.

STATIC ELECTRICITY IN NERVOUS AND MENTAL DISEASES.

Joseph J. Kindred read before the twenty-first annual meeting of the American Electro-Therapeutic Association a paper on static electricity in nervous and mental diseases in which he pointed out the good nutritional effects of the one-pole currents charging and discharging through the body. In his opinion its stimulating and secondarily sedative anodyne effects, both local and systemic, and its curative action on localized inflammatory areas make it superior to other treatment in many painful conditions such as neuralgia, myalgia, rheumatism, rheumatoid arthritis, gout, and migraine. Tabes dorsalis is amenable to some extent to the influence of these currents, that is to say so far as the relief of the pains, girdle sensations, and bladder complications is concerned. In some mental states the wave current acts as a combined tonic and anodyne. Dementia precox, it is said, has been treated with success by electrostatic methods. According to Kindred, the most brilliant results with the static machine have been obtained in neurasthenia. In concluding the author expressed the view that, if he were compelled to choose between electrotherapy, hydrotherapy, and physiotherapy on the one hand and drugs and all other medical measures put together on the other hand, he would by all means choose electrotherapy and hydrotherapy in the treatment of neurasthenic conditions.

THYMOL IN HOOKWORM DISEASE.

In the issue of the Public Health Reports for December 8, 1911, Chas. Wardell Stiles and George F. Leonard discuss briefly the administration of thymol in hookworm disease. Recently an exceptionally severe case of the disease came under their observation. In order to impair the patient's strength as little as possible the preliminary dose of magnesium sulphate, usually given the evening before the thymol is administered, was omitted, and very small doses of thymol were employed. The results were satisfactory. In several other cases

thymol was administered without [illegible] and hookworms were obtained. Consequently, on theoretical grounds and from practical experience, in cases of severe hookworm disease, the authors feel justified in recommending that the preliminary dose of salts be omitted and small doses of thymol be used for one or more courses of treatment. It is also pointed out that the number of worms obtained in any given case is influenced not only by the size of the dose of thymol, but by the number and position of the worms present and the amount of food in the intestinal tract. The principle upon which the small dose is used is that if numerous worms are present the thymol will reach some of them at least and a case of severe infection can thus gradually be reduced to one of lighter infection.

News of the Week.

Vaccination in Siam.—A letter to the *Sun*, written by Dr. Charles S. Braddock, Jr., late Chief Medical Inspector Royal Siamese Government, is of interest in view of the antivaccination stand taken by the Tammany aldermen of New York. The official report for the city of Bankok, Siam, covering the time from October 14 to December 9, 1911, shows that for the first week of this period there were fourteen deaths from smallpox and that by the last week the number had risen to seventy-four. Dr. Braddock reports that in a single village of Siam he has seen as many as fifteen or twenty children totally blind from the result of this disease. In the epidemic of 1902 in the north of Siam as many as 75 per cent. of all unvaccinated children under the age of five years died from the disease. The adults were immune because they were the survivors of a previous epidemic and had had the disease. At the present time the Government of Siam is endeavoring to vaccinate all the people, the king and queen having set the example by being vaccinated. In the village of Tatchin an epidemic broke out some time ago and before the officials of the government were notified there were 100 deaths from the disease. The entire population of the village was vaccinated and since that time there has been practically no smallpox there.

Vital Statistics of New York State for 1911.—According to the annual report of Dr. Eugene H. Porter, State Commissioner of Health, which was presented to Governor Dix on February 6, there were 2,002 fewer deaths reported during the year 1911 than during 1910. The death rate per 1,000 population was 15.5 as against 16.1 for 1910, the urban rate being but little more than the rural. The births exceeded the deaths by 75,288. There were about 90,000 marriages, or 5,000 more than for the previous year. Epidemic influenza has been the means of reversing the incidents of mortality so that the winter mortality has been higher than the summer. Pulmonary tuberculosis caused 14,170 deaths last year, about the same as in 1910. For the entire period of the last twenty-five years 11 per cent. of the deaths have been due to tuberculosis. Cancer caused 8,000 deaths, whereas in 1891 it caused only 3,000. The death rate from typhoid fever was the lowest ever recorded, 14 per 100,000 population. There were about 1,000 more deaths from accidents than in 1910.

Death Rate from Meningitis in Dallas, Tex.—According to Dr. Sophian of the New York Health Department, who has been assisting in the fight against cerebrospinal meningitis in Texas, the death rate from the disease in Dallas has been 44 per cent. However, since the treatment with serum was begun, the mortality among children has been reduced to 10 per cent. and among adults to from 10 to 15 per cent.

Yellow Fever in Guayaquil.—According to despatches received from the cruiser *Maryland*, an epidemic of yellow fever is imminent in Guayaquil. General Plaza, the commander of the Federal troops, who quelled the recent revolution, has been stricken with the disease. Officers of the State, War, Navy, and Treasury departments, as well as the officials of the Canal Zone, insist that this port, which is said to be the plague spot of the west coast of South America, be cleaned up. The United States has indicated a willingness to aid Ecuador in the matter as that republic has shown an inability to perform the task.

Bureau of Public Health and Marine-Hospital Service.—A board of commissioned medical officers will be convened to meet in Washington, D. C., Monday, April 8, at 10 o'clock, for the purpose of examining candidates for admission to the grade of assistant surgeon. For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C." Upon appointment the officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco. Assistant surgeons receive $1,500, passed assistant surgeons $2,000, and surgeons $2,500 a year. The tenure of office is permanent.

The Hunting of an Alleged Leper.—Poor John R. Early, who frightened the health officer of Washington, D. C., a couple of years ago, was shipped to New York in a freight car, and acquitted of the crime of leprosy by the Society of Medical Jurisprudence, through the efforts of Dr. L. Duncan Bulkley, is again enduring persecution—this time in the State of Washington. He recently bought a small ranch near Tacoma and undertook to earn his own living and mind his own business as a farmer. But the health officers found him and now propose to erect a high fence around an acre of ground on which his house is built and so protect the otherwise defenceless community. Leprophobia in health officers is a cruel disease—cruel to their innocent victims.

The Wassermann-Ehrlich Cancer Remedy.—Professor Ehrlich, who is more fond of fantastic drug names than is the Council on Pharmacy of the A. M. A., has christened the new eosine-selenium combination, with which he claims to cure mouse cancer, "nigrosin." Concerning this remedy, Dr. Kiliani of this city, at present in Berlin, is quoted in a wireless despatch to the *New York Times* as speaking most enthusiastically of its therapeutic possibilities. From his private observation of their work, he says, he feels safe in expressing the opinion that the discovery of this remedy is one of the most stupendous achievements of modern science. He believes that the problem of cancer treatment may be considered solved and thinks it most probable that within a comparatively short time the treatment of human cancer will enter upon an entirely new phase. The theory of the action of the remedy is that the selenium seizes upon the oxygen necessary for the rapid growth of the cancer cells, while the eosine, being carcinotropic, acts chemotherapeutically upon these cells.

For a Liberal Interpretation of the Nurse Practice Act.—The Public Health, Hospital, and Budget Committee of the New York Academy of Medicine at its last meeting unanimously adopted the following resolution, subject to the approval of the Council of the Academy of Medicine: "Resolved: That it is the sense of the Committee that any regulations adopted by the State Education Department under the Nurse Practice Act, should not be so formulated, interpreted, or applied as to prevent the training in properly equipped hospitals of a sufficient number of pupil nurses to meet the public demand for trained nursing service."

The Janeway Library of Columbia University. At a meeting of the trustees of Columbia University, on February 5, it was announced that Dr. Theodore C. Janeway, Bard Professor of the Practice of Medicine, had presented the trustees with the valuable medical library bequeathed him by his father, Dr. Edward C. Janeway, to be the departmental library of the department of the practice of medicine. The library consists of about 1,500 bound volumes, including complete sets of many of the most important clinical and pathological journals, and about 2,500 unbound monographs, journals, and pamphlets. It was also announced that Mrs. Russell Sage had given $25,000 to establish the E. G. Janeway Library Endowment Fund for the Medical School.

Colonel William C. Gorgas, U. S. A., chief sanitary officer of Panama Canal, has accepted the election to the office of third vice-president of the National Drainage Congress, which will meet in New Orleans April 10 to 13.

Dr. S. Weir Mitchell of Philadelphia attended the dinner with the University of Pennsylvania alumni at the Waldorf-Astoria and his name was put on the cup of honor which the New York alumni are keeping for those who have cast singular distinction on the university.

Dr. A. Jacobi spoke at the opening of the new Hospital for Children in Boston at the Boston Dispensary February 7. What has been erected will be provided with special facilities for laboratory work.

For Charity.—The will of Newman Cowen leaves the following New York institutions each $500: the Lebanon Hospital, Mount Sinai Hospital, Beth Israel Hospital, Montefiore Home, and the United Hebrew Charities. A concert given by the New York Symphony concert to raise a fund to endow a bed in a hospital in memory of Samuel S. Sanford, a member of the musical faculty of Yale, netted about $5,000. Among the numerous bequests made by the will of Eugene Kelly is one of $15,000 for St. Vincent's Hospital, New York. By the will of the late Mary W. Paul of Philadelphia the sum of $20,000 each is bequeathed to the Episcopal Hospital and the Pennsylvania Hospital, $1,000 each to the Children's Hospital and the Pennsylvania Epileptic Hospital at Oakbourne, Pa., and $500 to the Philadelphia Orthopedic Hospital.

Harvey Society Lecture.—The ninth lecture of the present course of Harvey Society lectures will be given in the New York Academy of Medicine on February 17, at 8.30 P.M., by Prof. R. H. Chittenden of Yale University. The subject will be "Current Views Regarding the Nutrition of Man." During the lecture there will be on exhibition in Hoosack Hall, a portrait of William Harvey painted by Cornellis Janssens.

Violent Criticism of Salvarsan.—A despatch to the *New York Times* says that in a recent report to the Academy of Medicine of Paris Professor Gaucher stated that many deaths had occurred in France, Germany, and Roumania through the employment of 606, the patients dying in a state of coma after a few injections. He complained of attempts to hush up such fatalities in France, and insisted that the remedy was of slight therapeutic efficacy.

Free Medical Clinic for Milwaukee.—St. Mary's Hospital has been reorganized and a new medical staff appointed of which Dr. James A. Bach is president, Dr. V. T. Hoibrook, vice-president, and Dr. Hans Rhombardt, secretary. Plans have been made for a free clinic which will be in operation in a short time.

Hagerstown Hospital to Move.—At the annual meeting of the Washington County Hospital Association it was announced that the Kee-Mar College buildings which were purchased some time ago and remodeled and renovated for the hospital will soon be ready for occupancy.

South Carolina Passes School Inspection Law. The bill providing for the medical examination of school children and college students as well as of teachers and all inmates of educational institutions by regularly appointed physicians was passed by the Senate of South Carolina on February 3.

Straus Laboratories Incorporated.—An association to be known as the Nathan Straus Pasteurized Milk Laboratories was incorporated in New York State on February 9. The purpose of the incorporation is to demonstrate the value of pasteurized milk and to distribute the same by means of stations distributed throughout the world. The incorporation also proposes to have licensed physicians instruct mothers in the use of pasteurized milk.

The Western Massachusetts Alumni Association of the Medical Department of the University of Vermont at their annual meeting at Springfield, on February 1, elected the following officers: *President*, Dr. C. W. Jackson of Monson; *Vice-President*, Dr. D. M. Ryan of Ware; *Secretary*, Dr. Charles J. Downey of Springfield.

The Oxford County Medical Association, which held its meeting in Ingersoll, Ontario, January 29, elected the following officers: *President*, Dr. Andrew MacKay, Woodstock; *Vice-President*, Dr. McGougan, Thamesford; *Secretary*, Dr. Brodie, Woodstock; *Treasurer*, Dr. Neff, Ingersoll; *Executive Committee*, Drs. F. S. Ruttan, C. M. MacKay, and A. McLay, Sr.

Appointment of a Quarantine Officer.—Governor Dix has sent to the Senate the appointment of Dr. Joseph J. O'Connell of Brooklyn as Health Officer of the Port of New York to succeed Dr. Alvah H. Doty, whose term expired a year ago. Dr. O'Connell was recommended by Mayor Gaynor.

Death of Dr. Hansen.—The death is announced of Dr. Gerhard Armauer Hansen of Bergen, Norway, the discoverer of the lepra bacillus. Dr. Hansen was born in 1841 and for many years was the director of the leper hospital in Bergen.

Deaths of Physicians.—During 1911, 2,145 physicians have died in the United States and in Canada; this gives an annual death rate of about 15.32 per 1,000.

Obituary Notes.—Dr. NORTON R. HOTCHKISS of New Haven, Conn., a graduate of the University of Maryland School of Medicine, Baltimore, in 1891, died at his home, January 30, at the age of 41.

Dr. Norton Royce Hotchkiss of New Haven, Conn., a graduate of the University of Maryland School of Medicine, Baltimore, died at his home January 30. He was former Surgeon-General on the staff of Governor Woodruff, and president of the New Haven Medical Association. He was forty-two years old.

Dr. Isaac Poole of Evanston, Ill., a graduate of Berkshire Medical College, Pittsfield in 1862, died at his home January 24, at the age of seventy four years. During the Civil War he served as surgeon on the battleship *Kansas*.

Dr. Oscar Czarnowski of New Orleans, La., a graduate of the medical department of Tulane University of Louisiana in 1873, died of pneumonia at his home January 24, at the age of seventy-five years.

Dr. Charles W. Oliver of Washington, D. C., a graduate of the medical department of George Washington University, died at his home January 26, at the age of twenty-five years.

Correspondence.

BRILL'S DISEASE AND TYPHUS FEVER.

To the Editor of the Medical Record:

Sir:—Your editorial in the Medical Record, February 10, 1912, is hardly fair in attributing to me a refusal to admit the identity of the disease, described by me some time ago, with typhus fever. It is a well-known fact that I was the one who first pointed out its clinical resemblance to typhus fever and that I was also the first to conduct experiments by inoculating blood from a few of my patients, who suffered with the disease, into monkeys in the effort to establish the identity. The failure of these experiments to transmit the disease to monkeys, the marked differences in the epidemiological factors, the negligible fatality of barely 1 per cent. were factors that induced me to express the opinion, as anyone may see, by referring to my article in the *American Journal of the Medical Sciences*, August, 1911, that the identity with typhus was further than ever from being *indubitably* established.

Anderson and Goldberger succeeded where I failed, even though they encountered a similar failure with the first three of their monkeys in transmitting the infection. I need only refer to the facts that in my article just quoted, published considerably before their experiments were conducted, I begged other investigators to carry on this work further to prove the identity, and that I was the one to furnish Anderson and Goldberger with the material for that work and for which they give me credit in their report.

I had to fight for years with the profession to secure a recognition of this disease, which every clinician in the city who saw it insisted was a modified typhoid fever. Even on reporting a fatal case as typhus fever the Health Department refused to regard the disease as such, though one of the officials made the autopsy. It gave me the greatest satisfaction to have the disease taken from the typhoid category by the investigations of the committee appointed by the New York Academy of Medicine (Report of Committee to the Section on Practice, December, 1910) because that was a step forward in the direction of progress.

It is hardly just, therefore, to be placed by your article in the list of "doubting Thomases," especially when all the investigations to establish the identity of the disease described by me with typhus fever were instigated by myself.

N. E. Brill, M.D.

48 West Seventy-sixth Street, New York.

[The statement to which exception is taken by Dr. Brill was based upon a letter in the *Journal of the American Medical Association* of December 2, 1911, in which he said that until stronger evidence was produced he would be "justified in calling this disease an infectious disease of unknown origin."—Ed.]

OUR LONDON LETTER.

(From Our Regular Correspondent.)

SURGICAL TREATMENT OF ASCITES DUE TO CIRRHOSIS OF LIVER—NEXT INTERNATIONAL MEDICAL CONGRESS—ANTI-TUBERCULOSIS CAMPAIGN IN WALES—OBITUARY.

London, January 26, 1912.

A long discussion on the operative treatment of ascites due to cirrhosis of the liver engaged the attention of the Surgical Section of the R. S. M. on the 9th inst. Mr. Morison opened it with a paper in which he described the procedure he had adopted and which he said was suggested to him by a visit to the post-mortem room, when Dr. David Drummond showed him a body in which cirrhosis had been fatal and there had been no ascites because the portal obstruction had been relieved by the collateral circulation—chiefly through enlarged Sappey's veins. Neither of these gentlemen were aware at the time that Professor Talma had performed an operation to establish a new anastomotic circulation in such a case, but they considered the possibility of doing so, and in the light of the enormous new vessels that are met with in rapidly growing abdominal tumors some such operation seemed feasible. In the first case in which they attempted this method of dealing with ascites the disease did not result from cirrhosis and the patient died nineteen months afterward, unrelieved. A second attempt was successful, and the patient was shown at the British Medical meeting at Carlisle eight months later in apparently good health. Other cases were mentioned, but it was emphasized that those in which the operation can be of use are rare and must be carefully selected. Mr. Morison said, so far as he knew, those of alcoholic origin in patients otherwise sound and whom repeated tapping failed to cure were most suitable, as none such had proved failures. Perhaps the reason is similar to the cure of dropsy due to heart strain, the chief predisposing cause being removable—the heart being relieved by rest, even by abstinence from alcohol. Mr. Morison detailed the technique he has employed, laid stress on strictest antisepsis and the after-treatment, and said reaccumulation sometimes took place after the operation and required tapping once or even twice, but need not cause anxiety.

Dr. Hale White began the discussion by expressing agreement with Mr. Morison that suitable cases were rare; he would say extremely rare. None of the successes were, he held, ordinary cases. Pressure on the portal vein was hardly the chief cause, for ascites might come on quite suddenly, and ligation of the vein did not set up ascites. The operation might prove fatal, and, considering the decrease in alcoholism, would probably die out. Dr. H. D. Rolleston thought the increased anastamosis

acted by enabling the liver to deal more easily with the blood passing through and thereby reducing the toxemia, which appeared to be the chief cause of ascites. He could not agree with Dr. White that tapping was not often needed more than once. Mr. Waring preferred omentopexy. Mr. Sampson Handley thought the drainage method lately adopted at the Middlesex Hospital might eventually become the established plan, but in any case he thought the surgical treatment of ascites had come to stay. He rather preferred Wynter's plan of femoral drainage. Dr. W. Essex Wynter said that the practical point was the overdistention of the peritoneum with nutrient fluid withdrawn from the circulation. Thus resulted toxemia and emaciation. A striking fact was that anuria was likely to occur after each tapping. For this autoseropathy was employed by some French authorities—withdrawing some ascitic fluid and injecting it hypodermically. A serious disappointment often was seen in the patient not giving up his alcoholism. Some persons had continued drinking after three or four years of freedom from ascites. This trouble had been mentioned already by Dr. Handley.

Mr. Spencer regarded the operation as to a certain extent exploratory, and there was a great advantage in exploring the abdomen in cases which had been repeatedly tapped. He recalled some in which diagnosis had been erroneous. He had varied the method in some cases. In one woman the Morison plan had done her much good and she wanted a repetition. He scraped the liver on the plan of Mr. Turner of St. George's Hospital, which relieved for a time. At a third operation he put a glass button in (Paterson's method). He had seen no injury from these operations, and felt sure they prolonged life. Dr. Parkes Weber had had four of his cases operated on by Mr. Michels, all successful. He thought cases which developed easily collateral circulation did not often have ascites, but others whose circulation did not thus develop had ascites early.

Dr. S. White of Sheffield sent a statement of nineteen cases, which was read for him. Five were fatal from different causes. Of the other fourteen three died within a year and two had to be tapped before the cure was complete. Mr. Makins said he had operated in five cases, four of which had been previously tapped several times.

It seems rather early to be talking about the next International Medical Congress, but those concerned with the arrangements think it is none too soon. The meeting is to be in London, and August 6, 1913, is fixed for the opening day. It will be thirty-two years since the meeting took place here. On that occasion Lister was present and antiseptic surgery the subject of discussion and even disputation to every little coterie of members and visitors. Sir J. Paget presided with the calm and courtesy which always distinguished him; Pasteur, Virchow, Huxley, Gull, and others whose memory remains were among the prominent personalities. For next year the King has promised his patronage, and Prince Arthur of Connaught has agreed to open the Congress. Ehrlich is to give the address on Pathology, Chauffard that on Medicine, and Harvey Cushing that on Surgery. There are to be twenty-two sections and subsections. You see, we are getting on—and there is need for activity, for it is estimated that £12,000 or £13,000 will be necessary to ensure success.

A royal charter is about to be issued to the Welsh Memorial Fund for King Edward VII., which takes the form of an anti tuberculosis association for the Principality and Monmouthshire. The association is representative of all classes, as well as of local authorities, especially those connected with health and sanitation. Nearly £200,000 has been contributed, and the Welsh Insurance Commissioners are to have power to make grants toward some of the proposed work. This will be to a large extent educational, an active effort being made to spread a knowledge of the risks involved and the method of prevention. But treatment, sanatorium and other, will receive attention, and arrangements for this will probably be made in conjunction with county councils and for insured persons with the local insurance committees.

Yesterday the announcement that Sir Henry Butlin died on the previous day came as a shock to many of his admirers. Even those who remembered he had been obliged by ill health to retire from the presidency of the Royal College of Surgeons thought perhaps the breakdown was due to overstrain, for he held in the same year the presidency of the British Medical Association. It seems such a little while since he delivered his two Hunterian lectures on cancer and proposed the name of *Unicellula cancri* for the cell. I gave you some account of these lectures in my letter of December 1, and you commented on his theory in your leader of December 16. That he was a general favorite in the profession was shown last June when we entertained him at a complimentary banquet. That was the occasion on which he spoke of the crisis threatened by the Insurance Bill and declared that we had as much right as any class to enforce our claims by a united refusal to work for inadequate remuneration, thus showing that although not dependent on the profession he had full sympathy with those less fortunately placed and whose living he considered the scheme endangered. He was soon after this banquet created a baronet, an honor it was generally held he well deserved for his surgical work. In 1868 he was house surgeon at St. Bartholomew's Hospital, with which he has continued to be connected throughout his life, being surgical registrar in 1872, later demonstrator of surgery, and taking the next vacancy on the assistant staff. In 1892 he became full surgeon, and on resigning after ten years was made consulting surgeon. He was attached for some time to the Hospital for Sick Children. He was dean of the faculty of medicine in the London University.

Dr. Cecil Yates Biss, late physician to the Brompton Consumption Hospital, died on the 20th inst., aged 66. He was a Cambridge graduate in arts and medicine, taking honors in the several stages; M.D., 1884. He was elected F.R.C.P. in 1889. He had been also connected with the Middlesex Hospital, in the school of which he lectured on pharmacology and therapeutics. He had also been an examiner in materia medica for the College of Physicians and the Apothecaries' Society.

Dr. C. A. Lee of Hull died on the 13th inst., aged 86. He went to Hull in the year he graduated, 1848, and had practised there up to a short time ago. He was deeply interested in the infirmary and other public institutions of the place, which he served in various ways. Shortly before his death he conveyed a site to trustees for the purpose of erecting almshouses, and he has left by will a large sum of money to carry out his intention.

OUR LETTER FROM THE PHILIPPINES.

(From Our Special Correspondent.)

GENERAL HEALTH CONDITIONS—MANILA WATER SUPPLY—INCREASE IN BERIBERI—CHANGE IN PUBLIC ATTITUDE TOWARD HOSPITALS—THE CHOLERA CARRIER—PERSONAL.

MANILA, December 9, 1911.

THE close of the year 1911 finds the Philippines in better condition from a health standpoint than they have probably been at any time during the past 200 years. There is no plague among men or rodents; no cholera has been reported for nearly six months; smallpox exists only in sporadic form. The installation of the new water system in the city of Manila has reduced the incidence of the intestinal diseases by almost one half. There are, however, a great many cases of so-called varioloid through the Islands. There is considerable dispute among the local physicians as to whether it is really varioloid or varicella. Be that as it may, there is no mortality from the disease, and the person afflicted with it are usually so mildly ill that they resent being called sick.

The new water system for the city of Manila has now been in operation since November, 1909, and sufficient time has elapsed to make it practicable to compare the number of deaths from intestinal diseases with the number which occurred prior to the time the new water became available. It will perhaps be remembered that previously the water for the city of Manila was obtained from a watershed upon which at least ten thousand persons lived, and who considered it their unalienable right to polute and defile the stream as they wished. The water now comes from a practically uninhabited watershed, some thirty miles distant from Manila. Up to the present time no filtration system has been installed, and the water is the ordinary surface water that is found in the tropics and contains amebiæ, with a bacteriological count that varies approximately from 150 to 300 per cubic centimeter. It is the intention ultimately to provide a purifying or filtration system, but this has not been undertaken up to the present time owing to the fact that there is not yet sufficient evidence available as to whether the amebiæ found are pathogenic or nonpathogenic. The experimental sand filters which have been tried have all permitted the passage of amebæ, so that if it should prove that the amebæ are pathogenic some other system of purification would have to be used. In spite of the lack of filtration it is interesting to note the decrease which has taken place in many of the so-called water-borne diseases. For instance, for the fiscal year ended June 30, 1907, there were 586 deaths from cholera, whereas for the fiscal year ended June 30, 1910, there were 146 deaths from this disease. For 1907 there were 344 deaths from dysentery, and in 1911, 143. Of convulsions of children which are generally admitted to be due to intestinal disturbances, there were, in 1907, 1,315 deaths, and in 1911, 510. Of chronic diarrhea and enteritis, under two years of age, there were 224 deaths in 1907, and 120 in 1911. Among persons over two years of age there were 353 deaths from diarrhea and enteritis in 1907, and 151 in 1911. From the foregoing it will be seen that there has been a reduction of almost one-half in these water-borne diseases.

In this connection, however, it is interesting to note that there has been an increase in the beriberi deaths. In 1907 there were reported 407 deaths from beriberi, whereas in 1911 there were 1,515 deaths from this disease. Allowing a reasonable percentage for errors in diagnosis, and making allowance for the fact that there was probably more attention given to beriberi on account of the large amount of discussion which has taken place within the past two years upon the etiology of this disease, there would still remain a large number of deaths which require an explanation. The Filipino, as well as the Chinaman, the Malay, and the people of Japan, is very fond of highly polished rice. In view of the gradual increase which has taken place in the wages of the Filipino laborer, it has been possible for him to purchase more rice, as well as a more costly quality than formerly, and it is believed not to be unreasonable to infer that the increase in beriberi is directly due to the increased consumption of polished rice in the Philippine Islands. It may, perhaps, be further explained on the basis that a large bulk of the rice grown in the Philippine Islands is not highly polished before it is used. During the past few years, owing to failure of crops here, it has been necessary to import large quantities of rice from Indo-China and other countries where it is customary to machine polish it before shipment. It is evident, then, that there has been very much more polished rice used during the past few years than was formerly the case, and that this may well account for the increase in the number of deaths from this disease.

Since the opening of the Philippine General Hospital in September, 1910, there has been a great change in the public attitude toward hospitals. Before that time the Filipino looked upon a hospital as a place to go to die, and the fear of a hospital was almost universal among the masses. At the beginning it was most difficult to induce the average Filipino to enter a hospital, but by patient insistence, and with the evidence of the actual benefit before his eyes, the conversion is going rapidly on. That this attitude has changed completely is probably best evidenced by the number of persons who are at present treated in the hospitals in the city. For instance, at the Philippine General Hospital, persons are now applying for treatment at the out patient department at the rate of 80,000 cases per year, thus making it one of the largest out-patient dispensaries in the world. Other hospitals in the city which have opened within recent years report similar increases in the number of applications for relief. The Philippine General Hospital has 350 beds, all of which are constantly filled, and applicants for admission must be turned away daily. Medical men here are now beginning to fear that the time will soon come when there will be implanted into the Philippines the same abuses of hospital privileges which have caused so much trouble in Europe and America.

That the cholera carrier is probably one of the most important factors to be considered in successfully dealing with this disease was again well illustrated by an incident which occurred in the city of Manila. During the month of July a person was seized with the disease. There were seven contacts in the same house who, upon bacteriological examination, all proved to be harboring the cholera vibrio, but who were not in any way ill. These cases were isolated and treated with calomel, and within a period of ten days none of their dejections was cholera-infected. Last week a curious incident occurred in connection with these same cases.

One of their number was taken violently ill with the clinical symptoms of cholera, but these cleared up in the course of ten hours, and the bacteriological examination of the stools did not reveal any cholera organisms. An examination was again made of the stools of the contacts, and no cholera vibrio was found.

Captain Philip W. Huntington, United States Army Medical Corps, who has been on duty as sanitary officer with the Bureau of Navigation of the Philippine Government, has been ordered to the United States, and will be succeeded by Captain Robert L. Caswell, United States Army Medical Corps.

Progress of Medical Science

Boston Medical and Surgical Journal.

February 1, 1912.

Diagnosis of Diseases of the Stomach and Intestines by the X-Ray. E. A. Codman.
Past and Present Methods in the Practice of Medicine. O. Worcester.
Blood Pressure in the Toxemias of Pregnancy. (Second Communication.) R. M. Green.
Infiltration Anesthesia in the Submucous Resection of the Nasal Septum. I. Sobotzky.
Cases from the Skin Department of the Massachusetts General Hospital. Service of John T. Bowen, M.D. J. H. Blaisdell.
A Case of Myiasis. H. B. Hart.

X-Ray Diagnosis of Diseases of the Stomach and Intestines.—E. A. Codman states that by means of one examination, the details of which he describes, the radiologist can give an opinion on the following points: (1) whether or not there is abnormality in the size, shape, contour, position, tonicity, and motility of the stomach; (2) whether or not there is residue after six hours; (3) whether or not there is delay in the passage of the food through the small intestine and ileocecal valve.

Methods in the Practice of Medicine.—A. Worcester contrasts the family practice of former days with the specializing tendencies of modern times.

Blood Pressure in the Toxemias of Pregnancy.—R. M. Green states that in a former paper he classified these toxemias as follows:

TYPE.	BLOOD PRESSURE.	
A. Eclampsia:	*Before Delivery.*	*After Delivery.*
1. Impending.	Moderate.	Failing.
2. Acute.	High.	Falling.
3. Fulminating.	Extreme.	Rising.
4. Postpartum.	?	Moderate; falling.
B. Chronic nephritis.	Moderate.	Rising or constant.
C. Hyperemesis.	Moderate.	Constant.

To these groups he now adds the two following: (1) postpartum eclampsia, which is a condition of cumulative toxemia in which the resistance of the patient's central nervous system prevents the outbreak of symptoms until after labor; (2) cases of pernicious vomiting, with fairly normal blood pressure, in which the condition progresses to a fatal result, with a rising ammonia coefficient, unless the uterus is emptied.

Infiltration Anesthesia in the Submucous Resection of the Nasal Septum.—I. Sobotzky notes that it has been found that anesthesia can be produced by the subperichondrial injection of a normal salt solution to which a few drops of adrenalin have been added. This solution can be used without fear of the distressing absorption symptoms that accompany the use of cocaine. The technique is simple. A weak cocaine solution, either of 2 or 4 per cent., is applied to the mucous membrane on either side of the septum. This is done to render painless the introduction of the needle of the syringe through the membrane to the cartilage. The anesthetic and hemostatic consists of 10 c.cm. of a sterile normal salt solution to which are added 4 minims of a 1:1000 adrenalin solution.

Cases of Rare Skin Disease.—J. H. Blaisdell reports a case of papulonecrotic tuberculides and one of generalized unpigmented nevi.

A Case of Myiasis.—H. B. Hart reports a case of intestinal infection of a woman with the maggots of one of the smaller and less common house flies, the *Anthomyia canicularis*.

New York Medical Journal.

February 3, 1912.

The Relief of Prostatic Obstruction. J. Bentley Squier.
Complete Amputation of the Penis by a Jealous Wife. G. F. Lydston and H. F. Steere.
Treatment of Diseases of the Posterior Urethra. J. A. Hawkins.
A Case of Keratitis Rosacea. B. Chance.
Some New Ideas Concerning Tuberculosis. A. Rose.
Alcohol and the Individual. H. Brooks.
Alcohol in Its Relation to the Stomach and Liver. M. M. York.
Serum Treatment of Hemorrhage and Blood Dyscrasias. A. W. Lescohier.
The Responsibility of the Medical Profession for the Early Diagnosis and Prompt Treatment of Pulmonary Tuberculosis. E. O. Otis.
An Explanation of the Positive Wassermann Test Following Some Cases of Anesthesia. S. L. Cherry.

Relief of Prostatic Obstruction.—By J. Bentley Squier. (See MEDICAL RECORD, January 20, 1912, page 144.)

Amputation of Penis.—G. F. Lydston and H. F. Steere report a case of complete amputation of the penis by a jealous wife. They state that the psychology of cases of genital injury by criminal assault varies: The causes are as follows. (1) Simple jealousy. Women sometimes injure not only the offending male, but also the female rival, making the genitals the object of assault. The male often makes the genital organs the objective point of assault upon a rival. The dominant idea is in most cases simply revenge. (2) The desire to deprive a rival of what seems to the jealous person the chief point of interest to the rival. (3) A desire to punish the one at whose hands the assailant has suffered injury. (4) Both women and men have been known to commit sex mutilation on persons in whom they no longer had an interest. (5) The desire to protect oneself from future encroachments on one's sexual rights. (6) Insane impulse. (7) Reversionary instinct, resulting in sadism. Apropos of this point the attack of the female spider and of the female *Mantis religiosa* upon the male after copulation are illustrations.

Diseases of Posterior Urethra.—J. H. Hawkins, in reviewing his methods of treating these conditions states that the day of treatment of diseases of the posterior urethra by sounds and instillation alone is long past, and with the etiology and pathology fairly understood the use of more rational methods should give more satisfactory results.

Keratitis Rosacea.—B. Chance reports a case of this condition.

Tuberculosis.—A. Rose refers to this disease under the name "phymatiasis," which he believes should be treated in "therapeutaria" or "iatreia" rather than in sanatoria. Abdominal strapping is recommended for the gastric atony associated with these cases, while the method of rectal injection with carbon dioxide is again brought forward as a therapeutic aid. The continuous warm bath is believed by the author to be the most rational remedy in tuberculosis, that is to say, in phymatiasis.

Alcohol and the Individual.—H. Brooks describes the pathological effects of alcoholic indulgence.

Alcohol and the Stomach and Liver.—M. M. York refers to the injurious effects of alcohol upon the gastric and hepatic functions.

Serum Treatment of Hemorrhage.—H. W. Lescohier states that in the causation of hemophilia the quantity of zymoplastic substances is of little importance, as these have been shown to be present in hemophilics to a degree equal to that in the normal individual. Rapidity and completeness of coagulation is directly proportional to the amount

of thrombin present. There is a direct proportion between the quantity of thrombin present and the amount of fibrin produced. Clinical experience shows that relatively large amounts of serum must be employed to produce definite results.

Early Diagnosis and Treatment of Pulmonary Tuberculosis.—E. O. Otis states that the control of this disease depends upon the universal dissemination of knowledge regarding tuberculosis in general, and regarding the results obtained when the disease is treated early, at the right time, when arrest is probable; or late, at the wrong time, when death is probable; the establishment of free dispensaries; examination of workshop and factory operatives; better medical inspection of schools; some form of automatic provision for families of tuberculous individuals while they are under treatment; perhaps a workman's compensation law against sickness; more assurance of employment when cured; special instruction and training in medical schools in early diagnosis; and, finally, the deeper and fundamental remedy—prevention of all those causes which lower normal resistance: poverty from a nonliving wage; bad housing; insanitary and dusty workshops; alcohol; and all the other preventable causes.

Wassermann Reaction Following Anesthesia.—S. L. Cherry states that anticomplementary bodies are formed in the blood of dogs during chloroform anesthesia, and these cannot be removed entirely from the serum by heating it to 55° C. for thirty minutes. (2) It is evident that when antigen, possessing anticomplementary properties in undue amount, is combined with a serum possessing anticomplementary properties, the total of the two may be sufficient to cause more or less fixation of complement in the Wassermann test. The purer the antigen is, therefore, the more strongly a positive Wassermann test points to syphilis. (3) No antigen, however made, is permanent, and the main thing is to use an antigen as strongly antigenic and as weakly anticomplementary as possible.

Journal of the American Medical Association.

February 3, 1912.

Treatment of Acute Endocarditis and Myocarditis.—F. S. Meara states that in these conditions the heart should be relieved by the avoidance of any strained or uncomfortable position, mental work of worry, and especially by sufficient refreshing sleep. Moderate doses of bromide may be found sufficient, but if not, other drugs should be called in, and the author prefers among the various hypnotics chloralamide or trional, but if these do not suffice, chloral or morphine may be required. The former is reliable, but its depressant effects must be considered, and he would give it only in the excited sthenic heart of rheumatic endocarditis; in the myocardial involvement, especially of pneumonia and diphtheria, he would not employ it. Morphine is reliable and safer. The medicinal treatment should be directed mainly to the cause of the heart involvement and here the salicylates are depended on, combined with alkalies. The local measures, cold, heat and local irritation, can be used and will suffice in most first attacks of rheumatic endocarditis. In later attacks cardiac tonics may be required to meet cardiac insufficiency and digitalis is the most reliable of these.

Drug Addiction and Mental and Nervous Diseases.—C. C. Wholey states that alcoholism may induce neuritis ranging from slight paresthesias to more serious conditions. It may cause optic atrophy and other morbid conditions of the cranial nerves and direct cortical involvement with or without peripheral alteration, as is shown in alcoholic types of insanity. The addiction to morphine, alcohol and other drugs may also appear as an effect as well as a cause of neuroses, and it may be a symptom of an involutionary process, as is sometimes seen in the aged who have long been temperate. It may occur in ordinary manic-depressive insanity and in paresis, of which it is often a contributing cause. There are many conditions in which the addiction may figure both as cause and as effect. Alcoholism in the ascendents may establish disease or susceptibility of the nervous system in the offspring, which may in turn be the chief factor in the etiology of intemperance. The effect of alcohol and other narcotics in masking or obscuring the clinical pictures of other serious disorders is well known.

Chronic Otitis.—W. A. Wells notes that there is a large percentage of cases which may be successfully handled if the proper methods of non-surgical treatment are employed. The object is not primarily the cessation of the discharge, which is merely a symptom, but the pathological process on which it depends. The treatment should be directed in some cases to the general health, in many cases to the state of the nose, nasopharynx and Eustachian tube, and in all cases to the middle-ear and its immediate adnexa. In some cases tonics, hygiene and exercise are to be directed and if tuberculosis or lues are present they must be treated. In children a chronic suppuration of the ear, not following measles, diphtheria or scarlatina, is almost certainly dependent on adenoids. The local treatment should be directed to the removal of the purulent secretion or other disease products, the sterilization of the parts and the prevention of sepsis and the use of selected medicinal agents to assist nature to normal condition. Disinfection of the nasopharynx and washing out of the ear, as well as suction by the Fowler apparatus which combines it with irrigation, are mentioned. It is only by the instillation method, properly done, that the medicine can be made to reach the desired place in a sufficiently concentrated state. The best agent for this method is alcohol, either alone or carrying with it such other drugs as boric acid, iodine, silver nitrate, etc. The alcoholic instillations may be used every day, or even oftener, according to the individual case.

Cocainism.—W. D. Owens describes the symptoms of this condition.

Rhythm in Apoplexy.—J. H. Hurst reports a series of five consecutive cases of apoplexy in which there was a periodicity in the recurrence of the attacks. The danger periods appeared not to exceed five days and to recur at approximately thirty-day intervals. Prophylactic treatment during these danger periods alone has lessened very materially both the frequency and severity of the attacks. During these danger periods the blood-pressure was much in excess of that for the remainder of the month. The ultimate cause appears obscure. It is suggested that the phenomenon may be due to (1) influences originating in the nervous system; (2) the products of germ or parasitic activity; (3) mechanical compensatory changes of blood-pressure; (4) disturbance of metabolism, assimilative or eliminative, or (5) to the function, or disturbance of function, of a gland or chain of glands possessing an internal secretion.

Hexamethylenamine in Treatment of Bronchitis.—D. Vanderhoof recommends the use of this remedy in the treatment of acute colds and in acute and chronic bronchitis.

Acanthoma Adenoides and Syringocystadenoma.—R. L. Sutton and C. C. Dennie state that lymphangioma tuberosum multiplex or, better, syringocystadenoma, is a non-malignant, cystic neoplasm derived from misplaced embryonal coil-gland elements. The cells still retain their sweat-secreting function, hence the tumors are true adenomata. Although these growths are, in reality, benign cystic epitheliomata, they distinctly differ, both clinically and microscopically, from the acanthoma adenoides cysticum originally described by Brooke and by Fordyce. If the term "multiple benign cystic epithelioma" is to be retained, its use should be confined strictly to tumors of the Brooke-Fordyce group, and a more fitting and proper designation, as syringocystadenoma, adopted for the neoplasms which have so long been indexed under the euphonious but misleading appellation of "lymphangioma tuberosum multiplex."

Nonunion of Fractures.—J. S. Horsley states that the non-union of fractures is the failure of the tissues to deposit lime salts, and after excluding all local and constitutional causes there still remains a group of cases in which this condition seems to occur and the bones fail to unite. There are two indications for the treatment of these cases, namely, to increase the quantity of lime salts in the blood and, second, to induce a larger quantity of blood-flow through the affected bone.

Hospital Decoration.—H. A. Gardner states that cold water paints are insanitary as well as non-durable. They cannot be washed down. Some paste-paints, recently introduced, containing a rosin binder mixed with glue, dextrin and other water soluble materials are even more objectionable than ordinary calcimine. The older method of washing the oil from white lead with turpentine and applying it as a flat paint should no longer be practised, as it is liable to produce a toxic lead dust. In order that a paint may be suitable for hospital walls it should, on drying, leave a hard, elastic, impervious surface which can be washed with water or antiseptic solutions or subjected to the fumes of formaldehyde and sulphur dioxide. The pigments must be permanent and unaffected by the caustic lime that may exist in cement or plastered walls. In public and private wards, where the patients' eyes must find restful surroundings, the modern sanitary flat wall finishes are preferable on account of the non-reflective surfaces they present. For operating rooms and the general trim of a hospital, satin or gloss finish enamels are best. They are sanitary and very durable. The painter should allow each coat to dry firm and hard before the next one is applied. With the introduction of cement for hospital floors a new problem arises. The surface wearing of these floors and the consequent dusting calls for properly designed cement coatings. These should be made largely of hard, abrasion-resisting pigments ground in an oil that will not saponify when in contact with the alkali-bearing cement and still be of such a nature as to produce a hard, glossy surface that can be flushed with water or dilute antiseptic solutions at any time.

Prostatometer.—H. J. Scherck describes an instrument for measuring the size of enlarged prostates. It is based on the caliper principle, with a rectal and a vesical arm, the former being properly curved and the latter consisting of a flexible metal sound for about two-thirds of its length.

Magnified Heart Sounds in Extracardiac Conditions.—O. H. P. Pepper reports an unusual case of magnified heart sounds due to extracardiac conditions occurring in a boy, aged 14, who had a greatly hypertrophied heart from endocarditis with badly damaged mitral and aortic valves. From the description Pepper had received before seeing him he had carefully considered a hydropneumothorax or hydropneumopericardium, but there was no evidence of either on examination. The sound could be heard from a point ten feet away, and was synchronous with a pulsation seen in the neck. It was a mixture of a tympanic note with a slight splashing element. It could be best reproduced by percussing very forcibly a dilated stomach half full of fluid, and this was just what the heart was doing.

Menstrual Suppression in Hypothyroidism.—C. Macfarlane reports a case illustrating this association.

Infectious Hemoglobinuria.—W. G. Little describes a case of this condition which is commonly known as Winckel's disease.

The Lancet.

January 27, 1912.

The Mental Processes in Sanity and Insanity. T. Claye Shaw.
On the Percentages of Ether Vapor Administered in So-Called "Open Ether" Methods. Sir F. Hewitt and W. Legge Symes.
Alcohol Injection of the Gasserian Ganglion for Trigeminal Neuralgia. W. Harris.
The Surgical Treatment of Sterility in Women. F. J. McCann.
The Klebs-Löffler Bacillus, A Few Notes to Emphasize the Importance of Bacteriological Investigation. I. C. Tengely.
Note on an Investigation into Ulcerating Granuloma of the Pudenda, as found in the Government Lock Hospitals, Western Australia. D. Steel.
A Note on Glaucoma. L. Hill.
A Case of Rhonnus Cavosus. H. W. Wilson.

Mental Processes in Sanity and Insanity.—T. Claye Shaw states that the insane person is really sane in his type, he is saying or doing the only thing possible to his existing conditions. The paradox that "there is no such thing as insanity" connotes that an insane act or delusion is the necessary result and the only one possible in a given state. The clue, then, to what is going on in the mind of an insane person is to be found by following up his speech and actions until one arrives at the ultimate state which alone could cause them, for there the trouble lies, and not in the manifestations which set up so much alarm, but which are really nothing but danger-signals—and this eventually comes to an inquiry into motives.

Ether and Open Ether Methods.—Sir F. Hewitt and W. Legge Symes conclude that the percentage of ether afforded by a Skinner's mask properly adjusted, lies ordinarily between 5 and 15 according to the extent of douching and the nature of the fabric employed. Gauze yields a higher percentage than lint or flannel, the percentage rising roughly according to the number of layers. With flannel or with lint, so adjusted that all inspirations and expirations pass through the fabric, a more or less equable atmosphere containing approximately 8 or 9 per cent. of ether vapor may be depended upon.

Alcohol Injection of the Gasserian Ganglion.—W. Harris states that the great advantage of extirpation of the Gasserian ganglion over Schlösser's method of alcohol injection of the nerve trunks has been the permanence of the cure in the former treatment, as opposed to the temporary relief of a few months to three or more years obtainable by the injection. It appears possible to obtain all the advantages of the Krause-Hartley operation without its attendant deformity and dangers, or even the necessity of a general anesthetic. In practically every case it is possible to pass the needle through the foramen ovale into the Gasserian ganglion. The technique for injecting the Gasserian ganglion varies only in detail from that of injecting the inferior maxillary nerve at the foramen ovale: instead of inserting the needle close below the lower border of the zygoma, a point is chosen either on or slightly below the line joining the incisura notch to the ala nasi. This line in the average skull, when the teeth are in position, corresponds to the lower border of the sigmoid notch of the lower jaw. To reach the foramen ovale, therefore, the needle must be directed slightly upwards, making it thus easier to pass the point through the foramen. As soon

as the nerve is reached at the foramen. The canal is rinsed out with 60 per cent. alcohol, using about 1 c.c., but if no general anesthetic is being given he precedes the injection of the alcohol by injecting 6 or 7 minims of 2 per cent. cocaine solution into the nerve, thus rendering the subsequent injection of the alcohol comparatively painless.

Surgical Treatment of Sterility in Women.—T. J. McCann notes the important rôle of gonorrhœa in the causation of sterility in both sexes. In the female the results produced in the tubes and ovaries through gonorrheal infection often lead to permanent sterility. Infection post-abortum and postpartum or infection the result of appendicitis may lead to a similar result, while tuberculosis may also be a cause. Such infections produce adhesions of the ovaries and tubes to the back and side wall of the pelvis, to the rectum, to the uterus, or to one another, or the Fallopian tubes become thickened and their abdominal ends closed. Improvement under appropriate treatment may result, but with gonococcal infection the results tend to persist, the outstanding features of this infection when attacking the Fallopian tubes and pelvic peritoneum being its chronicity and its tendency to form adhesions. The operation of making a new abdominal opening for the Fallopian tube is termed salpingostomy, and was first attempted by Skutsch in 1880. Uterine displacements account for certain cases of sterility. Curetting in the treatment of sterility is indicated in cases of what is termed chronic glandular hypertrophic endometritis associated with free menstrual loss occurring in a uterus normally placed and where no tubal disease exists. Sir J. Y. Simpson devised the operation of bilateral division of the cervix for the cure of sterility, and undoubtedly he was successful in many cases. If this operation be considered in the light of modern experience it fulfils many indications. It causes wide dilatation, it cures dysmenorrhœa even when simple dilatation fails, it provides free drainage, and so may lead to improvement in the condition of the endometrium.

The Klebs-Löffler Bacillus.—L. C. Fogely notes that this organism has been found in leg ulcers, nasal discharges, discharges from the eye, and in the urethral meatus.

Ulcerating Granuloma of the Pudenda.—J. Steel states that in the lesions of this disease spirilla of various kinds are found, some resembling the *Spirillum refringens*, some the *Treponema pallidum*. Another parasite was sometimes in evidence, usually in the fungating, granulomatous variety of the infection, and often from the enlarged inguinal glands, when such are present. Generally seen in the large, swollen mononuclear cells, and often in considerable numbers, they possess varying appearances; if for any reason they appear crowded together the bodies resemble enlarged cocci or bacilli, sometimes kidney-shaped, not unlike huge gonococci. The author believes that this condition consists of two distinct diseases, or an infection of an already diseased subject with another germ. The latter organism is presumably the agent described by Manson as occurring in India.

Glaucoma.—L. Hill believes that the cause of the increased tension in glaucoma primarily is altered metabolism. This is produced by bacterial toxins or otherwise, and results in chemical changes in the colloids of the eye which swell by absorbing more water. Obstruction of the venous and aqueous outflow by sclerotic changes with resulting lack of oxygen and increased production of acid may well be a possible cause.

Rhinitis Caseosa.—H. W. Wilson reports a case of this condition occurring in a girl aged eleven years, and manifesting itself in a yellowish discharge from the nose and the presence of a yellowish-white membrane on the outer wall of the nasal fossa. The material removed had a slight fetor and appeared more like putty than anything else. It was greyish-red in colour, of a soft, friable consistency, but at the same time was different from the ordinary caseous material one associates with tuberculous disease. Microscopically, the bulk of the mass was seen to consist of large numbers of long fine needles, mixed with a structureless material, the former probably of a fatty nature. In addition there were numerous micro-organisms, a few pus cells, and a few small crystals. No mycelial threads could be found. The cultures taken showed a short-chained streptococcus and *Staphylococcus pyogenes aureus*.

British and Medical Journal.

January 27, 1912.

Resistance to Disease.—A. R. F. Exham states that one of the local defences is the process of inflammation. Sir Watson Cheyne has some doubt whether the leucocytosis that accompanies the early stage of inflammation is quite as important as most men believe, holding rather that the essential resisting power of a part to local infection lies in the tissue cells rather than in the adventitious leucocytes which come into it subsequently. At any rate, leucocytosis is one factor in defense. Fever is in some way related to defense, and its absence where it might be expected is very often of the gravest significance. Again, there is the general question of the resisting power at various ages. Children seem to be less immune but more resistant to any acute infectious conditions. The exanthemata are far more frequent in children, and yet, as a rule, they are apt to be more severe in adults. Pneumonia, again, is more common in young people; in them the mortality is very low, but rises steadily in proportion to age. On the other hand, typhus is not so common in children, yet it is said to be not so dangerous in them. Typhoid fever is not as frequent in young children as in young adults, and is more frequent in the latter than in older persons, yet the mortality is smaller in young children and rises progressively as age advances.

Diagnosis of Spinal Cord Affections.—D. Forsyth states that these conditions may be arranged in three groups. (1) Those in which the symptoms come on all at once; (2) those in which the symptoms are acute, taking several hours or even days to develop; (3) those in which the symptoms are insidious. When the symptoms begin all at once there are only two lesions to think of—trauma and hemorrhage. In the former there is a history of injury, usually fracture-dislocation. In the latter, apart from injury, the cord has already been softened by myelitis or a new growth. Another possible cause of hemorrhage is pernicious anemia. Without warning, the patient becomes paralyzed and anesthetic up to the level of the injury. When the symptoms come on acutely one should think of (1) an acute infective process in the cord; (2) some thrombosis in the spinal vessels, and (3) acute spinal meningitis. Landry's paralysis and caisson disease belong to this group. Of the acute infective processes myelitis and poliomyelitis are examples. Spinal thrombosis is the result, apart from pathological states of the blood itself, of arterial degeneration, which, narrowing the vessels, hinders the streams of blood until it clots. This causes softening of the portion of cord supplied by

the affected blood-vessels. Syphilis is the cause of this condition. Senile endarteritis is another cause. The symptoms are not unlike those of acute myelitis. Syphilitic meningomyelitis begins with symptoms of spinal nerve root irritation, shooting and girdle pains, hyperesthesia and perhaps muscular spasm, followed later by paralysis and anesthesia; but still pain. The only truly spinal forms of meningitis are the syphilitic and the acute septic meningitis. The conditions in which the symptoms come on insidiously may be divided into two groups: those with motor symptoms only—progressive muscular atrophy, amyotrophic lateral sclerosis, primary spastic paraplegia, Friedreich's ataxia, and ataxic paraplegia; and those with both sensory and motor symptoms—tabes, syringomyelia, disseminated sclerosis, and compression of the cord. In progressive muscular atrophy the muscles of the patient's face and perhaps his deltoid and scapular muscles are wasted and show fibrillary contractions. In amyotrophic lateral sclerosis the patient's hand muscles are also the first to go, but the wrist jerk and triceps jerk are exaggerated. Later, the legs are affected and the process extends to the bulb. In primary spastic paraplegia there is absence of incoordination. The legs show the signs of lateral sclerosis. In Friedreich's ataxia the patient, usually a child, is unable to coordinate his legs, and later his arms and head, and his knee jerks are absent. His speech is peculiarly hesitating and he may have nystagmus. In ataxic paraplegia incoordination is present, but neither nystagmus nor affection of speech is present. The symptoms of tabes are well known. Syringomyelia, fully developed, combines the symptoms of progressive muscular atrophy in the arms with spastic paraplegia in the legs, and the patients are insensitive to pain and to heat and cold. In disseminated sclerosis the three cardinal symptoms are tremor, nystagmus, and staccato speech. Compression of the cord produces two-fold symptoms—those of spinal root irritation followed by root paralyses, and those of a transverse lesion of the cord itself.

Extramedullary Tumor of the Cervical Cord.—J. M. Clarke reports a case of this condition successfully operated upon.

Regeneration of Nerves.—B. Kilvington finds that the condition found after the restoration of a divided nerve trunk is very variable. These varying conditions render any definite statement as to prognosis and treatment extremely difficult, if not impossible. When no operation after secondary nerve suture has not taken place the main cause (apart from local conditions at the suture area, such as sepsis) is lack of regenerating power in the nerve cell. When all factors have been taken into consideration and it is concluded that restoration of function after secondary nerve suture is unlikely, there is still another surgical procedure open. This is the suture of the recently divided central nerve fibers to the distal trunk of the degenerated nerve—that is, by nerve anastomosis to an adjacent healthy nerve.

Pneumococcal Meningitis.—H. Drummond reports three cases of this condition.

Transient Hemiplegia Following Parturition.—H. Gillies reports two cases of this condition, apparently caused by a spasmodic contraction of the cerebral arteries.

Tetanus Treated by Subdural Injections of Magnesium Sulphate.—O. Smithson reports two cases in which this treatment was employed. Although both patients died the author believes that magnesium sulphate used in this way is a particularly potent drug.

Heat Stroke.—A. S. St. John reports a severe case of this condition. The remarkable recovery in a few hours from what appeared to be imminent death, on two occasions, after the withdrawal of cerebrospinal fluid, seemed to point to the fact that the patient was suffering from what might be described as a "blistering of his cerebral cortex," caused by the excessive heat rays of the sun in meningocortical edema, and that the fluid was being excreted faster than it could drain away, and by removing the excess the pressure was relieved.

Poliomyelitis.—L. S. Tomys presents a report of seven cases of this disease occurring in South Staffordshire.

Nitrobenzol Poisoning.—C. W. Hogarth reports a case of poisoning by nitrobenzol, commonly called oil of mirbane.

Berliner klinische Wochenschrift.

January 22, 1912

Experimental Nephritis.—Weiss and Maschke state that the problem of nephritis is not essential tendency to chronicity. They consider that the interstitial, all other so-called inflammations representing parenchymatous degenerations. Thus parenchymatous nephritis must be interstitial nephritis plus parenchymatous degeneration. The authors have performed different sets of experiments intended to illuminate the nature of the nephropathies. The kidneys were extirpated from one rabbit, and after it had in consequence become uremic, its blood was transfused into a healthy rabbit. Thereupon there developed in the latter evidences of intense functional activity of the kidneys, as shown by the degree of hyperemia and amount of granulation in the renal cells. It was evident that the latter underwent a certain amount of degeneration from the formation of nephrolysins. The degeneration was attended by extravasation of blood. Again as a result of innumerable punctures with a capillary needle the kidneys could be made to undergo contraction. The cycles of intact renal tissue could be seen in the act of doing compensatory work. In this sort of kidney there was no notable degeneration of the parenchyma as a result of the overwork, such as was evident in the first series of experiments. In a third set of researches it was sought to determine whether or not the constant excretion by the kidneys of foreign albumin could set up nephritis. The results when egg albumin was absorbed from the peritoneum and then eliminated by the kidneys were negative throughout. The authors are still experimenting and expect to publish all their finds in detail.

Indications for Renal Decapsulation.—Lehman concludes that Edebohls' operation is built upon false premises, which are not confirmed in practice and that in consequence it should be rejected outright. This, however, refers only to the operative cure of chronic nephritis. In itself it is justifiable because under certain circumstances it can prolong the life of a nephritic, even although there is no essential curative element in it. Further, decapsulation has an indication in so-called nephralgias and nephrorrhagias of angioneurotic origin. It is an emergency life-saving procedure in extreme oliguria, especially in the uremia of acute nephritis. It also facilitates permanent recovery from the latter and perhaps may actually contribute to it in some cases. In the uremia of chronic nephritis the operation is only justifiable if an acute exacerbation has occurred, the kidneys being still able to function. In purulent nephritis decapsulation may sometimes be conjoined with nephrotomy to favor drainage.

Industrial Diseases and Injuries of the Eyes.—Schnaudigel divides these as follows: (a) results of overwork or work under unfavorable external conditions; (b) lesions which occur as part of a general condition; and (c) direct injuries. Under the first head come the results of work on eyes with refractive anomalies. If student life may be defined as an occupation, school children may be included here for study in childhood and youth serves to bring out latent myopia, while the excessive use of the eyes in near work before they have attained their full development doubtless acts as a cause of short sight. In

regard to the second division, the eyes suffer notably in some occupations as part of a general process. The chief toxic agencies from this point of view are coal gas, lead, carbon disulphide, methyl alcohol, arsenic, mercury, nitrobenzole, etc., which are directly poisonous to the optic nerve. The third class, direct injury to the eyes, is naturally much more in evidence. Familiar examples are glass blowers' cataract, ophthalmia electrica, caustic burns, the keratitis of oyster shuckers and of other occupations in which the eyes are directly exposed to flying particles which do not have the force to penetrate. Penetrating injuries occur in certain metal workers. Direct injuries of the eye are very largely preventable by wearing goggles and by other means, so that in many cases the victims contribute directly to their condition by inconceivable folly.

Münchener medizinische Wochenschrift.

January 16, 1912.

Tricorrhexis Nodosa.—Hübner and Walter describe a remarkable wholesale incidence of this affection among schoolgirls. In addition to the manifest brittleness of the hair, the latter presented even to the naked eye the characteristic nodosities. The microscope showed the presence of the longitudinal fission. No sort of parasite could be found. While tricorrhexis nodosa is usually a sporadic affection, its endemic incidence has been noted from time to time in various localities. It has sometimes been assumed that for the production of this peculiar condition a gas-forming bacillus should be necessary, but no organism has ever been found constantly present, and hence it has been claimed that various bacteria can produce a common result, while from quite another point of view it has been demonstrated that the lesions may be set up by ordinary mechanical irritation. A study of the author's material appears to show, perhaps for the first time, that a predisposition is necessary for the development of this affection under ordinary circumstances. This was evident because the nutrition of the nails and teeth showed manifest defects. In the same subject there would be in evidence thin and lusterless hair, nails thin and flat, often excavated, and teeth which in the most pronounced cases were of the so-called Hutchinson type once believed to be pathognomonic of hereditary spyhilis. Since no boys were involved it was inferred that the exciting causes were mechanical and due to want of care and cleanliness. The subjects were children of people in the poorest circumstances, so that defective nourishment may be taken for granted. The fact that the condition improved in the summer months is explained by the greater energy of the hair growth during this season.

Groupwise Incidence of Heart Disease in Children.—Forell first refers to a description of this phenomenon by Max Herz, who recently narrated a so-called epidemic of acute endocarditis in Vienna, the victims ranging from six to eighteen years of age. A Hungarian practitioner also reported sixty cases of the same affection in girls in 100 such patients treated by him. The present author, then unacquainted with these reports, noted the occurrence of a petty epidemic in a restricted area, which, at first obscure, was found to be an infection characterized by a heart localization, which, however, was not the endocardium but the myocardium. There was no history or evidence of any earlier cardiac lesion. In Herz's cases not only was the lesion an acute endocarditis but there were evidences that the heart had previously sustained an injury. Again the present author has seen but seven cases, which is a very small number compared with the experience of the other practitioners. Hence Forell's cases may be regarded as in a class by themselves. Latent diphtheria was excluded, nor was there any evidence of a cryptogenous sepsis. In all probability the condition belonged under acute rheumatism. One patient at least out of the number showed an overwhelming predominance of rheumatic infection, hence the others may be regarded as of the same nature.

Treatment of Prostatic Hypertrophy by Stretching.—According to Kraemer, Freyel has proved conclusively that the severe cases of this affection are curable by extirpation of the growth. But since the operative mortality is so considerable as many cases as possible should be treated in a more conservative fashion. He would revert to the old-time resource of stretching the prostratic urethra. Recently he has cured six patients in this manner out of twelve so treated. The treatment entails little more intervention than ordinary catheterization and the use of the retention catheter. The instruments recommended are the urethral dilators of Bayer or Kollmann.

Deutsche medizinische Wochenschrift.

January 25, 1912.

The Cammidge Reaction and Fusing Point Determination Under the Microscope.—Weber describes the Cammidge crystals which led their discoverer to the belief that he had found a certain urinary token of pancreatitis. Others who followed him could not corroborate his claims; but it is significant that the operating surgeons are the most enthusiastic vouchers for the practical character of the test. In at least 70 per cent. of cases the latter is positive. Concerning the nature of the reaction we as yet have no certain knowledge. It is evident that as a result of disturbed nutrition in the pancreas some product is formed somewhere in the body which is capable of being detected in the urine. The most natural supposition is that such a body would be connected with defective carbohydrate metabolism and would stand in some relationship to alimentary glycosuria. It has been learned, however, that the reaction is wholly independent of the diet, so that it must originate in the diseased pancreas itself. But while the kind of food itself has no relation to the reaction the latter does not occur in the fasting state, while it does occur under sham feeding. Therefore, it must be bound up with the active secretion of the organ. The unknown substance which then forms and is eliminated in the urine can be shown to consist in part of a six atom sugar, which does not ferment. When this is boiled gently with HCl the hexose component is changed to phenylglycosazon, with a characteristic melting point, the latter representing the specific reaction. This the author determined under the microscope to be very nearly 200° C. The hexose should stand in some relation to the pentoses normally present in the pancreas.

Changes in the Antitryptic Index in Anaphylaxis.—Rusznyak refers to the discovery that this index is greatly increased in anaphylaxis, and deduces that this fact may be made to throw light on the nature of the latter which he regards as due to catabolic derivatives of protein produced by an abnormally rapid parenteral fermentation. Anaphylaxis is consequently poisoning with peptones. The production of the latter by fermentation is like a trypsin digestion, hence the increase in antitrypsin in the blood which is to be comprehended as an antianaphylaxis which tends to inhibit the parenteral fermentation.

Urinary Pepsin.—Strauss believes the fluctuation in urinary pepsin may be utilized further in diagnosis, especially since the introduction of the urine diastase test to determine the functional activity of the kidneys. Urinary pepsin has now been carefully studied for nearly thirty years and recently the old fibrin test has been supplanted by the recent method. When the urine contains no pepsin it means that the stomach is no longer secreting it, for pepsin is never formed elsewhere in the body.

Insurance Medicine.

Research in Life Insurance.—L. P. Orr, secretary to the Scottish Assurance Company, read a paper with this title at the second sessional meeting of the Scottish Faculty of Actuaries. He said that of late a new interest and a new publicity had been given to the profession of the actuary by recognition by the state of the value of the services which can be rendered to it by actuarial science. In the past the work done by British actuaries had raised their country to the foremost place in actuarial science. The business of a life insurance company was to insure lives, and its duty was to insure these lives on just and equitable terms. While every well managed office did its best to deal reasonably and fairly with applicants, it could do so only according to the knowledge, medical, actuarial, and general, which it possessed. Great progress had been made since the days when an applicant was accepted or rejected according to the impression that his personal appearance made on the assembled Court of Directors, and much had been done in the way of opening the portals of life insurance to those who at one time would have been refused the right of entry. The prevailing system of assessing lives, especially impaired lives, resting though it did on the best medical and actuarial opinion, was capable of improvement by being based to a less extent on individual opinion, and to a greater extent on the more solid ground of statistical experience. No praise could be too great for the painstaking skill and the anxious consideration shown by medical officers, and it was the duty of actuaries to lighten the labors of the physicians by placing them in possession of the important lessons to be learned from research. In the archives of the life offices there were papers to be numbered by hundreds of thousands, containing full particulars of the personal and family histories of each life, and a very considerable proportion of these lives remained on the books until death. It was these papers that under the scrutiny of the actuary and the medical officer could be made to furnish an answer to many problems. It was important to know what were the favorable or unfavorable elements in varying personal and family histories, and no more conclusive knowledge could be obtained than that which the records of life offices could be made to yield. In the past a number of tables dealing with mortality had been made up by medical officers, and some interesting results could be learned from them; but they were of little practical value for the one and only purpose for which they were really needed by insurance companies—namely, the assessing of new entrants. What was wanted was a combination of the best brains of the actuarial and the medical professions to engage in special investigations into the rate of mortality prevailing in various classes and founded on the broad basis to be obtained from combined figures of English and Scottish offices, the object being to assist companies in the initial selection of their risks by increasing their knowledge of the various circumstances which affect longevity. Mr. Balfour had said recently that he was one of those who felt the duty of doing all in their power as a community to encourage that research which was going to make medicine thirty years hence as superior to the medicine of to-day as the medicine of to-day was to the medicine of thirty years ago. That was the position which the Faculty of Actuaries should take up in regard to medical science in its bearing upon life insurance. This point of view raised the subject to a higher plane than when looked at from the purely business position. It was remarkable how one science dovetailed into another, how the discoveries in one helped to the development of knowledge in another. The vast stores of life-histories the insurance companies, and they alone, could draw upon were bound to reveal facts which would have a bearing upon medical science, as had already been shown by limited investigations made in the past. Practically nothing of any value had been done in this country in the way of classifying impaired lives statistically; very little had been done on the Continent; but in the United States a comprehensive investigation had been made, and was now in course of being revised. The belief that such investigations would yield interesting results might be illustrated by the example of applicants who had a pulse-rate below 60. A group of these lives, numbering 12,000, showed at all ages a uniformly favorable mortality experience. As an example of the practical value, from the actuary's point of view, he gave figures relating to lives above the average in weight (also from the American experience); although the lives had been regarded as so good that any objections on the ground of weight were overruled, yet in the largest group, consisting of over 26,000, the deaths were 47 per cent. above the number expected, and for lives entering above age 45 the excess mortality was no less than 72 per cent. The lessons to be learned from such research as he pleaded for should be made public, so that they might become known to the members of the medical profession generally, and through them become available for the benefit of all. To obtain successful results the English and the Scottish offices must collaborate, and he advocated the establishment under their joint auspices of a bureau of research, well equipped actuarially and medically. The bureau could work for the future as well as for the present by accumulating statistics to be used when sufficient data had been obtained to form a broad enfarch basis. Any objection on the score of cost should be put out of court at once; British offices counted their income by tens of millions, their funds by hundreds of millions, and in comparison the cost would be microscopic. He did not seek to minimize the amount of work involved in such research or the difficulties in pursuing it; but the Faculty of Actuaries, by virtue of its royal charter, was the custodian of the science in Scotland, and he hoped that in this movement in the evolution of life insurance it would take a leading part, believing it to be in its power to confer benefits not only upon the business of insurance but upon medical science and upon the community at large.—*British Medical Journal*, December 16, 1911.

A Victim of 200 Accidents.—The London correspondent of the *Journal of the American Medical Association* cites the case of a man, aged thirty-seven, who pleaded guilty to obtaining money by false pretences from tradesmen. He would fall down and claim to have been injured through the negligence of the persons whom he made his victims. His deception was favored by a malformed wrist which he represented as due to the accident. As he generally claimed only a modest amount his victims paid rather than fight the case, which, even if they were successful, would have involved them in much greater cost. If the cases had come into court he would soon have been detected. As they did not, the deception continued. During three years he successfully made about 200 such claims. He was arrested through playing the same trick on two butchers on the same morning, alleging that he had fallen on pieces of fat outside their shops. The fact that both at once sought the assistance of the Incorporated Society of Meat Traders led to detection of the fraud. A confederate accompanied him, making notes on his behalf of the incident with particulars of the name and address of those from whom the money was to be obtained. He was sentenced to eighteen months' hard labor.

Missouri Forbids Insurance Against Carelessness.—State Superintendent of Insurance Frank Blake has issued an order to insurance companies which insure physicians, dentists, surgeons, and druggists against liability for carelessness, and automobile owners against liability for injury to persons or property, to cease writing this form of insurance in the State of Missouri.

Book Reviews.

THE AMERICAN YEAR BOOK. A Record of Events and Progress, 1911. Edited by FRANCIS G. WICKWARE, B.A., B.Sc., Under Direction of a Supervisory Board Representing National Learned Societies. Price, $3.50 net. New York and London: D. Appleton & Company, 1912.

THIS second volume of the American Year Book, a publication begun in 1911, is constructed on the same general plan as its predecessor, though it is an improvement upon that volume in several respects. The societies under whose general supervision, as exercised by a board of their members, the work is prepared number 38. The members of this board either prepare the material themselves or designate some one to do the work under their supervision, consequently the information presented may be regarded as authoritative.

The work is one that admirably meets the wants of research workers and others who may need to inform themselves of the happenings in any special branch of man's activity. The main topics covered are: Comparative statistics, history and politics, government, economic and social questions, public works and national defence, industries and occupations, science and engineering, the humanities, and current record. Under these are upward of forty subtitles; under "Science and Engineering," for example, are grouped mathematics and astronomy; geology, meteorology, terrestrial magnetism, and geography; chemistry and physics; the organic sciences; psychology and philosophy; medicine and surgery; engineering. The articles in the subsection on medicine and surgery, contributed by Alexander and Adrian Lambert of New York, are: Typhoid vaccination, syphilis, protozoan culture, circulation in the peripheral mechanism of the body, the micrograph, the heart, fractures, transfusion of blood, administration of ether, internal hydrocephalus, esophagoscopy and gastroscopy, papillary growths of the urinary bladder, and x-rays. The information contained in these contributions is brought well down to the end of 1911, one of the references being to an editorial article in the MEDICAL RECORD of November 25, 1911. It is not for information in medical topics only, or chiefly, that the medical reader will find this work of especial use, but to obtain knowledge of work in other departments of human endeavor. If his wants in respect of other branches can be as satisfactorily met as the need of the layman for information in medical progress, the labor of the editor and his staff of contributors will be amply justified.

DISEASES OF THE DIGESTIVE CANAL (Esophagus, Stomach, Intestines). By Dr. PAUL COHNHEIM, Specialist in Diseases of the Stomach and Intestines in Berlin. From the second German edition. Edited and translated by DUDLEY FULTON, M.D., Assistant Professor of Principles and Practice of Medicine, University of California College of Medicine, Los Angeles Department; Attending Physician, Los Angeles County Hospital. Illustrated. Second Edition. Price $4.00. Philadelphia and London: J. B. Lippincott, 1911.

THE clinical viewpoint is the one from which this book has been written. The value of the anamnesis is emphasized, and those aspects of gastroenterology which present themselves in the everyday work of the practitioner are clearly and succinctly set forth with the skill that only the experienced teacher can command. The simplicity and directness of the text, the didactic arrangement of the subject-matter, the illustrative case histories, and the numerous prescriptions are all striking features which characterize this, as well as the first edition. In the present edition the editor has emphasized the increasing value of skiagraphy, and has included recent improvements in the methods of diagnosing lesions of the esophagus, a discussion of acute dilatation of the stomach, the treatment of gastric and duodenal hemorrhage, and the technique of sigmoidoscopy.

DEVELOPMENTAL PATHOLOGY. A Study in Degenerative Evolution. By EUGENE S. TALBOT, M.S., D.D.S., M.D., LL.D., Professor of Stomatology, Bennett Medical College (Loyola University); Corresponding Member, Budapest Royal Society of Physicians; Honorary President International Association of Stomatology, 1907, Paris. With 346 Illustrations. Price $6.00. Boston: Richard E. Badger, The Gorham Press, 1911.

THE main objects of this book are to show that the ontogeny of man, his structure and organs, is a modified recapitulation of his phylogeny in development. The author contends that, as the vertebral phase appears early in embryogeny, an unstable nervous system, checked by parental defects, eruptive fevers, and other agencies at the periods of stress in the child, affects phylogeny and ontogeny. He seeks thus to correct certain erroneous conceptions of heredity by showing that neither excessive nor arrested development is inherited directly from the parent. Dr. Talbot points out by the aid of developmental pathology that degenerative evolution and phylogeny or that process by which an individual or structure is transformed from a lower to a higher type are always going on, and that this fact, if one would obtain a proper grasp of the situation, must be considered in conjunction with heredity. In short, intrauterine education, environment, and development are quite as important as heredity in fashioning the individual and the race. The book is well printed and illustrated and deals with a most interesting subject in an instructive way.

HEREDITY IN RELATION TO EUGENICS. By CHARLES BENEDICT DAVENPORT, Carnegie Institute of Washington, Director Department of Experimental Evolution, Cold Spring Harbor, Long Island, N. Y.; Secretary of the Eugenics Section American Breeders' Association. With 175 Illustrations and Diagrams, and Complete Bibliography and Index. Price $2.00 net. New York: Henry Holt & Co., 1911.

IN these days of city dwelling and the degeneration of the human race following this mode of life, the question of improving the stock, physically at any rate, is much to the front. Works on heredity and eugenics have been fairly frequent of recent years, but the matter is as yet little understood except by the few. In the book before us the author has endeavored to make clear the various complex and perplexing problems in connection with heredity and eugenics, and it may be said that his attempt has been as successful as might have been anticipated. Perhaps he is somewhat too inclined to beg the question and to attribute to heredity more physical and mental ills than the greatest authorities have allowed themselves to attribute. There can be, however, no cavil as to the statements made with regard to the inheritance of certain physical and mental traits. The influence of breeding from healthy stock is as evident in man as in other animals and Mr. Davenport proves this point by citing the example of numerous American families. There is no doubt that measures are needed in all civilized countries to counteract the bad effects of modern industrial life and of overcrowding in cities, and if the application of eugenics will aid in gaining this end it should certainly be practised as far as possible. Enough is not yet known on the subject to state that it is practicable and the author himself admits that further investigation is required. The book is well compiled and affords a considerable amount of information couched in lucid language.

A TEXT-BOOK OF PHYSIOLOGICAL CHEMISTRY. By OLOF HAMMARSTEN, Emeritus Professor of Medical and Physiological Chemistry in the University of Upsala. Authorized Translation from the Author's Enlarged and Revised Seventh German Edition by JOHN A. MANDEL, Sc.D., Professor of Chemistry in the New York University and Bellevue Hospital Medical College. Sixth Edition; Total Issue, Nine Thousand. Price $4.00 net. New York: John Wiley & Sons; London: Chapman & Hall, Limited, 1911.

THE chemistry of animal and plant tissues and of the vital processes taking place in living bodies is a comparatively new science and one which, though great strides have been made in it in the last decade, offers one of the most promising fields for discovery for the student and laboratory worker. Of the many treatises on physiological chemistry which have appeared in the past six or seven years none has proved its superiority to Hammarsten's, and none, we venture to say, has been a greater favorite with the army of students who have turned their attention to solving the manifold chemical problems furnished by the processes of metabolism in the human body. The seventh German edition, of which this is a translation —excellently done it is—appeared about two years ago. It contains a new chapter, written by Professor S. G. Hedin of Upsala, on "Physical Chemistry in Biology." The sections into which this chapter are divided are Osmotic pressure, Colloids, Catalysis, Enzymes, and Ions and Salt action. The popularity of this work among English-speaking students of animal chemistry is shown by the fact that the American editions follow the German ones with great regularity, this being the sixth American, corresponding to the seventh German, edition. Professor Mandel has done his part well and has made a smooth and idiomatic translation, free from all German expressions or turns of phrase. It is scarcely necessary to recommend this work to students of biochemistry; they already know its worth, and all that is necessary to tell them is that a new edition has appeared.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held January 22, 1912

THE PRESIDENT, DR. JAMES F. MCKERNON, IN THE CHAIR.

Address of the Retiring President.—Dr. JAMES F. MCKERNON thanked the members for the support they had given to the society during his term of office. Some radical changes had occurred during the year and one was limiting the executive session to one-half an hour, except when such business of importance might present itself as to call for an extension of time by a majority vote. The society was to be congratulated upon the accessions to its membership during the year. No one who had not been closely identified with the official workings of the society could appreciate in the slightest degree the enormous amount of detail work carried on; and the members owed Mr. Vandiver and his staff their deepest appreciation of the manner in which they have and were now conducting the legal department of the society.

Inaugural Address of the President-Elect.—Dr. CHARLES GILMORE KERLEY expressed his appreciation of the high honor that had been conferred upon him and assured the members that he was not unmindful of its duties and responsibilities. The work of the legislative committee was to keep in touch with medical legislation, to inaugurate that which seemed desirable, to promote that which was beneficial, and to obstruct that which was vicious. During the past year charlatans, illegal practitioners of medicine, proprietors of so-called medical institutions, and members of various cults illegally dealing with things medical had been brought to the bar of justice. Without this activity on the part of the society, without this protecting influence for the public good, the city of New York would be overrun with those who preyed upon the ignorant among all classes of society. This branch of the society as a public benefactor was of no little importance. Dr. Kerley called attention to the effective educational work that was being done by the public health educational committee of the American Medical Association. Since the organization of this work, in July, 1909, over 5,000 lectures had been given to audiences aggregating 330,000 persons. The most difficult and disagreeable subject of medical charities, particularly the abuse of medical charity, was to be considered. The State rightly insisted that medical men should be well qualified, and in their medical societies they established high standards of honor and professional conduct. When so much was required it would seem but fair that an effort be made in order that those who met those requirements be given the opportunity for a reasonable return. The medical profession did more work without compensation than all the other professions combined. A considerable portion of the public had been educated to feel that medical services were due them without price. Physicians had cheapened their profession in the eyes of the public, and they were cheapening it every day by bidding for work through medical charities. Hundreds of physicians to-day in the city of New York were barely earning a poor living; not because they were not qualified; not because they were not willing to work; not because there were no sick to be treated; not because of the existence of various cults and societies which dealt with things medical. These qualified physicians were deprived of a reasonable living because of the medical charities as represented by hospitals, dispensaries, and other societies, lodge physicians, and contract practice, where those afflicted could be treated for little or no compensation when they were well able to pay. With hospital, dispensary, and other societies striving for patients, they should not expect the community to put a high value on what they were so anxious to give away. Sixty per cent. was a low estimate of those who could pay for medical services who were now getting it free. In twenty per cent. of this number it would be difficult to determine whether or not they were deserving of free treatment. The remaining forty per cent. were composed of people who were not poor, and many enjoyed larger incomes than the physician who was treating them. The constitution of the State provided in Article VIII, in Section 11, that any person who obtained medical or surgical treatment on false representation from any dispensary should be guilty of a misdemeanor. How many at the present time were given an opportunity to make false representations, and how many had been brought to court on this charge? Was it fair to the young medical man that he should be required to devote his time and energies to the care of the poor of the State without compensation? Physicians should be compensated for dispensary work. The nurses who might be employed were paid, the registrar was paid, and even the scrub woman was paid. All received compensation except the physician. The present system of medical service through contract work, such as the care of members of lodges and their families, orders of whatever society, cheapened medical service, degraded its purpose, and gave very inadequate service to the supposed beneficiaries, and the patients were the losers. The fee-splitting evil was most openly practised, and it was the means of these lodge doctors obtaining an income; was it desirable for the Medical Society of the County of New York to attempt control of this matter? Legislation relating to the establishment and location of medical institutions was greatly needed. There was at present a decided tendency to centralize medical charities within a comparatively small acreage on the East and West Side of the city, between Forty-second and Sixty-second streets. Such centralization, particularly of outdoor departments, meant that all who applied would be treated, an increased abuse of medical charity. The Society of the Federation of Churches in New York City in 1905, and again in 1910, took a careful house-to-house census of the population of this district; it was found that in 1910 there were 11,160 fewer residents than in 1905, a diminution of density of population of more than twenty per acre of acreage. Two organizations were making an investigation at the present time with the idea of establishing control relating to the distribution of medical charities and, if necessary, the Medical Society of the County of New York should cooperate. Probably no city had a more efficient department of health than the city of New York. In its efforts in behalf of the public it was well to call the Health Department's attention to the fact that much care should be exercised in order that it did not contribute its share to the abuse of medical charity. To what extent the Health Department should practise medicine was a matter that should be definitely determined. Section 1170, Greater New York Charter, as amended by the laws of 1909, chapter 342, stated that the Board of Health might cause proper care and attendance to be given to persons when it should be made to appear to the Board of Health that any such person was so poor as to be unable to procure for himself such care and attendance. There should be some means of regulating medical charities and there should be cooperation in this among the various medical bodies. Desirable legislation had often failed because of lack of unanimity on the part of physicians. In conclusion, Dr. Kerley suggested that the Comitia Minora be empowered to remit the annual dues of any member who was old and poor so that he might not be forced to resign. It seemed most desirable that the statute of 1806, adequate 106 years ago, be changed so that it might meet the necessities of 1912, and in this statute unprofessional conduct should

be incorporated and defined. There should be some means of control of hospital, dispensary, and medical charities, either by increasing the power of the State Board of Charities or through the establishment of a commission to which these organizations should be responsible.

Dr. E. Eliot Harris moved that the suggestions contained in Dr. Kerley's address be referred to a committee of five who should be instructed to report at a subsequent meeting. This was unanimously carried.

Trachoma: Its Cause and Treatment.—Dr. L. W. Crigler read this paper. He said that trachoma was a disease of the conjunctiva in which there was a characteristic connective tissue hyperplasia. It was marked by a proliferation of lymphoid cells, the follicles thus formed tending to degenerate and to become encapsulated by the newly formed connective tissue. As a result of this inflammatory process newly formed blood-vessels penetrated these follicles, which became distended with fluid and pushed their way above the surface of the conjunctiva; finally becoming degenerate, they broke down and the overlying conjunctiva was replaced by scar tissue. Thus, step by step, the entire conjunctiva was destroyed. As a result of this chronic inflammatory process connective tissue changes took place in the deeper structures of the lid, normal blood-vessels became obliterated, all glandular secretion was checked, and a general atrophy of the lid was produced. There was no doubt as to the contagiousness of trachoma. For the past one hundred years it had been one of the problems of military hygiene in the armies of Europe. Wherever large bodies of men were congregated, where there were intimate contact and foul air, rapid dissemination was certain. In this country those living in the tenement districts of large cities were in constant danger of infection. The violence of the onset seemed in some way related to the environment of the individual, bad hygienic conditions being directly conducive to the more aggravated types. Improved methods of sanitation had done much to minimize the frequency of epidemics of this disease, and except in hotbeds of trachoma acute onset was unusual. Little was known of the etiology of this affection. Work done in this direction centered about the so-called trachoma corpuscles, or trachoma bodies, which were first described by Halberstaedter and von Prowaczek in Java, and almost simultaneously Prof. Greeff and his coworkers succeeded in finding and describing similar bodies. These corpuscles had been found not alone in trachomatous eyes, but in eyes entirely free from any evidence whatsoever of trachoma. Fleming found them associated with gonococci repeatedly in connection with ophthalmia neonatorum. They had been found at times in the gonorrheal urethra of both males and females. Their origin being so obscure and their morphology so varied had led some investigators to consider the question as to whether they were dealing with a microorganism, a parasite, or a degenerate cell. These bodies had not been isolated and efforts to obtain them in pure culture had been unsuccessful. The consensus of opinion, however, was that they had some pathological significance in relation to trachoma. They were found in the conjunctival epithelial cells, where they presented the appearance of minute diplococci situated in the protoplasm of the cell. The writer said that one point he wished to emphasize was that trachoma was essentially a chronic disease, and that, with each succeeding month of its duration, new features arose to annoy and harass the unfortunate individual. Years, as a rule, elapsed between the time of its incipiency and the terminal stage, cicatrization, and unless the patient was so fortunate as to have the disease arrested early by intelligent treatment partial impairment of the sight or total blindness was the result. The clinical picture of the chronic type of this disease showed a slight drooping of the upper lids, which appeared thicker than normal, while the palpebral conjunctiva of both lids was studded with numerous translucent lymphoid follicles, varying in size from a pinhead to a grapeshot. In the early stage these follicles were confined to the retrotarsal fold of the upper lid, and it had to be doubly inverted before they could be seen. Dr. Crigler referred to the great similarity between trachoma and follicular conjunctivitis, and deplored the fact that there was no diagnostic point that would enable the general practitioner to distinguish them, to say nothing of the difficulty which the specialist encountered in separating these two diseases. The only distinguishing point seemed to be that follicular conjunctivitis tended to spontaneous recovery, leaving a normal conjunctiva, while trachoma never did. All doubt of the diagnosis was laid aside when the disease reached its second stage, where there was a hypertrophic thickening of the conjunctiva associated with a beginning destruction of the lymphoid follicles and a deposition of fibrous tissue. Months might be passed in reaching this stage. Pannus always began in the upper half of the cornea; no doubt the friction of the upper lid had a great deal to do with bringing about this condition, though infection also might have something to do with it. The acute type of trachoma differed from the chronic only in that the onset was sudden, the patient having symptoms of violent ophthalmia, with photophobia, lacrymation, and a free discharge of thin scropus. There had been no advance in the medical treatment of trachoma in the past ten years. The remedies used, however, were not without effect. The great stumbling block in the way of a cure was the patient himself, who failed to follow the advice of the physician, not realizing the importance of regular and systematic treatment lasting over a long period of time. The two main remedies depended upon to combat the inflammation and to lessen the hypertrophy were silver nitrate and copper sulphate, the former where there was much secretion, and the latter where there was marked hypertrophy. Both were extremely and persistently painful. Expression was indicated in those cases of trachoma that presented numerous follicles in the retrotarsal folds as well as on the palpebral conjunctiva. This operation did not bring about a cure of trachoma; it only lessened congestion and made the application of remedial measures more effectual. He felt convinced that all cases that responded to expression and a few weeks' after-treatment were not trachoma. They should never fail to emphasize to the patient the necessity of long-continued after-treatment; neglect to pursue this course of after-treatment was responsible for many relapses. If the disease was allowed to progress into the hypertrophic stage, with beginning cicatrization, successful cure became impossible and a resort to surgical measures was the only method of relief remaining. The surgical treatment as outlined by Hiesrath of Königsburg, and later modified by Vossius and Kühnt, had not received the recognition that it deserved. These men observed in old cases where a cure had been brought about by Nature a complete obliteration of the retrotarsal folds, a shrunken and distorted cartilage, a pannus that was dense and permanent, a complete destruction of all follicles, and a dry and shrunken conjunctiva. They argued that, as the disease would not subside until the tissues involved were destroyed, why not remove them at once and save the patient the time and suffering which nature took years to accomplish. The two operations indicated in advanced cases of trachoma were: first, a removal of the tarsal cartilage of the upper lid together with its overlying conjunctiva and retrotarsal fold, and, secondly, a removal of the tarsal cartilage of the upper lid alone. The former procedure was indicated in the beginning of the cicatricial stage, where roughened and ulcerated follicles remained; the latter where the follicles had been replaced by connective tissue, and the cartilage, while still hypertrophied, was undergoing retrograde changes

which resulted in a distortion of the lid. The operation of removing both the cartilage and conjunctiva was termed combined excision and was briefly described as follows. The upper lid was doubly everted by means of fixation forceps and horn. A horizontal incision was made through the conjunctiva alone at the junction of the ocular and palpebral conjunctiva. The cut margin of the bulbar conjunctiva was slightly undermined and three sutures were passed equidistant, sufficiently long to admit of a needle at each end. The lid was then singly everted and another incision 2½ mm. from and parallel to the lid margin was made through conjunctiva and cartilage. The ends of the incision were made to unite with the posterior one, and the conjunctiva and cartilage were gently dissected away, care being taken not to remove any of the tissue beneath this cartilage and to leave a very thin strip of cartilage above, if possible, to prevent injury to the levator muscle. The three sutures placed in the bulbar conjunctiva were drawn forward and, each being armed with two needles, were passed from within outward, one end passing through the cut end of the cartilage, the other just posterior. This caused coaptation of the bulbar conjunctiva with the 2½ mm. strip of conjunctiva remaining. The fornix was obliterated. The sutures were tied over a wick of gauze. The results of a hundred or more of these cases operated upon by Dr. Wootton, the writer, and various members of the staff of the Manhattan Eye and Ear Hospital during the past two years demonstrated beyond a doubt that this was the most successful means known of combating this condition. They had obtained a percentage of cures of at least 75 per cent. A resort to torsal resection alone was less frequent and the results, when the operation had not been done until late in the course of the disease, less gratifying. In making tarsal resection the lid was everted, an incision was made through conjunctiva and cartilage 2½ mm. from and parallel to the lid margin, the cartilage was carefully dissected away both anteriorly and posteriorly and the conjunctiva sutured in its original position in a manner similar to that described in the preceding operation. Neither of these operations restricted the motility of the eyeball, nor interfered with movement of the lids. It relieved ptosis and entropion and produced no outward deformity further than a fold in the lid sometimes more than normal. If granulations sprang up in the line of incision they might be removed with a strong solution of silver nitrate. Trachoma of the lower lid did not lead to the bad results that were produced when it attacked the upper lid. Removal of the palpebral conjunctiva alone was here indicated since the disease did not seem to involve deeper structures. Removal of the tarsal cartilage in the lower lid would result in immediate entropion.

Dr. Herbert W. Wootton said that the milder tyes of follicular disease really required no treatment. He called attention to another type that occurred in children in which the disease was most marked upon the upper lid and this could be treated with astringents, but not with long-continued treatment by caustics. It was a papillary conjunctivitis with much hypertrophy of the conjunctiva. These cases were often called trachoma. He said he had seen only two cases of this type in which there was corneal involvement.

Dr. Ellice M. Alger said that our great need was some means of differentiating between trachoma and follicular conjunctivitis, which were much confused even by ophthamologists. The term trachoma was originally applied to all diseases characterized by a rough or granular lid. The microscope had enabled them to narrow this application materially, but it was still too indefinite. At present they recognized two distinct types of trachoma, one marked by true hypertrophy of the conjunctiva and the other simply by the presence of enlarged follicles or glands. He did not believe the first form was ever cured by any method of treatment. It lasted a lifetime and the patient was fortunate to have his conjunctiva replaced by a smooth cicatrix. The only thing treatment could accomplish was to hasten this process. Follicles alone, however, without true hypertrophy of the conjunctiva, were not enough to make a diagnosis of trachoma, since they were merely the reaction of the conjunctiva to irritation, whether of a chemical, bacterial, or mechanical nature. Among school children who were predisposed to enlarged lymphatics, as shown by their adenoids and cervical glands, follicular conjunctivitis was extremely common, while true papillary trachoma was very rare. Such children suffered little discomfort, were not sources of danger to others, and would get absolutely well in time whether treated or not. To apply operative measures to them was not only illogical, but often actually harmful.

Dr. A. Edward Davis said that we were still in doubt as to a bacteriological diagnosis, although the trachoma corpuscles of Halberstaedter and von Prowaczek were supposed to be the true cause of trachoma. And recently Robert Hesse found these corpuscles in the epithelium of the lids, the conjunctiva of the eyeball, and in the diseased cornea in a case of old trachoma with pannus and considered it as a proof of the specific pathogenesis of trachomatous pannus. Be that as it might, the fact remained that they were still in doubt as to the true cause of trachoma, and must rely, in the majority of cases at least, on a clinical diagnosis. The most reliable symptom of true trachoma was the formation of firm organized follicles, which coalesced with the conjunctiva, broke down, and caused its progressive destruction. And this feature they must rely upon for a diagnosis. The author of the paper said he relied chiefly on silver nitrate and copper sulphate. Dr. Davis had come to rely largely on another remedy in these cases. He used sulphate of zinc, not in the strength ordinarily advised in the textbooks, but solutions of 2 per cent., 3 per cent., and 4 per cent., according to the severity of the case, applying it with cotton wound on an applicator. It did not burn or hurt so much nor nearly so long a time as either silver or copper, and was just as effective in hastening a cure. Dr. Crigler expressed the opinion in his paper that he doubted if the "expression operation" ever *cured* a true trachoma. Dr. Davis's experience, which had been large in such cases, was just to the contrary. He thought he knew a true trachoma, that was as well as they could know it clinically by the firm granulations with the adherent conjunctiva, and in a great number of these cases he had given complete relief in from two to six weeks' time. Certainly the "expression treatment," or cure, was infinitely shorter in time than local applications, and the patient did not become discouraged and quit treatment, as was so often the case with local treatment. The invention of the Knap roller forceps, to say nothing of the other less effective forceps, had been of incalculable value in shortening the treatment of trachoma, placing patients back in school or at work in a few weeks' time, whereas before the introduction of the "expression operation" it required months and even years to accomplish the same result. He therefore made a strong protest against minimizing the value of the "expression operation" in the treatment of trachoma. As to the operative measures in the later stages of trachoma, he believed the Heisrath operation the best one, and certainly justifiable in so grave a condition. A very recent contribution to the subject of treatment of trachoma was that of Jacovides, Egypt, printed in the current issue of *Ophthalmology*. His experience had been very large. It was half surgical and half medical. First, he did expression in the early stages. Later grattage, and lastly curettage with Abadie's sharp curette of isolated follicles and granulations. Secondly, the medical treatment consisted in applying silver nitrate to the

lids the day following the operation and for six or eight days until all secretion stopped. After the active secretion stopped (during the stage of active secretion the lids and eyes should be bathed frequently—every two to four hours) he made applications of copper sulphate solution in glycerine daily. At the end of fifteen to twenty-five days cicatrization began and the patient was soon well. Dr. Jacovides had carried out this treatment in fifteen thousand cases and had been greatly pleased with the results. Only about 8 or 10 per cent. had recurred, and these chiefly in children. In these latter cases he thought it was *reinfection* and not recurrence

Dr. John E. Weeks said he had not seen very good results after the Heisrath operation in cases of advanced trachoma. Any operation that lessened the area of the conjunctiva was a faulty one and should not be indulged in. The area of the conjunctiva should be maintained. With regard to the application of silver nitrate and copper sulphate to the conjunctiva after the expression operation, he believed that this was unnecessarily painful to the patient and brought about unsatisfactory results. The relapses that occurred in the treatment of trachoma were due to imperfect antisepsis.

Dr. L. Anna W. Williams said that in all cases of papillary trachoma, however slight the secretion, the New York Department of Health had found simultaneously with the "trachoma inclusions" a tiny hemoglobinophilic bacillus which, in its cycle of development, was exactly similar to that of the "trachoma inclusions" as described by Prowaczek and others. The bacillus seemed to be closely allied to that of influenza and the Koch-Weeks bacillus. This made the question of the relation of trachoma to acute contagious conjunctivitis of greater importance than they had hitherto considered it. Neither these organisms nor the inclusions had been found in cases of folliculosis. On the strength of these results the Health Department, in conjunction with the Department of Education, was attempting to establish special mixed classes for those children who were now being sent to school with slight secretions while receiving treatment at clinics. The Health Department was following up closely with full written records a large series of cases and it hoped at a later date to be able to have evidence on a number of hitherto disputed questions relating to trachoma.

The Cause of Myopia.—Dr. William H. Bates said that wild birds had usually good distant vision; in captivity they acquired myopia. Uncivilized people had good sight, but after living in civilized communities they acquired myopia. New-born children had normal eyes under atropine; but for some months or years later functional myopia was demonstrated with the aid of retinoscopy. An unsuccessful effort of the normal eye to see accurately new, strange, or unfamiliar objects was always followed either by myopic astigmatism, compound astigmatism, or simple myopia. In most eyes with errors of refraction and in normal eyes with eccentric fixation the axes of astigmatism produced by efforts to see distant objects were not usually constant and greater variations occurred in the same eyes from day to day than were observed in normal eyes. In compound hypermetropic astigmatism the effort to see at a distance always lessened the refraction of sometimes one, sometimes other principal meridians. In compound myopic astigmatism one or both of the principal meridians were always increased. In mixed astigmatism sometimes the hypermetropic meridian was lessened. In other cases the myopic meridian was increased; and in still others the hypermetropic meridian was lessened, while the myopic meridian was increased. In one class in one public school in the city of New York there were thirty young pupils; the attention of the teacher was directed to five children whose facial expression suggested defective vision. Their sight was tested and found to be poor in all. These children were shown how to read the small letters on the Snellen card and they obtained normal vision and required no glasses. The facial wrinkling and the evidences of strain disappeared. Cases were reported to illustrate the effects of effort when reading with difficulty at a near point. The uncivilized man was compelled to adjust his eyes for accurate distant vision for protection against enemies and in obtaining food. But when living in civilized communities he was protected from enemies, his food was supplied, and soon accurate distant vision was no longer necessary; the civilized man neglected to adjust his eyes for accurate distant vision and therefore he became myopic. School children did not need accurate adjustment of their eyes for distant vision. In conclusion Dr. Bates said the myopia was not caused by efforts to read by a bad light; the cause of myopia was an effort to see distant objects.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held January 18, 1912.

The President, Dr. Wm. M. Polk, in the Chair.

This meeting was held under the auspices of the Section on Medicine, and consisted of contributions from the hospital of the Rockefeller Institute for Medical Research.

The Nature of the Intoxication in Pneumonia.—Dr. Rufus I. Cole said they had been investigating this subject of pneumonia along three lines, the question of infection, the nature of the immunity, and the nature of the intoxication. All agreed that in pneumonia a severe general intoxication was present, and it was generally accepted that the degree of intoxication was quite independent of the degree of lung involvement, and that the intoxication was not directly related to the mechanical disturbance of respiration due to the lesions in the lungs. It was quite conceivable that the whole effect of the pneumococcus was in inducing the local lung lesion, and that the general symptoms which supervened had only an indirect relationship to the pneumococci, the symptoms being due to the absorption of the products of the inflammatory reaction. It was well known that fever and constitutional disturbances might arise from sterile abscesses, even from the absorption of extravasated blood. It was hardly likely, however, that the specific and characteristic symptoms in pneumonia could be due to this cause. The metabolic studies of Frederick Müller gave evidence that the pulmonary exudate during the course of a pneumonia was constantly being absorbed and reformed. This exudate might be toxic. In any case, the relation between the bacteria and the irritation of the tissues, resulting in inflammatory exudate, had to be explained. If the pneumococcus did not act in a purely mechanical way by its presence, one must suppose that it acted through definite chemical substances arising from it, or else in some mysterious way through physical forces such as disturbances of surface tension or withdrawal from the cells of some necessary constituents. The endotoxin theory of Pfeiffer had come to be generally employed to explain the nature of the intoxication induced by the pneumococcus. This presupposed that toxic substances were present within the bodies of the bacteria which, however, were set free only upon the breaking up or dissolution of the bodies of the bacteria. There was no evidence that pneumococci during growth elaborated a poison, as did the bacilli of diphtheria and tetanus, although the most diverse media and methods to produce such a poison had been employed. The statement had been made that the blood of pneumonia patients, when injected into rabbits, might produce a profound intoxication. It was now known that this blood contained the bacteria, and some of the results which followed were properly due to infection. Normal human blood was not infrequently toxic for rabbits. A rabbit

was inoculated with an overwhelming dose of the pneumococci, and just before death occurred (in from five to eight hours) the animal was bled to death, the blood was defibrinated as quickly as possible, the serum was passed through a Berkefeld filter to remove the bacteria, and as quickly as possible the filtrate was injected into a normal rabbit; to their surprise the animal did not die. The negative experiments made showed that the toxin, if formed in the blood, was either neutralized or fixed as soon as formed, or that it was changed and rendered non-toxic during the time necessarily elapsing while the serum was separating and being filtered. Then they turned their attention to the so-called anaphylatoxin of Friedberger and applied this method to the detection of a toxic substance in the pneumococcus, as had already been done by Neufeld and Dodd. They succeeded in repeating his experiment with the pneumococcus, and in a large number of guinea-pigs sudden death was produced with symptoms identical with those in anaphylactic shock following the injection of other proteins. Friedberger thought this experiment might offer the explanation for all bacterial intoxications. Rosenau, working with the pneumococci, had succeeded in producing a similar acute reaction and death by the injection of bacteria which had not been treated by immune serum and complement, but simply mixed in normal salt solution and allowed to undergo autolysis for forty-eight hours. He drew the conclusion that the virulence of pneumococci depended upon the readiness with which they autolyzed. Against this view there were many facts and among them was that the readiness to autolysis was not a strictly parallel property to virulence. Among about 250 guinea-pigs injected, acute death resembling that seen in anaphylactic shock had only been seen in seven instances. While they were unable to confirm Rosenau's results in producing typical anaphylactic shock with great uniformity with pneumococci autolyzed for forty-eight hours, they did find that a large number of the animals injected intravenously with autolyzed pneumococci died in from two to twelve hours with characteristic pathological lesions. The toxicity was not directly proportional to the bacterial concentration. The concentrations employed were from 500 million to ten billion per cubic centimeter. An important fact was that autolyzed extracts of pneumococci did contain toxic substances for guinea-pigs, and the toxicity apparently had a relation to the digestion of the bodies of the bacteria by the ferments contained within them. A further study of these toxic substances produced both *in vivo* and *in vitro* would undoubtedly lead to further knowledge concerning the nature of pneumonia and aid in solving the problems relating to the cure.

The Action of Pneumococcus Serum.—Dr. A. R. DOCHEZ presented some charts showing the results of the action of the pneumococcus serum in animals.

Dr. ISAAC ADLER told of some experiments that were made several years ago in testing the toxicity of the blood in cases of pneumonia in its different stages and kinds. Experiments were made upon the effect upon turtles' hearts; the results were never published because the heart never responded.

The Pathology of Acute Poliomyelitis.—Dr. FRANCIS W. PEABODY read this paper. He said that the attention of observers who had considered the pathology of poliomyelitis had been almost wholly centered on the lesions of the central nervous system, but in view of the very definite and constant changes which were found at autopsy in other viscera it was rather strange that they should have been almost wholly disregarded and that so little emphasis should have been put on the fact that acute poliomyelitis was essentially a general infection. Rissler, Strauss, Harbitz, Scheel, and Wickham had all noted the presence of lesions outside the nervous system, but had passed them by as having little bearing on the disease. As a matter of fact, the recognition of acute poliomyelitis as a general infection had an important bearing both in explaining the course of the disease and as affecting any possible means of treating it. While the exact path by which the virus entered the body was at present not definitely known, there was clinical and experimental evidence which made it probable that infection frequently gained entrance from the upper respiratory tract. It had been shown by Flexner, both anatomically and experimentally, that the upper nasal cavities were in direct communication with the meninges by means of the lymphatics, which passed outward with the filaments of the olfactory nerve. The earliest change which had been described in the nervous system was hyperemia and the collection of numbers of small mononuclear cells, probably lymphocytes, in the perivascular lymph spaces of the blood-vessels of leptomeninges. The first change, then, was an acute interstitial meningitis, which was not associated with fibrin formation or with exudate on the surface of the meninges. The blood supply of the cord was derived from the vessels of the meninges, and this perivascular infiltration followed along the vessels as they entered the cord from the meninges. Thus the earliest change which was found in the cord itself, both in human beings and in the experimentally produced disease, was hyperemia and the collection of small, round cells in the lymph spaces surrounding the vessels. This cellular exudate formed a sheath apparently completely surrounding the vessels for long stretches and in many places the cells were so numerous that they formed thick collars, which seemed to press on the lumen and might thus obstruct circulation. It was probable that there was also some toxic or mechanical effect in the intimal lining of the vessels, for hemorrhages, minute or extensive, were frequent findings, and one of the prominent features of most cases was the extensive edema. These three factors, cellular exudate, hemorrhages, and edema, all of them dependent upon vascular changes, might be regarded as the primary reaction of the nervous system to the virus of poliomyelitis. It had been suggested that the process by which the vascular lesions affected the nerve cells might be essentially a mechanical one. If the hemorrhage and exudate were absorbed soon enough, the cells might recover their function, but if, on the other hand, the anemia and pressure had been prolonged and excessive the nerve cells went on to complete necrosis. Histological examination showed nerve cells in all stages of degeneration. A most striking picture was formed by the entrance of polymorphonuclear neurophages into the necrotic nerve cells. In more severe lesions hyperemia, perivascular infiltration, hemorrhages, edema, and diffuse cellular infiltration throughout the gray and white matter were observed, but nerve cells might be completely absent from the picture. The same sequence of changes was practically constant in the posterior root ganglia and was found to a less degree in the brain, medulla, and pons. The changes which were found in the other organs in acute poliomyelitis were less striking than those in the nervous system, but they were practically as constant. In all of the eleven acute cases which they had examined there had been more or less extensive involvement of the lymphoid tissue and of parenchymatous organs. The lymphoid tissue throughout the body appeared to react to the virus. The Peyer's patches of the intestine and the mesenteric lymph glands showed perhaps the most marked acute swelling, but the mucosa over the Peyer's patches was unaffected. There was also definite and sometimes pronounced enlargement of the substernal, bronchial, cervical, axillary, and inguinal lymph glands, and of the tonsils. The spleen was frequently somewhat enlarged and on section the Malpighian corpuscles stood up as

raised, pale, transparent nodules, much as they did in typical "sago spleen." The thymus showed changes identical with those in the lymphoid tissue elsewhere. On histological examination one was struck by the resemblance of the lesions found to those described by Mallory in typhoid fever. The reaction was the same throughout the lymphoid tissue regardless of its location. Some of the lymphoid nodules might present a normal appearance, but the majority consisted of a zone of lymphocytes surrounding a more or les sharply circumscribed pale center. High magnification showed the center of the lobule to consist chiefly of large endothelial cells with oval vesicular nuclei. These cells were similar to those lining the lymph sinuses, but most of them were larger and took the stain very lightly. Scattered throughout the center of the nodule were broken down cells and granular fragments of necrotic nuclei, and in areas with extensive necrosis there was often an invasion of polymorphonuclear leucocytes. In the lymph sinuses there were large numbers of the same phagocytic endothelial cells and extensive proliferation of these endothelial cells, which was shown by the frequency with which mitotic figures were found. Necrotic cells were met with in the lymph sinuses, but, in general, necrosis was a more prominent feature in the centers of the lymphatic nodules, and proliferation in the lymph sinuses. Among the parenchymatous organs "cloudy swelling" was usually met with; in the liver, however, it resembled in character what had been described by Mallory in typhoid fever. They were for the most part sharply circumscribed areas of necrosis, ranging in size from lesions which consisted of one or two cells to others which embraced nearly one-eighth of a liver lobule. The character of the lesion varied with its size and age, but in general was very constant. The earlier lesions consisted of one or two disintegrating liver cells, with homogeneous, hyalin, pink-staining protoplasm, and occasionally with irregular, degenerated nuclei. In the older lesions an early and rapid degeneration was more apparent than in the necrotic liver cells. The cells were often arranged circularly, in acini, or in double columns. This arrangement simulated that in normal bile ducts, but it was found in association with lesions near the central and sublobular veins, as well as in the portal spaces. Surrounding the necrotic and regenerating liver cells there was usually a network of hyalin, fibrin-like material, and growing into this were many small capillaries. Scattered throughout the lesion were lymphocytes and frequently many polymorphonuclear leucocytes. That these changes were part of the reaction of the body to the virus poliomyelitis would seem to be made certain by the fact that exactly similar lesions might be found in the organs of monkeys which had been experimentally infected with the disease. The demonstration of such a widespread reaction to the virus and the close resemblance of the histological changes produced to those of typhoid fever were wholly in line with recent clinical and epidemiological advances which tended to recognize acute poliomyelitis as a general infection. The disease must be regarded as a widespread process which affected parenchymatous organs, lymphoid tissue, and, more especially, the nervous system. The demonstration of definite anatomical lesions in organs which had been shown to contain the virus was of considerable importance in helping to complete the picture of a general infection and emphasized the probable importance of the nasopharynx in the epidemiology of the disease.

The Blood and Spinal Fluid in Poliomyelitis.—Dr George Draper made this report. He told of the work that had been done with a twofold object, that of diagnosis and course. The material used was from 233 fluids from 69 cases, and it was taken as follows: 1st week, 43 cases; 2nd week, 45 cases; 3rd week, 40 cases; and 4th week, 30 cases. They investigated the pressure and gross appearance (usually clear, occasionally opaque, and sometimes clotted), the cell count, the chlorides, the reduction by Fehling's, and the globulin. With regard to the pressure, there was possibly in general an increase. The chlorides were normal. The reduction by Fehling's was normal. Early in the disease the polymorphonuclears outnumbered the mononuclears; similar changes had been noted by Flexner and Lewis. Of the 43 cases, 1st week, 23 had over 50 cells and 38 were above the normal, while in two prodromal cases there were 990 and 650 cells per case, respectively. Of the 45 cases, 2nd week, 8 had over 50 cells, and 23 above the normal. Of the 40 cases, 3rd week, there were 1 case over 50 and 8 above normal. The types of fluid presented (1) common, with a normal or slightly increased cell count and with well marked globulin; (2) a high cell count with normal or slight globulin; (3) normal or low cell count with a high gobulin. Each type apparently was characteristic of the stage of the disease, the cellular in the early days of the acute stage, the albuminous in the later stages of the acute stage. With regard to the early diagnosis, the cases examined before the onset of the paralysis were of the greatest interest. Six cases were seen in what might be termed the prodromal period. Of these, four later developed paralysis and two proved to be of the abortive type. The fluid obtained from a lumbar puncture made on the fourth day after the onset in one case gave a cell count of 650 per c.mm., 90 per cent. polynuclears, and a globulin reaction. Three days after the child suddenly developed paralysis and in five hours died of respiratory failure. A second case was seen on the day after the onset of symptoms. The spinal fluid contained 990 cells per c.mm., 90 per cent. of which were polymorphonuclears, and the globulin reaction was positive. On the following day one leg was paralyzed and the cell count of the spinal fluid was 627 per c.mm. with 80 per cent. mononuclears. On the next day both legs were paralyzed and the cell count was 1221 per c.mm. with 92 per cent. mononuclears including many large phagocytic cells. The globulin reaction was positve. Thus two cases seen early in the course of the disease showed fluids with unusually high cell counts, and with a marked predominance of polymorphonuclear cells. In one of them the change of the cell picture from the polymorphonuclear type to the mononuclear could be followed coincident with the onset of the paralysis. Three other cases in the prodromal period, one an abortive case and two becoming paralyzed on the day of the first lumbar puncture, gave cell counts of 37, 94, and 113 per c.mm. with 100 per cent., 93 per cent., and 83 per cent. of mononuclear cells, respectively, and globulin reactions which fell within normal limits. Finally, in one abortive case lumbar puncture on the second day after the onset of symptoms gave a wholly normal fluid. On the third day the cell count was 62 per c.mm. with 89 per cent. mononuclears and a positive globulin reaction. On the sixth day the cell count was 59 per c.mm., all mononuclears, and globulin positive. On the eleventh day the spinal fluid was again normal. That this was an abortive case of poliomyeltitis was proved later by showing that the patient's blood serum was capable of neutralizing active virus when mixed with it and injected intracranially into a monkey. In these six cases examination of the spinal fluid gave evidence which was helpful in making a diagnosis of poliomyelitis before the onset of paralysis. Similar evidence was afforded by eleven cases of Lucas and by one of Frissell. In none of these cases was a large percentage of polymorphonuclear cells found, but it seemed important to call attention to the fact that a fluid whose cytology resembled that found in cerebrospinal meningitis and other types of purulent meningitis might also occur in the early stages of poliomyelitis.

Dr. Edward D. Fisher said that in poliomyelitis there

was a general infection of all of the organs of the body, but this particular lesion was, as shown by the pathological findings, localized chiefly in the spinal cord substance itself. Meningitis manifested itself only to a minor degree. The value of the work in the laboratory was very great if the workers there kept in touch with the clinicians. The object of present investigation should be the study of prevention of the disease, that could be carried out in the laboratory, but the treatment of poliomyelitis, Dr. Fisher said, would always remain in the hands of the trained clinician.

Dr. S. J. Meltzer asked Dr. Peabody whether he did not think the observed visceral changes in poliomyelitis which concerned essentially the lymphoid tissues could be only secondary results, reactions to the products of the primary inflammation which were perhaps indeed confined to the central nervous system. Regarding the remark of Dr. Draper that the study of the spinal fluid did not seem to furnish any definite results which were of diagnostic value, Dr. Meltzer referred to his recent discovery that spinal fluid was capable of destroying added adrenalin, and that the destructive action of the spinal fluid from cases of poliomyelitis was definitely more marked than that of the spinal fluid from tuberculous meningitis, a point which could be elaborated to a differential diagnosis between these two diseases.

The Treatment of Syphilis of the Nervous System.—Dr. H. F. Swift and Dr. A. W. M. Ellis presented this communication. They said the central nervous system was frequently involved in syphilis, not only in the late stages, but early. This was explained by the early, general distribution of the spirochete. Although the spirochetes were found in the blood at times, they were specially adapted to the lymph spaces. The subaraehnoid space could be considered the great lymph sheath of the central nervous system. This probably explained the frequent involvement of the brain. Because of the peculiar pathological conditions existing in the vessels of the central nervous system it was difficult to have the curative agent completely supplied by the blood stream. There was considerable evidence that the blood serum of patients treated with salvarsan had a curative action on syphilitic lesions. In a number of cases this serum had been applied directly to the central nervous system by means of injection after lumbar puncture. Charts were shown of several patients in whom there was a decidedly beneficial effect from this form of treatment. In one the treatment was by direct application of the serum alone; in the others by combined intravenous injections of salvarsan and injections of serum into the spinal canal. The announcement was only preliminary, but seemed to promise favorable results, especially in the more resistant cases.

Dr. Joseph Collins said that he was gratified to see that the internist and the syphilologist had come to believe what the neurologist had been shouting from the house tops for many years, namely, that syphilis of the nervous system was not necessarily a late manifestation of syphilis, or what was colloquially called a manifestation of tertiary syphilis; but that frequently a tissue was affected soon after the original infection. Now that the internist had come to the propaganda of this teaching it might be accepted, just as was psychotheraphy when they began to talk about it. Dr. Swift's paper was of interest to him for several reasons. First, because of the statement that salvarsan or other medicament administered internally could not be recovered from the spinal fluid and that, therefore, it occurred to him to inject a certain quantity of serum taken from the blood of an individual who had just previously been given salvarsan. Secondly, because of the very small quantity of serum that Dr. Swift had been content to use. Thirdly, because the results which Dr. Swift obtained and reported did not compare favorably with those which Dr. Armour and Dr. Collins had obtained in a long series of cases of organic nervous diseases, and which they were about to publish. In the plan of treatment proposed by Dr. Swift the amount of salvarsan that was introduced into the spinal canal must be extremely small, keeping in mind the dose that was given first intravenously and the small amount of serum that was introduced into the spinal canal. One naturally was led to ask if it was the salvarsan in the serum that acted or whether it was not the result of some unusual immunity reaction involving the formation of soluble principles or antibodies in the spinal fluid. Dr. Collins said that if they were going to discuss the beneficial effects of salvarsan upon spinal cord diseases, such as tabes, they must differentiate between cases that presented the classical features of tabes but whose spinal fluid showed a low leucocyte count, for instance below 40 cells to the cubic millimeter, and those which presented similarly convincing so-called pathognomonic signs but whose spinal fluid showed a very large cell count, oftentimes many hundreds to the cubic millimeter, for it was in the latter type of cases that they might most confidently expect beneficial results from salvarsan therapy. Dr. Collins concluded by saying that he did not consider this to be an opportune time to discuss the pathogenesis of tabes, but surely a study of the cases to which salvarsan had been administered, *i.e.* cases in which careful study had been made of the cerebrospinal fluid before and after treatment, tended to bear out the view that they were dealing primarily with a meningitis and a secondary root-neuritis.

Dr. John A. Fordyce was glad that Dr. Swift had emphasized the occurrence of early involvement of the nervous system in syphilis. He had found that the general practitioner believed the nervous system was involved chiefly late in the disease, and while this was often true in tabes and paresis it was not uncommon to see forms of cerebral and cerebrospinal syphilis in the first year of the infection. He called attention to a case of very intense meningitis of the brain which had occurred three months after an initial lesion of the upper lip with a fatal termination. He also recalled a case of cerebrospinal syphilis coming on six months after infection, in which complete recovery took place after prolonged and intensive treatment. A renewed interest had been taken in the early infection of the nervous system in syphilis within the past year or two, or since salvarsan had been used so extensively in this disease; the claim having been made that these so-called nerve recurrences were due to the drug and not to the underlying disease. It had been, however, pretty conclusively demonstrated that such affections were due to incomplete treatment of the patient and not to the drug. He also called attention to the fact that certain syphilitic lesions of the skin and mucous membranes responded promptly to treatment, while others yielded with extreme slowness. This was especially true of certain forms of interstitial glossitis and leucoplakias of the tongue and mouth and scaling syphilides of the palm. The employment of intensive treatment over a long period of time was required to bring about a resolution of these forms of the disease. He believed that an analogy could be drawn between some of these obstinate skin and mucous membrane lesions of the disease and certain resistant forms of syphilis of the nervous system.

Dr. S. J. Meltzer remarked that Dr. Swift's interesting observation ought to be controlled by an intraspinal injection of serum from a case which was not yet treated, or simply from a normal individual; it was conceivable that the injection of normal serum into the spinal canal was capable of relieving the tabetic pains.

Rhythmic Changes in the Human Heart.—Dr. Canby Robinson showed on the screen some tracings that he had recently made.

Stated Meeting, Held February 1, 1912.

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR.

National Quarantine.—DR. WILLIAM M. POLK, in his opening remarks referred to the duty of the president to have presented at each of the Academy's meetings some subject bearing upon the science and art of medicine. One of the greatest departments in medicine was "preventive medicine," and this was intimately connected with quarantine, especially as it was administered in connection with maritime commerce and with immigration. A fruitful source of disease existed in each of these activities and each equipped itself with a clinical and laboratory staff in order that difficulties pertaining to medical inspection and supervision might be met at the ports of entry. When one reflected that after entering some of these disorders had a tendency to spread rapidly, a reason for interest in quarantine was evident. Moreover, when it was realized that while the people at large were the chief sufferers, the members of the Academy, in common with all the physicians of the city, must bear the brunt of such evil situations as faulty quarantine was apt to encourage; therefore, their interest could be regarded as no more than natural. In fact, they had a duty right there, and this duty was "inquiry." New York was one of the four ports within the United States outside National Quarantine. When one learned of the urgent need for sanitation in towns and communities dependent upon the State Board of Health and how inadequate was the sum allowed for this work, one was tempted to ask why not divert this expenditure into a channel where it was needed far more. It should be understood, however, that even now State Quarantine was dependent upon the National Quarantine. For all the information gathered at foreign ports and all precautions taken outside this port against infectious diseases, we were indebted to the National Quarantine. Already a large part of the quarantine work of this port was done by the National Department of Commerce and Labor. It would be a simple step to place the nation in charge of all the quarantine at this port, and it would be for the good of this community and the betterment of the health conditions throughout the State at large.

Advantages of National Control of Quarantine.—DR. LELAND E. COFER, Assistant Surgeon-General, United States Public Health and Marine Hospital Service, said he would endeavor to explain the national system of quarantine and the advantages which he believed were peculiar to it. Quarantine might be defined as an institution which prevented or modified the transmission of disease from one locality to another by the imposition of certain restrictions upon commercial intercourse. While quarantine was an offspring of medical science, it only throve when communities allowed themselves to be infected by quarantinable diseases, and its operations were unfortunately not then directed against the community so infected, but rather against the social and commercial intercourse between them. This was unfortunate and caused quarantine to be considered of such a palliative nature that progressive sanitarians were ever looking forward to the time when internal sanitary conditions would be developed to such an extent that medical science would be warranted in dropping quarantine as an obsolete and unnecessary measure. Fortunately sanitation was keeping pace with the other sciences in the march of progress. Prior to the passage of the act (approved February 15, 1893) "granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service," there was no national system of quarantine. Prior to 1893 the various State governments conducted their own quarantine systems. If the system had not been faulty and a burden upon commerce, not nearly so many States would have transferred their quarantine functions to the custody of the national government. In the act of 1893 the Secretary of the Treasury was empowered to promulgate uniform quarantine regulations for the ports of the United States, to be enforced by the State or municipal authorities, provided they would undertake to enforce them. In the event that they refused or failed to enforce these regulations, the President was directed to detail or appoint officers for this purpose. At a large number of ports the quarantine had been given over voluntarily to the national government, which exacted no fees; at other ports the national government had assumed charge by virtue of the law and because of noncompliance with the regulations. The quarantine functions at all of the ports of the Atlantic, Pacific, and Gulf seaboards were being operated under national control by the Department of the Treasury, under the Bureau of Public Health and Marine Hospital Service, with the following exceptions: Port of New York, Port of Buffalo, Port of Baltimore, Port of Providence, R. I. Dr. Cofer then gave a brief outline of the manner in which the national quarantine was conducted. In enumerating the factors which they had by a long process of education instilled into their officers for their consideration in determining the sanitary status of a vessel, he offered the following: (1) The facts concerning the sanitary status of the port of departure, which were obtainable from the bills of health, the ship's papers, the public health reports, and special information sent from the Bureau of Public Health and Marine Hospital Service. (2) The facts gathered from the personal observation on the part of the quarantine officer of the ship and its personnel. (3) Suppositions based upon (a) the sanitary history of the voyage; (b) the likelihood of latent infection; (c) the reputation of the captain of the ship; (d) the likelihood of concealed infection; (e) the attitude of the ship's surgeon; (f) the kind of cargo carried. By latent infection he meant the presence on board the vessel of plague-infected rats, or, perhaps, infected yellow-fever mosquitos, which vermin and insects, as the case might be, had not, up to the time of arrival, caused the infection of any of the personnel of the vessel. The Public Health and Marine Hospital Service was under the supervision of the Secretary of the Treasury, and was in charge of the Surgeon-General, who had six Assistant Surgeon-Generals in charge of the Bureau divisions. These divisions were as follows: (1) Foreign and Insular Quarantine and Immigration. (2) Domestic (Interstate) Quarantine. (3) Personnel and Accounts. (4) Marine Hospital and Relief. (5) Scientific Research and Sanitation. (6) Sanitary Reports and Statistics. Each division had special office quarters and a special clerical force. Through the division of Foreign and Insular Quarantine and Immigration, during the fiscal year just past, 15,160 vessels were inspected, involving the inspection of 1,516,445 persons, and the disinfection of 1,801 vessels on account of actual infection or for the destruction of rats and mosquitos, the carriers of plague and yellow fever. This division also supervised the medical inspection of immigrants and during the year ending June 30, 1911, 1,093,008 immigrants were inspected and 14,736 immigrants were rejected on account of diseases deportable under the immigration laws. The Public Health and Marine Hospital Service was composed of 135 commissioned officers, 283 acting assistant surgeons and 1,014 men. Representatives of this corps would be found in marine hospitals or in immigration or quarantine stations in every port and in the important cities and towns bordering upon the Canadian and Mexican frontiers. The service at the present time operated 46 quarantine stations extending along the Pacific, Gulf, and Atlantic seaboards from Alaska to Maine, and also the quarantine systems in the Philippines, Hawaii and Porto Rico. The diseases at present quarantined against under national law were cholera, yellow fever, smallpox, typhus fever, leprosy, and plague.

National Quarantine.—Hon. William Williams, Commissioner of Immigration, Port of New York, said that quarantine questions had, at various times, engaged the attention of the courts. This interesting extract from an opinion of the Supreme Court in the case of Morgan S.S. Co. *vs.* Louisiana Board of Health, 118 U. S. 455, was worth noting: "For the period of nearly a century since the government was organized Congress has passed no quarantine law, nor any other law to protect the inhabitants of the United States against the invasion of contagious and infectious diseases from abroad; and yet during the early part of the present century for many years the cities of the Atlantic Coast from Boston and New York to Charleston were devastated by yellow fever. In later times the cholera had made similar invasions; and the yellow fever had been unchecked in its fearful course in the Southern cities, New Orleans especially, for several generations. During all this time the Congress of the United States never attempted to exercise this or any other power to protect the people from the ravages of these dreadful diseases. No doubt they believed that the power to do this belonged to the States." In the course of the opinion the Court further said: "Whenever Congress shall undertake to provide for the commercial cities of the United States a general system of quarantine—*all State laws on the subject shall be abrogated*, at least so far as the two are inconsistent. But until this is done the laws of the State on the subject are valid." The relations of the State and Federal governments as regards quarantine matters were somewhat similar to those prevailing in bankruptcy matters. Recently the Federal government enacted a bankruptcy law which superseded all State laws. The question whether quarantine should be managed by the Federal or State government seemed to him to be a one-sided one. He had yet to hear a valid argument advanced why in New York, as almost everywhere else in the United States, it should not be in the hands of the Federal government. The question had an administrative and a medical side. Any remarks of his presupposed that the State could and would do the *medical* work as well as the Federal government. But it was in the interest of good administration that it be done by he Federal government because it dealt with matters national in character. This was shown in many ways. International conventions existed concerning quarantine matters. Indeed, without the best cooperation of other governments the best results could not be obtained. Furthermore, the whole country, not simply New York State, was interested in the execution of quarantine regulations at our port. To refer only to the immigrants that came through it, of some 830,000 who arrived in 1910, more than two-thirds went to places outside of New York State. And since the question was national in character, there was incidentally no reason why citizens of the State of New York should bear the financial burdens of a quarantine which served the whole country. The Federal government already carried on an enormous amount of medical work. Some of its medical agencies outside of the War and Navy Departments included the Public Health and Marine Hospital Service, the medical officers of the Revenue Cutter Service, Pension Office, the Indian Bureau and Old Soldiers' Homes, the Government Hospital for the Insane, and the Bureaus of Entomology and Chemistry. Not only did it conduct the quarantine work at all but three or four ports of the United States, but even at those ports where the State had charge of this work the Federal government must, under existing statutes, supervise its performance and intervene where it was unsatisfactorily done. This duty of supervising might readily result in friction. Besides incidentally the regulations of Boston and New York (both under State control) might differ, and different supervision be required at the two places. Congress was now considering the union in one bureau or department of all government medical agencies outside of the War and Navy Departments, and it would seem as a proper preliminary to this that it should gather in all quarantine stations. Mr. Williams mentioned some other matters to show to what extent the government was already in this business. It sent its surgeons abroad to study and report on health conditions. Then there was the "Passenger Act," an important measure about which very few people knew, requiring certain sanitary arrangements to be maintained on board ships both American and foreign, and proper food to be supplied. Its provisions hung very closely together with and were intended to facilitate the execution of the quarantine regulations. Lastly they came to Ellis Island. There they had a very substantial medical establishment. The surgeons, nurses, and attendants numbered over 100, and the hospitals were of fine modern design and equipment. A vast amount of medical work was done there, for they inspected all immigrants, sometimes a million a year, with reference to every physical and mental defect not covered by the quarantine laws. Ellis Island was a second line of defense, and any quarantinable disease which might escape the notice of the quarantine authorities would be held by their surgeons. Included in the diseases which operated to exclude immigrants were all of a dangerous contagious or loathsome character. In one respect the work of the quarantine and immigration officers overlapped. Two years ago the health and immigration authorities of New York agreed that good administration called for the removal at quarantine of patients suffering from such acute infectious diseases as measles, scarlet fever, and diphtheria. But a number of measles cases broke out between the time immigrants left quarantine and reached Ellis Island, and such cases were now cared for by the Federal government in its own hospitals. He closed by saying that the Federal government should perform those functions of government which were national in character and from every point of view the business of managing quarantine at the great port of New York was national in character.

Dr. Geo. W. Stoner, Surgeon Public Health and Marine Hospital Service, Chief Medical Officer, Ellis Island, New York, said that Dr. Cofer's statement regarding the supplemental quarantine work performed by medical officers of the Public Health and Marine Hospital Service engaged in the medical examination of arriving aliens and the advantage thus afforded to the maritime interests and the quarantine functions of a port, and of necessity the public at large, applied not only to the few ports—New York, Boston, and Baltimore, where maritime quarantine was still under State or municipal control, but to all the ports in the United States. If any quarantinable disease broke out, or any signs or symptoms of such disease were observed among the passengers or crew, after the ship passed quarantine at the entrance of the harbor and before the medical examination at the inner harbor (the Immigration Station) was completed, it was the bounden duty of the immigration medical examiner (the Public Health and Marine Hospital Service Officer) immediately to communicate the facts to the quarantine officer and at the same time perform or assist in the performance of all the quarantine functions pertaining to the case in such emergency—remove the sick, isolate the suspects, segregate the exposed, or, as would more likely be the case, remand the ship and all on board to quarantine again. The successful outcome in such emergency must, of necessity, depend upon the efficiency of the second (the Immigration medical) examination. But he believed that they would all agree that even the highest degree of efficiency might not avail in the absence of harmonious relations between the two stations; and as Dr. Cofer indicated, such relations were doubly secured at ports where the quarantine and the immigration work was conducted by officers of the same service who for the most part had had uniform training

and experience in quarantine as well as in immigration work. The necessary qualification of a quarantine officer was a thorough practical knowledge of quarantine, which meant everything pertaining to the best methods of preventing the introduction and the spread of contagious quarantinable diseases—cholera, yellow fever, smallpox, typhus fever, leprosy, and plague. All other diseases or defects, mental or physical were, so to speak, outside the province of the quarantine officer. Under certain conditions, however, he might be called upon, or feel in duty bound, to exercise the quarantine function and extend the same so as to include the acute contagious diseases, such as measles, scarlet fever, etc., not classified as maritime quarantinable—as was the case last year and year before here at the Port of New York, when the City Health Department Hospitals, where for years and years immigrants suffering from such diseases had been received and cared for (at so much per diem, of course, chargeable to the government but reimbursed by the steamship companies), declined, or were unable, to continue the care of these patients, and this at a time, too, when the new hospital buildings at Ellis Island were not yet ready for the reception of persons suffering from such diseases. At this juncture the Quarantine Officer agreed to receive from the Commissioner of Immigration and care for at the quarantine hospitals all cases of measles, scarlet fever, etc., occurring among arriving aliens. Many were removed directly from the ships at quarantine and a considerable number were sent down from Ellis Island. But in June last the new hospital at Ellis Island was put in commission and now all sick arriving aliens are being cared for there, except such as may be afflicted with the maritime quarantinable diseases above referred to.

The PRESIDENT announced that the recommendations contained in the papers would be referred to the Council of the Academy for consideration and with the request that they report back to the Academy. This was put in the form of a motion, was seconded, and unanimously carried

Dr. WILLIAM T. JENKINS said that he regarded the State fully able to maintain an effective quarantine at the Port of New York. He said he was health officer of the Port in 1892 and 1893 before the Public Health branch of the Marine Hospital Service was established. He combated an outbreak of typhus fever without Federal aid and was successful in preventing the entrance of cholera. When rumors of the prevalence of cholera in Hamburg were heard, he sent a representative abroad to report on the situation and was kept advised regarding the sailing of infected ships. He did not want the New York quarantine transferred from State to Federal control.

SECTION ON PEDIATRICS.

Stated Meeting, Held April 13, 1911.

Dr. WILLIAM SHANNON IN THE CHAIR.

Outdoor Sleeping Devices in Cities.—Dr. S. ADOLPHUS KNOPF read this paper and demonstrated the devices he described. In order to make the open-air treatment of tuberculosis, pneumonia, or nervous diseases feasible, even in the homes of the poor in cities, Dr. Knopf had devised a window tent which was attached to the inside instead of the outside of the window. It was so constructed that the air of the room could not enter or mix with the air in the tent. The tent was attached to the frame of the window, but did not entirely fill the lower half, a space of about three inches being left for the escape of the warm air in the room. This space could be reduced to one inch or less. The tent was constructed of a series of frames, made of Bessemer rod suitably formed, furnished with hinged terminals, and covered with extra thick yacht sail twill, properly fitted and having elongated ends which admitted of their being tucked in under and around the bedding to prevent the cold air from entering the room. Shutters or Venetian blinds could be utilized in conjunction with the window tent as a screen to intercept the gaze of neighbors. In stormy weather they were a protection as well. A piece of transparent celluloid was placed in the front of the tent to serve as an observation window for the nurse to watch the patient, if this was necessary. During the day the window tent could be pulled up and the window closed if desired. This window tent was of the greatest service to the tuberculous patient, for he could take his open-air treatment even in the cramped quarters of a city tenement without causing the remainder of the family to suffer from the cold. The patient should, of course, have an abundance of clothing; he should wear a sweater and protect his head and ears with a woolen cap. He then described a device, called the starnook, which was suitable for a rest in the open air by day and for outdoor sleeping by night. He had used one himself since October, 1910. The starnook consisted of three walls composed of frames holding movable slats, of a roof and a floor. It was all made of galvanized iron except the floor, the window sash, and the roof-frame. The wall of the house enclosed the fourth side through which access was had to the starnook. It was about nine feet long by six feet deep by six feet high at the outer side and eight feet high at the inner side. The roof could be completely raised against the walls of the house and an unobscured view of the sky could thus be had. Three upper sections of the front shutters could be entirely opened, making a typical rest-cure veranda during the day. The slats were so constructed as to secure absolute privacy, and in stormy weather could be tightly closed. Even when so closed there were enough open spaces to allow the freest circulation of air. Many conveniences could be added to this arrangement, such as electric light, electric motor contrivances for manipulating the various sections of slats, etc. For those who could not have this convenience a large beach chair could be fitted so as to protect the patient from the winds and render him very comfortable, even admitting of his having a table for books, writing materials, and meals. Dr. Knopf also described the half-tent, which was very light and easily shifted from place to place.

A Demonstration of a New Method of Securing Pure Air in Tenements.—Mr. HENRY ATTERBURY SMITH made this demonstration and stated that this new method of building staircases had been brought about through suggestions made by doctors. Charts were exhibited showing the Vanderbilt tenements on Seventy-seventh Street and East River. These buildings were nearly complete and a similar group of model tenements had been erected in a congested district of Hoboken. The Charity Organization Society had offered a prize ten years ago for any one who could bring about a law that would call for an open passageway and other conditions which would provide fresh air all the time. Mr. Smith presented pictures showing what had been accomplished. The entrances into these tenements were in a court and were one hundred feet apart. They were so arranged as not to be open to abuse or to conditions of immorality. In case of fire one hose could send water from one staircase to ninety-six doors. The shaft was the disagreeable feature about the tenement and should be abolished.

Resolution for Procuring Fresh Air in Tenements.—Dr. A. JACOBI offered the following resolution, which was unanimously carried: "*Whereas*, in the tenement house building laws of the City of New York there is no recognition of the new open-air stairway, doing away with dark halls, and *Whereas*, the airshaft is demanded because of presumed interior dark halls, and *Whereas*, the airshaft becomes superfluous in open-air stairway construction of tenements, as illustrated by the tenements now under con-

struction, Seventy-seventh Street and East River, and *Whereas,* the airshaft, besides being superfluous for purposes of ventilation, takes from the living quarters needed room space, is furthermore a possible means of close communication between adjacent compartments, transmitting noise and possibly dust and germs. Therefore, be it *Resolved* that it be recorded as the sense of this meeting that the airshafts in these new, specially constructed tenements with open-air stairways and without dark inner halls, are superfluous; and be it further *Resolved*, that the Section on Pediatrics recommend that the Building and Tenement House Departments of the City of New York be requested to formulate and secure such laws as shall allow the abolition of the airshafts in such specially constructed tenements and the space now occupied by them be incorporated in the adjoining living rooms; and be it further *Resolved:* That a copy of these resolutions, after endorsement by the Council of the New York Academy of Medicine, be forwarded to the departments regulating the building of tenements."

Dr. HERMANN M. BIGGS said that he had not visited these new tenements, but that Mr. Smith had submitted the plans to the Superintendent of Construction, Department of Health. Formerly the construction of tenements and the plumbing were under the supervision of the Department of Health. It was the opinion of everyone that these airshafts were unnecessary; in fact, that they were a distinct detriment to the houses so constructed.

Remedial Agents of Value in the Treatment of Pneumonia in Children.—Dr. W. P. NORTHRUP read this paper, which he stated had been written for the purpose of provoking discussion and not as an encyclopedic article. In sustaining the heart and vessels to keep the blood-pressure up to the efficient degree for the seven to twelve days' strain he considered the open cold air most valuable. Clinically it had been proved that this was true. Experimentally the explanation of this efficiency had been demonstrated by Howland and Hooker. The proper performance of all functions of the body, glands, muscles, and all tissues had to be backed by a certain blood pressure. Patients slept, retained a clear, bright color, took food, breathed freer, passed the crisis in better form, and entered convalescence in better condition by having been continuously in the cold, bracing, winter out-door-air. Dr. Northrup did not think otitis media was any more frequent in patients inhaling the cold air in the open than among others. He was sure that otitis was more common in institution groups of bronchitic pneumonia patients than in sporadic cases in households. He thought nothing was so bad for a bronchitic pneumonia case as a warm middle room or a crowded warm ward. No matter what one did with a single case he was liable to be sorry. One case proved nothing, but ten, twenty, or thirty years of experience was a basis of conviction. He wished to put the question, "What do experts say in regard to putting in the open air pneumonia, scarlet fever, diphtheria, influenza, pertussis, laryngitis, and otitia media?" Such a discussion might aid many a practitioner to omit some time-honored, annoying, and useless treatment and to substitute a modern helpful one. Dr. Northrup no longer used the pneumonia jacket and rarely used the poultice except for pain. Abdominal distention was one of the most distressing features of pneumonia. He had found an injection of milk and molasses, three ounces of each, was most effective in relieving this symptom. He also recommended hot high saline injections and turpentine in emulsion by injection. In considering pneumonia with tendency to heart failure, the writer said that this might mean different things to different people. When a patient's color changed so that a nurse noticed it, either to a leaden or to a pale color with a tinge of cyanosis and the heart became rapid, that heart was dangerously bad. Early in the disease the toxins acted like an alkaloid tonic or stimulant. At the end of a week it might be that the need of a stimulant became apparent. Even a little before this the stimulant should be begun. He recommended the use of digitalis first, tincture or fluid extract, later strophanthus, alternating dose and dose. After this strychnine and whiskey. The best heart tonic was cold, open, fresh air. The best first emergency stimulant was a hot foot bath; the second, a hot saline and whiskey bowel injection; the third, was a hypodermic injection of camphor, caffeine, adrenalin, or glonoin. The treatment of pneumonia had entirely changed recently, and Dr. Northrup hoped that the discussion would show where the profession now stood.

Dr. HERMANN M. BIGGS said that he felt out of place in undertaking a discussion on the treatment of pneumonia in children and that he would refer to only one phase of the subject. He thought they were under great obligations to Dr. Northrup for the emphasis he had placed on the treatment of affections of the respiratory tract and other affections of children by the open-air methods. In the Health Department they had come to believe more and more in the treatment of the diseases with which they were called upon to deal with in open air. At Otisville, where they had established a sanatorium for the tuberculous, they had learned that they could take patients from the tenements, place them out-doors, and while they might suffer somewhat from the intense cold, there was no distinct detriment to their condition. The results were always favorable, and at the end of a week or ten days they became accustomed to the open-air life and it was not at all objectionable. Sometimes three or four inches of snow would fall on the beds on which they slept. Since this institution had been opened, five years ago, there had never been a single instance of any severe acute affection of the respiratory tract as the result of exposure to fresh air and the cold Four years ago when the mortality at the Kingston Avenue Hospital, in Brooklyn, was so high, probably caused in part by the crowded wards, the Board of Health decided to build some temporary shacks and to place in these the patients afflicted with bronchopneumonia, keeping them in the open air as much as possible. The results were most gratifying. They found that the patients having severe bronchopneumonia and the septic complications of measles, when taken from the wards and placed in the fresh air did much better. Many of them went into convalescence without any serious trouble after removal from the wards of the hospital. Now there were in course of construction two pavilions which would contain 160 beds at the Riverside Hospital, and these would be used for contagious diseases and pulmonary tuberculosis. In East Sixteenth Street there were 320 beds and one side of the ward was as open as it could be made. Dr. Biggs believed that this method of treating contagious diseases as well as all forms of infection was the one they must follow in the future. Dr. Biggs had visited Dr. Northrup's wards at the Presbyterian Hospital, and notwithstanding the exposure to the open air, the patients showed that only favorable results followed. He said he believed that in a well-ventilated room infections could not be carried far. He had visited many of the hospitals for contagious diseases in Europe and was impressed with the fact that they did not separate the various forms of infection as they did in this country. In Paris, where the infectious diseases were cared for, all forms were looked after in the same pavilion, but with glass boxes eight by ten feet that opened into a corridor. In accordance with the suggestions obtained patients were now being separated by glass and wood partitions. At most there were only two beds to a stall.

Dr. CHARLES GILMORE KERLEY said that in assuming the care of any child afflicted with pneumonia there were many things which should be taken into consideration

The child's condition was temporarily changed; there existed something which depressed the child's vitality to the utmost and, therefore, all the little details of life should be attended to. A child with fever had a lessened digestive capacity and if the food usually taken was continued there would result in many cases intestinal toxemia and a ballooning of the abdomen. Some laxative should be administered, preferably castor oil. The diet should be reduced. Fat milk should not be given. The food should be reduced in amount at least one-half or two-thirds so as to avoid the toxemia and the distention of the abdomen which caused compression upon the diaphragm. The ordinary clothing should be worn, and not the oiled silk or other jackets which made the child so uncomfortable. The child should be kept as quiet as possible; he was very susceptible to nervous influences when well and much more so when ill. He should get food and rest at stated intervals. Only one person should be allowed in the sick room at a time. The child should not be fussed over and it would be better to keep members of the family from the room. To make the child comfortable often a Dover's powder or a cold compress might be required. With regard to fresh air, Dr. Kerley said he was not yet willing to place patients with true laryngeal inflammations on the roof and in the open; these cases did not do well in the cold air. The element of spasm should be borne in mind and this was increased when the child was exposed to the cold. In bronchial asthma the cold air might make the respirations more rapid; if the air was fresh, but not cold, the breathing was more easy. Exposing the child with bronchial asthma to the extreme cold he did not believe in. If one placed a child in quiet quarters, with proper feeding, with plenty of good and fresh air, with freedom from overtension, one had done all that was necessary for his good in many cases. If, however, the child was very sick something must be done in the line of drugs. The giving of expectorants, syrup of ipecac, of tulu, and other such stuffs certainly tended to upset the child's digestion, diminished his capacity for taking food, and took from him a certain amount of energy. Whatever food was ordered should be selected so as not to compromise the child's digestive capacity. There were many cases that required cardiac stimulation because of bad management; some children were in a toxic state from causes not due to the disease itself. When stimulants were required they should be given by the hypodermic method, because the stomach could not be relied upon. With a pulse of low tension and irregular, Dr. Kerley said he knew of no better agent than strychnine. He did not like to use digitalis because it tended to upset the stomach. Alcohol should be held in reserve until the seventh, eighth, or ninth day of the disease and then given only when other medication failed; when given it should be in large doses. It was surprising how much alcohol these patients could take and retain and without any signs of intoxication. He cautioned against the administration of alcohol early in the disease; give it late in the disease if at all. It was an agent to hold in reserve. Hydrotherapy, the cold pack, or the modified pack, were means of improving the heart's condition.

Dr. Rowland G. Freeman said that the old belief that measles was to be treated in the dark because of danger to the eyes had no ground at all; the eyes of patients with measles did as well in the light as in the dark. The bright sunlight did not harm the eyes of patients with measles any more than it would if they did not have the disease. A patient with measles should be placed near the open window, but the direct rays of the sun should not fall on the patient's eyes. Draughts were not to be feared. There should be plenty of sunlight and fresh air, things that were very difficult often to provide in many families. The results of this treatment were often surprising. The low mortality rate in many institutions was due largely to the fresh air. One should endeavor always to have open windows, sunlight, and fresh air; wonderful results often followed this treatment. With regard to measles-pneumonia, when the disease first appeared calomel should first be administered, and a mustard paste applied to the chest. Plenty of fresh air and sunlight should be allowed. The patient should be kept quiet. Fresh air did as much good as steam inhalations. A bronchitis was not a contraindication at all. In cases with a moist skin exposure to the open air would soon cause the skin to become dry.

Dr. B. Raymond Hoobler said that through the courtesy of Dr. Howland he had had the opportunity of observing the blood pressure on several hundred children in his wards at Bellevue Hospital. The observations had been on children with various diseases and in various stages of such diseases, taken indoors and after being in the open air. The findings which he reported applied only to lobar and bronchopneumonia, but were applicable to nearly all forms of acute respiratory conditions. The children when they were placed in the open air were properly protected with warm clothing, only their faces being exposed. The results might briefly be stated as follows: As a general rule the blood pressure was increased when a child was removed from a warm ward to the open air. The amount of such a rise was dependent upon several factors: (1) The more sick the child, the higher was the rise of pressure. (2) The higher the patient's temperature, the higher the rise of pressure. (3) The warmer the indoor temperature and the colder the outdoor temperature, the greater would be the rise. (4) The lower the blood pressure before placing the child in the cold air the higher would be the rise. (5) The blood pressure remained high as long as the child was left in the open air. (6) Drugs which had the effect of raising the blood pressure indoors 15 mm. of mercury would have but little effect if given when the patient was outdoors after the maximum effect of the cold had been reached. (7) The maximum effect of cold air was reached after about two hours in the open air. (8) Blood pressure fell gradually when the patient was brought indoors and reached its minimum after about two hours. (9) There was no dropping in the blood pressure below the usual indoor pressure as was the case with many vasomotor stimulants when the patient was brought in from outdoors. (10) Infants did not respond as well as did the older children. (11) The pulse and temperature would remain about the same, the only difference being in the blood pressure which accounted for the value of the outdoor treatment.

Dr. A. Jacobi said that Dickson in 1836 wrote a book on the mortality and morbidity of pneumonia in children and he stated that at that time of thirty-five patients only one remained alive; to-day, out of the same number it was found that only one died. The difference in the mortality was, of course, due to the different methods of treatment. When Dr. Jacobi entered into the practice of medicine it was the custom to keep the rooms warm, the windows closed. Water was not given the sick, but warm teas were. The children were kept warm and covered; in fact, they were not ever uncovered. This was sixty years ago. Fat milk should not be given in any acute infectious disease; the carbohydrates were the proper food to give. Many cases of pneumonia got along without any treatment, but it had always been a question with Dr. Jacobi whether getting well without treatment with drugs meant that these patients really did get well. When a patient, ill with an acute infectious disease, suffered from symptoms which lasted ten, eight, or even five days, with a high temperature that remained unchecked for such a length of time, it was a mistake to believe in no treatment. High temperatures in these diseases injured the patient's vitality—injured the myocardium. It was his practice not

to wait until things turned up; he did not believe in "Micawberism." Pay some attention to the heart. Give digitalis in the beginning of the disease, or strophanthus, or both together. Babies who were wakeful should not receive caffeine. He believed in giving opiates to children; as good results were obtained in children as in adults. The best stimulant, however, was camphor, given hypodermically, one part of camphor to four parts of sweet almond oil (not olive oil). In cases of pneumonia which did not readily undergo resolution, with thickened expectoration, etc., inhalations did well, especially with turpentine. The crude turpentine obtained from paint shops was what should be used. He had also used with success inhalations of chloride of ammonia; this salt was burned on a living coal or placed in a hot over or stove. It aided very much in expectoration and was well worth trying.

Dr. HENRY KOPLIK said that the tendency in pneumonia, as in typhoid fever, was to get well. The mortality in pneumonia differed according to the age of the patients; above the age of five the disease was quite benign. In different epidemics the disease gave different reactions. It should be borne in mind that pneumonia in children had a tendency towards recovery; but they also had a tendency to spread to both lungs, and many such patients died. Good results were obtained by placing children where they could get plenty of fresh air and good ventilation.

Dr. JACOBI said that the giving of digitalis by the drop method was absolutely useless. He used this agent very rarely. If he was dealing with a chronic case, however, knowing the heart muscle was in uniformly good condition, he might use it. One should remember that strychnine might overstimulate a weak portion of the heart and cause trouble. In cases of chronic endocarditis, strychnine should never be used. He seldom used it in small children. This was a drug that was used too much. In Europe it was not used to the extent that it was in the United States.

SECTION ON SURGERY.

Stated Meeting, Held, March 3, 1911.

DR. GEORGE WOOLSEY IN THE CHAIR.

Streptococcic Infection of the Knee Joint.—Dr. WALTER C. CRAMP presented this patient. In December, 1910, a boy 12 years of age was struck by a pair of iron pliers which inflicted a penetrating wound of the right knee. Five days later he was admitted to Bellevue Hospital with a temperature of 103.8° F. The joint was distended with pus. Incisions were made on either side of the patella and also laterally and posteriorly; to drain lateral pouches of the joint rubber tube drainage was instituted. The patient was treated with 1 to 10,000 bichloride solution for ten days. They began to remove the drains on the twelfth day and all were out on the sixteenth day. The patient was up and walking without crutches in the fifth week. At present, two and one-half months after the injury, the patient had 90 degrees flexion, no pain and walked with only a slight limp. Culture proved that the pus evacuated from the wound was streptococcus.

Chronic Glanders in Man—Report of a Case Treated with Glanders Vaccine.—Dr. WALTER C. CRAMP reported this case. He stated that a review of the study of C. D. Robin of the Royal Victoria Hospital, Canada, of 156 cases of chronic glanders collected from medical literature had led to the conclusion that chronic glanders in man was an exceedingly rare disease and that the mortality was extremely high, only 6 per cent. of the 156 cases being positively known to have been cured. Dr. Cramp's patient was a Pole, 34 years of age, a cement worker, who was admitted to Bellevue on October 20, 1908. His habits were good and there was nothing in his family history that had any bearing on the case. About one year previous to his admission to the hospital he had had a "stitch" in his side and was ill for about a week, but made a good recovery. Occasionally he had a slight cough without expectoration, but generally speaking his health was good. Four weeks previous to his admission his clothing became wet through from exposure and the same evening he had chills and fever followed by profuse sweating. He had had similar attacks three or four times previous to admission. One week after the first chill there appeared a swelling over the right forearm, followed the next day by one over the left forearm and right thigh but without any pain or tenderness. When the patient entered the hospital he had a temperature of 100.2°, pulse 120, respiration 24. Blood examination gave leucocytes 11,400; polymorphonuclears 78 per cent.; lymphocytes 17 per cent.; transitionals 2 per cent.; basophiles 2 per cent.; eosinophiles 1 per cent. The urine was clear with a faint trace of albumin, contained many leucocytes, amorphous urates, a few hyaline casts and had a specific gravity of 1022. Physical examination showed a heavily coated tongue, a few sibilant râles over the base of the right lung, and the inguinal and lymph nodes palpable. There was a small abscess over the radial side of the middle third of the left forearm; another of the ulnar side of the right forearm near the elbow; another on the posterior part of the right leg and another over the posterior aspect of the left thigh at the middle third. There were no signs of inflammation and no pain nor tenderness associated with them. These abscesses, which were deeply situated, were opened under cocaine. Culture made upon slanted and coagulated Loeffler's blood serum and on agar tubes remained sterile after a week in the incubating oven. Two guinea pigs were inoculated with the pus, one subcutaneously and the other intraperitoneally. Seventeen days after the inoculation the subcutaneously inoculated pig had developed an abscess, and cultures from the pus revealed Gram negative rods, which closely resembled in their morphology the *Bacillus mallei*. Cultures made from the pus upon slant glycerine agar yielded in forty-eight hours a growth of Gram negative rods, resembling the glanders bacilli in morphology, and guinea pigs inoculated with the pus showed a marked and prompt reaction, dying 36 hours after inoculation. The organism was found in the exudate of both pigs and in culture. The intraperitoneally inoculated pig showed a number of well-encapsulated abscesses in the peritoneum and retroperitoneal lymph nodes, abscesses of the liver and of the skin at the site of the puncture of the needle. Blood culture revealed the bacillus of glanders. The patient ran an irregular temperature until November, when he insisted on returning home. One month later, when seen again, he was running some temperature; two of the wounds were discharging pus. He was having chills and sweats. He was again admitted to the hospital and although the agglutination test was negative and no bacilli were found in the sputum ♏viii glanders vaccine were injected into the gluteal region on January 29. In six hours the temperature rose to 104° F., pulse to 124 and the patient had a severe chill and sweat; there was also considerable reaction in the region of the injection. The temperature gradually came down to normal and the inflammation in the gluteal region subsided. This dose was considered too large, and on February 5, ♏iv were injected as before. After this the temperature rose to 102° and the pulse to 108°. On February 8 ♏iv were again injected and this was followed by a rise of temperature to 105.8° F. and by a chill and sweat. After an interval of five days a similar injection was given. On this occasion the temperature rose to 100°, pulse to 96. The patient insisted on going home and was subsequently treated by Dr. Cramp at the Bellevue Hospital Dispensary. Injections of ♏iv were given on March 1, April 6, April 20, May 4, May 18, June 4 and June 21,

on which occasions there was very little, if any, reaction to the injection. The patient was last seen eighteen months after his symptoms had all disappeared. He had since returned to his own country and no further report was possible. From this case Dr. Cramp concluded: 1. That cases of chronic glanders could easily be overlooked, unless one was constantly on the lookout. 2. That multiple abscesses should excite suspicion, especially if on the extremities, as Robin had shown that in 80 per cent. of the cases such multiple abscesses occurred. That in this case there was no direct association with horses. 4. That the point of entrance of infection was unknown in this case. 5. That there never had been any nasal discharge. 6. That the patient remained apparently cured for six weeks and then showed a return of symptoms. 7. That no bacilli were found in the sputum. 8. That extreme exposure to bad weather seemed to be a predisposing cause. 9. That this case had been proven one of glanders by laboratory methods and by reaction to the vaccine injections. 10. That this case was apparently cured by vaccine injections.

Posterior Root Section for Spastic Paraplegia.—Dr. Ernest Sachs presented a patient, forty years old. For one year she had had a spastic condition which followed an attack of measles. Whether this was a true case of Little's disease or not he did not know. After being in the hospital for some time she was unable to leave her room and could not climb stairs. The first operation performed was a bilateral laminectomy, the third and fourth lumbar and first sacral roots being severed on both sides. Massage and passive motion were given. Now she could get around and climb stairs. There was anesthesia on bution of the nerves from the fourth lumbar segment. The roots were completely cut across at their point of exit. the front of both thighs which corresponded to the distri- She still had ankleclonus.

Frontal Lobe Abscess.—Dr. Ernest Sachs presented a woman who was admitted to the hospital December 20, with the diagnosis of anterior poliomyelitis. She had paralysis of the right arm and leg. Her temperature varied between 99° and 104° F. She had a slight scalp wound on the forehead. A lumbar puncture was made and clear fluid was obtained; it was under considerable tension and the polymorphonuclears were 75 per cent. There were no signs of aphasia. On December 24, she suddenly became unconscious and had convulsions. At this time Dr. Sachs was called in. She soon regained consciousness. There were a weakness of the right arm and leg and diminished reflexes. There was a right optic disc and the vessels were tortuous; therefore, lumbar puncture was again done and 90 c.c. of fluid removed. Diplococci were found and Flexner's serum was injected. The following day she sat up in bed. The diagnosis at that time was a localized meningitis over the left cortex with possible abscess formation. On December 29 the wound in the forehead became puffed and a fracture was discovered. The patient was then sent to Beth Israel Hospital for further treatment. An osteoplastic flap was turned down but it was thought better to put this flap back in place and open the abscess through the original wound in the forehead; this was done. The temperature continued and at the end of one week the patient became somnolent and had retention of urine. A lumbar puncture was again made and in the fluid obtained were found white flakes, probably only fibrin. The patient rallied and made an uneventful recovery. She developed loss of abdominal reflexes on the right side, a symptom described by Stewart in such cases.

Case of Torsion and Strangulation of the Entire Greater Omentum—Recovery.—Dr. Aspinwall Judd presented a man on whom had been made the diagnosis of appendical abscess. He had a temperature of 103° F., pulse 120, leucocyte count 20,000 and a high percentage of polymorphonuclears. There was a mass in the appendical region. At operation there was found a torsion and strangulation of the entire greater omentum producing a volvulus. The end of the omentum was adherent to the appendix and was involved in a catarrhal inflammation. The appendix was engorged but had not ruptured.

A Case of Coincident Right Femoral and Inguinal Hernia in a Man.—Dr. Aspinwall Judd presented this patient who was sent to the hospital because of a hernia of the right side. At operation there was found a coincident right femoral and inguinal hernia. The ordinary operation was performed and an uneventful recovery followed.

A Case of Bacillus Aerogenes Capsulatus with Amputation Five Weeks After Infection, with Recovery.—Dr. Aspinwall Judd reported this case which occurred in Dr. Robert T. Morris's service at the Post Graduate Hospital. So far as Dr. Judd could ascertain this was the only case in which with this delay recovery had taken place. A boy, 13 years of age, was referred to Dr. Judd suffering from a compound, comminuted fracture involving both bones of the forearm. The accident had occurred when the boy was playing upon some manure, and particles of the same contaminated the wound. Bearing in mind that the *Bacillus aerogenes capsulatus* was frequently found in this material he advised prompt incision and cleansing of the wound, and although this was done thoroughly and with great care, within twelve hours gas bubbles arising from the area proclaimed the presence of the dread bacillus. Cultures taken proved the surmise correct, and in addition a virulent culture of streptococcus was found. The inflammation and blebs extended half way to the axilla, temperature had risen rapidly to 104.4° F.; the arm was greatly swollen and edematous and the boy was in great pain. Wide incisions were made through the skin and fascial planes down to the bone from wrist to elbow, both on the anterior and posterior surfaces of the arm. Two long incisions nearly as deep were made in the biceps and triceps. These wounds were cleansed with peroxide of hydrogen, drains inserted and the arm placed in a continual bath of saturated solution of hot alum acetate, the temperature being kept at 102° to 104° F. by means of a spirit lamp. Stimulative and supportive treatment was applied. The arm was taken from the bath twice daily and peroxide injected thoroughly into all the wounds. Fifteen c.c. of commercial mixed vaccines of streptococcus, staphylococcus, and colon bacillus were injected every second or third day. The boy's parents absolutely refused amputation. The temperature diminished and the patient progressed favorably until the twenty-third day when his temperature again rose to 104.4°, the pulse going to 120. Further incisions were made, the bacillus being found as high as the axilla. His temperature varied until the thirtieth day of his illness when a third operation was performed and an infusion of 1400 c.c. of normal saline containing two drachms of adrenalin was administered. At the end of a week the patient was extremely weak, seemingly almost moribund. A second infusion was administered when he was pulseless. Permission to amputate was now given and the entire arm and contents of the axilla were sacrificed. The wound was left wide open and cleansed with peroxide of hydrogen. From this time an uninterrupted, though very slow, convalescence began. During the crisis Fowler's enemata, containing four ounces of saline and half an ounce of whiskey were administered from every three hours to five hours. Considerable quantities of strychnine and digitalin were used and morphine was required on numerous occasions to control the pain. So long as the patient's arm was in the acetate bath he complained of no pain whatever and the aerogenes bacillus apparently made no headway, but as soon as the bath was discontinued on each occasion there was a prompt

recurrence of the infection. How much of the successful issue was due to the continuous alum acetate bath, how much to the liberal use of peroxide of hydrogen, and how much to mixed and autogenous vaccines it was impossible to determine. Perhaps all of these factors together with the extraordinary resistance of the patient were responsible for the outcome.

Dr. J. G. Callison said that the autogenous vaccine was given in doses of five hundred million and six hundred million respectively, and again at a later period injections of three and four hundred million were given on four occasions. After the amputation, when there was considerable purulent discharge, a culture showed the presence of *Bacillus pyocyaneus* with some streptococcus. A vaccine was again prepared, combining these two organisms, and a dose of six hundred million was given. While conclusions could not be drawn from a single case, it did not seem too much to assume that probably the vaccine treatment, by helping to raise the opsonic content of the patient's blood, played a part in overcoming the septicemia, and confined the local infection within narrower limits. The pathologist's report contained also an account of a case of infected wound of the hand in which, after opening an extensive pocket of pus in a tendon sheath, twenty-five cubic centimeters of antistreptococcus serum were given in three doses of four, six, and five million respectively. This case progressed rapidly to recovery, the temperature being normal five days after operation.

Extirpation of the Larynx for Carcinoma.—Dr. Fisher presented a man, forty-seven years old, who first complained of hoarseness in July, 1909. This became worse and dyspnea developed. A diagnosis of carcinoma was made. On August 18 enlarged and diseased glands were extirpated. The trachea was cut across and sewed to the skin; then the larynx was extirpated. The patient made a good recovery from the operation and did well for six days when he began to run temperatures. Three of the tracheal rings became gangrenous. Later he had pain in the lower right lobe of the lung, crepitant râles and a very offensive sputa. On October 5 an abscess cavity was opened; it was about the size of an orange. The temperature then fell to normal. On October 21 the resulting fistula was closed by a plastic operation. Since this the patient had gained forty-four pounds in weight. During the course of his disease a very thick and tenacious mucus was secreted which nearly choked him. This had to be pulled out. The patient now wore a silver tube.

Posterior Spinal Root Section.—Dr. Alfred S. Taylor presented a man, thirty-one years old. When but four years of age he was suddenly stricken with hemiplegia and aphasia. Within the last few years there had developed a spastic condition of the right upper extremity; the cramps and pains in his arm prevented him from getting his sleep. These painful cramps soon occurred every few minutes and, therefore, it was deemed advisable to give him relief by making a section of the posterior spinal roots. Two months ago a laminectomy was done, the last two cervical and first dorsal being completely divided. A very good result followed this procedure.

Posterior Spinal-Root Section in the Treatment of Muscular Spasticity.—Dr. Alfred S. Taylor read this paper. He stated that the theory upon which section of the posterior spinal nerve roots was based was that damage to some portion of the motor mechanism of the central system prevented the passage of controlling and inhibiting impulses from the higher centers to those below. The lower centers freed from such control soon developed a condition of over-excitability or over-activity which caused in the corresponding muscles hypertonus or spasticity. These lower centers were largely accentuated by the stimuli coming along the sensory roots from the peripheral field. This combination of the spinal center with the peripheral sensory and motor components formed the so-called lower reflex arc. The spastic complex involved at least the following elements: 1. Diminished voluntary motor power. 2. Diminished inhibition and control by the upper centers of the reflexes. 3. Over-activity of the spinal centers causing spasticity in the corresponding fields. Different cases were made up of these components in varying degrees. Persistent spasticity often led to fibrous changes in the muscles followed by organic shortening, and this in turn to joint deformities. The prognosis depended upon making the distinction between pure spasticity and organic contracture. The spastic syndrome was characterized by diminished voluntary muscular control, increased reflexes, spastic muscles, resisting either active or passive motion, a certain degree of nervous exhaustion, and the absence of phenomena showing evidences of damage to the sensory tracts. Attempts at voluntary movement aggravated spasticity. Operative interference was contraindicated in those cases which had almost entirely lost the power of voluntary motion, as the elimination of spasticity would substitute a flaccid palsy for the one previously existing. In many of these cases, however, there were conditions present which could be improved by operation. The rigidity of the extremities added to the difficulty of caring for these patients and the severity of the pain made them irritable. Operation relieved this pain and made these cases easier to care for. The object of the operation was to relieve the spasticity by adding a lesion of the sensory tracts to that already existing in the motor, after the analogy of tabes superimposed upon spastic hemiplegia, with the presumed effect of breaking the reflex arc. The point of attack was obviously the intradural portion of the posterior spinal roots, the section of which lying between the ganglion of the root and the cord caused a permanent degeneration upward in the cord. For the exposure of these roots either laminectomy or unilateral laminectomy was employed. Dr. Taylor's personal preference was strongly in favor of unilateral laminectomy, which he had had occasion to use in sixteen cases either for posterior root section or for exploration of the cord. The roots of both sides might be divided through a unilateral laminectomy and he had found, contrary to the statement sometimes made, that this technique was practicable in young children. His youngest patient was three and one-half years old. He first punctured the dura and allowed the fluid to escape slowly, which he believed, would minimize any bad effect. When the posterior roots were freely exposed they might be divided according to one of two plans. Sherren had demonstrated that two consecutive posterior roots could be divided without causing anesthesia or other symptoms. If three or more consecutive roots were divided there would appear anesthesia with more or less trophic disturbance and ataxia. Hence the rule had been laid down that only two adjacent roots should be divided, the next one left, then two more divided, if necessary, and so on. Another way of avoiding undesirable sequelæ was by the partial division, one-half or two-thirds of each root being divided. This method had given good results and avoided disturbance of sensation. To arrive at a logical basis for a choice of method, the groups of spastic muscles must be plotted out with their corresponding nerve roots. When the spastic muscles represented the field of only two or three posterior roots these should be divided completely. When the muscles were spastic over a wide area the writer preferred the method of partial division of the roots involved. In spastic paraplegia, partial section of the roots had one considerable advantage: it was necessary to remove the laminæ from only the last dorsal and two upper lumbar vertebræ to expose the lumbar enlargement of the cord with all the corresponding roots. This made a small wound, placed favorably for healing. The only drawback lay in the fact

that the posterior roots came from the enlargement in a continuous series of small bundles which could not be differentiated into separate roots, so that scientific accuracy was hardly possible. The type of operation should be chosen to suit the individual case. Most operators advised the resection of as much length of the root as was readily possible. If the material was desired for examination this might be done, but otherwise it did not seem necessary. In order to avoid bleeding and the causation of undesirable cicatrices he had adopted the method of crushing the root for a moment with a heavy clamp and then dividing it through the crushed area. These cases seemed to have more pain for the first few days after operation, but the field was much clearer and there was no fear of post-operative organization of clot. After the division of the roots any blood in the dura was flushed out with warm saline solution, the dura closed tight with fine continuous catgut sutures, and the remainder of the wound closed without drainage by layer sutures. Drainage should always be avoided because it frequently led to a prolonged escape of spinal fluid and increased the chances of infection. All of Dr. Taylor's cases except two had healed by primary union. For the first three days there was usually much pain in the operative area. The reflexes diminished in proportion to the disappearance of the spasticity. After the wound had healed there was absolutely no evidence of damage to the spine either in form or function. Organic contracture in some patients occurred in some muscle or group of muscles. The treatment for this condition consisted in the use of the various physical methods of therapy, and in the re-education of the patient in the use of the damaged muscles. After such operative and after treatment practically every case showed great improvement. Of the two cases which resulted fatally one died in the third week of pneumonia and the other during the operation.

Dr. Joseph Fraenkel congratulated Dr. Taylor and Dr. Clark; they had been the first to put the idea underlying this operation into practical use and had brought help to a class of cases which was badly in need of it, and heretofore left to their fate. The operation was to his mind one which had come to stay, and which was a valuable acquisition to the armamentarium of neurological surgery. He believed the operation was in danger of becoming discredited if applied without thorough understanding of the theoretical rationale. This seemed to him to be briefly the following:

In a paper published by Dr. Collins and himself some ten years ago, which was based upon considerable clinical and experimental data, they came to the conclusion that the degree of spasticity and the consequent loss of voluntary motion was the expression of the purity of the lesion of the pyramidal tracts. This meant that an isolated and pure lesion of pyramidal tracts would give rise to considerable spasticity and considerable loss of voluntary motion; that additional disease of sensory tracts would diminish the spasticity and thus also the corresponding defect of motion. Therefore it appeared that the operation was only indicated in cases whose symptomatology was purely motor. In all cases in which there was additional sensory disease, particularly disease of the sensory tracts of the brain, the postoperative results were liable to be disappointing. Thus the disappointing results in the case presented by Dr. Taylor were explained.

Chronic Glossitis of Unknown Origin.—P. Watson-Williams reports the case of a girl, aged sixteen, whose tongue has been sore and fissured for five or six years, but much more so during the past year. There is pain on swallowing, and occasional hoarseness. There is a history of a discharge from the left side of the nose, but no evidence of accessory sinus suppuration. The tongue is extremely fissured with atrophy of papillæ in some parts and hypertrophy in others. There is no actual ulceration, and neither history nor evidence of syphilis.—*Proceedings of the Royal Society of Medicine.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended February 10, 1912.

	Cases	Deaths
Tuberculosis Pulmonalis	444	181
Diphtheria and Croup	333	27
Measles	868	14
Scarlet Fever	332	16
Smallpox	2	—
Varicella	356	—
Typhoid Fever	53	7
Whooping Cough	31	4
Cerebrospinal Meningitis	7	1
Malarial Fever	—	—
Totals	2,426	250

Pemphigus of Pharnyx and Conjunctiva.—P. Watson-Williams reports the case of a man aged fifty-eight years whose eyes have been inflamed for six weeks, and whose throat and mouth have been sore for about one month. There are white membranous patches scattered over the palate, pharynx, and inner sides of the cheeks and under surface of the tongue. The surrounding mucous membrane is swollen and intensely red. When first seen there was a membranous condition of the conjunctiva, but this has partially cleared up with applications of 10 per cent. argyrol. Finally there appeared bullæ on the chest; these gave the first evidence of skin involvement.—*Proceedings of the Royal Society of Medicine.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended February 9, 1912.

Places	Date	Cases	Deaths
CHOLERA			
India: Madras	Dec. 24–30	51	46
Italy	Dec. 24–31	6	1
Provinces—Caltanisetta	Dec. 24–31	1	..
Girgenti	Dec. 24–31	5	1
Java: Batavia	Dec. 17–23	3	1
Roumania: Districts—Braila	Oct. 31–Dec. 13	22	11
Convoluri	Oct. 31–Nov. 28	21	1
Doliju	Nov. 2–Dec. 13	14	..
Konstanza	Oct. 30–Nov. 28	4	..
Tulcea	Oct. 31–Dec. 13	13	2
Servia	Declared free Dec. 31.		
Belgrade, district	Nov. 26–Dec. 16	..	1
Turkey in Asia: Aleppo	Jan. 26	..	..
Kharput	Dec. 17–30	9	7
Tripoli	Jan. 4	1	Present
Turkey in Europe: Constantinople	Jan. 2	1	..
Durazzo	Dec. 7–13	2	..
YELLOW FEVER			
Mexico: Merida	Jan. 14–20	2	..
PLAGUE			
Chile: Iquique	Jan. 1–6	1	..
Pisagua	Nov. 1–30	8	..
China: Hongkong	Dec. 17–23	2	1
German East Africa: Dar-es-Salaam	Nov. 13–15.	1	1
From the interior via Bergamogo.			
India: Bombay	Dec. 24–30	13	14
Karachi	Dec. 24–30	6	6
Java: Pasoeroean Residency	Dec. 17–23	9	3
Straits Settlements: Singapore	Dec. 10–16	2	2
SMALLPOX			
Arabia: Aden	Dec. 19–Jan. 1	3	1
Canada: Montreal	Jan. 21–27	5	..
Ottawa	Jan. 14–20	14	..
Quebec	Jan. 21–27	23	..
Winnipeg	Jan. 14–20	1	..
Chile: La Serena	Nov. 21–30	14	..
China: Hongkong	Dec. 17–23	11	9
Cuba, Habana	Jan. 19	1	..
From steamship *Mexico*.			
France: Paris	Jan. 7–13	7	..
Germany	Jan. 7–13	1	..
India: Bombay	Dec. 24–30	4	2
Madras	Dec. 24–30	4	3
Italy: Genoa	Jan. 1–15	14	..
Leghorn	Jan. 17–23	10	..
Messina	Nov. 19–Dec. 31	..	5
Naples	Jan. 1–6	5	..
Palermo	Jan. 1–13	389	134
Java: Batavia	Dec. 17–23	3	1
Mexico: Guadalajara	Jan. 14–20	..	1
Mazatlan	Dec. 19–23	..	1
Mexico	Dec. 17–30	18	8
San Antonio	Jan. 1–21	12	9
San Carlos	Jan. 1–21	..	Present
Spain: Cadiz	Dec. 1–31	..	9
Valencia	Jan. 6–12	27	3
Straits Settlements: Singapore	Dec. 10–16	2	1
Teneriffe: Santa Cruz	Jan. 1–13	..	2
Turkey in Asia: Beirut	Jan. 1–13	75	12
Turkey in Europe: Constantinople	Jan. 8–14	..	4

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Original Articles.

A STUDY OF THE HEART IN SYPHILIS.*

(BASED ON FIFTY CASES.)

By HARLOW BROOKS, M. D.,

NEW YORK.

VISITING PHYSICIAN TO THE CITY HOSPITAL AND TO THE MONTEFIORE HOME.

In presenting this subject it has been my object, not so much to consider the unusual changes which may occur in the heart in syphilis, but to study the condition of the heat in the ordinary case of this infection.

The importance of the subject must be universally appreciated because of the considerable number of cases of early and late syphilis which ultimately die or develop serious and permanent disease through lesions of this viscus. Because of its anotomical position, and also because of its symptomatic unity, I have elected to consider with the heart the associated disease of the proximal aorta.

Much has been written on this subject but many, in fact most authors, are prone to consider only those lesions as syphilitic which are stamped with the hall-mark of the gumma or which present active changes of unmistakable luetic nature, whereas, concerning other viscera, the kidney or the liver, the resulting fibrosis and degeneration of the late or cured lesions are commonly admitted as really syphilitic. Such is also my conception concerning the late changes in the heart and aorta.

It has been my impression for a long time that internists as a class have not fully appreciated the gravity of the early effects of syphilis on the circulatory organs, because striking signs of cardiac disease may not appear until late in the infection. Doubtless, because cases have ceased to show manifest dermal, mucous membrane or nervous symptoms, we have sometimes treated them in a half-hearted and slipshod sort of way which invites aneurism and courts myocardial degeneration. It is very generally reported that syphilis of the heart does not develop until late in the disease, and, therefore, the condition is of relatively little import in the early stages of the infection. (Krehl, Whittaker, Lang, etc.) I propose to show that this is really not the case, but that it develops early in the infection when only by its prompt treatment permanent cardiac lesions may be obviated.

Since I believe that a study of any disease condition is most satisfactorily based on a thorough knowledge of its pathology and pathological anatomy, I have elected in this paper to present a preliminary study founded on fifty consecutive cases of syphilis taken from my autopsy series, leaving for the future a detailed consideration of the symptomology of the conditions. These fifty cases include secondary, tertiary and quaternary types of the disease, but in passing, permit me to remark that from the pathologists' and internists' viewpoint, the division of syphilis into definite stages is productive only of harm, and it has been borne in upon me not only by my autopsy experience, but from my clinical observations as well, that when the chancre has appeared with general infection, general damage has begun, at least insofar as the circulatory organs are concerned. From this series I think that the most impressive fact shown is that the duration of a case is in reality but little measure of the damage which may be done to the tissues, and especially to the all-important circulatory organs.

Accustomed as are all of us to rely more or less on history in diagnosis, it is perhaps interesting to point out that in but fifteen of these fifty cases was a clear history of syphilis given, yet all showed post-mortem unmistakable and characteristically syphilitic lesions somewhere in the body. Of these fifteen instances mentioned the infection was specifically denied by most, and in some instances entirely honestly, I have no doubt. Of the remaining thirty-five patients luetic history was either voluntarily or unknowingly denied. This observation, which I believe is quite in keeping with the experience of most, but serves to impress upon us the value of scepticism and of the intelligent use of the Wassermann reaction, which, while by no means infallible, either positively or negatively, is certainly better than 70 per cent. of error based largely on history or the therapeutic test.

Because of this discrepancy in history, it has been impossible to estimate in most cases the time which has elapsed between the date of the infection and the appearance of signs or symptoms of cardiac deficiency, or of the post-mortem evidence, but it is quite evident from this study that we can no longer look upon syphilitic disease of the heart as a late manifestation, but that the symptoms of cardiac disturbance seen in the secondary stages doubtless are due to definite morphologic alterations in the heart.

In most instances the only assistance in this regard has come from a study of the lesions. Where these showed active cell production and round cell infiltration, it has been assumed that the change was an acute or still active one, but where it has been characterized more by cicatrization and degeneration it has been assumed that it was of a latter stage, in fact though not necessarily as to time. In several crucial cases, however, to which from time to time reference will be made, the history was such that the time could be determined with a considerable degree of certainty.

From a microscopic study of these lesions I have come to the conclusion that some of the most im-

*Read at the meeting of the Society of Alumni of the City Hospital December 20, 1911.

portant morphological alterations occur in the early stages of the disease, and thus probably account for such early symptoms of cardiac deficiencies as are mentioned by Hirschfelder. (Text-book.)

Changes in the pericardium were found in seventeen of the fifty cases. In no instance, however, were these in any way characteristic of syphilis, and it is my opinion, contrary to that recently expressed by Billings, that there is little or no direct relationship between pericardial lesions and the parent disease, nor do I feel that here, as I have stated elsewhere in regard to non-specific pericarditis, that this condition is in itself a very serious one, but that it appears chiefly only as an index of the nature of the parent process.

Quite a different state of affairs appears to be the case with the epicardium, which was found diseased in twenty-eight of the fifty cases. The nature of this change demands more than passing mention, since it apparently throws light on the whole question of the primary manner in which syphilis affects the circulatory system. The most frequent epicardial lesion is seen in white, opalescent oval or circular patches of thickening, usually situated at points where active capillary anastomoses occur. On microscopic examination these patches of thickening are found in some cases to be made up of hyperplastic endothelial cells and connective tissue fibrils infiltrated by lymphocytes. Beneath these areas the blood and lymph channels are found surrounded by small round cell accumulations, and in some instances calcareous infiltration has taken place. In one instance of this group calcification and diffuse epicardial phlebitis were noted, associated quite naturally with terminal thrombosis of these vessels. These epicardial changes are quite constantly found associated with marked endocardial defects, but are in most cases entirely independent of changes in the pericardium, from which this lesion seems to be entirely distinct even in the matter of mutual adhesions, which, however, rarely seem to originate in this disease. This patchy epicardial lesion is, of course, not exclusively limited to syphilis, but it is in my experience more frequent here than in any other form of disease, and while insofar as I can determine it has no direct or definite clinical manifestations, it is probably an index of vascular disease and is very likely in some respects allied to leucoplakia of the mucous membranes.

Disease of the myocardium is very frequent in these cases of syphilis. This subject has perhaps been most carefully studied by Mracek, who in a group of fifty cases found gummatous myocarditis in ten, fibrous changes in nine, and gummatous and fibrous in eight. Buschke and Fisher (*Deutsche med. Wochenschrift*, Nr., 19, 1906), and Simmons (*Münch. med. Wochenschrift*, 1906, S, 1550) have recently demonstrated the spirochetæ in the diseased muscle.

In my series I have found the occurrence of myocardial changes to correspond relatively, but poorly, with those of Mracek. Actual gumma of the heart I have found, as have Adler, Krehl, and others, a rather infrequent condition, and of my fifty cases true gumma of the myocardium was present in but five instances, but the myocardium was diseased in some manner in forty-four of the fifty cases.

The most frequent myocardial change is fatty degeneration, which was present in ten instances. That this degeneration bears a direct relationship to the lues admits of question, and in my opinion it is in most instances a result of malnutrition of the heart muscle, commonly primarily due to disease of the coronary vessels. Fatty degeneration associated with fibroid change was present in five instances. Fatty and parenchymatous degeneration were associated in six cases. Manifestly syphilis, except in its early and most active stages, will not cause parenchymatous degeneration, and the presence of this type of change in each of these cases was evidently due to entirely extraneous or terminal factors.

Brown atrophy was found alone in seven cases, apparently as an evidence of primary disease of the coronary vessels, which most commonly leads to this state of malnutrition. That this is the correct explanation in these examples is evidenced by the fact that the brown atrophy was found in but one instance unassociated with marked gross disease of the coronary trunks. As a contributory factor, however, it must be remarked that in but one of these seven cases was the age of the patient below forty, and in none was the known duration of the syphilitic infection less than twenty-five years, except in a single case occurring at thirty-four years, where the coronary disease was very marked and active, although the infection was of but six months' standing.

Purely fibroid changes were found in but four instances, but were associated with fatty degeneration and infiltration in five others, so that a total of nine instances may be justly assumed. There is no myocardial change in syphilis which equals in probable importance this fibrosis, and I have made a special study of the condition in an attempt to clear up its origin. Three times it was associated with cardiac aneurism, in all of which this condition had directly or indirectly induced death. In two cases it had particularly involved the very important papillary muscles, and in three other instances it had led to extensive dilation of the right auricle as a result of the fibrous invasion of its walls. Careful microscopic study of hearts taken from cases dying in the active stages of syphilis, or which still show gummata or a true syphilitic myocarditis, has convinced me that this cardiac fibrosis is of two methods of origin. It may, in some cases, result from a coronary thrombosis or obliterative endarteritis, which has led to a greatly diminished blood supply to the myocardium with a resulting myomalacia or muscle necrosis followed and repaired by a consequent fibrosis in the healing process, or it follows from an elemental inflammatory process which has its acute origin as a true syphilitic myocarditis, six instances of which were studied in this series or from the closely analogous condition of cardiac gumma. In the healing and replacement inflammation of luetic myocarditis I have been invariably able to demonstrate active interstitial hyperplasia taking place coincident with or as a result of the specific process. The importance of the recognition of this origin of fibrous myocardial changes is obvious. It at once lays directly at the door of the luetic infection the most important alterations found in the heart muscle in old cases of syphilis, and at the same time it indicates that if earlier death were the rule in syphilis that gummatous or active syphilitic changes would be reported much more commonly, whereas now these changes are but tardily being recognized as frequently occurring, since it is represented at

autopsy by its late signs only. These cases which have come to autopsy in my services have almost without exception been under excellent treatment, at least for a time during the early days of the infection, and may therefore not be expected to show such actual active lesions but rather the evidences or scars of them. What also renders these fibroid changes of syphilis so important is that from the nature of the change, once established, it is ineradicable and although correct and active antisyphilitic medication may cause the clearing up of exudates and the removal of cellular tissue, it is not to be supposed that adult fibrous tissue, unless in a necrotic condition, can be so influenced. Treatment to be successful must then come before and not after these changes.

It has been recognized for a long time that syphilis is one of the chief excitors of coronary disease, but I doubt that most of us yet appreciate the degree to which this is true. In this series disease of the coronaries was present in thirty-five instances *to a relatively greater grade* than the general arterial changes. In other words, a distinct selective tendency of the syphilitic virus for the coronary vessels is manifest. That age is a relatively negligible factor in this condition is indicated by the fact that extensive coronary lesions were found in cases as young as twenty-three, twenty-six, and twenty-eight, and the occurrence as well as the degree of coronary lesions appears to correspond more or less definitely with the activity rather than the duration of the disease.

As to the precise character of the changes in the coronary vessels, nothing definite can be said for it has been found that practically all types of coronary disease are included in this series of cases, from extreme grades of calcification to the acute ulcerative changes of active endarteritis such as was found in an early case in the secondary stage, just as the initial skin rash was appearing. In three instances thrombosis of the coronaries was found which had apparently originated from a primary endarteritis. Speaking in general, the most frequent coronary lesion in syphilis appears to be a fatty degeneration with endarteritis, often with in places a limitation of the lumen, and in others a widening of the same. These changes were found most pronounced in those subjects where a true inflammatory myocarditis with granulomatous formation was present, and the gross examination of the heart wall seemed in those cases to indicate that the granulomatous process had originated in or about the walls of the coronary vessels.

Judging from the considerable number of cases of Stokes-Adams syndrome reported in luetic cases, a frequent location for these myocardial foci is in the auricular ventricular septum and bundle. Two such apparent cases have appeared in my clinical service, but none have thus far come to autopsy. Judging from the lack of response to active syphilitic treatment, these lesions, at least in my cases, are fibrotic or degenerative and not infiltrative in character. They are not the acute primary irritative but curable lesion, but its incurable result. Insofar as may be judged by this series the location of the chief involved area of the myocardium has been mostly dependant upon relationship to a diseased and usually more or less occluded coronary vessel, or upon some endocardial lesion which has thrown an extraordinary strain upon some portion of the heart, for example, auricular thrombosis following extreme auricular dilation and fibrous myocarditis was present in four of my cases in which a valve defect apparently played a determining rôle. Study of these and other cases has also persuaded me that unusual tension upon the papillary muscle is a factor inviting syphilitic invasion to this special muscle distribution.

Endocarditis has been so frequently found associated with syphilis that in the past it has been customary, at least in regard to aortic lesions, to clinically assume where other etiological factors were wanting that the probable exciting agent was syphilis. In this group my findings in this special respect differ somewhat from the rule, although corroborating it in general. Pure aortic lesions do not predominate in this group of cases, and of the thirty-seven instances showing endocarditis seventeen showed involvement of both aortic and mitral segments. In some the aortic lesion was the greater, and in others the mitral predominated insofar as activity was concerned. When pure lesions alone are considered no mitral instances appear, but seven of pure aortic disease are found, most of which showed active ulceration. In three instances the aortic mitral and tricuspid were diseased and the mitral tricuspid and semilunar in one. In three subjects all the heart valves were invaded by a generalized sclerosing valvular endocarditis. In four cases there was a universal involvement of the endocardium, of such nature as to evidence its definitely specific nature, taken in association of course with the general visceral lesions presented in the case.

Involvement of the conus arteriosus and aorta are so closely associated with those of the heart that it seems not improper to consider lesions of these structures together. The aorta was diseased in a total of forty-four out of fifty cases, in thirty-seven only, however, did the disease extend to the abdominal artery and its chief branches; in short, a definite predeliction for the upper portion of the vessel was shown. In ten cases aortic aneurysm was found, giving, I believe, one of the highest percentages of aneurysm formation yet reported. None of these showed aneurysm below the diaphragm, but all were limited to the arch, again indicating the affinity which the syphilitic poison has for this region of the aorta. Two aneurysms developed from the sinuses which I have found in many cases, both specific and simple, to show more or less distention and ulceration even where no true aneurysm can be said anatomically to exist. Three were of the ascending arch, one of the ascending and transverse, and one of the transverse only, while in three instances the sac was of such size as to practically include all parts of the arch.

It has long been a matter of dispute as to how soon after primary infection aneurysmal formation might take place, and in general my cases conform to the rule that it is in the late disease that it occurs; for example, in two cases where the time of infection could be fairly certainly fixed the aneurysm was discovered in one twenty-two years after infection, and in the other thirty-two years. On the contrary, in two other cases of this same group the aneurysm developed in one not over six months after the initial lesion, and in another, a most interesting case, the patient died from the perforation of an aneurysmal sacculation from one of the aortic sinuses at the very outset of the secondary skin rash even before the diagnosis had been conclusively made. This finding explains the observation and statement of Grassman con-

cerning the frequency with which serious cardiac signs appear in the secondary stages of syphilis, and in my conclusions I shall use this fact as of special importance for the adequate understanding of syphilis of the circulatory organs.

So much has already been written concerning the various forms of aortic disease which occur in syphilis that it is unnecessary to consider them at any very great length here; in my series, however, the predominating lesion, appears to be an atheromatous process in which calcified plaques alternate with excavated and degenerated foci. In most instances the lesions do not, however, possess any grossly syphilitic characteristics, but might also be caused by other disease processes, although when examined microscopically some of the foci commonly exhibit areas of infiltration about the vasa vasorum and necrotic centers which must be looked upon as more or less typically syphilitic. Twelve cases showed changes of this suggestive nature. In eleven other instances the aortitis was of the ordinary arteriosclerotic character, which insofar as could be determined presented no certain hall-marks of lues. Active inflammatory changes, probably of a syphilitic character, were found in two cases and in four the inflammation was definitely of a gummatous type, evidenced by nodules of mingled organized tissue and clot in which giant cells and foci of necrosis with fibrous hyperplasia left no doubt as to their nature. Six instances presented discrete foci of fatty necrosis of the intima extending down to the media coat, and sometimes into it. Very little inflammatory reaction attends these lesions, the surface of which is often raised above the mean level of the intima and which are marked grossly by a bright yellow color. Lesions of this character are also very likely to be distributed along the descending aorta and are often symmetrically placed near or about the exit of the intercostal arteries.

There can be but little doubt that the primary change induced by syphilis on the heart and aorta originates in and about the nutrient blood vessels of these viscera. This is indicated both by the changes in the epicardium and by those in the myocardium which can, in most instances, be directly and anatomically traced to the blood vessels. Nothing is more clear from a pathological standpoint than that the myocardial degenerations are commonly dependent on preliminary alterations in the coronaries, and the almost constant changes in these vessels is one of the most striking features of the disease, as it affects the circulatory system.

The early predilection of the syphilitic poison for the blood vessels may perhaps want experimental evidence as yet, but the tendency for this infection to seriously involve the vascular distribution is among the earliest of scientific anatomical observations concerning syphilis. It was recognized and described definitely by Ambrose Pare and by Lancisi in 1728.

Concerning the important question then of how soon the heart begins to suffer fom the effects of syphilis, Krehl states (Nothnagel's Ency. Diseases of the Heart. Am. Ed.) that this is not before six to ten years after infection, yet Grassman. Hirschfelder and others call attention to the frequency with which serious cardiac signs appear during the secondary stage. This is a common observation as well as the prompt improvement which occurs under proper treatment. Certainly from my cases one must infer that these changes begin at least early in the secondary stage of the disease, although they may not fully develop until the tertiary stage. The case cited above in which an aneurysm perforated before the secondary rash had fully appeared and that in which serious cardiac and aortic lesions sufficient to cause death developed within six months after infection are in all probability not isolated and rare cases, but the treatment which is generally administered at this period seems at least to relieve and often to thus obscure or delay the symptoms in the average case. Most syphilitic infections are recognized during the secondary stage and are at least for a time correctly treated, so it seems probable that the cardiac and aortic lesions are thus held at least for a time in abeyance. Recognizing as we must the very early onset of vascular changes in syphilis and the fact which I have also attempted to demonstrate is apparent that most of the cardiac lesions are secondary to these primary vascular alterations, it follows then that cardiac lesions are early in development. Absolute anatomical confirmation of this theory is chiefly wanting because cases do not ordinarily die during this early period for the patient survives the acute and curable lesion to suffer and very probably eventually die from its late results which from the nature of the lesions and from that of the tissue in which they occur are permanent.

Most of the cases reported in this series have come from hospital services where the nature of the case had been fully appreciated notwithstanding the almost universal denial of history on the part of the patients, hence it appears that these serious late lesions of the heart and aorta do not respond to treatment, for in nearly all these cases the cardiovascular lesions were an important or the sole factor in the causation of death. Hence appears the great necessity for instituting early and vigorous treatment in all cases of syphilis as soon as they are recognized and before permanent lesions may develop in these important organs. The earlier and the more vigorous, just so much the better, for the above cases have demonstrated how hopeless treatment must be in cases already showing extensive coronary changes or a fibroid or degenerated myocardium.

Notwithstanding the apparent hopeless character of such lesions as have been described in this paper it none the less not infrequently happens that properly instituted treatment even in the late stages may afford a certain amount of benefit. Years ago Curschmann reported good results from the exhibition of iodine in cardiovascular syphilis, but it has become necessary to reaffirm this almost axiomatic observation as indicated by the recent articles of Longcope and of Collins and Sachs (Reports Assn. Am. Phys., 1910), who have called attention to the fact that spyhilitic disease of the circulatory organs demands active treatment with mercury—pushed just as vigorously as in acute syphilis of the central nervous system.

As Krehl has well said of this subject, the clinical signs are not characteristic; they are simply those of a myocarditis or of an aortitis, or those of a coronary sclerosis, yet when these signs appear and any possibility of syphilitic infection be present the case should be given the benefit of the doubt disregarding the age of the probable lesion, though fully appreciating that to be entirely effective, treatment should have been begun long before symptoms appear.

Thanks to the Wassermann reaction we are no longer dependent on an uncertain and probably untruthful history to guide us in this respect, and my plea is that in all cases of probable aortic or cardiac disease the Wassermann test be applied and then that active treatment be kept up at least until a negative Wassermann is attained. In the absence of a positive Wassermann I would further advise that if the clinical picture indicates syphilitic infection that the treatment test be vigorously applied none the less.

Further, I wish to again point out to you that if real permanent benefit is to be expected in these cases, treatment must be instituted very early, probably early in the secondary stage, and the drugs must be pushed to their full physiological limit.

I believe that internists as a class are very negligent in their management of cases of syphilis—we are all too apt to feel with the patient that as long as the external manifestations of the disease are in abeyance all is well, while as a matter of fact the intravascular changes are far more important, far reaching, and resistant than the signs of the mucous membranes and skin.

As to the methods of treatment, from my personal observation, salvarsan is no more dangerous in cases of marked cardiovascular disease than in other and seemingly simple cases, but this paper is not designed to discuss the methods of treatment but to call your most earnest attention to the almost universal occurrence of serious cardiac and aortic lesions in syphilis, to the fact that these changes begin early in the infection and through their latter stages they possess a largely irradicable character and from the very nature of the lesions and their visceral location the bearing on not only health but on life itself is more direct and important.

44 West Ninth Street.

THE QUANTITATIVE ESTIMATION OF TRYPSIN AND AMYLASE IN THE FECES AND IN DUODENAL CONTENTS.

PRELIMINARY REPORT.

By G. A. FRIEDMAN, M.D.,

NEW YORK.

Volhard's method of showing the presence of trypsin has already enabled us to obtain valuable data with reference to the occasional regurgitation of pancreatic juice into the stomach. Thus, Faubel was able to show the presence of trypsin in twenty-two out of thirty-seven cases, having pumped out the stomach in these cases after the introduction of oil. Volhard himself found tryptic activity in nine cases out of twelve of stomach contents obtained in the same manner. In one case of severe icterus he was able to exclude carcinoma of the head of the pancreas because of the strong trypsin reaction of the stomach contents. In a patient with severe diabetes, in which he could never obtain any evidence of the regurgitation of pancreatic juice into the stomach, his diagnosis of sclerosis of the pancreas and obstruction of its duct was corroborated at the autopsy.

Molnar has studied the presence of trypsin and pepsin in the stomach contents, giving oil to his patients on a fasting stomach and using Volhard's method of determining trypsin. The largest values for trypsin were obtained in gastroptosis and gastric carcinoma. Volhard's method (for which the reader is referred to his paper), combined with Wohlgemuth's method of quantitative estimation of amylase in the feces, has led in many instances to the diagnosis of various affections of the pancreas; Volhard, Goldschmidt, Heyn, and others have published such instances. On the other hand, the quantitative determination of trypsin and amylase in human duodenal contents with the parallel estimation of these ferments in the feces has, to my knowledge, never before been made. I have used the feces of eighteen patients, making several estimations in certain cases and, when possible, making a previous analysis of the stomach contents. In five of these cases the duodenal contents were likewise examined by the same methods; Einhorn's duodenal pump being used for obtaining the necessary material. This pump reaches the duodenum easily if there is no obstruction of the pylorus and no considerable atony of the gastric musculature. It is surprising how fast the olive-shaped end of the pump reaches the duodenum in cases of achylia gastrica, this being of course explained by the frequent hypermotility accompanying this affection. It is advisable in using Einhorn's pump not to aspirate at once when the mark 80 is reached, but to wait for about an hour. Then one usually obtains, even in cases of gastric hyperacidity, neutral or weakly alkaline duodenal juice, which is golden yellow in color as a rule, though occasionally colorless. Only in duodenal contents obtained under such conditions is pepsin not to be demonstrated, as I have often proved to my satisfaction by the use of the Jacoby ricin test. Feces are also usually free from pepsin except in isolated cases, as was lately shown by Ury. I have accordingly used the less complicated method of Fuld-Gross-Goldschmidt in preference to Volhard's method, which serves to show both trypsin and pepsin, which, of course, was necessary in his patients, in whom gastric juice with regurgitated pancreatic juice was the material used for examination. Previous to my work, Heyn has successfully used this method for determining ferments in the feces, and then simply adopted it for the examination of the duodenal juice as well.

The following was the method of examination. The patient was kept on a mixed diet for three days, after which the feces were always of slight alkaline reaction. For testing this reaction Kaplan's method was used, as follows: Rub up five grams of feces in 30 c.c. of distilled water, added gradually to the feces. To 2 c.c. of this mixture, placed in a test tube, 1 per cent. alcoholic phenolphthalein solution was added and titrated with decinormal soda hydrate. If 0.9 c.c. or less of the soda hydrate solution is necessary to produce a distinct change in the feces then the reaction may be considered alkaline. Five grams of dried feces of such patient was then rubbed up with 20 c.c. of physiological salt solution added drop by drop, and then centrifuged for fifteen minutes in a high speed centrifuge, filtrated through a double paper filter and the filtrate was used for further examination. Now two series of dilutions were made with distilled water 1:5; 1:10; 1:50; 1:100; 1:1,000; 1:10,000. To one series 5 c.c. of a 1:1,000 casein solution are now added.* To the second series of dilutions 5 c.c. of 1 per cent. soluble starch (Kahlbaum) and a little toluol are added. The test tubes are closed

*One gram of casein, 1 gram of sodium carbonate, and 1 gram of chloroform are mixed in 1 liter of distilled water and then heated on a water bath.

with cotton and then incubated for twenty-four hours at a temperature of 38° C. Now a few drops of 1 per cent. acetic acid are added to the test tubes containing casein: turbidity or precipitate means that the casein has not been digested. In order to interpret the results in terms of units, the following calculation was used: A dilution of 1:50 of the feces extract digests 5 c.c. of casein solution. One c.c. of undiluted feces should digest fifty times this quantity, that is, 250 "casein units." The second series of test tubes are filled with water and one drop of ⅒ iodine solution is added. A blue coloration shows that the starch has not been all digested. The same calculation is used for translating the result into "amylase units." The same method is used in testing duodenal juice, this being first filtered and diluted with distilled water. To differentiate the results, we call them "duodenal trypsin" and "duodenal amylase" units. The duodenal juice is obtained three-quarters of an hour after giving the patients a glass of milk half diluted with water and sweetened with two lumps of sugar.

My material has been obtained from the Vanderbilt Clinic, a few cases from Mount Sinai Dispensary, and the rest from private practice.

Case I.—W. was referred to me by Dr. T. C. Janeway with a probable diagnosis of catarrhal icterus. The stool was examined five times—twice when icterus was still present and three times after this had subsided. The icterus lasted eight weeks and had existed for six weeks when the patient was referred to me for examination. First examination of stool: trypsin, 25 units; amylase, 500 units. Second examination (a week later): trypsin, 50 units; amylase, 500 units. Third examination (a week later): trypsin, 250 units; amylase, 500 units. On the last occasion the icterus was no longer present, except that the conjunctivæ were slightly tinged yellow. During that week the stomach content was examined twice: free HCl, 60-64; total acidity 90-90; starch digestion, blue color obtained. On the day of the third examination of feces the duodenal tube was introduced. Contents: golden yellow, trypsin 50,000, amylase 5,000. Fourth examination of stool (a week later); trypsin 5,000, amylase 500. Duodenal examination on this occasion showed, after the same meal, trypsin 500,000, amylase 500. Fifth examination (one week later): Feces: trypsin 5,000, amylase 5,000. Duodenal contents: trypsin 5,000,000, amylase 5,000.

Case II.—H. (Vanderbilt Clinic) has been under my treatment for a considerable time for achylia gastrica. While taking HCl, the diarrhea is arrested, on discontinuing it returns. First examination of feces: trypsin 250, amylase 50,000. Duodenal contents colorless, reaction neutral, many milk coagula, trypsin 50, amylase 5,000. Second examination of feces: same results. Ten minutes after aspiration of 20 c.c. of duodenal contents the following test was made: 10 drops of a 10 per cent. HCl solution were injected into the duodenum with half a syringe of water; aspiration 10 minutes later. Golden yellow color, strong acid reaction, less milk coagula. After 15 minutes contents again aspirated and were colorless. Reaction neutral. Milk coagula smaller and fewer.

Case III.—Mrs. H., referred to me by Dr. Lachowsky. Achylia gastrica and gastrogenous diarrhea. Right floating kidney, high degree of secondary anemia, nervous symptoms. First examination of feces: trypsin 50, amylase 5,000. Duodenal contents: golden yellow, milk coagula. Thin, stringy mucus adherent to the duodenal bucket (duodenal catarrh (?)). Trypsin 50, amylase 50,000. The feces were no longer examined. The duodenal contents were examined three times more at intervals of 2 weeks. Administration of HCl with pepsin, alternating with pancreatin. General condition much better. No more diarrhea, but the same trypsin and amylase values. There was no mucus in any of the three subsequent examinations.

Case IV.—P. Achylia gastrica and constipation. First examination: Feces, trypsin 50, amylase 5,000. Duodenal: trypsin 50, amylase 5,000. Contents golden yellow, reaction alkaline, few milk coagula. The next three examinations of feces and duodenal contents at intervals of one to two weeks resulted in the same values, except that the reaction of duodenal contents was sometimes strongly alkaline, sometimes neutral; color twice golden yellow, once colorless.

Case V.—Miss F. Achylia gastrica, diarrhea, mucous colitis. First examination of feces: trypsin 50, amylase 250. Second examination: trypsin 50, amylase 250. Duodenal contents: trypsin 50, amylase 5,000.

Case VI.—R. Gastrophtosis. Free HCl 44. Total acidity, 84. Starch, blue color obtained. Feces: trypsin 5,000.

Case VII.—M. Intestinal atony. Hyperacidity. Neurasthenia. Trypsin 500, amylase 500.

Case VIII.—F. Hepatic cirrhosis (?) Trypsin 500, amylase 500.

Case IX.—G., 27. Gallstones. Had a few attacks of typical gallstone colic shortly before examination. Trypsin 500, amylase 500.

Case X.—C. Cholecystitis (?) Incomplete pyloric stenosis. Hyperacidity. Trypsin 50, amylase 50.

Case XI.—D. (Vanderbilt Clinic). Violent paroxysms of gallstone colic five years ago. Six weeks ago icterus set in with brown urine. Patient does not know whether the onset of icterus was accompanied by clay-colored stools. In the sixth week of her icterus there was violent vomiting, occurring mostly at night. Since then there has been also dull pain in the hepatic region. Has lost weight. Present condition: Icterus, but not much pronounced. Liver enlarged. Right hepatic border can be palpated down to two fingers' breadth above umbilicus. Left lobe not palpable. Surface of liver is nodular and very hard. Gall-bladder cannot be palpated. Examination on a fasting stomach yields 230 to 280 c.c. of acid reacting contents with food remnants. Contents in two layers after standing, lower consisting of food remains. There is a marked bile reaction. Microscopically, there are concentric starch granules and many sarcinæ, both of the large and the small varieties. Congo, positive; Günozburg, positive. Bile-ring Ewald. Free HCl, 20; total acidity, 48. Glycyltryptophan test negative. Starch digestion, blue color obtained. Urine, brown; bile, present. Stool, clay colored. No biliary pigments. Trypsin 25, amylase 50. Diagnosis: Probable primary carcinoma of the gall-bladder with secondary partial stenosis by pressure of the first part of the duodenum, with possibly secondary nodules in the pancreas. In the Presbyterian Hospital the stool was examined for neutral fat and fatty acids, the former being found in excess. The patient being very weak, exploratory laparotomy was done under novocain anesthesia. No information could be gained in reference to the pancreas and gall-bladder.

The latter was probably shrunken; nodules in the liver and omentum could be distinguished.

Case XII.—B., tailor. Abdominal tumor in the right hypogastrium. Diagnosis lies between mesenterial, omental, or pancreatic neoplasm or cyst. Examinations of the stomach contents gave normal acidity values. Feces: trypsin 500, amylase 5,000. For this reason pancreatic cyst was partly excluded. Operation in the Mt. Sinai Hospital (Dr. Elsberg). A thick-walled cyst of the omentum, filled with blood, was found. Pathological examination: Spindle-celled sarcoma.

Case XIII.—G. From the Mt. Sinai Dispensary. Visible intestinal peristalsis up to the cecum, where a tumor is distinctly palpable. Cachexia. Reaction for occult blood positive. Stool contains long bacilli. Very large quantities of pus cells in the stool. Examinations of the stomach contents: Hyperacidity. Trypsin 50, amylase 50. Diagnosis: carcinoma of the cecum.

Case XIV.—S. From the Vanderbilt Clinic, referred by Dr. Mosenthal. Light diabetes. Gastric juice: Alternating anacidity and hyperacidity (heterochylia). Trypsin 500, amylase 50,000. The same results were obtained on three occasions.

Case XV.—B. Diabetes (3½ per cent. sugar). Trypsin 500, amylase 5,000.

Case XVI.—A. Referred by Dr. Waldman, New York. Colica arteriosclerotica. Pulmonary tuberculosis. Achylia gastrica. Severe diarrhea. Trypsin 25, amylase 25. On account of severe attacks of abdominal pain an exploratory laparotomy was performed January 30, 1911, for gastric cancer. Nothing was found. August 17, first seen by me. Pulsation of the abdominal aorta marked. Blood pressure taken on four occasions: 160, 158, 145, 170. No cough, no fever. Lungs negative. In subsequent examinations subcrepitant râles found in right axillary region. In October, consolidation of this region and left apex. Cough. Many tubercle bacilli in the sputum. At first the attacks of pain were greatly relieved by diuretin in 0.5 gram doses. Stools not clay-colored. Urine negative.

Case XVII.—G. Chronic nephritis (after scarlet fever). Enlarged spleen after malaria, in Russia. Chronic colitis. Trypsin 5,000, amylase 5,000

Case XVIII.—M. Bulimia for 20 years. Operation for gallstones five years later. During the last three weeks violent diarrhea, with clayish appearance of stools. No tenia eggs or parts were found in many preparations. Right floating kidney. Urine negative, no biliary pigments. The stools look exactly as in obstructive icterus, yet bile was present. Microscopic: Muscle fibers with and without transverse striæ, no crystals of neutral fat, yeast cells, triple phosphates, many pus cells. Blood: Considerable secondary anemia. This suggested chronic pancreatitis (history of gallstones). Examinations of the stomach contents: No free HCl. Lactic acid, reaction strongly positive. Long bacilli. Glycyltryptophan test positive twice. No microscopic or macroscopic stagnation. Possibly this was a case of ulcerative carcinoma of the gastric wall, and hence the diarrhea, which would account for the high values: trypsin 500, amylase 50,000. The trypsin and amylase findings, as well as the analyses of gastric contents, etc., are tabulated in tables A and B:

Analysis of Findings.

Group A.—Case I is interesting from the fact that the icterus subsided as the trypsin units gradually rose from 25 to 5,000, while the amylase values remained uninfluenced by the jaundice. Furthermore, it is a striking fact that in the duodenal contents the trypsin values were as high as 50,000 to 5,000,000 and the amylase units relatively low. If Pawlow's animal experiments are remembered, showing that HCl incites secretion of the pancreas ferments and bile, the high trypsin units in the duodenum after the abatement of icterus could be easily explained, because in this patient there was hyperacidity of the gastric contents. Unfortunately the duodenal contents could not be examined at the first two examinations when icterus was present, but the increase in the trypsin values of the feces seems to point to an obstruction of the secretion at the time, probably a catarrhal swelling of the pancreas duct, or ducts, because the stimulus, HCl, inciting pancreatic secretion, was certainly present. In cases II, III, IV and V (achylia) the low value of the trypsin units in the feces and duodenum is noteworthy, while the amylase units are high as compared to case I. Here it may be assumed that the pancreas has not ceased to supply the protryptic secretion or its way to the duodenum has not been obstructed, but that the stimulus for the secretion was absent. The good starch digestion in the stomach in achylia is also demonstrated. The findings in

TABLE A.

No.	Name	Diagnosis	Gastric Analysis	Feces		Duodenal Contents	
				Trypsin	Amylase	Trypsin	Amylase
I.	W. W. Referred by Dr. Janeway.	Catarrhal icterus.....	Free HCl 60-64. Total acidity 90-90. Starch, blue color obtained.	(a) 25 Patient icteric	500	.....	.....
				(b) 50 One week later still icteric	500	.....	.....
				(c) 250 Icterus gone, scleræ subicteric. (Two weeks later.)	500	50,000	5,000
				(d) 5,000 (Three weeks later.)	500	500,000	5,000
				(e) 5,000 (Four weeks later.)	5,000	5,000,000	5,000
II.	H. Vanderbilt Clinic.	Achylia gastrica. Gastrogenic diarrhea.	Free HCl. T. A. 10-12. Several examinations.	(a) 250	50,000	50	5,000
				(b) ..... Not examined	.....	50 (One week later)	5,000
III.	Mrs. H. Referred by Dr. Lachowsky.	Achylia gastrica. Gastrogenic diarrhea. Right-sided floating kidney. Secondary anemia. Nervous symptoms.	Free HCl none. T. A. 8-10. Repeated examination.	50	5,000	50	50,000
IV.	P.....	Achylia gastrica and constipation	Free HCl none. T. A. 8-12. (Repeated examination)	50	5,000	50	5,000
V.	F.....	Achylia gastrica. Diarrhea, mucous colitis.	Free HCl none. T. A. 10. (On several examinations.)	(a) 50	250	50	5,000
				(b) 50 (Two weeks later.)	250		

TABLE B.

No.	Name	Diagnosis	Gastric Analysis	Trypsin	Amylase
VI.	R. Vanderbilt Clinic	Gastroptosis	Free HCl, 44. Total Acidity, 84. Starch blue color obtained.	5,000	Not made
VII.	M.	Intestinal atony	Hyperchlorhydria	500	500
X.	A. Referred by Dr. Bobrow.	Incomplete pyloric obstruction; cholecystitis (?).	Hyperacidity and hypersecretion. Microscopical stagnation of food on fasting stomach.	50	50
VIII.	F. Vanderbilt Clinic	Probably cirrhosis of liver	Hyperacidity	500	600
XI.	D. Vanderbilt Clinic. Also seen in the Presbyterian Hospital.	Probably primary carcinoma of gallbladder with pyloric or duodenal obstruction. Obstructive icterus. Nodular hard liver.	Free HCl, 20. T. A., 46. Lactic acid, 0. Glycyltryptophan test negative. On fasting stomach 230-280 c.c. obtained. Gross and microscopic stagnation of food. Sarcinæ. Marked bile reaction.	25	50
IX.	G.	Gallstones	Hyperacidity	500	500
XII.	B.	Omental cyst	Free HCl, 20. Total Acidity, 50	500	5,000
XIII.	G.	Carcinoma of the cecum	Hyperacidity	50	50
XIV.	S. Vanderbilt Clinic. Referred by Dr. Mosenthal.	Diabetes mellitus	Heterochylia	500. On two subsequent determinations there were the same findings.	5,000
XV.	B.	Diabetes mellitus, 3½ per cent. sugar, reported by Dr. Bernstein.	Not made.	500. On two subsequent determinations the same findings.	5,000
XVI.	A. Seen also by Dr. T. C. Janeway.	Colica arteriosclerotica. Pulmonary tuberculosis. Diarrhea alternately with constipation.	Anacidity on two occasions	25	25
XVII.	G.	Chronic nephritis after scarlatina. Tumor of the spleen (malaria in Russia). Chronic colitis with profuse diarrhea.		5,000	5,000
XVIII.	M.	Carcinoma of the stomach, ulcerated, probably of the walls. Diarrhea.		500	5,000

case II, after administration of HCl through the duodenal tube, deserve special consideration. The rapid change of color to golden yellow proves an increased secretion of bile followed by its typical action (milk coagula smaller and fewer). With the disappearance of the acid reaction the secretion of bile was arrested (contents colorless). In case III mucus in the duodenal contents could be demonstrated once. But I consider it hasty to conclude from this fact that there was cartarrhal duodenitis. The patient was very nervous, and the case may have been similar to cases of mucous colitis of nervous origin. In the *American Journal of the Medical Sciences* I have described a case of Reynaud's disease with intermittent achylia gastrica in which mucus was occasionally present in the stomach, while at other times it was completely absent. With the exception of case III I have never observed mucus in the duodenum. In cases VI, VII, VIII, and IX the feces contain normal values. The low values, in spite of hyperacidity, are remarkable in case X, and it is open to question whether we have to deal with secondary chronic pancreatitis in this patient. In case X there were probably metastases in the pancreas. The excess of neutral fat in the feces certainly points to a pancreatic affection. It is hard to believe that there was a primary carcinoma of the pancreas, because, in the first place, there was a typical paroxysm of gallstone colic, and, in the second place, the icterus was not as pronounced as is generally observed in primary carcinoma of the head of the pancreas. It may be concluded from the findings in cases XIV and XV that the diabetes was not of pancreatic origin. Cases XVII and XVIII confirm the results obtained by other investigators, who have found high trypsin and amylase values in severe diarrhea, while case XVI provides an exception, there being diarrhea and yet very low values. Considering, however, that in this case anacidity had previously existed, it would be possible thus to account for the low trypsin values, but not for the amylase figures.

In conclusion it must be mentioned that Frank and Schittenhelm rightly assert that with the newer methods of examination it is possible only to demonstrate a proteolytic ferment, but by no means to establish the fact that that ferment is surely trypsin. for this reason they suggest that control experiments with leucylglycin be made, as this preparation is split by erepsin with the formation of glycocoll, but not by trypsin. I purpose making experimental comparisons in this respect in the near future. Up to the present I have not been able to obtain leucylglycin in New York. I herewith express my hearty thanks to Dr. T. C. Janeway, in whose private laboratory most of the work here described has been carried out. My thanks are also due to Mr. W. W. Herrick, chief of the Internal Medical Department, Vanderbilt Clinic, where many of these patients have been examined.

REFERENCES.

1. Volhard, F.: "Über die Untersuchungen der Pancreassaftes beim Menschen und eine Methode der quantitativen Trypsinbestimmung," *Münchener medizinische Wochenschrift*, 1907, No. 9.
2. Faubel: Quoted from Molnar.
3. Wohlgemuth: *Biochemische Zeitschrift*, 1908, Vol. 9, p. 1.
4. Molnar, Béla: "Über die Frage der Übertrittes von Pankreassaft in den Magen," *Zeitschrift für klinische Medizin*, 1909, Vol. 6 F.
5. Heyn, L. G.: "The Diagnosis of Pancreatic Disease," *Journal of the American Medical Association*, 1911, p. 562.
6. Einhorn, Max: "A Practical Method of Obtaining the Duodenal Contents in Man," MEDICAL RECORD, January 15, 1910.
7. Ury: *Biochemische Zeitschrift*, 1910, Vol. 23, p. 153.
8. Fuld-Gross-Goldschmidt: Quoted from Heyn.
9. Kaplan, Dr. M.: "A Chemical and Microscopical Routine in the Investigation of Gastrointestinal Disorders," *New York Medical Journal*, 1907, p. 1057.
10. Friedman, G. A.: "Local Asphyxia of the Extremities (Raynaud's disease), with the Hitherto Undescribed Complication of Intermittent Achylia Gastrica," *American Journal of the Medical Sciences*, February, 1910.
11. Frank and Schittenhelm: "Über das Vorkommen von Erepsin in den menschlichen Fäzes," *Zentralblatt für die gesammte Physiologie und Pathologie des Stoffwechsels*, 1909, p. 881.

123 EAST NINTY-FIFTH STREET.

COLON BACILLUS INFECTION OF THE URINARY TRACT.

REPORT OF CASES.

By REGINALD M. RAWLS, M.D.

NEW YORK.

ASSISTANT SURGEON WOMAN'S HOSPITAL; GYNECOLOGIST TO NORTH-WESTERN DISPENSARY; PHYSICIAN TO DEMLIT DISPENSARY.

In a recent article (MEDICAL RECORD, Oct. 7, 1911) I drew certain conclusions from a review of the literature and from my study of cases. In two years, in a surgical experience, I have observed eighteen cases, of which seventeen have been seen in the last fifteen months. These cases have all presented definite clinical symptoms and have shown the *Bacillus coli* present in cultures made from the urine. I shall report but eight of these cases, which will be sufficient to show that the *Bacillus coli* may be the cause of acute urinary infection in health, in the puerperium, and in post-operative gynecological cases. While my series is too small to permit definite conclusions to be drawn, it proves that this infection is not uncommon and that hematogenous infection is quite common. *Bacillus coli* infection of the urinary tract may be primary or it may be secondary to some other focus. Often the first clinical evidence of this primary focus is an acute infection in the urinary tract.

CASE I.—Male, age 36, pneumonia ten years ago, no venereal history. Middle of August, 1909, marked gastrointestinal disturbance, general malaise, and pain in right kidney. Two weeks later a rigor lasting half an hour, fever, sweating, mild prostration, increased right lumbar pain, and frequent and painful urination. For a few days the patient had a recurring afternoon chilliness and temperature, but was able to be up and attend to his usual occupation.

Evening of September 2 he had severe chill and a temperature of 103.5° F. with symptoms of acute renal colic. The next five days an evening chill or chilliness, temperature 104° to 104.2°, pulse 70 to 100; the morning temperature ranging from 101.5° to 103°, pulse 80 to 82. The pulse was often irregular and weak and occasionally of high tension during a mild suppression of urine. There was frontal headache, and during the pyrexia much general discomfort, restlessness and mild delirium. A troublesome cough with mild physical signs developed, clearing up six days later with a large quantity of mucopurulent sputum. For one day there was a mild right otitis media which terminated without suppuration. *Urine* was amber colored, turbid, strongly acid, sp. gr. 1011, albumin 0.77 grains to the fluid ounce, no sugar, one epithelial and two finely granular casts, moderate amount of pus. Diazo and Widal reactions negative. Leucocytes, 14,000; Polymorphs, 85 per cent. General symptomatic treatment was given with urotropin, grains 5, every four hours. Five days later (Sept. 14) temperature remained normal and patient made a slow convalescence and was able to take up his usual occupation the end of September, although the urine was still turbid and there was some slight lumbar pain and frequency of urination.

Three weeks later, Oct. 20, he developed a right epididymitis, and two days later was confined to bed as the pain was intense. Temperature was 102° to 103°. A urethral discharge developed and a smear showed the colon bacillus. Abscess of the epididymis was incised and culture from the pus showed pure colon bacillus. Two weeks later, when all active symptoms had subsided, autogenous vaccines, one hundred million, was given on five successive days. Slight local reaction and one degree rise in temperature. On the sixth day, five hundred million given, slight local but no general reaction. Urotropin was given in five grain doses every four hours, increasing five grains a day up to 75 grains, and then 30 grains a day for a period of several months. The vaccine seemed to have no effect on the bacteriuria and the urotropin, even in large doses, only a temporary effect; the frequency of urination, however, was marked, especially with the maximum dose. At the present time there is a bacteriuria and occasional lumbar pain. An x-ray photograph gave no evidence of stone or any kidney abnormality.

CASE II (5140).—Female, age 22. For two or three years attacks of colitis. One year ago had "sugar in the blood" and colitis; confined to bed two weeks. Morning of August 23, 1910, normal confinement, slight perineal laceration, repaired seven hours later. Twelve hours after delivery a chill and temperature. Seen in consultation afternoon of August 24, temperature 102.8°, pulse 108, slight abdominal distension, tenderness over uterus and bladder, but no tenderness over kidneys. After thorough catharsis symptoms subsided, except for an afternoon chilliness and slight rise in temperature. The fourth day post-partum the left parotid became enlarged and painful. The next afternoon a severe rigor, temperature 104°, severe headache, and increased swelling and pain in parotid. The following afternoon I again saw the patient, the lochia were more profuse and foul, uterus enlarged, and there was marked tenderness over uterus and bladder.

Admitted to Woman's Hospital, August 31, 1910, at 8 A. M., temperature 101.8°, pulse 112, respiration 28. Urine, amber, acid, sp. gr. 1019, trace of albumin, no sugar, hyaline casts, pus, and bacteria. Culture from urine showed pure *Bacillus coli*. Leucocytes 21,400, polymorphs, 87 per cent. Blood culture negative.

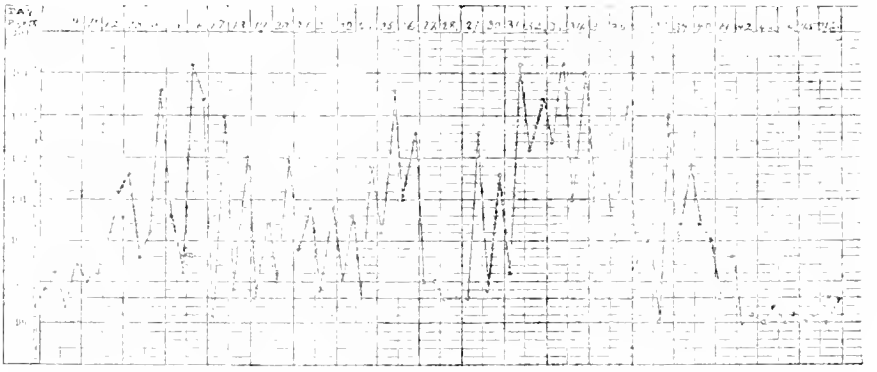
Under ether, the cervix admitted two fingers and was discharging a large amount of pus with strong putrid odor. The uterine cavity was explored with gloved finger and Emmet curette forceps and a small amount of débris, principally old blood clot, was removed. The fundus was located half way between umbilicus and symphysis. The uterus was very flabby, its walls thin, and in places there were distinct lines of cleavage extending from the cavity out into the musculature. The examination impressed me that I was dealing with a very septic uterus and that the prognosis was decidedly bad. The uterus was douched out with iodine water, and an application of tincture of iodine made and the cavity packed with iodoform gauze. Culture from the uterine cavity showed pure *Bacillus coli*. Urine, after ether examination amber, acid, sp. gr. 1017, trace of albumin, no sugar, coarse granular casts, and pus. Leucocytes 25,500 and polymorphs 88 per cent.

The first twenty-four hours temperature ranged from 102.8° to 104.6°, although five alcohol sponge baths, Murphy drip, strychnine, and ergotol were used to relieve symptoms. Next morning uterine gauze removed and for first time there was noticed a marked urticaria of neck, arms, and thighs, which disappeared in two or three days.

The second twenty-four hours, temperature ranged from 103° to 104.6°, although urotropin and benzoate of soda, āā grains 70, strychnine, ergotol, and five alcohol sponge baths were given. There was painful urination with slight tenderness over right kidney, especially over the costovertebral angle. Urotropin and sodium benzoate continued and temperature steadily came down with a marked decrease in size of parotid and decrease of vaginal discharge, and at end of five days remained normal. Sixteen days later patient was discharged. Urine was normal, except that it gave a pure culture of *Bacillus coli*. Smear and culture from cervix negative.

Case III.—Mrs. B. (6435), admitted to Woman's Hospital, June 26, 1911. Age 26, nullipara. Dysmenorrhea and for two years very nervous, frequent headache, backache, and pain in right lumbar region. At times frequent and painful micturition. Uranalysis: Amber, acid, 1020, no albumin, no sugar, epithelial and pus cells.

June 29, 1911, Pfannenstiel incision, resection of right ovary, and shortening of round ligaments through external ring. Uneventful postoperative recovery until twelfth day, when there was a slight rise of temperature, which reached 101.6° the morning of the thirteenth day. (See temperature chart.)



Accompanying this fever were headache, sore throat, pain in the back and right kidney. A simple gargle and aspirin, grains ten every four hours, were used and the temperature fell to 99.6° by afternoon. In twenty-four hours (14th day) there were a chill, sweating, headache, photophobia, marked general discomfort, and the temperature, pulse, and respiration were 103.6°, 116, and 28, respectively. An ice cap and alcohol sponge bath were used, in addition to the aspirin and the temperature in twenty-four hours (afternoon of 15th day) fell to 99.2°. Blood examination: Leucocytes 18,000 and polymorphs 81 per cent. Smear from throat was negative. Uranalysis: Dark amber, alkaline, 1010, albumin a cloud, no sugar, pus and blood cells. Culture from urine on agar and bouillon showed colon bacilli. Aspirin discontinued and urotropin and sodium benzoate, ten grains of each, given every three hours. The next morning (16th day) chill, nausea, vomiting, and sharp shooting pain all over body, with frequent and painful urination. Temperature rapidly rose to 104.2°. Ice cap and alcohol sponge baths failed to reduce the temperature below 103.4°.

Mornings of 17th, 18th, 19th, and 20th days temperature was practically normal with an afternoon rise to 103°, 102°, 100.6° and 102°. During the next day temperature did not go above 100.8°, but patient was voiding every one or two hours in amounts from four to twelve ounces. Blood examination: Leucocytes 15,800 and polymorphs 89 per cent. Cystoscopic examination by Dr. A. T. Osgood. "Cystoscopy shows moderate subacute cystitis, diffuse over bladder wall, with marked swelling about right ureter mouth, from which cloudy fluid emerges. Left ureter mouth shares in diffuse cystitis, but shows no localized swelling. Both ureters were catheterized, urine obtained was light amber and cloudy from each. The urine from right ureter catheter was more turbid than that from left. Urine flowed from each at same rate and with normal intermissions. Part of turbidity may be due to phosphates or other normal constituents. Diagnosis must depend upon urine analysis and cultures."

Uranalysis: Light straw, acid, sp. gr. amount insufficient to determine, albumin a cloud, no sugar slight sediment. Microscopical examination shows motile bacilli with pus cells, leucocytes, and squamous cells.

Culture from both ureters show Gram negative bacilli (short) with morphology of colon bacilli. From the twentieth to the thirty-fourth day there were four acute exacerbations. The pain being referred to the right and left kidneys alternately with marked tenderness over the kidneys, and pain in the costovertebral angles on pressure. Towards the end of this time vomiting was almost constant with marked prostration. Blood examination: Leucocytes 13,600, polymorphs 81 per cent. The 31st day urotropin and sodium benzoate were discontinued and potassium citrate, grains 30, were given every four hours. At noon of 34th day, temperature 101.6°, and 100 million bacillus coli stock vaccine was given. This was followed by a marked reaction and temperature reached 104° in twelve hours. Temperature gradually fell to 100° by the morning of the 36th day, but by afternoon it again reached 103.2°. On the morning of the 38th day temperature came down to 98°, which was the lowest point reached in three weeks. The patient's general condition was much improved, micturition was frequent, but was relieved by reducing amount of potassium citrate to fifteen grains every four hours. However, temperature again reached 103° by afternoon, 100° by morning of 39th day, and 101.8° by afternoon. Urinalysis: Pale amber, alkaline, no albumin, no sugar, few red blood cells, and abundance of bacteria which on culture proved to be *Bacillus coli*. Blood examination: Leucocytes 11,600 and polymorphs 74 per cent. The afternoon of the 30th day, 100 million autogenous vaccine were given, and in four hours there was a rise in temperature of but four-tenth of a degree, and then the temperature gradually came to normal

on morning of 42d day, when a second 100 million of autogenous vaccine was given. This vaccine was continued in like dosage every third day until patient's discharge on the 60th day. From the 44th day, urotropin, grains 5, and potassium citrate, grains 10, every four hours were given, in addition to vaccines. Patient's convalescence was now quite rapid, although there was frequent micturition with tenderness in the right costovertebral angle. Two days before her discharge the urine was amber, acid, sp. gr. 1008, no albumin, no sugar, few red blood, and epithelial cells. Culture on agar and bouillon gave luxuriant growth in 48 hours of a short Gram negative bacillus with morphology of *Bacillus coli*. Five weeks after leaving hospital, and at her menstrual period, there was an acute exacerbation and 150 million stock vaccine was now given, with slight reaction and a daily recurrence of symptoms. At the end of a week 200 million stock vaccine was given and has been continued every week up to the present time. She has had but one other acute exacerbation, which was at a menstrual period, and she is now gaining in weight and general health, although there are at times pain in the kidneys and frequent and burning urination, and the urine has the macroscopical appearance of a bacilluria.

The following cases I report through the courtesy of Dr. Le Roy Broun, from his service at Woman's Hospital. Case IV. illustrates acute suppression of urine and might be easily mistaken for so-called acute ether nephritis.

Case IV. (5464).—Female, aged 20, admitted to Woman's Hospital, November 14, 1910, with a gonorrheal salpingo-oöphoritis of ten days' duration. Smear from cervix showed the gonococci. Urine light amber, acid, sp. gr. 1035, trace of albumin, and many pus cells. Temperature 100°, pulse 100, and respiration 24. After two weeks' treatment temperature and urine became normal.

December 8, 1910, abdominal salpingo-oöphorectomy by Dr. Broun. First twelve hours following operation patient secreted only one dram of urine and in the next twelve hours but six ounces. Urine cloudy, acid, sp. gr. 1025, trace of albumin, and blood cells. Patient was very restless, complaining of severe pain in abdomen and back and vomiting incessantly. Nausea and vomiting were persistent for the next four days, and at the end of this time the patient first retained nourishment by mouth. The urine had now gradually increased up to twenty-four ounces, plus some that was lost. The treatment used was the Murphy drip, hot application over kidneys, electric light treatment (Goldspoon), and nutrient enemata with sodium acetate added. Urine, light amber, acid, sp. gr. 1012, slight trace of albumin, blood and pus cells, but no casts. Culture from urine gave the colon bacillus and Gram positive cocci in clusters and chains. From the fifth day on the urine steadily increased in amount, although the temperature did not remain normal until three weeks after operation. Gonococci were absent in smear from cervix and a second culture from urine showed Gram negative bacilli resembling *Bacillus coli*.

The following case illustrates a staphylococcus infection and an acute *Bacillus coli communior* infection developing seventeen days after operation.

Case V. (5877).—Admitted to Woman's Hospital, March 3, 1911, with the following history: Female, age 36, vii-para. Normal confinement (midwife) five weeks ago, in bed fifteen days. Third week, post-partum, history of gonorrheal infection, and has been confined to bed for last two weeks. On admission temperature 99.6°, pulse 100, and respiration 48. Examination showed a tender subinvoluted uterus, double tubo-ovarian disease, and slight tenderness over left kidney. Urine cloudy, acid, sp. gr. 1012, small amount of albumin, no sugar, leucocytes, and few pus cells. Culture from urine showed staphylococci. Leucocytes 15,000, polymorphs 75 per cent. Von Pirquet test negative. Urotropin and sodium benzoate, āā grains 10, were given every three hours for next six days, in addition to symptomatic treatment.

March 9, 1911, operation by Dr. Broun, supravaginal hysterectomy, for septic uterus and double tubo-ovarian abscess. Culture and smear from tubes and ovaries negative. Twelve hours after operation catheterized specimen of urine was of amber color, cloudy, acid, small amount of albumin, large amount of pus cells, and hyaline casts. Culture from urine negative. Forty-eight hours after operation the patient developed acute dilatation of the stomach. Postoperative temperature never above 100°. Out of bed on fifteenth day, and making good convalescence.

Seventeenth day temperature 102.2°, rapid pulse, labored respiration, and severe sharp pain in left kidney. Urine, amber, cloudy, slightly acid, sp. gr. 1008, no albumin, no sugar, epithelial cells and leucocytes. Culture from urine, pure *Bacillus coli communior*. Transplant showed the same. Urotropin and sodium benzoate, āā grains 10, every three hours. Two days later culture from urine showed a few specimens of *Bacillus coli communior*. Nineteen days later, on discharge from hospital, culture from urine showed no growth.

The following case shows the spontaneous recovery from a *Bacillus coli* infection:

Case VI. (5940).—Female, age 23, ii-para, no previous illness. Admitted to Woman's Hospital, March 20, 1911. Diagnosis double pyosalpinx and left ovarian abscess. Leucocytes 12,000, polymorphs 86 per cent. Urine, amber, cloudy, acid, sp. gr. 1032, no albumin, no sugar, few leucocytes and epithelial cells. March 28, 1911, vaginal panhysterectomy by Dr. Broun. In forty-eight hours temperature 103°, pulse 130 and respiration 30, but at end of another twenty-four hours these symptoms had subsided. The fourth evening after operation she complained of severe pain in back and right lumbar region. Previous to this time patient was catheterized, but now began to void small amounts of urine every two to three hours. The next night unable to sleep because of frequent and painful urination. Voiding every thirty minutes to an hour and a half, in amounts from a dram to two ounces. A catheter was passed and no urine found in bladder. From this time until the tenth day after operation she complained of right lumbar pain and frequent urination, then these symptoms subsided spontaneously. No enlargement of the right kidney or evidence of pain on deep pressure.

The seventh day the urine was light amber, turbid, alkaline, sp. gr. 1025, no albumin, no sugar, amorphous urates and phosphates. A culture showed *Bacillus coli*. Two days later the symptoms subsided, urine amber, clear, acid, no albumin, no sugar and microscopical examination negative. A culture from urine still showed the *Bacillus coli*.

The following case demonstrates a focus of colon infection with *Bacillus coli* in the urine and no clinical or pathological evidence of urinary infection:

Case VII. (5537).—Mrs. E., age 37, admitted to Woman's Hospital, December 6, 1910. Temperature 100.6°, pulse 118, respiration 22. Leucocytes 15,200, polymorphs 79 per cent. The temperature ranged from 100.4° to 102°, and on third day leucocytes 16,900, polymorphs 82 per cent.

December 9, operation by Dr. Broun. Posterior colpotomy, clots and dark blood evacuated, followed by a profuse hemorrhage. Rapid median incision, which revealed a ruptured left ectopic pregnancy with active bleeding. Mass removed and hemorrhage controlled. For two weeks temperature in afternoon ranged between 100.4° and 102°. The twelfth day the abdominal wound broke down and a culture of the pus gave colon bacilli. Urine, amber, acid, sp. gr. 1025, no albumin, no sugar. Culture showed colon bacilli. There was no frequency nor burning of micturition, no tenderness or pain in kidney or bladder.

December 26, 40 million dead colon bacilli (stock vaccine) given; at end of five days 40 million more, and at end of another five days 76 million. Three days after second injection, temperature reached normal for first time in twenty-five days, and amount of abdominal discharge was less and healing stimulated. However, the urine gave a culture of colon bacillus thirty-two days after operation, although throughout there had been no symptoms of any urinary involvement.

The following case is reported through the courtesy of Dr. Dougal Bissell. It shows a primary focus of colon infection with a secondary urinary infection.

Case VIII. (5502).—Female, age 24, admitted to Woman's Hospital, November 25, 1910. For fifteen days severe pain in region of left kidney extending across the abdomen and around to the back. Tender mass in left kidney region, which *x*-ray examination showed to be encroaching upon the diaphragm, but the kidney was not made out. Urine, catheterized from bladder, amber, acid, no albumin, no sugar, few squamous and round celled epithelial cells, one cylindroid, and urea 12.5 grams per liter. Urine from left ureter amber, cloudy, acid, no albumin, no sugar, few leucocytes, red blood cells, hyaline and granular casts, and urea 18 grams per liter. Leucocytes 20,000, polymorphs 88 per cent. Von Pirquet test negative.

For the first week the patient was very restless and noisy and complained of severe pain in left lumbar region. Temperature 100° to 102° F. December 1, 1910, operation by Dr. Bissell. Through a lumbar incision, a hard exudative mass was found posterior to the left kidney and between kidney and descending colon. Further investigation was postponed as patient took anesthesia badly. Gauze was introduced down to the mass and incision partly closed. For the first twelve hours after operation the temperature remained below 100°, and the first two weeks ranged from 100° to 102°. On the fourth day there was severe pain in the left ear, followed in three days by moderate purulent discharge. No culture was made from this discharge. The seventeenth day there was a discharge of pus and small amount of urine from the lumbar incision. Culture made from this discharge showed *Bacillus coli*. Urine, amber, cloudy, acid, sp. gr. 1018, trace of albumin, blood, and epithelial cells. Culture from urine showed *Bacillus coli*. Two blood examinations failed to show the plasmodium of malaria and an examination of the sputum for tuberculosis was negative. Following a free discharge of pus, the temperature remained normal for nine days, but on December 26 the afternoon temperature reached 103°. Leucocytes 19,000, polymorphs 77 per cent. December 27, urine, light amber, acid, sp. gr. 1010, trace of albumin, no sugar, epithelial, pus, and blood cells. Urotropin was given in seven and one-half grain doses three times a day and at end of six days the temperature became normal; except for this there was no improvement in general condition. The convalescence was very tedious and the wound was discharging freely. January 17, 50,000,000 (stock) colon vaccines given, January 20, 50,000,000, and January 24, 75,000,000. There was very little local and no constitutional reaction, but the discharge from the wound became appreciably less and it healed more rapidly. February 3, 1911, urine, amber, acid, sp. gr. 1012, no albumin, no sugar, leucocytes. Patient was discharged, as the mass and tenderness in the left side had disappeared, the sinus had healed, and her convalescence was well established.

Summary.

B. coli infection of urinary tract in health.	2 cases
B. coli infection of urinary tract post-partum	2 cases
B. coli infection of urinary tract post-operative	14 cases
Total number	18 cases

Primary focus of B. coli infection of post-operative cases when not in urinary tract was as follows:

Infected ectopic gestation and abdominal wound	1 case
Appendix and pelvic abscess	1 case
Gall-bladder and carcinoma of stomach	1 case
Appendix	1 case
Pelvic abscess and tubal disease	1 case
Perinephritic abscess	1 case

In all these cases hematogenous rather than ascending infection seems the most likely explanation of the mode of entrance. The possible exception was the case of perinephritic abscess which ruptured directly into the urinary tract although there was some previous kidney involvement.

233 West Eighty-third Street.

EPITHELIA FOUND IN URINE, AND THEIR DIFFERENTIATION, AS AN AID TO CORRECT DIAGNOSIS.*

By A. T. GAILLARD, M. D.,

PHILADELPHIA, PA.

In approaching any subject of scientific interest and value, with a view to enlightenment, one naturally seeks first the authority who has made the most careful researches, and who has published in clear, concise language the result of his work. In a previous paper I pointed out that the opinions of most authorities on the subject of epithelia found in urine are of little value, neglecting as they do the vital and essential points necessary to a successful study of this branch of microscopy, and destroying one's confidence at the very beginning by the fatal assumption that clear and definite conclusions are beyond the reach of the pathologist. To any one beginning with this assumption a working knowledge of the subject in question is of course impossible. It is first necessary to accept as truths

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the results obtained by the best authority, and in this field of microscopy at least, the satisfaction of confirming them by personal observation will not be denied the student. Louis Heitzmann, in his work on "Urinary Analysis and Diagnosis," has made a complete and scientific record of the possibilities in diagnosis by a study of the epithelia found in urine, and their differentiation. There is no doubt whatever that any good microscopist can attain reasonable proficiency by careful study of this book alone. The results of his work are clearly set forth—one has only to accept these results as well-established truths, and errors in diagnosis will seldom occur.

I shall devote as short a time as possible to the description of the various epithelia derived from the genitourinary tract, as the chief aim of this paper is to enter a protest against the fallacious teaching that results along these lines cannot be accomplished when these results have been undoubtedly demonstrated thousands of times, and corroborated by clinical proof.

As the study of epithelia depends for success largely upon recognition of their comparative sizes, the same magnifying power must always be employed. Experience has shown that the best results are obtained from the use of a 1/6 objective, with a 1-inch eye-piece, which in most instruments magnifies about 450 times.

For convenience of description epithelia common to both sexes will be taken up first. These are epithelia from the uriniferous tubules, pelves, ureters, urethra, and bladder. In the bladder, epithelia of the flat or squamous variety from the superficial layers are found in small numbers in normal urine. When large, round, or cuboidal shapes, from the middle layers, are seen in moderate numbers, an inflammation of some kind is present, even if secondary to disease of some other part of the genitourinary tract. As a result of deep-seated inflammation, such as ulcerative cystitis, tumor of the bladder, etc., there appear epithelia from the deep layer, which are columnar in shape and larger than any others of this character except those from the deep layer of the vagina. These epithelia are invariably seen in deep-seated inflammation of the bladder and cannot be mistaken for any others.

Epithelia from the urethra are partly flat or squamous, somewhat smaller than those from the upper layers of the bladder, partly cuboidal and partly columnar; they present the same appearance in male and female, though more common and more abundant in the former.

Epithelia from the ureters are usually cuboidal, though sometimes columnar, are invariably about twice the diameter of the pus corpuscles in a given case, and cannot be distinguished from those of the prostate gland, which they exactly resemble. Those from the ureter, however, are usually seen in connection with kidney and pelvic epithelia, and as primary injury to the ureter is comparatively rare, the diagnosis offers little difficulty.

Epithelia from the pelvis are somewhat irregular in shape, sometimes almost spherical, sometimes lenticular or pear-shaped. They are distinctly smaller than those derived from the bladder, and if this difference in size is carefully noted, and if they are present in sufficient numbers to observe the peculiar distinctive shapes, the common error of mistaking them for those of bladder origin will be avoided.

Epithelia from the uriniferous tubules of the kidney are never present in normal urine, and their appearance is always indicative of a pathological condition in the kidney. It should be strongly emphasized here that the study of all epithelia is one of comparative size; unless this is borne in mind it is impossible to make the differentiation. The pus corpuscle is taken as the unit, so to speak, and though varying in size in different individuals, varies but little in a given specimen of urine.

Epithelia from the convoluted and narrow tubules are usually almost spherical, generally contain a nucleus, and are invariably about one-third larger in diameter than the pus corpuscle in a given case. Their presence in the urine, especially if accompanied by epithelia from the straight collecting tubules, which are columnar in shape, always denotes a pathological process, and it is possible to make a diagnosis of irritation of the kidney or a nephritis perhaps, even without the presence of albumin and casts. The condition may not be a severe one, but is none the less present; it may be due to the irritation caused by an excess of urinary salts, or the indigestion of irritating drugs, but on the other hand a true interstitial nephritis may exist without the constant presence of albumin and casts, and which can be diagnosed in no other way than by the recognition under the microscope of these epithelia. It certainly seems utter folly for any one to deny that the differentiation is possible, at least in this part of the genitourinary tract, for specimens obtained by the ureteral catheter have demonstrated beyond the shadow of a doubt that these epithelia, distinctive in shape and size and seen only in specimens so obtained, if kidney lesion exist, come from the kidney and only from the kidney. Any objections to such conclusive proof can be regarded only as hopelessly prejudiced.

Epithelia found in urine of the male are those from the urethra, prostate gland and its ducts, seminal vesicles, and the ejaculatory ducts. Those from the urethra have already been described as irregular and usually somewhat smaller than bladder epithelia, but in severe inflammations there appear irregular columnar or cylindrical shapes, usually the result of ulcerations tending to stricture formation.

Epithelia from the prostate gland are cuboidal in shape, twice the diameter of the pus corpuscle, and, as already stated, of similar shape and size to those shed by the ureters. This similarity does not constitute a difficulty in diagnosis, however, if one remembers that ureteral epithelia are usually seen in connection with those from the upper urinary tract. With the absence of epithelia from the kidney or pelvis of the kidney, and the appearance of cuboidal shapes twice the diameter of the pus corpuscle, particularly if accompanied by epithelia coming from the ducts of the prostate, the diagnosis is certain.

Epithelia from the seminal vesicles are more or less irregular in shape, about the size of those from the duct of the prostate, occasionally contain yellow pigment, and when seen in the urine with a moderate or large number of pus corpuscles are an evidence of inflammation, possibly suppuration in the seminal vesicles.

From the ejaculatory duct come long, narrow, columnar epithelia, sometimes ciliated, though the cilia may be broken off, delicate parallel rods showing at the point of cleavage. Their size makes them characteristic; confusion between them and those from the bladder is impossible, the former being

narrower. It is sometimes possible to make a diagnosis of hypertrophy of the prostate gland before the clinical symptoms are manifested. In such a condition the prostatic epithelia are filled with so-called endogenous new formations, a collection of pus corpuscles originating within the epithelium itself and caused by pressure of the enlarged organ. These same new formations are also seen in the bladder epithelia, as the result of pressure on the bladder wall.

It is also possible by the study of these epithelia to make a diagnosis of acute and chronic prostatitis, spermatocystitis, and abscess of the prostate gland. No one will deny the value of being able to determine the source of pus in the urine, and in most cases the diagnosis can be made plain by a study of the epithelia present with the pus. For example—in acute abscess of the prostate the clinical evidences are usually of sufficient prominence to make a diagnosis, but it is quite possible that pyo-nephrosis or a severe cystitis may be coexistent. In acute abscess of the prostate the features under the microscope are moderate numbers of red blood globules, a large number of pus corpuscles, epithelia from the prostate gland and its ducts, sometimes in groups, connective tissue shreds, and mucus. These features alone, with an absence of kidney epithelia, make the diagnosis positive, and exclude the possibility of renal or other complication. On the other hand, in cases where more than one organ is involved, the seat of the severer lesion can always be determined by the comparative number of epithelia present from the various diseased sources.

What has been said of the possibility of tracing the source of pus in the urine is equally true in cases of hemorrhage. Hemorrhage from the pelvis of the kidney due to calculus can be diagnosed, hemorrhage from the presence of malignant tumor of the bladder, or hemorrhage from any other part of the genitourinary tract may either be positively diagnosed, or at least valuable aid may be given the clinician by the microscopist. It is not denied that some cases present great difficulties, that repeated examinations may be necessary before a definite conclusion can be reached, that in a few cases no diagnosis is possible, but in the great majority of instances I maintain that a positive opinion as to the source of the hemorrhage can be given from the urinary examination alone.

Epithelia found in the urine of the female come from the vagina, the Bartholinian gland, cervix uteri, and mucosa uteri Those from the vagina are the largest epithelia seen in urine and are flat in shape from the upper layers, cuboidal from the middle, and columnar from the deep layer. Inflammations of the vagina usually result in the appearance of epithelia from the Bartholinian gland, which are similar in shape and size to those derived from the prostate and ureters, about twice the diameter of the pus corpuscle.

Epithelia from the cervix uteri are somewhat similar to urethral, but more inclined toward the columnar shape, and as a rule are readily distinguished, while those from the mucosa uteri are long and narrow, similar in appearance to those described as from the ejaculatory duct but smaller and with cilia more often present. When these peculiar formations are present, together with epithelia from the cervix, they are indicative of a catarrhal endometritis.

Chronic diseases of the genitourinary tract may be diagnosed by the appearance within the epithelium of fat globules, and their presence in small groups throughout the microscopic field. These are small, glistening, highly refractive, granules and globules, and their appearance in the urine is always an evidence of chronicity. It is by no means necessary to employ one of the stains for the detection of fat.

It is not claimed that the source of every epithelium seen in the urine can be located, some must always remain doubtful, but if they appear in sufficient numbers the great majority of a certain size and shape can be accurately assigned to their proper source. There is no doubt whatever that all the epithelia described can be differentiated and a positive diagnosis made, independently if need be of the clinical history. In this fact lies the chief claim to consideration for this work, the importance of detecting early pathological changes, particularly in the kidneys, where disease is often far advanced before appreciable clinical symptoms appear. Even when albumin is found the error is commonly made of promptly dismissing the possibility of an existing nephritis because casts are not present. Some physicians err on the other side in making a diagnosis of nephritis in all cases of albuminuria, regardless of the cause responsible for the condition. Too much stress cannot be laid upon the importance of careful and repeated examinations before the kidney function is declared impaired, but the balance of error certainly lies in the direction of too infrequent diagnosis. When red blood corpuscles, pus corpuscles, and epithelia from the uriniferous tubules in moderate numbers can be demonstrated in the urine the diagnosis of nephritis is justified, is in fact positive.

One of the arguments advanced by some pathologists against the views expressed by Heitzmann is that actual pathological specimens of epithelia, obtained by scraping, do not show the differences in size and shape described as existing in fresh urine. This is quite true of specimens obtained in this way, but if examined in situ, and without exposing them to this destructive process, the characteristic shapes and sizes are perfectly apparent. And it can hardly be denied that the ideal condition under which to study epithelia is in the fresh state as they appear in the urine, only recently detached from the mucous membrane. But the hardest argument to combat, because it is really no argument at all, is the one that assumes in general terms the impossibility of obtaining results by these methods, the flat refusal to accept results already accomplished, already firmly proven. In the face of such skepticism it is hard to fight. I maintain that this method of diagnosis is based on sound, logical, and scientific principles. By rigid processes of exclusion the epithelia originating in the genitourinary tract have been accurately assigned to the various mucous membranes of which they were originally a part. Is it not logical to assume when epithelia of a certain shape and size appear constantly in the urine in cases where the clinical history is not in doubt that they are desquamated as a result of inflammation in that particular organ? And when these epithelia are never found in other lesions, and never appear in normal urine, is it not reasonable to insist that they come from that organ alone, and are present as a result of some pathological process causing their detachment? I do not wish to be understood as decrying or belittling the work of the clinician; on the contrary it should be emphasized that labo-

ratory work is only a much-neglected aid to correct diagnosis in those cases where the clinical history is obscure, or where an early diagnosis is of value because of a lack of clinical symptoms. This much I am willing to concede, but I must protest most strongly against the assertion that a diagnosis cannot be reached by laboratory methods alone. I have recently seen arguments absolutely denying the value of all laboratory work in the diagnosis of nephritis unless unmistakable clinical symptoms can be demonstrated. The fact is entirely overlooked that a chronic interstitial nephritis may exist for years with no appreciable clinical evidences, and if such statements are allowed to go unchallenged the unfortunate patient is denied the benefit of an early diagnosis and must await clinical manifestations of anasarca, dyspnea, cardiac hypertrophy, arteriosclerosis, etc., or until an acute attack intervenes, and a sudden uremic coma ends his life. The insidious onset of chronic interstitial nephritis is too well known to need emphasis; the disease is common in middle-aged men apparently in robust health, and the diagnosis unfortunately is often delayed until little can be accomplished in the way of treatment. The mortality experienced by insurance companies in this class of risks is very heavy, because albumin is either absent in the urine or the slight trace present is overlooked by the examiner. And until microscopical examination of the urine is more widely insisted upon these losses will continue.

Recent Actuarial Statistics show a steadily increasing percentage of mortality from the degenerative diseases, between the ages of 40 and 60. With a more general appreciation of the value of urinary analysis conducted along the lines of this paper, the mortality now being charged up to diseases of the kidneys would soon show a decrease, instead of the present alarming increase.

In closing three conclusions may be drawn:

1. That all epithelia originating in the genito-urinary tract may be differentiated.

2. That the diagnosis made by the clinician can always be confirmed by microscopical examination of the urine after the methods described.

3. That valuable aid in making a diagnosis can always be given when the clinical symptoms are obscure or too vague to allow of a positive diagnosis.

415 Walnut Street.

ON THE USE OF A DEFINITE TEMPERATURE IN TREATING DISEASE AND THE DESTRUCTION OF THE GONOCOCCI.

By J. A. FULTON, M.D.,

ASTORIA, OREGON.

Since the dawn of the history of medicine, heat and cold have held a prominent place in therapeutics, and the universal use of one or the other, both by the laity as well as by the profession, is conclusive proof of their value. In watching the effect of these two measures and endeavoring to decide why it is that either is of benefit at any time, or in any particular condition, I have arrived at certain conclusions which appear to me to be of sufficient value to justify me in submitting them to the profession.

In the past it has been sufficient to direct that hot or cold applications be made, without designating how much heat or what degree of cold was to be maintained. In using any chemical for a germicide it is required that it be used in a certain definite strength. Both heat and cold are germicides if used in proper strengths, and it is as easy to regulate the strength of our applications of these agents as it is of the chemicals in common use.

It has seemed to me, as it has to others, that nature in an uncertain way makes an attempt to use heat as a germicide by increasing the temperature of the body when pathogenic germs have gained a foothold in the system. Like others, I have seen the benefit of a high fever; I have seen an ulcerating tuberculous breast heal rapidly after an attack of erysipelas accompanied with a prolonged high temperature; I have seen a well-developed case of pulmonary tuberculosis which was making rapid headway almost entirely relieved by a long and severe attack of typhoid fever; I have seen an epididymitis apparently cure a case of gonorrhea in a few days; I have seen an acute attack of gonorrheal rheumatism with a high fever surprisingly relieved in a few hours and every attack with high temperature was followed by a lull in the severest symptoms. I have therefore come to look upon fever as nature's attempt to destroy germs.

The laboratory has shown us that all pathogenic germs thrive best at about the normal temperature of the human body. When the temperature goes above or below this the growth of the germ is retarded. Increase this temperature still more and the growth is stopped. Increase or lower it still further and the germ is killed. This occurs out of the body, then why not in the body?

The skin and tissues underneath are poor conductors of heat or cold. Nevertheless, I have proven time and again that either heat or cold may be sent into the tissues through the skin for a considerable distance. The skin will stand a steady application of heat at about 120° F. without injury to the parts. I say "about" for the reason that the skin of one person may be more sensitive than another, and may not stand quite as much heat and may blister. I have found none, however, that will not stand 118° F. and some that will stand 123° F. applied steadily for some time. It is possible to heat clear through the abdominal wall of a person not too fat. Cold likewise may be made to penetrate quite deeply without damage to the parts. The essential thing to observe in the application is that the temperature be of a known and unvarying degree, and be kept constantly applied. The haphazard method of ordering hot or cold applications is not to be depended upon any more than would be the application of an antiseptic without regard being paid to the strength of the application made. In using the Bier method of treatment, after the constricting band has been applied, the part should be wrapped in an electric heating pad kept at a known temperature, and the part under treatment subjected to prolonged high temperature with a probability or rather almost a certainty of heating clear through the part. In applying a poultice to any part, it is wiser to cover the poultice with the electric heating pad and by this keep it at a steady and known temperature, instead of the present method of making applications which are hot one minute, cold the next. That such a method would be of benefit there can be no doubt. I have in my work demonstrated time and again that a heated bougie held within the urethra will raise the temperature of the skin outside along the urethra from five to eight degrees. A heated instrument kept within the rectum or vagina will heat clear through into

the adjoining cavities, showing that heat may be made to pass through living tissues and that a part may be heated to a temperature several degrees above the surrounding parts without injury. I have seen a chronic ulcer of the leg heal rapidly after a twenty-four-hour application of heat at about 118° F. I have seen an eczema of the leg heal after a twenty-four-hour application of heat, and I am convinced that any infected part, such as an infected finger, will be benefited by a prolonged application of heat.

In view of these facts, I am led to believe that the benefit received from the applications of heat or cold comes in some way through the destruction or the weakening of pathogenic germs—in some cases the complete destruction of them; in others, perhaps, through such an influence on them or the blood cells as to encourage the production of opsonins or to increase the activity of phagocytes, and in this way assist in the cure.

There are some pathogenic germs which will require such a degree of heat to destroy them as to be destructive to the tissues, although subjecting them to a prolonged temperature as high as the tissues will stand may retard their development and weaken them so that nature can more easily destroy them. The laboratory has shown that there are some germs which a comparatively low temperature will destroy, and the one most easily reached is the gonococcus. The gonococci can not endure a temperature above about 113° F. outside of the body. Will that temperature destroy them in the body? I believe that I have proven that a temperature a few degrees above this will.

The gonococcus is of low vitality, notwithstanding the disease produced by it is stubborn to treat. The reason for this is that the germs as soon as located begin to burrow beneath the epithelial layer of the mucous membrane and are thus soon in a position to defy the action of the various antiseptics and washes that simply pass over them, and which do not injure them or retard their growth in the least.

Now if heat at 120° F. will destroy them or weaken them, so that nature's phagocytes may cast them out, we have a safe and simple remedy at hand. And since heat may be depended upon to penetrate the crypts and follicles of the urethra, it should be possible to prevent any such a thing as latent gonorrhea.

As to the best method of applying heat or cold at a definite and controlled temperature to the urethra, I have found that a metal tube in which water is made to circulate at a known temperature and which is supplied with a thermometer at the point of inflow, and another one at the outflow, keeping one informed as to the exact temperature of the bougie all the time, is best. By connecting this to an insulated tank which would prevent the rapid loss of heat, we are provided with an instrument which enables us to apply heat or cold to the entire length of the urethra and to know all the time just what we are doing.

During the past three years I have treated quite a number of cases of gonorrhea by this method. All of the cases met with have not been treated by this method for various reasons. Cases in which the meatus was too small to admit the bougie I have treated by other methods. Cases in which the patients did not seem to have sufficient intelligence to justify me in expecting to see them return to report have been let go. I have, however, treated quite a number of cases and have convinced myself that gonorrhea may be aborted or cured in one week and possibly in one treatment.

In applying this treatment to an acute case of gonorrhea I first wash out the urethra with a physiological saline or a weak boracic acid solution; then instill a three or four per cent. solution of stovaine; have patient recline on a table or lounge; have the bougie and thermometers hang from a hook on an arm from a tripod so that the bougie will, when introduced, not cause any needless discomfort. Then the water at the desired temperature is allowed to flow through the bougie and out into a vessel placed alongside of the patient. It is best to introduce the bougie before starting the water running so as to allow of a gradual increase of heat which is not so apt to be painful. The thermometers will show the temperature of the water at the entrance and exit of the bougie and the amount of loss of heat through radiation while passing through the instrument. The loss will depend upon the rate of flow, but should not be more than one degree. Our object should be to keep the temperature as high as the patient can stand it, and never to allow it to fall below 119° F. This temperature should be maintained for from thirty minutes to one hour. When the séance is over it will be observed that the mucous membrane is slightly swollen and that there is a watery discharge formed around the bougie. For a few days the urethra may be swollen and tender and the entire organ may at times be swollen and sore. Bathing in cold water has promptly relieved this condition. I have been accustomed to prescribe a mild zinc acetate solution for injection and citrate of potassium internally. Whether or not this is of any benefit to the patient I do not know, but it keeps him busy. I have had patients get well under this treatment in one week after one application of the heat. After three applications on successive days I have had no acute case take longer than eighteen days for a cure. Have had one case of epididymitis develop and in one case with an already irritable bladder a cystitis follow the treatment. In neither case do I think the complication was due to the treatment, but developed in spite of the treatment. In one case, in which an epididymitis was well started, one application of the heated instrument seemed to check it at once. My experience has been mostly with acute cases, but I have treated a few chronic ones. I have seen a case of three months' standing get well in one week after one application of the heat. I believe the heat has enabled me to cure my chronic cases more promptly than in any other way.

I have treated one case only with low temperature. In this case I applied a bougie at 34° F. for forty-five minutes. I made one application. The discharge stopped in eighteen days. There was so much inconvenience connected with getting the temperature desired in the cold treatment that I devoted the rest of my time to hot application. I believe, however, that in cold we have an agent of great value if properly used.

So far I have done only pioneer work in this method of treating this disease. Owing to the small amount of material at hand I have not been able to determine several things which must necessarily be worked out in any new treatment. Just how high a temperature may be used without destruction of tissues is a question to be determined. Whether it is best to make only one application of heat in an acute case of gonorrhea, or whether

an application every day for three or four days is best, is to be determined only from experience. In fact there is much to be learned and unlearned before we may sift the true values out of any method of treating disease.

In closing I may repeat that heat or cold used in treating disease should be in definite strength. That heat or cold when properly applied does readily penetrate living tissues. That a bougie at 120° F. held in the urethra for a few minutes will raise the temperature of the skin out alongside from five to eight degrees. And finally that the benefit following the proper application of heat or cold is derived from the effect upon, the weakening of, or the destruction outright of the pathogenic germ causing the disease which is under treatment.

Like everything else not thoroughly tried in medical work, it will take time to prove its full value. Nevertheless I submit these ideas to the profession with a feeling that the correct and scientific use of heat or cold (used in definite and known strength) offers much of value to the profession and merits a more careful investigation.

BACTERINE TREATMENT IN PULMONARY TUBERCULOSIS.

By GEORGE SANDERS, E.L.M., M.D.

NEW YORK.

THE hypodermic injection of dead germ cultures, known as bacterines or vaccines, is establishing itself rapidly as a therapeutic agent. It has frequently proven most successful, and with more knowledge of its proper application in appropriate cases a therapy of great usefulness will be at our command.

In all infections we have to wait for the blood to make its antibodies to neutralize and rid the system of the toxins, and when this is delayed it may result in a long illness which may end fatally, but by the early use of the bacterines a stimulation of the blood elements to fight the infection takes place and so saves the tissues from the longer influence of toxins. To immunize against or combat internal infections will be the widest field of the bacterines.

In pulmonary tuberculosis we deal with an internal infection caused by the tubercle bacillus. However, the tubercle bacillus, alone, finding a vulnerable point in the tissues, may hardly produce any symptoms, and the patient may not be aware of any disease at all. It is held by many that an additional infection of one or more of the pus-forming organisms is the true cause of the more or less rapid downgrade progress of the disease, and the true cause of the breaking down of the tissues surrounding the tubercle, thereby causing cavities in the lungs. The chronicity of a case depends upon the degree of the secondary infection.

It is this secondary infection that causes rapid loss of weight and strength, fever, night sweats, loss of appetite, and mucopurulent and purulent expectoration. Tuberculin treatment in pulmonary tuberculosis has often proved harmful to the patient. Tuberculin treatment should not be undertaken when the patient is feverish, but in most cases of tuberculosis, and especially of the rapidly advancing type, fever is always present, considered from a point of 100° F. or above. Now, if by means of bacterine treatment we are able first to overcome this secondary infection to a greater or less extent, a patient then can be placed in a condition to receive any further treatment toward the direct eradication of the tubercle bacillus through the injection of tuberculin.

It is true that cases having reached an advanced stage in the disease may not or cannot be helped because of an exhaustion of the opsonins of the blood and of the great destruction of lung tissues.

In applying bacterine treatment to tuberculous patients, I was agreeably surprised in the results obtained. The following cases cited are not selected ones, but they are such, in succession, as came for treatment. These cases have not been treated long enough to show definite end results, but, owing to the benefits derived so far, their progress should stimulate general interest for the application of this therapeutic agent.

In using a combination of bacterines consisting of the various organisms that produce suppuration and other concurrent affections in tuberculosis we meet all likely indications.

The combination of bacterines used in the following cases consists of streptococcus, multivalent, 50,000,000; staphylococcus, multivalent, 500,000,000; communis coli, multivalent, 100,000,000; pneumococcus, 100,000,000, in each cubic centimeter. The dose injected is one-half this amount and thereafter increased or decreased according to the tolerance of the patient. A slight negative phase following an injection seems to be followed by better results than if none appears.

CASE I.—Mr. B., aged thirty-three years; occupation, salesman; came to me on October 12 of this year, with the following history: About four years ago he had a "cold" with fever, which kept him in bed for about six weeks. It was then discovered that he had pulmonary tuberculosis, as his sputum examination was positive. He then had a severe cough, night sweats, and loss of appetite, with rapid loss of weight and strength. Patient states that he weighed about 135 pounds when in good health and before this attack. He subsequently went to Liberty, N. Y., where he improved considerably and gained in weight. He had an hemoptysis about four times at that place. After about eighteen months he returned to New York City, where he since has remained. Since his return he had one slight hemorrhage from the lungs. During the summer months, he states, he loses in weight, but he gains in weight during the winter. His appetite has always been good, he has no sensation of fever, but he has occasional hectic flushes; he feels, as he states, "all in," and especially so on rainy and disagreeable days. He is unable to do any work or to take much exercise; he always takes medicine to keep him from coughing and to give him a night's rest.

Physical examination showed expansion of chest on inspiration more on the left side than on the right. Infraclavicular and supraclavicular spaces sunken on both sides, but more so on the right. Vocal fremitus distinct over right side. Dullness over right upper lobe. Over same part subcrepitant râles and rough bronchial breathing, also some bronchial breathing below. This young man has his heart on the right side of the chest. Pulse 118, temperature 100.6° F., weight 125 pounds. One-half cubic centimeter of the above named combined bacterine was injected, and instructions were given the patient as to his diet, fresh air, etc. He was instructed to stop his medicine.

October 14. Patient states that he felt a little feverish and that he had a headache soon after the injection. This all gradually disappeared in

a few hours. He sleeps now a little better, but otherwise feels as usual. Noticed a slight increase in cough. Pulse 100, temperature 98.6° F. Second injection of 0.8 c.c. of bacterines October 16. Patient states that he had no reaction from the previous injection. Yesterday having been a disagreeable day, he did not feel so well. He had a little night sweat the night before last, but none during the past night. Pulse 112, temperature 99.6° F. Third injection of 0.8 c.c. of combined bacterines. Examination of sputum showed the tubercle bacillus.

October 20. About one hour after the last injection the patient complained of a slight headache which lasted about an hour. He felt pretty well the past two days, considering that we had threatening weather and some rain. On such days he heretofore felt especially miserable and much weaker. He sleeps better lately. Pulse 114, temperature 99.8° F., weight 126½ pounds, a gain of 1½ pounds in one week. It has to be taken into consideration, however, that he always gained in winter, and one cannot assume that this gain was due altogether to the influence of the bacterines. I have no information as to whether he was gaining in weight before he started treatment. Fourth injection of ½ c.c.

October 24. Patient had a headache about one hour after the injection. This did not last long. He now sleeps well. Fifth injection of ½ c.c.

October 29. A slight malaise soon after the previous injection, which lasted about ten minutes. He sleeps well and feels generally a little better. Temperature 99.4° F., weight 127½ pounds. Sixth injection of ½ c.c.

November 1. There was no reaction from the last injection. Patient states that at times he coughs more than usual. Pulse 112, temperature 98.2° F. Seventh injection of 0.6 c.c.

November 5. There was no change. Patient seemed a little nervous to-day. Pulse 120, temperature 98.6° F., weight 128 pounds. Eighth injection of 0.5 c.c.

November 8. Patient states that he feels improved, and that he has noticed no hectic flushes since treatment and so far. Pulse 104, temperature 99.2° F. Ninth injection of only 0.2 c.c. (all I then had).

November 12. For the past two days he has not felt so well. The weather was and still is very disagreeable, with fog and rain. He, however, feels generally improved. Pulse 108, temperature 99.4° F., weight 130 pounds. I have not seen the patient since and I do not know what has become of him. He has been treated exactly one month and he has gained five pounds in that time.

The above case was one of a very chronic nature and what is noticed, (1) Improvement in sleep without medicines. (2) Changes in weather and rain did not affect him as much and sometimes not at all. (3) A steady gain in weight. (4) He felt a general improvement.

Case II.—Mrs. M., aged twenty-six years, married three years, one child born about ten months after marriage, and since then she does not feel well. Although always in good health prior to her confinement, she was often subject to "colds." A cough developed since the child was born. Last April she was examined by a physician and her case diagnosed as one of pulmonary tuberculosis. She was advised to leave town and she went to Sullivan County, N. Y. No improvement took place there and she soon returned here. Her average normal weight she stated was about 120 pounds. She is losing weight and strength rapidly and is getting worse. At the beginning she had some night sweats, but none lately. Cough is troublesome and mostly so in the mornings. Her appetite has been very poor for a long time and she takes no breakfast. Menstruation normal. Patient looks emaciated, chest narrow, with intercostal spaces prominent. Supra and infraclavicular spaces very much sunken, more so on the left side. Dullness on left upper chest. Subcrepitant and crepitant râles heard over both upper lobes. Pulse 100, temperature 98.6° F., weight 91 pounds. No injection of bacterines was made at this visit, October 22.

October 25. Pulse 114, temperature 98° F., weight 90 pounds. First injection of 0.5 c.c. of combined bacterines given and the customary instructions. Sputum is positive.

October 29. Patient states that she had a severe headache and malaise soon after the injection. She slept better the past night and she seems to have a better appetite. Pulse 98, temperature 98.6° F. Second injection of 0.5 c.c.

November 1. Again she had a severe headache and malaise soon after the injection. She had also a few attacks of weakness with feeling of faintness which, however, soon passed off. Pulse 96, temperature 97° F., weight 90 pounds. Third injection of only 0.3 c.c. given.

November 5. Patient states that the reaction after the last injection was very much less severe, and that on the day following she felt very well, better, in fact, than she had felt for a very long time. Pulse 82, temperature 98.6° F. Fourth injection of 0.3 c.c.

November 8. Patient had only a slight reaction. She feels well and looks more cheerful. Her appetite is improving. Pulse 90, temperature 98.2° F., weight 90 pounds. Fifth injection of 0.4 c.c.

November 12. There was a slight reaction. Patient states that she feels much improved and that her appetite is getting much better. She now takes some breakfast. Pulse 90, temperature 98.4° F., weight 90 pounds. Injected 0.35 c.c.

November 15. Patient had no reaction. She feels good. Seventh injection of 0.5 c.c. Pulse 102, weight 89 pounds. Patient states that she put on a lighter skirt to-day.

November 19. Patient had a very slight headache yesterday morning. Feels good, appetite much better. Pulse 90, temperature 97.4° F., taken by mouth after she had come in from the cold. Weight 89½ pounds. Eighth injection of 0.6 c.c.

November 22. Patient feels well. Pulse 100, temperature 99.4° F. (rectal). Ninth injection of 0.7 c.c.

November 26. Again patient states that she feels generally much improved. Pulse 94, temperature 98.6° F. (rectal), weight 90 pounds. Tenth injection of 0.8 c.c.

November 30. Patient had no reaction after the last increased dose. Her expression and general appearance are entirely different from when I first saw her. Pulse 95, temperature 98.6° F. (rectal), weight 90 pounds. Eleventh injection of 0.9 c.c.

December 6. On some mornings the patient complains of headaches, and rheumatic sensations, otherwise feels fine, as she expresses herself. Appetite very good. Twelfth injection of 0.65 c.c. Pulse 100, temperature 99° F. (rectal), weight 90 pounds.

December 10. Patient complains of a slight pain in the back and says that her menstrual period is a little ahead of time. Pulse 94, temperature 100° F. (rectal).

In this case again we have some direct improvements: (1) Improvement in appetite. (2) Improvement in general health. (3) Her appearance is not of a person who was very much under the influence of a wasting disease. No increase in weight is noticed so far, but she feels much stronger.

The dose of bacterines of 0.5 c.c. at the beginning brought on too much of a reaction, and when reduced most of the above changes began to show themselves.

A further report of the last case, together with new ones, will be made later. A fair trial of the bacterines given in tuberculous cases will, I hope, prove a step further in the therapy of the disease.

144 East Sixty-first Street.

A SMALL QUICKLY MADE STERILIZER.

By DOUGLAS H. STEWART, M.D.

NEW YORK.

Select any rather long, salt-mouth bottle having a good cork, rubber or other. Put into the bottom of this a heaping teaspoonful of borax, cover this with several pieces (2 or 3) of blotting paper of as large a size as will lie flat, pour in a teaspoonful of formalin, push down on this a layer of absorbent cotton to hold all in place, put in the article to be sterilized and shove the cork home.

Details such as wrapping an article in cotton to prevent shaking, or otherwise to protect it, may be left to the judgment of the reader. Broadly speaking, with the most ordinary care the contained should be as safe in this container as any ligature in its sealed tube.

Evidently the above is a description of a formaldehyde sterilizer and a most natural question is, is the amount of gas sufficient? A working formula for formalin states that five ounces (sprayed) will sterilize 1000 cu. ft. in ten hours. This strength would be about ½ per cent. of that in most bottles of the size required or (say) about two minims to a preserve jar—whereas, according to directions, a teaspoonful, spread out in surface exposure by the blotting paper, will stop any culture under its influence in ten minutes. Complete germicidal effects demand a safety margin, therefore I give twenty minutes. Practically the bottle remains shut for long periods and the instrument is exposed to the action of the germicide for the same length of time. The necessity of keeping the cork in place as much as possible need only be mentioned. Articles of a material affected by heat are here easily and safely cared for. An old-fashioned hypodermic syringe, with leather or rubber washers and plunger, is so difficult to sterilize without damage, that it is usually aseptic by accident only. Yet this method will put and mainain any such in a sterile condition. Any one employing vaccines and serums will appreciate the item of "individuality." That is to say, that several syringes and their needles may be placed in individual bottles, any one may be used p. r. n. without delay and then after being used may be carefully wiped, replaced, and resterilized. Whether the syringes are assembled, or their parts separated, or their needles in position, or not is all a matter of choice. Knives, needles, in fact, any instrument, may be submitted to the process; but towels, etc., should not be. It works too well on fabrics. It penetrates every fiber and the formaldehyde, being retained, renders gauze (for instance) an active irritant capable of producing a papular and erythematous dermatitis. Rust is a negligible condition. A new pair of scissors placed in such an apparatus in July, 1908, are still there. Once or twice they were covered with a sort of bloom, which was easily wiped off and the polished instrument remains unspotted and undimmed. The borax does not have to be replaced very often and the necessity for new formalin is shown by the curly and dry appearance of the blotting paper. A test by smell may be readily made. It is sure but harsh. And it is really unnecessary.

Summary.—The method suggested has its own field. It is portable, clean, and independent of temperature. It furnishes a receptacle which produces and maintains sterility. It works well in a room, on a pantry shelf or under a buggy seat. It is inexpensive and it is readily made.

128 West Eighty-sixth Street.

Significance of Typhoid Complications.—F. Klewitz points out that the real significance of the many different complications of typhoid fever was first realized only when this disease was regarded not as a local disease but as a general bacteriemia.—*Medizinische Klinik.*

Some Cases of Lesion of the Cauda Equina.—E. Cedrangolo presents a study of five cases of lesions of the cauda equina, which study has a bearing on the localization of such lesions within the spinal canal. Two tracts may be distinguished in the cauda equina; a medulloradicular, corresponding to the ninth and tenth dorsal and first and second lumbar vertebræ; and a radicular corresponding to the vertebræ from the second lumbar to the second sacral. If the first segment from the lowest be injured, the first radicular segment, there results an anesthesia and paralysis equal to that caused by a lesion of the medullary segment of the same number. For every clinical form of lesion of the cauda equina one must determine whether the lesion is of the root or of the medulloradicular segment. The conus is above the filum terminale and extends upward to the constriction of the lumbar swelling, that is, to the level of the fifth sacral root. In the conus are the centers of the bladder, of the rectal nerves, and of ejaculation and erection, and the center of the Achilles tendon reflex; here also start the motor fibers for the levator ani, the bulbocavernosus and ischiocavernosus, the detrusor and sphincter of the bladder, and the anal sphincter; finally the sensitive fibers for the bladder, rectum, perineum, scrotum, and sacrogluteal folds. Hence a lesion of the conus will cause disturbances of the sphincters: first, retention of urine and later incontinence of the bladder and rectum. In the genital sphere erection is completely abolished, and ejaculation is varied between partial and total absence of the orgasm. The cremaster and Achilles reflexes are abolished or enfeebled. Also there occurs anesthesia of penis, scrotum, perineum, or anus, according to the degree of the lesion. Above this segment is the epiconus, a lesion of which causes disturbances of the sacral plexus, and sensorymotor paralysis of the peronei or sciatic nerves. In every case one may localize the lesion by the presence of some of these characteristic symptoms. The study of the reflexes is important. Every skin zone is innervated by three roots, and anesthesia of any region must be caused by lesions of one root and also of the roots above and below it. The author analyzes his cases and shows how each set of symptoms may be referred to a definitely localized lesion of some part of the conus or epiconus.—*Giornale Internazionale delle Scienze Mediche.*

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THE RATIONALE OF ACQUIRED TOLERANCE TO DRUGS.

THE manner in which the body protects itself from the action of foreign substances, more particularly from the action of virulent poisons, is a subject which has acquired considerable importance within recent years. That the organism possesses many different modes of disposing of its toxic invaders is pointed out in a paper on this subject by W. E. Dixon in the *Proceedings of the Royal Society*, November, 1911. One of these methods, as explained on the basis of Ehrlich's hypothesis, is the attraction of drugs to the protoplasmic molecule to which they are bound by certain atomic groupings. But the body possesses the power, in a simpler manner, of causing the synthesis of poisonous substances into relatively harmless ones. Phenol combines in the body with sulphates, forming phenol-sulphuric acid ($C_6H_5.O.SO_2.OH$); camphor unites with glycuronic acid; and salicylic acid combines with glycocoll, forming salicyluric acid.

The synthesis of the last named substance takes place in the kidney through the agency of a ferment. Carbolic acid and sodium sulphate have no chemical affinity for each other *in vitro*, the synthesis in the body taking place slowly, which would suggest that in this case also the union is the result of ferment action. Similarly chloral combines through the agency of a ferment, and almost entirely in the liver, with glycuronic acid to form urochloralic acid. In the case of the aromatic substances the protective synthetic mechanism has a certain teleological significance, for several of these substances are formed in the gastrointestinal canal and unless neutralized by the body would cause poisonous manifestations. In the case of alcohol the body meets the invasion up to a certain point by means of complete oxidation whose rate appears to vary in different individuals. The symptoms of alcoholic intoxication begin to appear as soon the blood contains from 0.1 to 0.2 per cent. of this substance. The apparent tolerance for alcohol manifested by those addicted to the use of this stimulant indicates that in these individuals the rate of oxidation is accelerated. This, however, is no proof that a true tolerance has been acquired.

The behavior of the body in the presence of alkaloids illustrates how real tolerance may be acquired. Morphine is split up into oxy-di-morphine, which is practically innocuous. It has been shown by Faust that, following repeated hypodermic injections of morphine into the dog, at first 70 per cent. of this alkaloid is excreted in the feces, but later only a trace of the poison is thus eliminated, while chemical examination of the tissues reveals the absence of any trace of the poison. These experiments proved that the tissues of the animal had acquired the power of destroying the poison. Similarly it has been shown by Heger and others that the tissue juices of the frog's liver have the power of completely destroying hyoscyamine. It has been shown by Cloetta that the natural tolerance of the rabbit to atropine is due to the animal's power of destroying this alkaloid, which process takes place in the liver. This normal power of destroying the alkaloid may be considerably increased as the result of daily injections of atropine for a period of several weeks.

In view of the widespread use of tobacco the question of how the body disposes of the nicotine that is absorbed is one of eminent practical importance. Dixon subjected this question to experimental investigation and found that a certain tolerance to nicotine can be acquired by those who use tobacco habitually. This substance is removed from the circulating blood by the liver cells, which through the agency of a ferment destroy the alkaloid, provided that this reaches the tissues slowly and in minute quantities, which is the case in ordinary tobacco smoking.

The manner in which the body acquires tolerance to certain inorganic substances is still veiled in obscurity. Examples of this tolerance are seen in the case of the gastrointestinal irritants, copper sulphate and zinc sulphate, and particularly in the case of arsenic. The arsenic eaters of Styria begin with doses of 0.02 to 0.03 gram of arsenous acid taken two or three times a week and finally attain the maximum dose of 0.452 gram, which they take without injurious effects. It is suggested by Dixon that the immunity to arsenic may be attributed to the combination of this substance with some organic compound, resulting in the formation of an indifferent body free from arsenical action. Of closely related interest is the tolerance to arsenic that may be acquired by the spirochetes of relapsing fever, by the *Treponema pallidum*, and by the trypanosomes. It has been shown that arsenic-fast trypanosomes are uninfluenced by arsenic *in vivo*, but *in vitro* they are even less resistant than ordinary trypanosomes. It would appear as if the trypanosome acquires the power of resisting the attack of arsenic by virtue of the presence of some substance in the body of the host which forms a non-toxic arsenical compound. Ehrlich's chemoreceptor hypothesis, in which he claims that the arsenic combines with the protoplasm of the trypanosome by means of certain atomic groupings, does not explain the experimentally demonstrated fact that these same trypanosomes are more sensitive to arsenic in the test-tube than ordinary trypanosomes. At any rate, the problem of arsenic tolerance, whether studied with reference to the protozoan or to the multicellular organism, is still a long way from solution.

STRIKES FOR GOOD HEALTH.

The enthusiastic work of certain social agencies which has been directed toward broad problems of social hygiene, as for instance in the antituberculosis movement and in the work of reducing infant mortality, has done much to arouse a general interest in the vital questions of sanitation. It may well be that the movements specified are but indications of the general trend of the times, but it is evident that the systematic education of the public by social and sanitary specialists backed up by enthusiastic laymen has made the people think more, not only of abstract sanitary movements, but of the personal problem of keeping well.

The labor unions are beginning to recognize the vital importance of the healthfulness of the conditions under which they work, as of course has been the case in the obviously dangerous trades from the start. They are coming to see the danger of such factors as bad air, overcrowding, poor lighting, etc. It is stated that within the past year the Cloak Makers Union of New York has successfully conducted twenty-eight "sanitary" strikes. These strikes have attracted very little public attention, "and yet," says *The Survey* (January 20, 1912), "they reflect a remarkable and dramatic forward movement in the great garment trades in New York, in which the workers, with the sanction and cooperation of the progressive employers, are attempting to secure through the force of collective action what neither self-interest on the part of some employers, nor the good opinion of the trade, nor State law and enforcement have been able hitherto to effect." Many of the strikes were against the cellar workrooms of the East Side, and the proprietors were forced to secure more healthful quarters. In one instance the proprietor had put up 6-ft. partitions within the shop, shutting off the light from the pressers and forcing them to work by artificial light. A number of these strikes were in protest against dangerous fire conditions. Such evidence of the awakening of a hygienic conscience among these workers of the city suggests to what extent this same influence must be making itself felt in the homes as well.

The tremendous influx of ignorant foreigners into this country makes the problem of maintaining healthful conditions a continued struggle, and the intelligent cooperation of the people among whom these foreigners settle, such as is suggested in these strikes for health among the garment makers of New York, must prove a powerful influence for good.

BALDNESS AND ITS TREATMENT.

The question of baldness and of the chances of its successful treatment is naturally one of absorbing interest. In all parts of the civilized world the tendency of hair to depart in an untimely manner from the heads of members of the rising generation is becoming more and more evident. The sight of a bald young man is so frequent as to give rise to no comment, and when a man reaches middle age he is almost expected to be bald to some extent.

Gottheil, in *Progressive Medicine* for September, 1911, deals with the matter at some length. He deprecates the tendency to treat the subject as a joke and discusses the ordinary forms of premature or senile alopecia, commonly associated with or following prevalent scalp affections known as seborrhea or eczema seborrhoicum. In recent years the custom of discarding head gear in the belief that thereby the growth of the hair will be stimulated or that its loss will be stayed, has been widely adopted. The fact is, however, pointed out that the skin and its appendages are peculiarly susceptible to the action of the sun's rays. Overindulgence in sun baths is prejudicial to the human organism, causing irritability and nervousness, cardiac and circulatory disturbances, and dermal lesions, sometimes of a serious nature. Well-known authorities on skin diseases state their belief, founded on long experience, that extended exposure to the rays of the sun finally causes marked baldness. Indeed, the effect of the *x*-rays is similar to that of the actinic rays of the sun in this respect. Yet the hatless habit must not be wholly condemned offhand. Undoubtedly it has its advantages, and it must be noted that savages in tropical climates, who wear little or no protection for the head, in the great majority of cases possess an abundant crop of hair. Furthermore, it is a moot question as to whether interference with the circulation caused by our modern tight-fitting hat bands is not as harmful to the growth of the hair as prolonged exposure to the actinic rays of the sun. Baldness is without doubt a disease of civilization and is one of the penalties attached to being an inhabitant of a progressive and cultured country. Perhaps the more civilized the country the more prevalent will baldness be, for extreme civilization infers a mode of life furthest removed from that of nature. Indeed, a lack of hair is almost synonymous with the acme of civilization and is one of the most annoying of the white man's burdens.

As for the treatment of baldness, few dermatologists are agreed on a uniform plan. It would seem that the most rational and most common sense remedial and preventive means, that is, when no definite disease is present, are to stimulate the tissues of the scalp and to increase the blood supply of the hair follicles. This may be best done by a second person. Brushing should be proceeded with vigorously and persistently for months, supplemented with the application of a suitable lotion. Even then no certain results can be guaranteed. Some check the loss of hair by these methods, others do not attain this much-desired end, and some apparently thereby hasten the defluvium capillorum.

CULTURE OF LIVING TISSUE CELLS.

That tissue cells might be made to proliferate outside the body in artificial media is, at first sight, a corollary from our knowledge of the survival of grafts under many circumstances. The perfected technique of the cultivation of minute unicellular organisms goes back for so many years that the prolonged failure of pathologists to cultivate body cells occasions wonder. It is more than possible that such attempts may have been made or at least

approximated in connection with the study of grafts and regeneration in man, to say nothing of work of this kind of zoologists and embryologists. That the growth of nerve fibers outside the body in coagulated lymph was the first step taken in this line of research seems only a step in advance of what we have long known of nerve grafts and regeneration. Why integrating phenomena are present in one experiment and absent in another has usually been explained in part by the presence or absence respectively of a suitable nutrient plasma. Hence, while the demonstration of the growth *in vitro* of tissue cells is startling enough, it is much less revolutionary than at first sight appears, save, of course, in its promise for the future.

In the *Berliner klinische Wochenschrift* for January 2 Hadda relates his personal experience with these cultivations. He came to the United States to obtain the technique and witnessed the demonstrations of Carrel, which he repeated on his return to Breslau. He endeavored to satisfy himself beyond all doubt that the proliferation which occurs is actually a growth and not representative of some irresponsible form of reproductive cell activity. There could be no doubt that growth *in vivo* was paralleled to a certain extent, the rate agreeing, for example, with that of cell growth and not with that of arbitrary cell proliferation. Although these tissue cells grow *in vitro*, we cannot as yet say that they become specifically differentiated from the embryonal stage, or that they show any other tendency to organize. The cultures consist of spindle shaped cells arranged in series and felted together about a common center. The next step in order would appear to be a research into the fate of cell cultures when introduced into the tissues of living animals.

Chemotherapy.

As is well known this term has become the familiar designation for that form of therapeutics which seeks to destroy living parasites in the tissues by the selective action of certain diffusible substances which are powerless to injure the tissues of the host. It is essential that the remedy shall act through the medium of the circulation. In all probability the great internal remedies, some of which have been in use for centuries, owe their power over acute diseases largely to the possession of chemotherapeutic properties. We refer here chiefly to quinine, mercury, iodine, salicylic acid, and arsenic, all of which have been used empirically. Atoxyl against a trypanosome disease was presumably the first rational application of this principle, the benefits being ascribed here to the arsenic component of the molecule. Salvarsan marked a great advance in the same direction. At a recent meeting of the Gesellschaft der Charité Aerzte, Berlin (*Berliner klinische Wochenschrift*, January 15), Morgenroth read a paper on the subject which we are considering. The trypanosome furnishes a good test object of a chemotherapeutic research, as various chemical substances are able to attack it in the tissues, and synthetic derivatives of quinine, notably ethylhydrocuprein, have been tested on both trypanosomes and malaria parasites, as well as on various pathogenic bacteria, especially in the pneumococcus infection of mice. More recently attempts have been made to form a synthetic which shall exhibit the power of salicylic acid over rheumatism, and thus far this property appears to be possessed in some degree by para and metaoxybenzoic acids. The latter has all the force of salicylic acid with great reduction of its toxicity.

Chorioepithelioma Malignum.

This neoplasm is not only of constantly increasing interest in its local manifestations, but its sphere of contact with other biological problems seems to be constantly broadening. Indistinguishable from the fetal trophoblast, it has given rise to a belief in some quarters that all cancer is due to the activation of latent trophoblastic cells in the organized tissues. The entrance into the blood of trophoblastic cells appears to give rise to such dissimilar conditions as gestation toxicosis and the visceral metastases of chorioepithelioma, which latter may even occur in the absence of a primary focus. At a meeting of the Medizinischer Verein of Greifswald (*Deutsche medizinische Wochenschrift*, December 7) Cohn called attention to two new features characterizing this neoplasm. He has noted that even in the most severe inoperable cases spontaneous resolution may occur. This he explains by the assumption that the tumor cells have entered the veins and set up thrombosis. In this way not only are metastases prevented but the primary growth suffers necrosis. That metastases occur is not due to the special malignancy of the growth, but rather to a merely accidental entrance of tumor cells into the circulation, doubtless of mechanical causation. Extirpation of the primary focus appears to favor metastasis.

News of the Week.

Feeble-Minded Children in New York.—The New York Society for the Prevention of Cruelty to Children has been investigating the subject of abnormal and feeble-minded children and has made a report which states that there are at the present time in New York approximately 7,000 distinctly feeble-minded children, or about 1 per cent. of the school population. This is in addition to an equal number of idiots and imbeciles, but does not include the borderline or morally defective children. Few of the children brought before the Children's Court are really vicious, about one-half are merely the victims of environment. The remainder are produced from the 10,000 mental or moral defectives who roam at large in the community without proper parental or medical supervision. Recent census statistics show that 30 per cent. of the feeble-minded children in the general population of the United States are the progeny of aliens or naturalized citizens, and from this it may be assumed that at least 3,000 of the 10,000 feeble-minded children in New York were brought here, or are the offspring of the 9,000,000 aliens who have come to this country in the past ten years. In view of these facts the committee making this report urges the enactment of legislation whereby children may be subjected to a preliminary examination as to their mental development, before being admitted to the schools and from time to time thereafter and whereby all children coming before the Children's Court may be subjected to a similar examination in proper cases. They furthermore urge the establishment of an institution for the care and treatment of this class of children and the enforcement of legisla-

tion preventing the future admission of such children with immigrant families.

National Movement for Mental Hygiene.—A meeting of the National Committee for Mental Hygiene was held on February 17 at the Hotel Manhattan in New York, when it was announced that an anonymous donor had given $50,000, which will be immediately available for the work of the committee, and another gift of $50,000 has been promised toward a permanent endowment fund as soon as $200,000 has been raised. The work of this organization will take the form of a systematic effort to improve conditions affecting the condition of the insane as well as the education of the same on the subject of mental disorders, their causes, prevention and cure. Dr. William Russell, superintendent of the Bloomingdale Hospital, is chairman of a committee to make a survey of the national field, and Dr. Thomas W. Salmon of the United States Public Health and Marine-Hospital Service has been granted a leave of absence in order that he may take charge of the active work of the survey. The officers elected at the meeting are: *President*, Dr. Lewellys F. Barker of Johns Hopkins University; *Vice-Presidents*, Dr. William H. Welch of Johns Hopkins University, Dr. Charles P. Bancroft, superintendent of the New Hampshire State Hospital, Concord, N. H.; *Treasurer*, Otto T. Bannard, President of the New York Trust Company.

State Hospitals for the Insane Overcrowded.—The report of the State Lunacy Commission, which was presented to the Legislature on February 14, showed that there were in the various institutions of the State 33,311 committed insane patients. Of this number 31,051 were confined in the State hospitals; of these 14,569 were men and 10,482 women. The total number of patients paroled during the year was 781. There were during the year 5,573 new cases requiring commitment, and 1,383 relapsed cases requiring recommitment. The capacity of the State institutions was exceeded by 3,043. During the year 1,628 patients were discharged as recovered. The deaths numbered 2,885, or 75 per 1,000, of those committed, being slightly in excess of those of 1910. The total disbursements for the year amounted to $7,931,660 and the amount collected from paying patients to $486,040, this being $86,000 in excess of the previous year. The commission again recommended that there be a single-headed commission instead of the present commission, consisting of three members. They also urged the speedy development of the new Mohansic State Hospital, the Creedmore Branch of the Long Island State Hospital, and the extension of the Ward's Island lease to fifty years.

English Birth Rate Lowest on Record.—The quarterly return of births just published in London states that the births registered in England and Wales during the fourth quarter of 1911 numbered 209,269, the lowest number recorded during any fourth quarter since the establishment of civil registration.

Meningitis in Houston and Galveston, Tex.—According to reports given out on February 11 there have been 74 cases of meningitis in Houston since January 1, of which 56 were within the city limits and the remainder in the surrounding country. There have been 24 deaths, only five of which have been white persons. Thus far six complete cures have been reported and as many more are said to be ready to be discharged as cured. Reports from Galveston state that there have been 16 cases of the disease in that city since the first of the year. Occasional new cases continue to be recorded in both cities.

Pneumonia in Chicago.—Pneumonia is unusually prevalent in Chicago. During the week ending February 12 there were 704 deaths in that city from all causes and of this number 178 were from pneumonia. There were 663 deaths for the corresponding week of 1911.

Reports of Typhoid Fever in Milwaukee Said To Be Exaggerated.—Dr. Frederick A. Kraft, Health Commissioner of Milwaukee, has come out with the statement that the accusations alleging that the Health Department has been negligent in protecting the water supply are unfounded as well as the statements creating the impression that there is an epidemic of typhoid fever in the city. According to the statistics of the Health Department there is less typhoid fever than usual in the city, there being but 93 cases at the present time; many of the cases reported as typhoid have been only diarrheal affections cured in from a week to ten days.

Smallpox in St. Johnsbury, Vt.—There is an outbreak of smallpox in St. Johnsbury, on account of which the schools have been closed indefinitely. There are ten cases in four families.

Typhoid Inquiry.—Health Commissioner Lederle has appointed a commission of physicians and sanitary experts to study the methods of the New York Health Department in handling typhoid fever and to suggest, if possible, improved methods. Among those present at the first meeting of this commission were Professors William T. Frederick of the Massachusetts Institute of Technology, George G. Whipple of Harvard, C. E. A. Winslow of the City College, Drs. John Winters Brannan, Alexander Lambert, and Herbert D. Pease, together with a number of representatives of the Health Department.

Proof of Inquiry from Pasteurized Milk Demanded.—A letter has been sent out signed by Nathan Straus which states that in spite of the well-considered policy of the public health service in recommending pasteurized milk it is repeatedly asserted that its use causes rickets, scurvy, and anemia, and thus people are frightened into exposing their children to milk-borne diseases. In order to bring this issue to an end Mr. Straus offers $1,000 for any case of scurvy, rickets, or anemia caused by feeding a baby with properly pasteurized milk. If any such case is alleged the determination of the facts will be left to Dr. Rupert Blue, Surgeon-General of the Public Health and Marine-Hospital Service; Dr. M. J. Rosenau, of the Department of Preventive Medicine, Harvard Medical School, and Dr. John F. Anderson, Director of the Hygienic Laboratory of the Marine-Hospital Service, or to any jury that they may choose.

New York Health Department Prepared to Test for Syphilis and Gonorrhea.—Announcement is made that the Research Laboratory of the Health Department is prepared to make the serodiagnostic test for syphilis and for gonorrhea. Apparatus and directions for drawing the blood may be had on application, and only glassware specially prepared by the Research Laboratory may be used. With the apparatus is sent also an outline for the history of the patient. Data obtained in connection with these cases will be for laboratory use only and not accessible to the public. As a rule these

tests will be made only for those patients who cannot afford to pay for an examination and only at the request of the physician in charge to whom reports will be sent. If so desired blood will be drawn at the Research Laboratory on Monday and Thursday between the hours of 10 and 12. The announcement contains the statement that a positive reaction is not obtained within six weeks to three months from the time of infection in syphilis, or within six weeks in cases of gonorrhea, and a negative reaction does not exclude the possibility of specific infection either before or after treatment. It is also stated that the ingestion of alcohol within twenty-four hours of the collection of the specimen of blood interferes with the accuracy of the test.

Presentation of a Portrait of Dr. Wyeth.—At the meeting of the New York Academy of Medicine on February 14, Dr. Simon Baruch, as chairman of the committee designated to procure a portrait of Dr. Wyeth, presented the portrait, which was painted J. Campbell Phillips. In making the presentation Dr. Baruch read letters from several contributors to the fund expressive of the high esteem in which Dr. Wyeth is held. The picture is to be placed in the gallery devoted to portraits of presidents of the New York Academy of Medicine.

Indiana State Board of Examiners Sues Healers.—Recently the Indiana State Board of Examiners filed suits against a number of "chiropractors," a sect of "healers" who practise after a course of study of only a few months, on the ground that they are practising the healing art without complying with the law. On the other hand, the chiropractors claim that they should be exempt from the provision of the law because their name is not contained in the statute.

Is Advertising a Bar to Medical License?—The question whether the fact that a physician advertises is a valid reason for the rejection of his application for a license to practise medicine in Minnesota has been submitted to the Attorney General. It is the basis of a complaint filed by Dr. Boyd Williams in an appeal from a recent action of the State Board in which he was denied a certificate to practise medicine because he had advertised for patients.

Owner of Medical College Sues State Board.—Dr. Waldo Briggs, owner of the College of Physicians and Surgeons of St. Louis, Mo., has filed a suit for $200,000 damages against the State Board of Health because the board ordered his college stricken from the accredited list of medical colleges.

State Medical Examiners Appointed.—Dr. Thomas McDavitt of St. Paul, Dr. John E. Campbell of South St. Paul, and Dr. A. G. Moffatt of Howard Lake have been appointed to the State Board of Medical Examiners of Minnesota.

Medical Reciprocity in Quebec.—A bill has been presented to the Legislature in session in Quebec the intention of which is to authorize the Roderick Act to become operative in Quebec. According to this law medical certificates will be recognized all over the Dominion, with the previous individual consent of each province.

Dinner for Dr. Finney.—A dinner was given Dr. John M. Finney by his associates in Baltimore as an expression of their pleasure over his decision to remain in Baltimore instead of accepting the presidency of Princeton University. About 300 physicians and surgeons attended and among the speakers were Drs. Patton, Hibben, Remsen, Torney, Robert Abbe, and Surgeon-General Stokes. It was announced that a fund of $10,000 had been raised to bring foreign lecturers to Johns Hopkins and to increase the knowledge of surgery, to be known as the Finney Fund.

New Appointments at University of Pennsylvania.—The following appointments have been announced for the medical department of the university: Dr. Edward Lodholz is to be assistant professor of physiology; Dr. W. N. F. Addison, assistant professor of normal histology; Dr. George H. Fetterolf, assistant professor of anatomy; Dr. L. A. Ryan, assistant professor of chemistry and toxicology.

Honor Pioneer Doctors.—The Boone County Medical Society give a banquet at Boone, Ia., on February 9 in honor of Dr. G. D. Rowe, who came to Boone in 1868, and Dr. J. H. Noyes, who came to Ogden in 1867, both of whom have been in continuous practice ever since.

Dr. Carl Von Noorden of Vienna has accepted the invitation of the New York Post-Graduate Medical School and Hospital to deliver a series of lectures on Metabolism in October, 1912.

Dr. Frederick G. Hallett, secretary of the examining board of the Royal Colleges of Physicians and Surgeons, has arrived in this country in response to the invitation of the Council on Medical Education of the American Medical Association to take part in the conference on medical education to be held in Chicago on February 26.

Dr. William M. Conant is to be the new head of the surgical department of Tufts Medical School, Boston, and Dr. William A. Brooks is to be his assistant.

Dr. Simon Flexner has sailed for Europe to be gone two months. He will lecture in London on a public health topic and in Edinburgh on the serum treatment of meningitis.

Dr. Simon Baruch of New York addressed the New Rochelle Medical Society by invitation on February 12 on the "General Aspects of Hydrotherapy."

Dr. C. S. Huffman of Columbia, Kas., has been nominated for Governor of Kansas.

Charitable Gifts.—The Tuberculosis Preventorium for Children at Farmingdale, N. J., has received $5,000 from Jacob H. Schiff, $1,000 from Mrs. Schiff, $1,000 from Eugene Meyer, Jr., and $500 from other contributors. There remains to be collected but $2,500 in order to complete the fund of $150,000 needed for the new buildings which have been planned.—The will of the late H. Edward Wendell of Philadelphia bequeaths the sum of $1,000 to the German Hospital of Philadelphia.—Under the will of Miss Margaret E. Mitchell of New York, Roosevelt Hospital is a beneficiary for the amount of $15,000 and the Presbyterian Hospital for $1,000.

Tuberculosis Hospital Completed.—The new building for tuberculosis patients at the City Hospital of Providence, R. I., is about completed and will be ready for occupancy on April 1. There will be accommodations for 57 patients.

Maternity Hospital Needed in Washington.—At the hearing on February 7, before the committee on public health of the Chamber of Commerce, opposition was expressed to the recommendations of the Board of Charities that appropriations be discontinued and Columbia Hospital abandoned. A governmental appropriation that would enable Columbia Hospital to continue its work was favored as there is no other free maternity hospital, sepa-

rate from a general hospital, in the city of Washington.

Tuberculosis Home for New York.—The tuberculosis infirmary of the Metropolitan Hospital on Blackwell's Island will increase its accommodations for tuberculosis patients by the erection of a new building adjoining the present structure on the north end of the island. The new building will be constructed of local stone and blue stone and will cost $180,000. The main features of the new structure will be four roof gardens and a solarium.

Addition to Tacoma Hospital.—A building which will provide handsome quarters for physicians is to be built in connection with the Northern Pacific Hospital at Tacoma, Wash. The estimated expense of construction is $8,000.

A Unique Historical Exhibition.—It is announced that an historical exhibition of rare and curious objects relating to medicine, chemistry, pharmacy, and the allied sciences will be held in London during the International Medical Congress in 1913. This exhibit is being organized under the direction of Henry S. Wellcome, the aim being to bring together a collection of historical objects illustrating the development of the art and science of healing from the most primitive times to the present day. It is anticipated that the exhibition will reveal many facts and will elucidate many obscure points in connection with the origins of various medicines, and in respect of the history of disease. It is also believed that it will bring to light many objects of historical interest hitherto known only to the possessors and their professional friends. The exhibition will bé strictly professional and scientific in character and will not be open to the general public. Mr. Wellcome asks for the cooperation of all those interested in such an exhibit and especially appeals to all those who possess objects of historical medical interest to render their assistance in making the project a success by loaning such objects to him.

The Medical School of Yale University will celebrate the centennial of its founding in 1913. The present class will be the largest to graduate from this school, there being 31 members.

The Macon County Medical Society, which met in Tuskegee, Ala., on February 2, elected the following officers: *President,* Dr. C. E. Williams of Notasulga; *Vice-President,* Dr. B. W. Boothe of Shorter; *Secretary-Treasurer,* Dr. C. Thompson of Tuskegee.

The Fox River Valley Medical Society, which met at Neenah, Wis., on February 4, elected the following officers: *President,* Dr. D. T. Phillips of Menominee, Mich.; *Vice-Presidents,* Dr. F. G. Connell of Oshkosh, and Dr. S. G. Todd of Neenah; *Secretary-Treasurer,* Dr. Webber Kelly of Green Bay.

The New York State Homeopathic Medical Society, which met in Albany, elected the following officers on February 14: *President,* Dr. Willis C. Clifford of Attica; *Vice-Presidents,* Drs. R. W. Sherwood of Syracuse, Walter C. Crump of New York, and W. H. Pierson of Brooklyn; *Secretary,* Dr. Bert B. Clark of New York; *Treasurer,* Dr. R. D. Howland of Elmira; *Censors,* Drs. Harry E. Keith of Yonkers, Louis Faust of Schenectady, H. W. Basoner of Ithaca, and Glen L. Bidwell of Rochester.

The Ramsey County Medical Association, which met in St. Paul on February 5, elected the following officers: *President,* Dr. T. W. Stumm; *Vice-President,* Dr. C. J. Meade; *Secretary and Treasurer,* Dr. C. E. Smith.

The Forrest County Medical Society, which met in Hattiesburg, Miss., on February 9, elected the following officers: *President,* Dr. L. B. Hudson; *Vice-President,* Dr. Fern Champenois; *Secretary and Treasurer,* Dr. J. J. Stevens; *Censor,* Dr. C. W. Bufkin.

The Twin City Medical Association, which met in Centralia, Wash., on February 5, elected the following officers: *President,* Dr. W. B. Hotchkiss of Chehalis; *Vice-President,* Dr. J. M. Sleicher of Chehalis; *Secretary and Treasurer,* Dr. Rush Banks of Centralia.

A New Quarantine Head.—The appointment of Dr. J. J. O'Connell of Brooklyn as Health Officer of the Port of New York was confirmed by the Senate on Monday of this week, the vote being 21 to 15.

Obituary Notes.—Dr. JOHN P. HECHT of Somerville, N. J., a graduate of the Jefferson Medical College, Philadelphia, in 1880, died suddenly of angina pectoris February 12, at the age of 54. He died at the Somerset Hospital after exposure in attending to an accident case. He was surgeon to the Somerset Hospital, local surgeon for the Central Railroad of New Jersey, member of the American Medical Association, Somerset County Medical Society, Academy of Medicine of Northern New Jersey, and permanent delegate to the Medical Society of New Jersey. He was always greatly interested in matters of hygiene, for a long time member of the Raritan Board of Health, the Somerset Antituberculosis Association, and President of the Physicians Association of Somerville.

Dr. CARSON HENRY BRITTON, a graduate of Toronto University Medical Faculty in 1885, died at his home in East Toronto after a long illness, on January 31.

Dr. HERMAN L. WICHMAN of St. Louis, Mo., died at his home January 23, at the age of sixty-nine.

Dr. WALDEMAR KOCH of Chicago, Ill., assistant professor of pharmacology at the University of Chicago, a nephew of Robert Koch, died at his home February 2, at the age of thirty-six years.

Dr. PHILIP FRANK of North Yakima, Wash., a graduate of the Kentucky School of Medicine, Louisville, in 1889, died on January 22, at the age of sixty-one years. He was formerly president of the State Board of Health.

Dr. J. D. SCANLON of Vancouver, a graduate of the medical department of the University of Oregon in 1901, died on January 23 of an overdose of chloroform.

Dr. C. A. STILES of Seville, Fla., died at his home January 23, at the age of seventy-eight. For many years he had practised in Atlanta, Ga.

Dr. EUGENE D. CHELLIS of Portland, Me., died at his home February 1 after a long illness.

Dr. CHARLES W. RENNICK of Gas City, Kan., a graduate of the University Medical College of Kansas City in 1895, died at his home January 27. He was 41 years of age.

Dr. J. MILLER MOORE, formerly of Rock Hill, N. C., was found dead in bed in New York on January 28. He was 40 years of age.

Dr. WILLIAM HENRY TALLMADGE, Jr., of New York, a graduate of Jefferson Medical College, Philadelphia, in 1905, died at his father's home in Stamford, Conn., on February 7, at the age of 34.

Dr. JOHN BACON COOLIDGE, formerly a prominent

dentist of Boston, died at the home of his daughter in Natick, Mass., on February 3, at the age of 91. He was instrumental in starting the Boston Dental College in 1867, which afterwards merged with Tuft's Dental College in 1807, and held a chair in the college for twenty-seven years. He was the first dentist to use nitrous oxide gas, having given a demonstration of the use of this anesthetic in 1864, and was a prolific inventor of dental instruments. For his work in this field he received a certificate of honor from the Belgium Anniversary Celebration in 1840.

Dr. Hampton Stokes of Carmi, Ill., died on February 1 at the age of 70 years.

Dr. William A. Cross died at Jenkintown, Pa., on January 28 at the age of 68 years. He was graduated from Miami Medical College in the class of 1872.

Dr. Arthur M. Walker of Gala, Va., died of apoplexy on January 31. He was graduated from the College of Physicians and Surgeons, Baltimore, in 1880.

Dr. Frederick Strong Tabor of Spring Valley, Ill., a graduate of Rush Medical College, Chicago, in 1881, died of valvular heart disease on January 29, at the age of 62 years.

Dr. Warren E. Anderson died at his home in Pensacola, Fla., after a long illness, on February 1, at the age of 57. He was graduated from the Mobile Medical College in the class of 1882. He was formerly secretary of the Florida State Medical Society and a member of the State Board of Health.

Dr. Evans Gulla of Hamburg, Ala., a graduate of the Medical Department of the Tulane University of Louisiana in 1901, died at a sanatorium in Ohio, January 28.

Dr. Sidney S. Graber of New York City, a graduate of New York University Medical College in 1888, died at his home February 8. He was 51 years of age.

Dr. George W. Fitzpatrick of Kansas City, Mo., a graduate of Ohio Medical College, Columbus, in 1863, died at his home, February 1, at the age of 70 years.

Dr. E. G. Wilson of Athens, Ga., died in New Decatur of pneumonia. He was 74 years of age.

Dr. Thomas P. Coan, resident physician of the New York Foundling Hospital, died of pneumonia on February 3 at the Presbyterian Hospital. He was graduated from the Johns Hopkins Medical School in 1910.

Dr. Lewis Slocomb Horton of Brooklyn lost his life in a fire in the basement of his home on February 5. He was graduated from the College of Physicians and Surgeons, New York, in 1862, and retired a few years ago. He was 70 years of age.

Dr. Elmer E. Fuller of Plymouth, Mass., died on February 6 after a brief illness at the age of 40 years. He was graduated from the Hahnemann Medical College and Hospital in the class of 1893.

Dr. Eno Sander died at St. Luke's Hospital, St. Louis, Mo., on February 11, at the age of 90 years.

Dr. George Denison Wheedon, a graduate of the Albany Medical College in 1853, died at his home in Syracuse, N. Y., on February 14, aged 79. During the Civil War he was surgeon to the Tenth New York Cavalry.

Dr. James W. Moriarty of East Boston, Mass., a graduate of the Harvard Dental College, died on February 11 at the age of 45 years.

Dr. Ralph M. Mead of Brooklyn, N. Y., a graduate of the Long Island College Hospital in 1882, attending physician to the Seney Hospital and visiting physician at St. Joseph's Institute for Deaf Mutes, died of apoplexy February 16, at the age of 55.

Dr. Henry K. Whitford of Elgin, Ill., a graduate of Eclectic Medical Institute, Cincinnati, in 1861, one of the founders of the National Eclectic Society, died at his home February 17 at the age of 85.

Dr. Peter Wendt Brakeley of Dunellen, N. J., a graduate of the University of Pennsylvania in 1869, died at his home February 12.

Correspondence.

THE LATE PROFESSOR ALBARRAN

To the Editor of the Medical Record:

Sir:—Prof. Joachim Albarran, who died in France, January 18, after a lingering illness of three years, was one of the most conspicuous figures among the professors of the Paris School of Medicine, though one of the youngest. He was born in Sagua la Grande (Cuba) in May, 1869. He first studied medicine in Madrid, then went to Paris. In 1884 he headed a promotion of internes, a number of whom are now professors or chief physicians or surgeons in the Paris hospitals. In 1888 he entered the service of Professor Guyon in Necker Hospital and remained there for fourteen years as interne, chief of clinic and "agrégé" professor. From 1901 to 1906, he was chief of service in another hospital; in 1900 he was called to succeed Professor Guyon himself, but soon the strain of overwork began to tell on him. In 1908 the suspicion of tuberculosis became confirmed and later diabetes aggravated the condition.

Albarran's field of research covered everything in genitourinary diseases. A skilled surgeon, he was also a trained bacteriologist and a master in anatomopathology. His contributions to medical science are well known and too numerous to quote at length. Though his professorship was prematurely cut short, he leaves enough behind justly to rank near his old beloved teacher, Professor Guyon, who now survives him.

Paxton E. Gardner, M.D.

New York.

OUR LONDON LETTER.

(From Our Special Correspondent.)

INSURANCE ACT—RENEWED FIGHTING, COLLEGES, ETC., INTERVENE—FURTHER REFERENDUM BY PRACTITIONER—MEDICAL ASSOCIATION OF LONDON, CLINICAL MEETING—OESOPHAGEAL STRICTURE AND OTHER CASES—PROHIBITED MOVEMENTS OF DIAPHRAGM IN CONSUMPTION—OBITUARY.

London, February 2, 1912.

Suddenly after a lull the fight about the Insurance Act has become more earnest. Opposition on the part of the Oddfellows and others outside is added to that inside the profession, but to the latter only can I refer. On Wednesday the Council of the British Medical Association met to settle a report to present to the representative meeting on February 20, also to consider an invitation to attend a conference with the Insurance Commissioners relating chiefly to the selection of medical members of the advisory committee. The Council declined

to attend such a conference until after the representative meeting.

Yesterday the Royal College of Surgeons had a council meeting at which a similar invitation to attend the conference was discussed and declined. The Royal College of Physicians and the Society of Apothecaries take the same course and the proposed conference is now postponed. A report of the committee appointed by the College of Surgeons to consider the position of fellows and members under the Act was received and considered. Council concluded that the administration of the medical benefits proposed by the act cannot be carried out with due regard to the welfare of the public and the profession and that no satisfactory arrangement can be reached without an amending act. They would be prepared to render assistance in the drafting of such act for the provision of amendments which are necessary to secure the cooperation of the profession. The standing committee of the college was instructed to communicate with other corporations with a view to united action. If the act has alarmed the profession into genuine union it has done it one good turn, and the fact that it has awakened the omniscient corporations to a sense of their duties might cover many blunders when they are corrected, as all are determined they shall be. It is hoped by many that a central council may be formed by the corporations to support the profession in the crisis, but others ask what is the general medical council but such a body, permanently organized, but which so far has accomplished nothing. If the B. M. A. rises to the occasion it may establish itself in a position analogous to the trades unions. It now wields a good deal of the powers of such unions, but it must certainly not shirk responsibility and its council must understand that the inner clique will no longer be tolerated. It seems a monstrous abuse of association that an elected committee should decline to submit itself to the request of its electors or to resign office.

The B. M. A. Reform Committee, as it still calls itself, is rapidly pushing its organization, has taken offices, appointed an executive or secretary, and a business manager. This week it has re-issued the manifesto published on January 11 and a letter asking members of the B. M. A. to support a resolution at the representative meeting to call on all to refuse to form panels or undertake any medical duties under the act until the six points are embodied in our amending act. Such an act they are preparing; eight clauses are decided on and very important is one substituting the General Medical Council for the insurance commissioners as the body to have power to remove a name from the panel—thus liberating the medical men from the control of lay persons, which has always been hated in the club system.

The six points insisted on are also the object of the pledge proposed by the *Practitioner*, which has secured 21,000 votes. The conductors of that journal have now taken a further step, proving that it is wrong for the council of the B. M. A. to pretend they can secure their points through the regulations. The *Practitioner* said no, and as the fact was questioned from a legal view, has obtained the opinion of three eminent counsel (Sir E. Clarke, K.C.; Mr. Danckwerts, K.C., and Mr. Stuart Bevan) on each of the six points. Copies of these opinions they are now sending to every member of the profession; I received one this morning. It is obvious that the six points are not guaranteed in the act, and consequently the profession is left entirely in the hands of the approved societies. The policy of the *Practitioner* is "No-service-whatsoever." If the B. M. A. at the representative meeting will adopt this policy, the *Practitioner* will intervene no further than to assist in any manner desired. If not "steps must be taken to secure the ultimate triumph of the no-service-whatsoever policy." As to remuneration it is clear from the counsels' opinions that the profession in each district is left to haggle with insurance committees, three-fifths of their members being appointed by approved societies. That is the old contract system by the old clubs in a new dress.

You will observe that the outside, or partly outside, movements—and the same is the case with others not mentioned—propose to work through the British Medical Association, which has an organization ready to hand. If its council will only get rid of the dominating influence which has brought it to this pass or, if unable to do so, will submit itself for re-election and let the members eliminate the offenders, the other organizations will leave it in possession of the field in the belief that the fight must end in victory.

The Medical Society of London had a clinical evening on the 22d ult. and some interesting cases were shown, among them a boy who, after a fright, began to have spasmodic movements of muscles which Dr. Frith called paramyoclonus multiplex. Contractions of the orbicularis palpebrarum were synchronous and very uncertain as to frequency, sometimes a number quickly following, at others rest for several minutes. These were just what one has been accustomed to call spasmodic tic. But other muscles had become affected in a similar way. In the triceps and supinator longus the movements were most constant. There was no spasticity of the limbs, no clonus, and the electric reaction of the muscles was normal. No change was noticed while the lad had been under observation (about 9 months).

Dr. Parkes Weber showed a case of edema of the right leg in a woman of 29 with no other abnormality. It began about two years ago at the foot and has gradually involved the whole limb. It disappears gradually if the patient keeps her bed but returns when she gets up again. Thyroid treatment had proved negative.

Dr. Weber also joined Mr. E. Michels in a case of mutiple polyps of the large intestine with toxemia symptoms in a girl of 17, who four or five years ago began to have attacks of diarrhea with occasional protrusion of a lump from the anus. On April 24, at the hospital, it was found that the mucous membrane of the rectum and sigmoid flexure was studded with soft, sessile, or pedunculated tumors. The diarrhea was continual and the urine had excess of indican. In May some of these seemed to have become gangrenous and a small one, which came away, consisted of glandular tubules, lined with columnar epithelium with interstitial fibrocellular connective tissue. On June 1 Mr. Michels did appendicostomy and the intestine was then regularly washed out through the opening. The toxemia and diarrhea seemed relieved, but so far the polyposis persists, though the patient feels better and has gained in weight. The opening is being kept patent. At one time a weak solution of protargol was used for the irrigation.

A case which you might be excused for calling

an accidental cure of esophageal stricture was shown by Mr. Howarth and Mr. Corner. It was a little girl who in June, 1908, being then 4 years old, was playing in the street and seen to be trying to vomit, was taken to Guy's hospital and a week later was admitted for stomatitis with ulceration, it being supposed that she had swallowed some corrosive. In August of the same year she was taken into St. Thomas' hospital for dysphagia of two months' duration. Under full anesthesia and with an esophagoscope bougies could only pass 8 in. from the teeth. Gastrostomy was done by Mr. Corner and in November the child went to an infirmary. After a time the stricture relaxed and a bougie could be passed; it was dilated and the operation wound allowed to close. She can now eat ordinary food. Just below the cricoid several white patches are seen in the esophageal wall, not projecting into the lumen which is not narrowed. Did the stricture split in dilating and the rapidly growing epithelium form grafts over the splits which show as discontinuous white patches?

At the previous meeting of this society Dr. Harrison Orton, who has paid much attention to *x*-rays in a paper on the diagnosis of phthisis by their help, said restricted movements of the diaphragm, first pointed out by Dr. Francis Williams, are now generally admitted to be a valuable indication especially if present in the early stage. Careful measurements were sometimes required to fix it and it was sometimes impossible to detect it. Possibly it was present in all cases at some period but might have passed by before the inspection. It was suggested that discrepancies of opinion were probably due to the fact that variations took place. These had been noticed to correspond with periods of activity of the disease and perhaps might illustrate nature's means of giving rest to an inflamed lung, for during activity the movements were restricted, generally in the lower part of the excursion. When the activity abated the diaphragm again took on its usual work and might actually do more, as if to compensate for the limitation. In some cases adhesions might account for limited movements but they could not explain all.

Mr. Hallett, secretary of our conjoint examining board, is on his way to Chicago, having been invited by the council of the American Medical Association on Medical Education to address the meeting on the methods adopted by our board of conducting examinations for licenses to practice. He will also collect information as to the standards of education and the range of curriculum required by universities on your side for medical degrees.

Dr. Abraham Colles, visitor of lunatics in the metropolitan district for the London Chancellor of Ireland, died suddenly on Monday at the age of 63. He was a Dublin student and took his M.D. in 1878. He practised here for several years but retired some time ago in consequence of cardiac disease.

At the service held in memory of Sir Henry Butlin in St. Andrew's Church, Wells street, the congregation looked like an assembly of medical men, so numerous were the many leaders of the profession who managed to be present. At the same hour another memorial service was held at the Church of St. Bartholomew's-the-Less for the convenience of the staff of his hospital and others who were unable to be present at St. Andrew's.

Lt.-Col. R. A. King Holmes, M.D., late of the Indian Medical Service, died on Tuesday in London. He studied in Dublin, Galway, and Belfast, graduated at the R. U. I. in 1866, M.D. 1870, took M.R.C.S. Eng., 1871, and joined the Indian Medical Service the next year. In 1875 we find him jail superintendent at Meerut. He was transferred to Lucknow in 1885 and was acting as inspector of prisons in 1892 with the rank of lieutenant-colonel. He retired in 1899.

Manchester has lost a zealous laryngologist by the death of Dr. E. S. Yonge, physician to the Throat hospital in that city and to the Crossley sanatorium. He was the author of the plan of treating hayfever by resection of the nasal nerve. He lately published a book on "Diseases of the Nose and Throat."

OUR LETTER FROM PARIS.

(From Our Special Correspondent)

GENERAL EFFECTS OF GREAT HEAT ON THE ORGANISM—DIABETIC COMA—HEMOLYSINS IN PATHOLOGY—DIURETICS—EPIDEMIOLOGY AND PROPHYLAXIS IN CEREBROSPINAL MENINGITIS IN THE ARMY—PATHOGENY AND TREATMENT OF PUERPERAL ECLAMPSIA—THE FUTURE OF PREMATURE INFANTS—TREATMENT OF GENITAL DEVIATIONS AND PROLAPSUS—DEATH OF DR. AUFRET.

PARIS, January 15, 1912.

MAURICE DE FLEURY, at the Academy of Medicine, presented a study of the effects of great heat on the general organism. Gastrointestinal troubles in adults have assumed especial importance by reason of the abnormally high temperature of August and September last. There were numerous cases of cholerine, dysenteric enteritis, appendicitis, and paratyphoid fever, and many of the patients attacked still suffer from the effects of these diseases. The principal mechanism in the production of these diseases is the increased virulence of the pathogenic bacteria contained in the organism under the influence of a hyperthermal atmosphere. Great heat also acts on foodstuffs of animal origin, the toxicity of which is increased. Lastly, great heat produces an almost entire substitution of perspiration for the urinary function. Under the influence of external heat perspiration increases greatly in amount and the urine becomes less. Now the sweat eliminates much less toxins than the urine. The result of these factors combined is a continued hepatic congestion. It is only by a careful hygienic and therapeutic course that we can avoid serious accidents. Meat, milk, and eggs should be taken only in small quantities; drinking at mealtime should be stopped, and much water should be drunk in the intervals of digestion.

The twelfth French Congress of Medicine was held at Lyons, October 22-25, 1911. The first question of interest was diabetic coma. Lépine gave a detailed history of the different phases passed in reaching diabetic coma. The author believes that we are still far from knowing all the elements which unite to cause acetonemia and diabetic coma. The treatment of diabetic coma by bicarbonate of soda appears to be useful only as a preventive.

The second question discussed was the rôle of the hemolysins in pathology. Georges Guillain, Troisier, and Nole presented papers.

The third subject was diuretics, on which Mayor of Geneva read a paper on the mechanism of urinary secretion. It is not the increase of blood pressure, but the acceleration of the blood current which increases diuresis. Ligature of the renal

vein stops all diuresis, although it increases pressure. Diuresis is caused by certain selective medicines: digitalis, which acts by raising the general arterial tension with temporary persistence of the permeability of the renal arteries; caffeine has an action on the heart and vessels analogous to that of digitalis: theobromine causes a diuresis tardily established and slowly passing away.

Pic of Lyons thinks that among these medicaments we should place borage, juniper, dandelion, wild cherry (?), couchgrass, maize, and uva ursi. In all these plants there are diuretic principles which often have an irritant action on the kidney, but are so diluted that their action is slight. Among salines are chloride of calcium, in doses of 0.70 centigrams to 2 grams, which appear to have a marked diuretic action.

Arnozan criticises the phrase often repeated that "water is the best diuretic." In reality in persons who have edema, water can only cause oliguria. In certain patients rest in bed has no favorable action on diuresis. The dechlorated régime is the weapon of choice against renal dropsies.

The fourth question under discussion was the epidemiology and prophylaxis of cerebrospinal meningitis in the army. Rouget thinks that cerebrospinal meningitis is a disease of all the year except the summer. We note the disappearance of the disease in the spring. Dampness and cold have a predisposing effect. Dissemination of the disease takes place almost entirely by germ carriers, who easily transmit this terrible affection to their surroundings. All those who can be proved to be contaminated should each day have the nose, mouth, and pharynx disinfected. The diagnosis of cerebrospinal meningitis should be made from the finding of a cerebrospinal fluid that is turbid or purulent on puncture, and on the presence in the fluid of the pathogenic agent, the meningococcus.

The Obstetrical Society of Paris held its fourteenth annual session in October, 1911. The first question considered was the pathogeny and treatment of puerperal eclampsia. The pathogenesis of eclampsia was treated by Bar. Lesions of the liver and kidney play an important rôle as causes of eclampsia. Arterial hypertension should be considered a symptom of great importance in the pathogeny of puerperal eclampsia, capable of determining grave symptoms and lesions. The treatment of puerperal eclampsia was considered by Commandeur of Lyon. This treatment should be above all prophylactic. The treatment of the convulsions should be a large venesection of 1,000 to 1,500 grams. This will remove a great part of the poisons. The obstetrical treatment is rapid delivery.

The second question was the future of premature infants. Wallich and Fruhinsholz read papers. There is no doubt that many premature infants who have grown to adult life give every satisfaction with reference to their physical development and intellectual caliber; on the other hand, there are others who show various degenerations, and these degenerations appear especially in relation to the degree of prematurity and the violence of the traumatism at birth.

The third question was the treatment of genital deviations and prolapse. Doleris and Potocki presented papers. The surgical treatment of genital displacements should consist in reducing the uterus to its normal position and maintaining it there without lessening its mobility or changing its relations and anatomical position. The treatment of genital prolapse should be surgical. Abdominal hysteropexy with shortening of the round ligaments will assist when there are no perineal tears. When there is vaginal prolapse and cystocele we should have recourse to colpoperineorrhaphy and suture of the elevators, completed by anterior colporrhaphy, and if need be by amputation of the cervix.

Dr. Aufret, a member of the Academy of Medicine, is dead. He entered the service of the navy as surgeon, and was soon called to the school at Brest, where he taught successively anatomy, operative and clinical surgery. He was made director of the Sanitary Service, then inspector-general, and was called later to be president of the Council of Sanitation at Paris. He made important studies of diverticula of the intestine, prolapse of the intestines, and traumatic lesions of the ureters. These works amply justify the place which he occupied in the Academy of Medicine.

Progress of Medical Science.

Boston Medical and Surgical Journal.

February 8, 1912.

The Responsibility of the Medical Profession for the Early Diagnosis and Prompt Treatment of Pulmonary Tuberculosis. J. B. Hawes, 2d.

The Influence of Race on the Prevalence of Tuberculosis. F. P. McCarthy.

Further Observations on the Fly Problem at the Worcester State Hospital, Massachusetts, 1911. S. T. Orton.

The Inefficiency of the Ordinary Bed Rest. Its Correction with a Thigh Support. L. T. Brown.

Early Diagnosis and Treatment of Pulmonary Tuberculosis.—J. B. Hawes, 2d, states that every patient in whom there is the slightest suspicion of pulmonary trouble should receive a routine physical examination, during which he should be stripped to the waist. Examination of the sputum should be a part of this routine. A "hemorrhage" should be considered as definitely indicating consumption unless there is clear evidence to the contrary, which there practically never is. The early diagnosis should be made long before bacilli appear in the sputum. One should place more stress upon the patient himself and his history and less upon his lungs. In every doubtful case the patient should keep a record of his temperature and pulse, taken at the hours of 8, 12, 4 and 8, and should report in a week.

Race and Tuberculosis.—F. P. McCarthy notes that a definite resistance has been acquired by certain races as a result of contact with tuberculosis over a long period of time, brought about by urbanization. The Indian and negro races have acquired as yet very slight resistance against the disease and preventive measures are practically the only means of stemming the mortality. The present high mortality rate among the Irish can be brought to a considerably lower level by the educational and preventive measures now in vogue. In the fight against the disease it may be possible to raise the resisting power of a race against tuberculosis. The relative low mortality among the Jewish people contrasts with the high rate among the aboriginal races.

The Fly Problem.—S. T. Orton describes the measures that have been taken at the Worcester State Hospital to abate the fly nuisance.

Bed Rest and Thigh Support.—L. T. Brown has devised a thigh support by means of which, no matter at what angle a bed rest or pillows may be put, there will be something under the thighs and below the buttocks to prevent any sliding downward and at the same time to give a comfortable rest for the knees and legs.

New York Medical Journal.

February 10, 1912.

Alcohol a Menace to the Soldier; and the Privileges of the Post Exchange. L. L. Seaman.

Cancer of the Rectum and Lower Sigmoid. With Five Reports of a Unique Case. M. F. Porter.
An Atypical Case of Hyperthyroidism. J. S. Horsley and B. M. Roseboro.
A Case of Purpura Hemorrhagica. J. M. Wallheld.
The Salvation of the Consumptive. C. P. Wertenbaker.
Vaccine Therapy in Diseases of the Ear, Nose, and Throat. V. Dabney.
Perforation of the Gravid Uterus, Its Prevention by Proper Technique with Case Reports. S. Wiener.
A Study of Two Hundred Cases of Pyosalpinx. H. A. Duncan.
Tumor of the Brain. H. Climenko.
Insanity in Children. C. Holmes.

Alcohol and the Soldier.—L. L. Seaman makes a plea for the restoration of the canteen.

Cancer of Rectum and Lower Sigmoid.—By M. F. Porter. (See MEDICAL RECORD, January 13, 1912, page 87.)

An Atypical Case of Hyperthyroidism.—J. S. Horsley and B. M. Roseboro report a case of hyperthyroidism complicated by chronic appendicitis, retroversion of the uterus and a bilateral cervical tear.

Purpura Hæmorrhagica.—J. M. Wallheld reports a case of this condition.

The Salvation of the Consumptive.—C. P. Wertenbaker advocates the establishment of farm sanatoria, where tuberculous patients can receive care and treatment.

Vaccine Therapy in Diseases of the Ear, Nose and Throat.—V. Dabney states that in acute and subacute otitis media, stubborn, slowly healing sinuses following the mastoid operations, all forms of tonsillar infection and furunculosis of the auditory canal vaccines will surely abbreviate convalescence. Aside from preventing unnecessarily prolonged suffering, no mean consideration, this shortening of the duration of disease tends to prevent the familiar consequences of prolonged suppuration in the ear, such as deafness, great inconvenience, loss of time at work, expense, and even death.

Perforation of Gravid Uterus.—S. Wiener reports a case of this condition and discusses its diagnosis and treatment. The course that should be pursued as soon as perforation of the uterus is recognized is as follows: All further manipulation should cease, intrauterine irrigation should be dispensed with; the uterus and vagina should be packed; the patient placed in the Fowler position, and further developments awaited. Barring peritoneal infection, the majority of cases will show no further ill effects. If the uterus has not yet been completely emptied, this may be undertaken at a future time. However, if the accident has not been at once recognized, if there has been intraperitoneal manipulation with the curette or placental forceps, or if omentum or intestine has actually been drawn down into the vagina an exploratory laparotomy is urgently indicated. This should be performed just as soon as proper preparations can be made. A few hours may decide the question of the life or death of the patient. To await the development of active symptoms of peritonitis or the collapse supervening upon intraabdominal hemorrhage may turn the scale in favor of a fatal issue. The exact method of procedure after opening the abdomen must be determined by the conditions met with.

Pyosalpinx.—H. A. Duncan reports a series of 200 cases of this condition and notes that 0.45 per cent. of the patients were unsexed just before or at the beginning of their reproductive period of life. The direct cause of the pus tube is one of the most interesting of the phases in this series of cases. Of the 200 cases, fifty-six were due to infection by the gonococcus, fifty-six were due to infection following abortion; twenty-eight were due to infection following childbirth; fifteen were due to infection traveling from a purulent appendix; six were due to the tubercle bacillus; six were due to infection following dilatation and curettement done outside the hospital, and in thirty-three the direct cause could not be obtained.

Tumor of the Brain.—H. Climenko reports the case of a laborer 43 years old in whom a glioma existed for a considerable time in a functionally important area of the brain without giving any discomfort to the patient. When the symptoms made themselves apparent, they were of such rapid onset as to simulate an acute disease. The tumor was successfully removed.

Insanity in Children.—C. Holmes states that the anatomically unstable nerve centers of the vigorous, growing child offer a vulnerable field on which the maladjustments and abuses of a crowded, hustling city life may do irreparable damage. The ability to recognize the abnormal from the normal mental excitement, to appreciate that a certain form of unrest is developing as a direct result of distressing bodily or home conditions, to decide whether or not the child's conduct is due to his being fundamentally defective, to recognize the excitement of fatigue from overstudy—these are some of the things which should constitute the equipment of prophylactic workers in the homes and in the schools. Exceptional opportunities for the observation of incipient mental diseases, especially among children, are furnished by every large general hospital, but unless the hospital is equipped with special wards, specially trained nurses, and medical men for the care of such patients, these cases commonly pass through unnoticed.

Journal of the American Medical Association.

February 10, 1912.

A Study of Chlorosis with Reference to Enteroptosis. R. R. Smith.
Legal Powers of Health Departments. W. A. Evans.
Nitrous Oxide and Oxygen Anesthesia in Major Surgery. F. Allen.
Clinical Observations from 203 Patients Operated on for Renal Tuberculosis. W. F. Braasch.
Some Bacterial and Non-Bacterial Diseases. E. S. Talbot.
The Prophylaxis of Cerebrospinal Meningitis, With Some Observations as to Carriers. H. D. King.
Contusion of the Chest Followed by Persistent Hemoptysis and Presystolic Murmur and Thrill. J. C. Wilson.
Salvarsan in Pernicious Anemia. A. Friedlander.
The Hormones, with Special Reference to Peristaltic Hormone. C. D. Aaron.
Local Fatty Degeneration of the Myocardium Associated with Localized Colonies of *Spirochæta pallida*. A. S. Warthin.
An Improved Noise-Producer for Determining Unilateral Deafness. E. P. Fowler.

Enteroptosis in Children.—By R. R. Smith. (See MEDICAL RECORD, Vol. 80, page 48.)

Legal Powers of Health Departments.—W. A. Evans states that all health work is based on police power; to meet the unusual conditions the police-power laws must conform to certain legal standards. First, the condition which is sought to be met must be important. Second, the remedy proposed must be reasonably adequate to meet the demands and provision must be made for advancing standards in health legislation. Health laws and ordinances must be reasonable, taking into account the individual rights, which must be necessarily overswept at times, and must be guarded by giving due notice of what is necessary to be done. The wishes of the general public must rule and the mass must be protected regardless of the ordinary machinery devised to fit the usual conditions.

Nitrous Oxide and Oxygen Anesthesia.—F. Allen notes that writers quoting statistics designed to show the safety of gas and oxygen anesthesia should carefully separate the brief administrations of dentistry and minor surgery from the prolonged administrations of major surgery. Anesthetic deaths occurring during the use of nitrous oxide and oxygen in major surgery are not uncommon. There are at the present time not enough statistics as to the safety of nitrous oxide and oxygen in major surgery to show that it is as safe as ether or chloroform. In order to insure a maximum of safety, gas and oxygen should not be administered except by a skilled anesthetist equipped with the best available apparatus, and patients should receive preliminary hypodermic medication. In estimating the freedom from after-effects of gas and oxygen anesthesia in major surgery, careful distinction must be made between patients receiving gas and oxygen

only and those receiving gas and oxygen and "just a little ether." When given with large amounts of ether, gas and oxygen has only a slight advantage over the nitrous oxide ether sequence properly administered by the closed method.

Renal Tuberculosis.—W. F. Braasch, from an analysis of 283 cases of renal tuberculosis finds that there is a noticeable preponderance of males, in that they constituted 61 per cent., or almost two-thirds of the total number of cases. Although renal tuberculosis is generally considered as being confined largely to the young adult, 20 per cent. of the patients in the series were above 40 years of age. Hematuria was found to be present in 60 per cent. of the cases. Hematuria occurred about twice as often in the male as in the female. Bladder irritability in 80 per cent., renal pain either alone or coincidental with bladder irritability in 25 per cent., and hematuria in 6 per cent. of the cases are primary symptoms. Renal tumor was palpable in but 20 per cent. of the cases. Operative mortality is a negligible factor in nephrectomy for renal tuberculosis. One can expect a permanent cure in fully 75 per cent. of patients operated on. On the other hand, if otherwise treated, fully 90 per cent. must eventually succumb to the infection and in taking the small chance for such a cure the risk of infecting the bladder or infection of other foci is greatly increased.

Mouth Diseases.—E. S. Talbot reports cases of gonorrheal stomatitis and spirilla infection of the mouth.

Prophylaxis of Meningitis.—H. D. King states that nearly one-fourth of all individuals of the infected locality may be carriers of the disease without apparently showing any serious symptoms. Only occasionally do they present signs of a nasopharyngitis or slight meningococcal infection. There are some persons who probably carry the germs permanently and perpetuate the disease. Up to the present there has been no absolutely efficacious means of causing the disappearance of the germs in the carriers, but the rigid observance of certain precautions would limit the extent and severity of epidemics. The first essentials for this are: (1) The earnest cooperation between the people and the health authorities in enforcement of all necessary health regulations. (2) The detection and isolation of healthy germ carriers. (3) Efforts toward rendering them harmless.

Traumatism and Heart Disease.—By J. C. Wilson.

(See page 385.)

Salvarsan in Pernicious Anemia.—V. Friedlander reports a typical case of pernicious anemia in which, following an injection of 0.3 gram of salvarsan and then the injection of one grain of cacodylate of iron on alternate days until twenty-seven doses had been given, the condition rapidly improved.

Hormones.—C. D. Aaron concludes from his observations that the peristaltic hormone treatment of constipation provides a new and very promising method.

Cardiac Syphilis.—A. S. Warthin concludes that focal or diffuse fatty degeneration of the myocardium may be associated with the presence of numerous spirochetes of syphilis without reaction on the part of the interstitial tissues. Such changes probably represent a very acute or mild (latent) infection. It occurs very frequently in congenital syphilis. Calcification or fibroid change may follow the parenchymatous change without a definite interstitial inflammatory reaction. In such areas the spirochetes are few in number or have entirely disappeared, according to the stage of the secondary process.

The Lancet.

February 3, 1912

Medicolegal Aspects of Paresis.—Sir George H. Savage states that brutal assaults are frequently made by individuals who are in the early stages of general paralysis. Another early symptom is sexual excess. Adultery is common among these patients, as are likewise assaults on children and indecent exposure. Petty thefts are also common. Acts of violence may be a sequence of hallucinations and ideas of persecution. As regards the testamentary capacity of a paretic, the ordinary qualifications for capacity must be established, but it must be admitted that there may be periods of complete lucidity during which a proper will may be made. In criminal cases it may be set up by the prosecution that the crime, though perpetrated by a general paralytic, was still done during a period of sanity.

Heart-Block and Nodal Rhythm in the Acute Infections.—J. Cowan, G. B. Fleming, and A. M. Kennedy report a case of diphtheria, with full heart block, in which the auriculo-ventricular bundle and node were found to be involved in an acute inflammatory process, and similar lesions were present in the auriculo-ventricular bundle in a case of malignant endocarditis in which conductivity was defective. In three cases of acute endocarditis, with nodal rhythm, the auriculo-ventricular node was acutely inflamed, the bundle being only and but slightly affected in one instance.

Salvarsan in Syphilis.—A. Foerster states that salvarsan is of special value where rapidity of action or concentration of treatment is desirable—*e.g.*, for the removal of certain infective lesions, for patients whose conditions of life render a regular treatment impossible. It is widely applicable, as its toxicity is small. Cardiac disease, syphilis of the nervous system, and concomitant grave maladies are its chief contraindications. The intravenous method is the only recommendable one. Repeated medium doses are preferable to a few large ones. Its use is indicated where mercury has failed. In very early cases an attempt at aborting the disease by excising the chancre and administering salvarsan is advisable. In florid secondary syphilis combined salvarsan and mercury treatment should be instituted and persevered with. The severe tertiary cases should also be submitted to this combined treatment. In mild tertiary cases salvarsan recommends itself by the rapidity of the removal of the lesions and by the long duration of the subsequent latency. Truly malignant cases are as hopeless under salvarsan treatment as otherwise. In late latent cases and in parasyphilis the administration of salvarsan presents no utility.

Syphilitic Aortitis with Valvular Incompetency.—A. Morison notes that syphilitic aortitis with valvular incompetency, though a distinct clinical entity, is a type of valvular disease which is not always recognized as such, although, with reasonably careful investigation and reflection, it should not fail to be detected. The patient affected with specific aortic valvular disease is usually a man and generally comparatively young, but not a youth. His age varies from 30 or 35 to about 50. Even on careful investigation, and, as a rule, no history of rheumatic or scarlet fever is to be elicited. Nor is there a history of physical disability in earlier life. The patient has usually followed some active calling, and often that of a soldier or sailor. Ultimately he becomes dyspneic on exertion, frequently complains of attacks of pain in his chest or epigastrium, and on examination reveals aortic valvular disease with consecutive enlargement of

the organ. If he fails to respond to treatment (as he frequently does at the stage at which he presents himself) and dies, the necropsy reveals an atheromatous aorta and puckering of the valves, which, considering the comparative youth of the patient in most cases and an absence of the history of the usual acute infections which induce heart disease, leads, even when syphilitic infection is denied, to a diagnosis of the consequences of that condition.

X-Ray and Radium Measurements.—S. Russ performed a series of experiments with the view of determining the intensity of penetration of the *x*-rays and the gamma rays of radium. He found that, starting with equivalent intensities at the surface, there would, under the experimental conditions, be a more marked diminution in the intensity of the gamma rays than of the *x*-rays, despite the fact that the absorption of the rays by the tissues was nearly thirty times greater in the latter than in the former case.

Membranous Rhinitis.—D. Forbes and H. P. Newsholme conclude that membranous rhinitis can readily produce similar disease in others. The connection between membranous rhinitis and diphtheria in a school outbreak, which the authors report was so intimate as to make it almost certain that there was a causal relation between them. It is a point of practical importance that the comparatively frequent occurrence and great infectivity of membranous rhinitis should be recognized widely. Missed cases of the disease would readily account for a not inconsiderable proportion of school diphtheria. An autogenous vaccine seems to be of definite value in removing membrane, getting rid of nasal discharge, and hence greatly reducing the infectivity of membranous rhinitis. But the vaccine does not appear to be capable of completing the work of elimination after the membrane has gone, *i. e.* after the vascular and lymphatic channels by which antibodies can reach the bacilli have been removed.

School Closure in Measles.—A. B. Raffle emphasizes the value of school closure as a means of preventing the spread of measles.

Operation for Hemorrhoids.—C. A. Bucklin describes his method of operating on hemorrhoids as follows: The patient having been prepared for this operation by taking upon retiring on the previous night the necessary cathartic is anesthetized to the state of muscular relaxation. The greased blades of a bivalve vaginal speculum that can be forcibly distended with a screw mechanism are instantly introduced just through both sphincters sufficiently to insure that they are stretched when the blades are expanded. Five minutes are taken distending the blades to the proper size. The screw is now reversed one turn which causes the blades to relax from their strong contact with the mucous membrane of the anus sufficiently to allow the speculum to be slowly rotated and manipulated for the purpose of exposing the lining of this opening for inspection. Hard stumps resulting from previous hemorrhoids are removed with the forceps and a knife. Other forms of this disease are treated with the forceps and a No. 1 catgut ligature, after which the hemorrhoids are cut off outside of the ligatures; or when the swellings are too numerous they may be treated with hypodermic injections of 30 per cent. carbolic acid in alcohol. The slits made in the mucous membrane by operating are better closed by stitches of No. 1 catgut for the purpose of avoiding complications.

British Medical Journal.

February 3, 1912.

Investigations of the Motor Functions of the Alimentary Canal by Means of the *X*-Rays. A. F. Hertz.
The Importance of Pelvic Deposits in the Diagnosis of Abdominal Cancer. G. G. Turner.
Further Examples Illustrating Cases of Chronic Toxemias at Vittel. H. J. Johnston-Lavis.
An Address on Iodine as the Sole Dressing for Operation Wounds. R. Alcock.
A Lecture on a New Material (Duralumin) for Surgical Appliances. E. M. Little.
A Note on the Value of Anchored Dressings in Surgery. J. Lynn Thomas.
Erythema and Death Following Intestinal Catarrh. P. B. Unwin, and A. Eddowes.
A Preliminary Note on the Penetrating Power of Some Ointment Excipients. F. Gardiner.
Hydrocephalus as a Sequel to Shock. A. K. Armstrong.

Motor Functions of Alimentary Canal.—A. F. Hertz describes the advances made through the agency of the *x*-rays in the study of the motor functions of the alimentary canal in health and disease.

Pelvic Deposits in Diagnosis of Abdominal Cancer.—G. G. Turner emphasizes the fact that in cases of malignant disease in the upper abdomen, and especially of stomach cancer, while there may be no signs of dissemination to be made out on ordinary abdominal examination and no ascites, there may be quite a considerable deposit in the pelvis, easily recognizable on rectal examination and without any symptoms to point to its presence.

Chronic Toxemias.—H. J. Johnston-Lavis reports a series of six cases to show the good effects of the spa treatment at Vittel, France, for the various chronic toxemias.

Iodine as the Sole Dressing for Operation Wounds.—R. Alcock reports the successful results that he has obtained in thirty-one cases in which, following a surgical operation, the operation area was treated by means of the application of tincture of iodine at intervals for the first few days, the incision being left exposed to the air and covered only by the patient's night clothes.

Duralumin for Surgical Appliances.—E. M. Little states that this metal is an alloy of aluminum slightly heavier than that element. Its strength, however, is about the same as that of mild steel of the same bulk. Like brass, it can be made stiffer by hammering, and it is supplied in varying degrees of hardness, according to the purpose for which it is required. It is practically noncorrodible, being scarcely affected by prolonged exposure to a concentrated solution of sodium chloride, ammonium sulphate in 10 per cent. solution, ammonia, sulphuric or nitric acids, sulphuretted hydrogen solution, or sea water. Caustic alkalies, however, attack it quickly. Duralumin takes a high polish, which is scarcely dulled by prolonged exposure to the air, even to the air of London. It cannot be brazed, but it can be soldered; as soldering has an annealing effect on it, it is not often advisable to use solder. Nor can it be tempered like steel, but the hardening effect of hammering or rolling takes the place of tempering to some extent. The author has found duralumin well adapted for orthopedic appliances, because of its strength, lightness, and freedom from corrosion.

Anchored Dressings in Surgery.—J. L. Thomas, in operations on regions difficult to bandage, confines the wound with a simple anchored dressing, that is, some of the sutures of the wound are tied around the dressing to keep it in place.

Erythema and Death Following Intestinal Catarrh.—P. Brooke Unwin and A. Eddowes report the case of a child under two years of age in whom death followed an erythematous eruption secondary to intestinal catarrh.

Penetrating Power of Ointment Excipients.—F. Gardiner, as the result of his experiments, points out the superiority of olive oil and cedar oil among liquid excipients, the former being the better; goose grease is first among the more solid fats, and benzoinated lard comes next. Glycerite of starch with cold cream, glycerite of starch with lanolin, "ungt. ophthalmicum basicum" and cold cream are the best of the combinations, and are placed in order of merit.

Hydrocephalus Following Shock.—A. K. Armstrong

reports the case of a man, aged fifty-four years, who succumbed to hydrocephalus, apparently resulting from mental shock.

Münchener medizinische Wochenschrift.

January 23, 1912.

Treatment of Acidosis with Alkalies.—Marchand shows that although infusion of a patient having diabetic acidosis with solution of an alkali can at most prolong life for a brief interval and hardly marks an advance in therapeutics, there may be conditions of acidosis of nondiabetic nature in which such intervention not only saves life for the occasion but may also lead to permanent recovery. The type of such an acidosis would naturally be that which results from acute poisoning so-called with strong acids, and this is most often to be looked for in suicidal attempts where a large volume of acid is swallowed deliberately. In a case of sulphuric acid poisoning of this character, in addition to the local effects of the acid, there was a well marked syndrome of acidosis, consisting of coma following an initial motor restlessness and cyanosis (the latter aggravated by edema of the glottis). A solution of magnesia was first introduced into the stomach and trachetomy was performed. Then 300 c. cm. of 5 per cent. sodium carbonate solution was infused into the veins. The patient immediately came out of his coma, and later voided an alkaline urine and passed freely alkaline fluid feces. The complete recovery of the patient showed that the injury to the nerve centers was not permanent but due only to the deprivation of alkali as a result of absorbing the free acid. In such cases the passage of such strong alkali through the tissues would itself be injurious so that the intravenous is the proper method of exhibition from every viewpoint. A thrombus may form *in situ*, so that some danger exists of its extension toward the heart. For this reason the vena basilica should be chosen for infusion, and generally speaking, the greater the distance from the heart the less the likelihood of fatal thrombosis.

Treatment of Cutaneous Scars.—Thilo appears to have been at work for the past 25 years in developing a technique for offsetting all the disadvantages of cicatrices following injuries. These are many, comprising vulnerability, unpleasant sensations, deformity, interference with function, unsightliness, etc. There is nothing new or startling about the technique which consists in a thorough persistent application of all useful measures, such as massage, hydrotherapy, mechanical devices, etc. The cosmetic and functional results attained are sometimes surprising. In a very extensive scar of the lower extremity resulting from a burn, the scar area was covered with adhesive plaster strips as a protective, and through the latter, massage and passive motion were carried out, beginning about two months after the injury. The leg was further kept under a weight extension for part of the time. After the leg had been gradually straightened by thus antagonizing the scar contraction it was placed in a splint. After this start, the natural efforts of the patient seemed sufficient to correct further deformity and 20 years later the scar is seen to be perfectly smooth and supple. The early massage has to be done under the plaster, but at a later period the author applies frictions with sand and oil or water. The subsidence of itching and tension shows the therapeutic efficacy of this procedure. The influence of this massage on the circulation has also been utilized by the author in such opposite conditions as erysipelas of the leg and cold feet. In the former, which was treated on the same principle as an extensive recent scar, the pain and swelling were almost gone within four days.

Serum Death and Anaphylaxis.—Dreyfuss reports a case which shows the danger of giving second injections of the same curative serum within a two years' interval. Following an injection of diphtheria antitoxin, a boy who had already been recipient of a prophylactic injection at that period died within half an hour. Investigation showed that it was the only accident traceable to a series of 3,000 vials of one of the leading manufacturers. The symptoms, —itching, convulsions and vomiting—represented a toxic syndrome, due evidently to supersensitiveness following the original injection. The lesson is clear that if first injections are made with horse serum specimens, second injections should be practiced with a special serum obtained from some animal other than the horse.

Deutsche medizinische Wochenschrift.

February 1, 1912.

Bloodless Dilatation of the Nasal Fossæ.—Killian states that in 1910 he recommended, for the first time, that the inferior turbinal be fractured in connection with mucosa resection. He has since come to the conclusion that fracture alone has a distinct field of usefulness, not that it gives better results, but that more people would submit to the bloodless method, both on general principles and because it greatly abridges the period of treatment. Naturally, only the lesser degrees of deformity are suited to this conservative plan. After the application of adrenalin-cocaine the turbinal is forced outward with the Luc-Brüning forceps until it is heard to crack. The author has also devised a special instrument for the purpose. A deviated septum may sometimes be fractured at the same sitting.

Ischemic Paralysis of a Limb from Arterial Occlusion.—Aoyagi of Tokio gives a monographic account of this condition, which is of very rare incidence when compared with the form caused by construction. He reports a personal case in much detail and cites similar cases from literature. In 1899 Lapinsky reported a series of six cases. In the prevailing type the plugging of the arteries appears to occur as part of a general infection—pneumonia, typhoid fever—or as the result of an endocardial lesion. A histological study shows that the terminal filaments of the sensory and motor nerves suffer more than any other structures from the ischemia, the muscles participating in a much lower degree. The converse is true in ischemic paralysis from constriction.

A New Protozoan Disease.—Under the name granuloma telangiectodes europeum Schridde describes an affection which he believes to be by no means a rarity in Germany. It is manifested chiefly by ulcers upon the fingers and hands, but lesions may occur elsewhere on the limbs or in fact almost anywhere on the surface. The most striking feature is the mushroom-like proliferation, which at once suggests verruga peruana or granuloma telangiectodes tropicum. It may be the botryomycosis described by French authors. While it does not attack the bones of the fingers primarily, it may do this by direct extension, and this destructiveness, with the fungating appearance, would cause the lesions to be reckoned clinically as sarcomata. The present study is almost wholly histological, and the demonstration of a protozoan cause is not yet complete.

Progress in Preventing and Treating Seasickness.—According to Peters, physician on the Hamburg-American line, the hygienic exhibitions in Germany will contain many new devices of a physical and mechanical nature for preventing and offsetting the effects of wave motion on the passengers of steamships. Something in this direction was introduced in 1905 by the author—a vibrating chair, designed to affect favorably the circulation, which was supposedly interfered with by the ship's motion. The effects could be studied through changes in the circulation of the external ear. Under the influence of the seasickness the latter became pale, but vibration restored the vasomotor equilibrium. The apparatus was a failure, however, in practice; and active locomotion gives better results.

Insurance Medicine.

BLOOD-PRESSURE ESTIMATION IN INSURANCE WORK.

For some years now it has become a recognized thing that the blood-pressure is a useful and important guide to the state of health, and in some cases where a man may look healthy the blood-pressure may give valuable information, as by it we find that the arteries are not what they appear to be and that cerebral hemorrhage may occur in spite of the outside appearance of perfect health.

Various instruments exist for the measurement of the blood-pressure—in fact we may say that there are at least fifty different models of blood-pressure instruments—sphygmomanometers. Most of these are graduated to indicate a normal blood-pressure equal to from 120 to 140 millimeters of mercury and so comparisons of the readings of the different instruments are readily made. Readers of foreign literature, however, should remember that in some countries in Europe, but especially in France, the instrument most commonly in use is the instrument of Potain, and this is not graduated as the others. Potain, in his work on blood-pressure, gauged the normal as 150 to 100 for man and 140 to 180 for woman. (Potain: "La pression artérielle de l'homme à l'état normal et pathologique," 1912.) Now here we have an instrument consisting of a small rubber bulb attached to the ordinary registering apparatus by a rubber tube and this Potain instrument gives the normal as 150 to 100. The 150, of course, corresponds to normal blood-pressure, but it does not correspond to 150 mm. of mercury, and this is the point against which we must be on our guard. If thus an examiner states that with Potain's instrument the blood-pressure is 100 mm., we are still within limits, whereas with the Riva-Rocci instrument the registering of 100 mm. would be high.

This information may be of use to the medical officers of companies with European business, as a misunderstanding may easily occur in consequence of the considerable difference which exists between the reading of Potain's instrument and the reading of other instruments.

Injuries of the Liver.—Knepper says that the most difficult of medical problems in accident insurance consists in determining the part played by accidental injury in the causation of disease of internal organs. He has had the good fortune to observe many cases of accidental injury of the liver and spleen and to follow them to the development of internal disease, and has gathered the material in a systematic fashion.

The liver is of extreme importance in questions of accidental internal injury. Its surface is very large, some portions of it are very insufficiently protected, and it is, therefore, easily injured. Moreover, dislocation of the organ, inflammation, or abscess formation frequently follow. Injuries of the liver may be open; that is, accompanied by a wound of the abdominal walls, or closed. Open wounds are easily diagnosed if the direction of the injuring force is recognized, the wound being probed if necessary. It must be remembered that a penetrating injury, if deep enough, must strike the liver because this organ has no such faculty of slipping out of the way as some other intraabdominal organs. Penetrating wounds are always accompanied by injuries of the peritoneum, and are, therefore, always very serious. Such injuries frequently occur in working with agricultural instruments, machinery, etc., and infection is, therefore, almost always a consequence. Death in such cases must, of course, be referred to the accident; if recovery follows and, later, symptoms of pain, tenderness, inability to do hard work, gastrointestinal disorders, etc., are complained of, they may well be due to the adhesions and scars following the injury, and must be so interpreted by the insurance physician.

Subcutaneous injuries of the liver are usually due to directly acting violence of blunt character, such as kicks, blows, etc. External evidences of the injury may be absent or much less severe than the internal injury, and the degree of violence necessary to produce injuries of the liver may be surprisingly slight. Especially fragile is the liver substance in consequence of infectious disease, various degenerative changes, syphilis, tuberculosis, neoplasm, etc. The degree of injury varies a great deal from slight lacerations accompanied by hemorrhage and ending in scar formation and recovery to extensive trauma involving a great deal of the liver substance and ending in death. Knepper details three cases of death after such injuries, with autopsy findings. One other patient, who sustained a fatal tear of the liver, together with other injuries, was able to mount a wagon right after the accident and hold a conversation with the bystanders!

The following symptoms should be looked for in the diagnosis of liver injuries: (1) Pain in liver region, with tenderness upon pressure. This is seldom absent, except in cases of "euphoria" of shock, but may be marked in simple hyperemia with capillary hemorrhages. (2) The so-called "consensual" pain in the right shoulder, which is sometimes so marked as to limit the use of the right arm, the muscles of which may show atrophy. (3) Signs of internal hemorrhage combined with those of shock; that is, a small, hardly perceptible pulse, paleness of the face and of the mucous membranes, frequent yawning, nausea and vomiting, and a rigid abdomen, with dullness below or in the flanks. (4) Frequently there are marked anxiety and fear of death, which are very characteristic for severe injury of the abdominal organs, and especially of the liver. (5) Icterus is present in about 20 per cent. of the cases and may appear early, in the course of the first two weeks, because of resorption of escaped bile, or late because of mechanical obstruction of the bile passages. If present, jaundice is of much diagnostic importance; its absence does not exclude injury of the liver. (6) Increase of liver dullness, which may be very little marked in plain hyperemia of the organ or very extensive in subcapsular hemorrhage. (7) Hardening of the liver, which is usually a late consequence of chronic inflammation engendered by the injury.—*Zeitschrift für Versicherungsmedizin*, November, 1911.

The Consequences of Liver Injuries.—Knepper continues his exhaustive study of liver injuries. He says that microorganisms easily gain access to an injured organ and cause inflammatory reaction. The inflammation may subside or it may result in a circumscribed abscess, which may be latent for months or even years, and finally give characteristic evidence of its presence. On the other hand, it may perforate into the neighboring organs, the pleural cavities or the stomach, for instance, or cause a general infection of the peritoneal cavity. Rarely it may adhere to the external abdominal wall and perforate externally.

Occasionally a local or even a general peritonitis arises after an injury of the liver, without a preliminary abscess formation. Such peritonitis may be recovered from and result in adhesions, or may end fatally. Perihepatitis may first give rise to symptoms when the patient tries to take up his work after recovering from an injury of the liver. Frequently an examining physician may be unable to convince himself of the actuality of the patient's complaint, and thus may cause much injustice to him in case of a claim for indemnity. Knepper details three examples

of liver injuries, one followed by the formation of an abscess, another by perforation into the stomach, and the third resulting in a troublesome perihepatitis.

Knepper then considers injuries of the gall-bladder and bile passages. The gall-bladder may be torn at the time of liver injury and free bile in the peritoneal cavity may necessitate an operation. Normal bile, however, may cause no irritation of the peritoneum and no infection. On the other hand, rupture of a gall-bladder containing stones or the seat of an ulcer usually results in infection of the peritoneum. Trauma is supposed to have some etiological relation to the appearance of gallstones, but it is more probable that it simply makes latent gallstones manifest. Occasionally trauma may result in a cholecystitis in a gall-bladder containing stones.

The following more remote consequences of liver injuries must be likewise considered: wandering liver, hepatic cirrhosis, diabetes mellitus, and carcinoma of the liver. Opinions are divided in reference to the rôle played by trauma in the etiology of wandering or floating liver. Such a consequence is certainly very rare. Occasionally an acutely inflamed and enlarged liver may be mistaken for a wandering liver, but the condition is transient and later examinations usually show the actual state of affairs. Knepper says that Szaweljew has gathered 117 cases of wandering liver, in sixteen of which trauma seems to have been the etiological factor.

Occasionally trauma is held to be of etiological importance in liver cirrhosis. Senator has admitted this possibility in giving an expert opinion in a suit for damages. He says that only rarely a cirrhosis may have arisen from damage of liver tissue and consequent overgrowth of connective tissue: it is more reasonable to suppose that a perihepatitis takes place and the inflammatory condition slowly overtakes the liver itself. However, it is much more probable that an already existing cirrhosis is made evident by the injury than that the injury causes a cirrhosis. That trauma may increase the symptoms of cirrhosis must be granted.

The question whether diabetes mellitus may or may not develop after a liver injury is a different one, and the opinions of authorities are divided. Ebstein thinks diabetes may follow any general injury of the organism, such as may occur with concussion. Claude Bernard, Zimmer, and others claim to have seen such cases of hepatic diabetes. Kausch, in a study of the etiology of diabetes, tells of 150 consecutive cases of diabetes, in none of which was trauma mentioned as a possible factor. Senator names 1 per cent. of this etiology among his 800 cases. On the other hand, diabetes may have existed before the injury without having been recognized. A transient glycosuria, too, occurring after injury may at first be mistaken for diabetes. Of course, an injury of the pancreas may occur at the same time as the liver is injured, and this may be responsible for the development of diabetes after such an injury. An existing diabetes is frequently made worse by any trauma.

The rôle of trauma in the etiology of liver carcinoma is also very doubtful. We know so little of the etiology of cancer in general that caution is necessary in judging malignant disease in any aspect. Frequently, too, an apparently primary cancer of the liver, symptoms of which may be complained of by the patient, is proved to be secondary to a neoplasm elsewhere in the stomach, or breast, for instance. The primary cancer may be very small, while the secondary growth in the liver is of enormous size. On the other hand, cancer of the gall-bladder seems to have something to do with the chronic injury produced by gallstones, and in such cases a single intense trauma may also have some etiological bearing upon the disease. A preexisting cancer can, of course, be made much worse by trauma: it may either be made to grow and form metastases quickly by such an occurrence, or may break down rapidly and give rise to very acute symptoms. Cancer anywhere, however, is subject to such variations in its program that the rôle of trauma must be very carefuly weighed in each case; frequently the change in the disease may be shown to have preceded the injury.—*Zeitschrift für Versicherungsmedizin*, November and December, 1911.

Traumatism and Heart Disease.—J. C. Wilson reports the case of a man who received a severe contusion on the chest followed by hemoptysis in recurring attacks. The patient's general health had been good and there was no evidence of rib fracture. The immediate effects of the accident were quickly recovered from and there were no very marked symptoms of pulmonary disease. The patient had never had rheumatism, but developed the signs and symptoms of a well-developed mitral stenosis with good compensation, but with a marked tendency to bronchopulmonary hemorrhage. The author remarks that this symptom in mitral stenosis is much more frequent than the descriptions in the literature of that disease would indicate. He quotes some authors who have noticed cases of heart disease following traumatism, and he thinks that the leucocytosis of 16,600 at the late period after the accident and some evidence of a persistent, though gradual, subsiding congestion of the lower lobe of the left lung, probably associated with a low-grade chronic bronchopneumonia, may be invoked to account for the continuing blood loss in connection with an advancing mitral stenosis. The hemorrhagic cases of this disease are often incorrectly regarded as obscure cases of pulmonary tuberculosis. Allbutt's "System of Medicine" is quoted as follows: "Traumatic influences occasionally give rise to the lesions of mitral obstruction. Indirect injury very rarely produces any changes in the mechanism of the mitral valve unless there has been previous disease, but direct violence, such as a blow on the anterior chest wall, is not a very rare cause of the affection." Bernstein, in 1896, collected the reports of cases of heart disease directly following traumatism, 124 in number, but a careful examination of this list shows a very limited number in which the valves were implicated and not one which presents the characters of the author's case. Stern's monograph, "Die traumatische Entstehung innerer Krankheiten," contains a limited number of further cases of valvular disease. Riesman reported a case of mitral stenosis of traumatic origin in which the injury was indirect, being the result of violent exertion on the part of the patient in fleeing from footpads. In most of the cases reported the signs of valvular lesions have been attended by indications of acute endocarditis and in a large proportion of these cases the diagnosis has been either established or confirmed by necropsy.—*Journal of the American Medical Association*, February 10, 1912.

Arteriosclerosis in Relation to an Accident.—Pickenbach tells of a riding master, 64 years old, who was found in collapse and unconscious in the riding school. He recovered consciousness after stimulating medication, and it was then discovered that he was suffering in addition from a large hematoma and contusion of the right hip and right side of the abdomen. The patient insisted that he was kicked by a horse while alone in the riding school, and sustained the injuries because of the kick and the fall to the ground. However, he showed advanced arteriosclerosis and gave the history of attacks of dizziness. Pickenbach considers that in all probability the man fell off a horse while in such an attack and consequently was not entitled, according to the conditions of insurance, to accident indemnity. Because of the impossibility, however, of proving either explanation of the injuries, a compromise was effected.—*Aerztliche Sachverständigen-Zeitung*.

Book Reviews.

CLINICAL DIAGNOSIS. A Text-Book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By CHARLES PHILLIPS EMERSON, A.B., M.D., late Resident Physician, the Johns Hopkins Hospital, and Associate in Medicine, the Johns Hopkins University; Professor of Medicine, Indiana University School of Medicine. Third Edition. Price $5.00. Philadelphia and London: J. B. Lippincott Company.

EVEN in the comparatively short time of the five years that have elapsed since the book first appeared the development of the subject with which it deals may well be termed tremendous. The laboratory aspects of diagnosis are increasing in significance to such an extent and are enlisting the efforts of so many workers that new methods are being suggested with almost bewildering rapidity. Many of these are of little value, some have only temporary interest, and a few will no doubt be found permanently useful. Properly to sift this enormous amount of material is a task whose magnitude can be fully appreciated only by those who are themselves engaged in it, and a careful survey of this new edition of Dr. Emerson's book reveals most admirable discrimination in the selection of the additions. It goes without saying that the volume has been greatly enlarged and it is a pleasure to find with what thoroughness the literature has been reviewed. Omissions of any moment seem to be few and subjects of recent interest such as the Wassermann reaction and the use of the viscosimeter are fully discussed. Benedict's very easy and reliable method for determining the total sulphur in the urine is not mentioned, however, nor is the meiostagmin reaction, while the large amount of recent work that has been done on the glycyltryptophan test might also be thought to deserve discussion. A feature that makes the book of especial value is the prominence that is given to the interpretation of the results of the various diagnostic procedures and the introduction of much matter which is the result of the author's own observation. The chapter on the sputum is a good example of this and forms by far the best presentation of the subject with which the reviewer is acquainted. The new edition has been so thoroughly revised and so extensively enlarged as to make it to all intents a new book which possessors of the former editions will be eager to have and which may be most warmly commended to those who are as yet not familiar with it.

THE WELLCOME PHOTOGRAPHIC EXPOSURE RECORD AND DIARY. U. S. A. Edition. Price $1.00. London and New York: Burroughs, Wellcome & Co., 1912.

THE new edition of this exceedingly useful pocketbook has undergone no change in its general arrangement, but comprises a number of valuable additional tables and formulæ. It is without doubt the most satisfactory of all similar publications, and photographers who have once become accustomed to its use would not willingly dispense with it.

AN ARMY OFFICER ON LEAVE IN JAPAN, Including a Sketch of Manila and Environment, Philippine Insurrection of 1896-7, Dewey's Battle of Manila Bay, and a Description of Formosa. By L. MERVIN MAUS, Colonel United States Army. Illustrated. Price $1.50. Chicago: A. C. McClurg & Co., 1911.

IN this most entertaining book Colonel Maus does not appear himself as the writer, but has introduced the narrator in the person of a fictitious Mr. Rhodes, an employee of the National Bureau of Commerce, who is sent on a special mission to the East and makes the journey in company with an army officer, known as the Major, and a member of the Philippine judiciary, known as the Judge. These gentlemen are familiar with the conditions, past and present, of the countries visited and possess a vast fund of useful information and anecdotes which they impart to their companion and which is faithfully recorded by him. In addition to a delightful description of the principal places in Japan as far north as Nikko, the book contains chapters on Manila, the Philippine insurrection of 1896-7, Dewey's battle, Formosa, the religions of Japan, the persecution of the Catholics in the seventeenth century, an historical sketch of Japan, including the war with China, the Boxer trouble in 1900, the Russo-Japanese war of 1904-5, and most useful guide-book information on railroads, rickshas, guides, hotels, etc., in Japan for the use of the traveler. The author is a most entertaining raconteur and one may pass a few delightful hours in reading the book, even if he never has seen nor expects to see Japan. For one going to Japan the book will prove invaluable, not only for pleasant reading on shipboard but as a trustworthy guide-book for the places to be visited. The Appendix contains also several tables of the estimated cost of a trip to this fairy land not yet quite spoiled by Western civilization.

NACHWEIS UND BESTIMMUNG VON GIFTEN auf BIOLOGISCHEM WEGE. Eine Anleitung fur Pharmakologen, Gerichtsärzte, Gerichtschemiker, und Apotheker. Von Dr. phil. et med. Hermann Fühner, Privatdozenten fur Pharmakologie an der Universitat Freiburg i. B. Berlin und Wien: Urban und Schwarzenberg. Price $2.25 and postage. New York: Rebman Company, 1911.

TEXTBOOKS on chemistry, toxicology, or forensic medicine frequently include a few methods for the testing of poisons biologically, but in this volume the author has brought together for the first time in one book methods for thus recognizing some fifty poisonous substances. He describes the specific effect of these poisons on algæ, yeasts, and moulds, as well as upon frogs, mice, rabbits, and cats. Methods and results are exactly pictured and no reference is made to the physiology of the subject, so that no confusion will be present on that account. For this reason any person reasonably familiar with laboratory technique should be able easily to follow any of the tests. Quantitative as well as qualitative methods are described and in many instances far exceed in delicacy the best chemical methods at our disposal. Their value is greatly enhanced by the fact that the author has himself perfected each test. The book should be of great value to the medicolegal expert and to the pharmacologist and portions of it will no doubt in time find their way into the Pharmacopœia.

FURTHER RESEARCHES INTO INDUCED CELL-REPRODUCTION AND CANCER. Consisting of papers by H. C. Ross, M.R.C.S. England, L.R.C.P. London; J. W. CROPPER, M.B., M.Sc. Liverpool, and E. H. Ross, M.R.C.S. England, L.R.C.P. London. With Illustrations The McFadden Researches Price $1.00. Philadelphia: P. Blakiston's Son & Co., 1911.

THIS small volume consists of a paper on chemical substances which cause cell division of human lymphocytes; descriptions of methods of making permanent fixed films showing such divisions and of inducing division of cells floating in proper solutions; a paper on the action of "auxetics" upon erythrocytes; and some remarks upon cancer in pitch workers. Accompanying the volume is a circular letter, a copy of one from Dr. Ronald Ross to the publishers, giving details of the controversy between H. C. Ross and a committee of eminent men who acted as his "patrons," but later disclaimed all responsibility for his book on Induced Cell-Reproduction and Cancer. This letter apparently shows that Dr. H. C. Ross has been more sinned against than sinning. The chief concern of the reader interested in the subject, however, consists in having to pay one dollar for a few papers which should have reached him as free reprints had they been published in medical journals and not as an independent book, because of the controversy.

The papers themselves, beyond descriptions of methods, add nothing to the statements in Dr. Ross's book, mentioned above. They should prove of interest to those who have read that book. Without it they are almost unintelligible.

DIE STÖRUNGEN DES VERDAUUNGSAPPARATES ALS URSACHE UND FOLGE ANDERER ERKRANKUNGEN. Von Dr. HANS HERZ in Breslau. Zweite, umgearbeitete und vermehrte Auflage. 1 Teil: Die Krankheiten des Blutes, des Stoffwechsels, der Konstitution in ihrer Beziehungen zum Verdauungsapparat. Price 6 marks. Berlin: Verlag von S. Karger, 1912.

THE first edition of this book was published thirteen years ago. The advance of our knowledge on the relation between gastrointestinal disorders and other affections has been so marked in the meantime that this edition is almost a new work. The first volume, now before us, considers anemia, leucemia, pseudoleucemia, hemorrhagic diseases, gout, diabetes, obesity, affections of the thyroid activity and disturbances of metabolism that are dependent uopn gastrointestinal disorders. Each chapter is more of a résumé of the published facts and theories of other authors than merely an expression of the author's views. This makes the book of value for reference. In general Herz's study shows no very striking or original observations, yet should prove of value to the internists as well as to specialists in the narrower field of gastroenterology. Its perusal may serve to keep the physician from the error of narrowness, which often follows in the train of modern specializing in one field of work.

THE CONQUEST OF THE NERVES. By J. W. COURNEY, M.D. Price $1.25. New York: The Macmillan Company, 1911.

THIS is a booklet of ten chapters, containing an intelligent interpretation of the success of Christian science, "Emmanuel movement," New Thought, etc., in the treatment of certain affections of the nervous system. The author shows that the physician is frequently responsible for the despair of a nervous patient which makes him turn to some ostensibly new and mystic curative creed. He then analyzes the more simple affections of the nerves and shows how a sufferer from "nerves" may find a cure in himself and in orthodox medicine, rather than in Christian science, for instance, which compels him to do violence to his intelligence or, in plain English, "to make a downright fool of himself."

The book is very well written, in a clear and entertaining style, and can be safely recommended by physicians to their patients. The doctor, too, may find in it valuable hints for the treatment or rather the management of persons suffering from functional nervous disease.

ABHANDLUNGEN AUS DEM GEBIETE DER GEBURTSHILFE UND GYNAEKOLOGIE. Mitteilungen aus der zweiten Frauenklinik der Königl. ung. Universität zu Budapest. By Prof. Dr. W. TAUFFER, Direktor der Klinik, Vol. II, No. 1. Price 4 marks. Berlin: S. Karger, 1912.

THE work here referred to includes contributions from the Gynecological Clinic at Budapest, presided over by Professor Tauffer. The contents comprise the following six articles by various members of the same. A clinical study of placenta previa and its treatment, by Frigyesi, based on a study of 110 cases which occurred in the clinic; pyelitis in pregnancy and its treatment, based on an investigation of 26 cases, which leads to the claim that a waiting policy in such cases is not to be recommended before labor and if the condition occurs during the puerperium without any improvement in the clinical signs taking place within forty-eight hours catheterization of the renal pelvis is to be resorted to; the preparation of the abdomen for gynecological operations, by Scipiades, a paper in which the writer advises the preparation of the skin with applications of acetone-alcohol and tincture of iodine; the application of Momburg's constriction belt in obstetrics, also by Frigyesi: inversio uteri associated with hypoplasia of the adrenal system, by Mansfield; a study of a case of spontaneous inversion of the uterus in a primipara, in which it was found that a high degree of hypoplasia of the adrenals was present, together with a diminution of the adrenalin content to about one-quarter of the normal amount, which leads to the building up of an hypothesis that such extreme conditions of atony without any local anatomical basis are due to the lack of this tonic hormone; and, finally, pregnancy and fibroids, by Scipiades, in which the relation between these tumors and sterility is discussed. The above treatises constitute a very valuable addition to gynecological literature.

HANDBUCH DER INNEREN MEDIZIN. Bearbeitet von L. BACH, Marburg; J. BAER, Strassburg; G. VON BERGMANN, Berlin; R. BING, Basel; H. CURSCHMANN, Mainz; W. FALTA, Wien; W. A. FREUND, Berlin; H. GUTZMANN, Berlin; C. HEGLER, Hamburg; K. HEILBRONNER, Utrecht; R. HEINZ, Erlangen; G. JOCHMANN, Berlin; K. KISSLING, Hamburg; O. KOHNSTAMM, Königstein, W. KATZENBERG, Hamburg; P. KRAUSE, Bonn; B. KRÖNIG, Freiburg; F. KÜLBS, Berlin; F. LOMMEL, Jena; E. MEYER, Berlin; E. MEYER, KÖNIGSBERG; L. MOHR, Halle; P. MORAWITZ, Freiburg; E. MÜLLER, Marburg; F. ROLLY, Leipzig; O. ROSTOSKI, Dresden; M. ROTHMANN, Berlin; C. SCHILLING, Berlin; H. SCHOTTMÜLLER, Hamburg; R. STAEHELIN, Basel; E. STEINITZ, Dresden; J. STRASSBURGER, Bonn; F. SUTER, Basel; F. UMBER, Altona; R. VON DEN VELDEN, Dusseldorf; O. VERAGUTH, Zurich; H. VOGT, Strassburg; F. VOLLHARD, Mannheim; R. WITTMAACK, Jena; Herausgegeben von Professor Dr. L. MOHR, Direktor der medizin. Poliklinik zu Halle (Saale) und Professor Dr. R. STAEHELIN, Direktor der medizin. Klinik zu Basel. Erster Band: Infektionskrankheiten. Mit 288 zum Teil farbigen Textabbildungen und 3 Tafeln in Farbewdruck. Price 26 Marks. Berlin: Verlag von Julius Springer, 1911.

THE imposing array of names that greet the reader as he scans the title page of the first volume of this new "Handbook of Internal Medicine" gives him an inkling of what he is to expect on the succeeding pages. The term handbook is modest indeed, for it characterizes a six-volume work, the first volume of which contains over 1,000 pages. With characteristic German thoroughness this work aims to present the modern aspects of internal medicine, chiefly from the viewpoint of pathological physiology, so far as this is rendered possible by the present stage of research. Pathological anatomy is not accorded that overwhelming share of attention which it attracted in the early days of medicine; but the claims of the clinical laboratory in conjunction with those of the bedside are given greater emphasis. At the same time the practical needs of the everyday practitioner are amply supplied. The first volume takes up the infectious diseases. It is difficult to single out any one feature which deserves commendation, so admirably have all the topics included in this volume been presented. The opening chapters from the pen of O. Rostoski deal with infection, immunity, anaphylaxis, and the diagnostic and therapeutic value of the immunity reactions. The acute exanthemata are described by P. Rolly, while F. Krause discusses pertussis, influenza, herpetic fever, epidemic parotitis, diphtheria, tetanus, typhus, and Asiatic cholera. G. Jochmann is the author of the article on dysentery. The typhoid diseases are discussed in an extensive chapter of 200 pages by H. Schottmuller. An important chapter is that on the septic diseases by G. Jochmann, who also treats of erysipelas, acute articular rheumatism, and cerebrospinal meningitis. Poliomyelitis is dealt with extensively by E. Müller. The other subjects included in this volume are acute miliary tuberculosis, leprosy, plague, Malta fever, protozoal diseases, yellow fever, dengue, beriberi, and the zoonoses: actinomycosis, glanders, foot and mouth disease, trichinosis, anthrax, and rabies. The volume is profusely illustrated and well printed on excellent paper.

A STUDY IN TROOP LEADING AND MANAGEMENT OF THE SANITARY SERVICE IN WAR. By Major JOHN F. MORRISON, General Staff, United States Army, and Major EDWARD L. MUNSON, Medical Corps, United States Army. Approved by the Surgeon General United States Army. Published by authority of the War Department. Price $1.50. Agents, United States Cavalry Association, Fort Leavenworth, Kans., 1910.

THIS book contains a graphic description of the operations of a division of troops in battle and describes in minute detail the management of the sanitary service. As an exposition of the field duties of the medical department in battle this book has not been equaled by anything heretofore published. The book is of great interest to any one who wishes to obtain an idea of what the sanitary service has to do before, during, and after an engagement. It emphasizes the great importance of military and tactical knowledge on the part of medical officers, and shows that the function of the sanitary service in the removal of wounded from the field is of the utmost importance, and that the removal can only be accomplished efficiently by officers who are familiar with the art of war and with military methods and means of administration. The book is as easy to read and as interesting as a good novel.

THE PRINCIPLES OF SANITARY TACTICS. A Handbook on the Use of Medical Department Detachments and Organizations in Campaign. By EDWARD LYMAN MUNSON, A.M., M.D., Major, Medical Corps, United States Army; Assistant Commandant, Field Service School for Medical Officers; Senior Instructor, Department care of troops, School of the Line and Staff College, Fort Leavenworth, Kansas. Approved by the Surgeon General, U. S. Army. Published with consent of the War Department. Price $2.00. Agents, U. S. Cavalry Association, Fort Leavenworth, Kansas. 1911.

THIS book is a handbook which is of the utmost value not only to medical officers of the military service, but also to all other staff and line officers. It has a large amount of information which should appeal to the general medical profession. It must be borne in mind that in any war which the United States undertakes against a first-class power there will be a demand made upon the medical profession of the country to supply between 20,000 and 30,000 medical officers. There were some 14,000 doctors employed upon the Federal side alone during the four years of the Civil War. These men came into the military service without previous training, and in the vast majority of instances absolutely ignorant of military matters.

Major Munson's book gives a very clear and distinct idea of the service that will be demanded of medical officers in our next war, and for that reason the book should appeal to those persons who are interested in the subject of national defence.

The introductory section of four chapters gives an admirable description of the history of the organization of the sanitary service and of its present arrangement.

The problems in the body of the book are complete as to detail and extremely well conceived and arranged.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held January 25, 1912.

DR. FRANKLIN A. DORMAN IN THE CHAIR.

Two Cases of Secondary Abdominal Pregnancy.—Dr. ROBERT L. FRANK reported these cases. He stated that primary abdominal pregnancy occurred so rarely that, until recently, its actual occurrence had not been satisfactorily proven. In order to demonstrate a primary peritoneal insertion of the ovum it must be shown that neither the ovary nor the tube had been involved. The two cases reported were primarily tubal, and secondarily underwent further development within the peritoneal cavity. The first case was one of ectopic gestation, probably arising from the fimbria ovarica, with beginning lithopedic formation. The patient, 31 years of age, was referred to Dr. Frank with the diagnosis of ectopic pregnancy, probably abdominal, with dead fetus. The history of the case showed that eight months before she presented herself she had had severe abdominal cramps in the right iliac region, lasting two and one-half hours. Two days later she fainted and later she suffered three more attacks of pain, 10, 13, and 18 days, respectively, after the first seizure. She did not menstruate for four months and considered herself pregnant. For the past four months menstruation had been regular, but scant. Examination revealed a uterus reaching almost to the umbilicus, and behind it a hard, slightly irregular mass which could hardly be palpated from above. Bimanual examination showed that the uterus was enlarged, anteverted, and elevated by a hard, semi-cartilaginous mass which occupied Douglas' cul-de-sac and reached laterally almost to the anterior superior spines. At operation a somewhat enlarged uterus, with a few small fibroid nodules on its posterior surface, was found. Behind the uterus and extending into the lowest portion of the Douglas' pouch was a hard, irregular mass the size of an orange, attached to the uterus, sigmoid, and pelvic parietes by fine velamentous adhesions. The right fimbrica ovarica was unusually long and broad, forming a band 2 cm. wide, which was lost in the mass. The tumor was freed without difficulty and the patient made an uneventful recovery. The specimen consisted of a black discoid mass, upon which was stretched a mummified fetus, still within its membranes. Microscopical examination showed that the black portion consisted of placenta. The *x*-ray demonstrated a complete fetal skeleton corresponding to the fourth month of gestation. The history showed that in the first month of gestation some disturbance took place, probably the gradual extrusion of an ampullary ovum, which continued to derive its blood supply from the fimbrina ovarica. At the fourth month the fetus died and mummification was well under way when interrupted by the operation. The second case was one of tubo-abdominal pregnancy with the insertion of the placenta on the posterior surface of the broad ligament and pelvic floor. This patient was a woman 35 years of age, who was sent to Mount Sinai Hospital for ruptured tubal pregnancy, and on admission was in a severe state of collapse, pulse 148, temperature 101.6°, respiration 32. The abdomen was distended, there was a bulging semi-fluid mass in the posterior fornix, and the various signs of pregnancy were noted. Operation was performed at once. The abdomen contained a large quantity of free blood and a live four-months-old fetus lay free among the coils of intestine. The uterus corresponded to a three months pregnancy. The outer third of the right tube was lacking and a large placenta was located attached to the posterior surface of the right broad ligament, the peritoneum covering the division of the aorta and slightly downward on the peritoneum of Douglas' cul-de-sac. On attempt to free the placenta the right broad ligament tore completely away from its attachments and the torn ovarian vessels retracted upward. They had to be ligated without previous exposure of the ureter owing to the desperate condition of the patient. Right salpingo-oophorectomy was performed and violent oozing continued from the bed of the placenta, making tamponing necessary. The posterior fornix was perforated from above and a gauze drain covering the bleeding area led out into the vagina. The patient did well for a few days when she began vomiting bilious fluid and complete obstruction supervened. The abdomen was reopened and the upper jejunum was found much distended. A kink was located high in the renal region produced by a large adherent blood clot which had angulated the intestine. The angulation was relieved and a tube enterostomy established, but the patient failed to rally and died five hours later. The specimen was a normal fetus 25 cm. in length with a cord 12½ cm. in length. The placenta was thin, circular, and 10 cm. in diameter. The outer one-third of the tube was lacking and in the torn end villi were demonstrated. Some important points necessary to an exact anatomical diagnosis were lacking; it was possible, however, to demonstrate that the placenta was directly attached to the parietal peritoneum in the location already described.

Multiple Fibroid Complicating Pregnancy; Hysterectomy; Recovery.—Dr. S. M. BRICKNER reported this case, which was seen by him in consultation on September 8, 1911, and admitted to Mount Sinai Hospital on September 9. Her last menstruation had occurred fifteen weeks before and her present illness dated back four weeks. She said that one day two months before her admission to the hospital she had had short sharp pain in the left side of the abdomen. Four weeks before she had an attack of sharp abdominal cramps and nausea, but no fainting, no collapse, and no spotting. The cramps lasted three days and then she noticed spotting for the first time. Four days later she had another attack of cramps; since that time she had continued to have these attacks, but had never vomited until the day before admission. Physical examination showed the abdomen to be irregularly and asymmetrically enlarged. To the left side there was a hard smooth mass, freely movable, and extending from the pelvis to three fingers' breadth above the umbilicus. On the right side a number of nodules could be felt under the skin which resembled fetal small parts. A bruit could be heard over the right side. Vaginal examination showed nothing abnormal except for the congestion of pregnancy. The cervix lay behind the symphysis. The entire cul-de-sac was filled by a mass which could be felt to the side of the uterus. The mass moved with the cervix and was soft in consistency. A five-inch suprapubic incision was made and the peritoneum opened. It was immediately apparent that they were dealing with a mass of multiple fibroids. The large mass felt in the cul-de-sac before operation was a huge fibroid partly subperitoneal and partly interstitial. Labor at term would have been impossible. It was decided that hysterectomy was the safest procedure. The right tube and ovary and the left tube were removed. The specimen showed multiple fibroids varying in size from an apple to a cocoanut. The measurements were: From above downward, 19 cm.; antero-posteriorly, 22 cm.; side to side, 13 cm. Two of the neoplasms were interstitial and the largest of these was deeply wedged into and blocked the pelvis.

Secondary Abdominal Pregnancy; Operation; Recovery.—Dr. S. M. BRICKNER reported this case. The patient was 36 years of age, the mother of one child eight

years old. Her last menstruation occurred on September 29, and was ten days overdue. She was seen on November 27. She gave a history of frequent attacks of abdominal pain, accompanied by nausea, thirst, and perspiration, and spotting. Three weeks before she had had an attack of very severe pain followed by intense prostration. Examination showed the abdomen exceedingly rigid and sensitive to touch. A mass could be made out to the right and above the uterus, extending to the umbilicus. The mass was irregular in shape and exceedingly tender. The uterus could not be made out. The diagnosis made was extrauterine pregnancy with hematocele, or secondary abdominal pregnancy. The patient was operated upon and the pelvis was found to be filled with clots and old fluid blood. To the left lay a large mass partially covered with intestines and omentum, which formed the superior portion of what was seen to be a sac. The left border of the sac was the sigmoid flexure; the posterior wall of the uterus formed its inferior wall and its right border was composed of blood clot in which the right tube was lost. At the left border of the clot and below the omentum lay the placenta. The sac was removed *en masse*. As the patient's condition did not permit of any further operative procedure the abdomen was closed. The specimen exhibited consisted of a gestation sac containing a fetus of about three months extrauterine development and amniotic fluid. The umbilical cord was attached to an irregularly shaped placenta distant about three cm. from the amniotic sac. The fetus was alive at the time of its removal, but the heart stopped beating in a few moments. The convalescence was uneventful after the first few days. This was a case of secondary abdominal pregnancy, originally a primary pregnancy of the right tube.

Dr. C. F. JELLINGHAUS discussed the papers (by invitation).

Report of a Case of Interstitial Pregnancy.—Dr. JAMES W. MARKOE reported this case. The patient was 31 years of age, and both her family and personal history were negative. Five years ago she was curetted for what was supposed to be an incomplete abortion, but no fetus was discovered. After remaining in the hospital for some time she left against the advice, but returned in a few days with high temperature, rapid pulse, and marked collapse. A diagnosis of ruptured ectopic gestation was made, but the patient's condition was so bad that it was not deemed advisable to operate. She gradually improved under conservative treatment, but was not able to leave the hospital for several months. In September, 1911, she again applied to the hospital for treatment, stating that three years previous to this time she had been delivered of a large child which was still-born. A bimanual examination showed a tumor about the size of a goose egg on the right side of the uterus and apparently connected with it. The mass was extremely tender and slightly movable. She stated that her last menstruation had taken place on July 10, so a provisional diagnosis of two months' ectopic pregnancy was made. On opening the abdomen the tumor became immediately apparent, and was seen to be directly connected with the right horn of the uterus. The left tube and ovary were congested and bound down with old and very firm adhesions, both to the intestines and to the omentum. After breaking up some of the adhesions the swollen and congested Fallopian tube, together with the left ovary, were removed. The appendix, which was bound up with the adhesions, was freed and removed by the purse-string method. A partial hysterectomy was then performed. It was deemed unadvisable to remove the entire uterus because of the possibility that old inflammatory foci on the left side might be opened up. The subsequent history of the patient was uneventful, and she was up and about on the nineteenth day. In reviewing the history of the case it seemed probable that the illness of five years ago was most likely a ruptured ectopic pregnancy, in which the hemorrhage was not very marked and the products of conception were eventually absorbed, leaving behind the dense adhesions found at the operation. The fact that in the interval an intrauterine pregnancy had occurred was of interest and showed that the conditions which prevailed to bring about the two ectopic gestations did not prevent one ovum from lodging in the normal mucous membrane of the uterine cavity. The interstitial variety of ectopic pregnancy seemed to be the least frequently met with, there being but 30 cases reported up to 1904. Since then an increasing number of cases had been reported. This was probably due to the fact that greater attention had been paid to the diagnosis of the condition. As the pregnancy developed in the wall of the uterus it might proceed to a more advanced date than in the case of the tubal varieties of ectopic gestation. For this reason a rupture of the sac was more likely to prove fatal than in the other types. It was possible that an abortion might take place either into the tube or the uterine cavity, where the growth might continue; but from the histories of the cases reported it was quite obvious that if an interstitial pregnancy was recognized an operation was necessary without delay. Unfortunately it was less easy to make such a diagnosis than in the presence of a tubal gestation, but it had been claimed that in interstitial pregnancy the amenorrhea was usually persistent, while in the tubal pregnancy more or less irregular bleeding occurred. It was important to determine in each case whether an incision of the sac was possible or whether hysterectomy was necessary.

Dr. H. N. VINEBERG said that a few years ago he had had a case of interstitial pregnancy with symptoms of an indefinite nature pointing chiefly to an obstinate constipation and general peritonitis. On examination he found a very large uterus with no definite mass in the pelvis, and while he agreed with the house surgeon, who had made a diagnosis of ectopic pregnancy, that the condition was probably due to a bursting of the products of conception, he could not convince himself that it was an ordinary case of ruptured tubal pregnancy. Upon opening the abdomen he found it filled with blood, liquor amnii, débris and a fetus of about four months, lying free among the intestines. The uterus looked as though it had had its entire fundus blown off. It was removed, together with the foreign matter in the abdominal cavity, and the patient made a good recovery. Dr. Vineberg said that he had recently had a patient with a small projection on the anterior wall of the fundus of the uterus, median to the round ligament insertion, which appeared like a small sac. This was removed and examined. Some of the pathologists stated that it was a pregnancy, and others said it was not. It was not a cyst, but a cystic mass about the size of a walnut, containing blood. These were the only instances of interstitial pregnancy that he recalled having seen in over 200 ectopic pregnancies.

Case of Fibroid Complicating a Pregnancy at the Fourth Month.—Dr. RALPH WALDO reported the case of a primipara, twenty-six years of age, who last menstruated September 7, 1911. The time that elapsed from her last menstrual period to that of the operation was eleven weeks and three days, but probably the pregnancy was not over ten or eleven weeks. The woman had been married only a few months. Her urine was normal. She sent to her family physician because of abdominal pain, and he detected a tumor in her pelvis. Shortly after this Dr. Waldo saw her and operated. He presented the specimen removed, which was a fibroid that had been situated back of the uterus and filled the pelvis and pressed on the rectum. The entire colon, especially the cecum, contained a large amount of solid matter. This patient had

been constipated for a long time; she had taken various kinds of cathartics. Dr. Waldo showed a specimen of the uterus with the fetus contained therein. An incision had been made in the cervix at one side of the cervical canal. He left one ovary in. The only thing that could have been done in this case was to take the uterus out. The patient made an uneventful recovery.

Dr. Herman J. Boldt believed that the specimens presented were the most interesting of any that had been shown in the section for some time, and he was particularly impressed with what Dr. Jellinghaus had presented. With regard to Dr. Frank's cases of primary abdominal pregnancy, he did not believe that such a condition had yet been proven, although many had been described. Some years ago Dr. Boldt had a case that he thought was unique and the specimen was sent to Dr. Welch of Baltimore for confirmation of his diagnosis. After repeated and careful examinations he reported back that it was not a case of primary abdominal pregnancy. On the placenta were two or three fimbriæ from the Fallopian tube. The point that Dr. Jellinghaus raised, and in which Dr. Boldt concurred, was that so far as the urinary fistulæ were concerned, none of his cases—and he had had several—were cured spontaneously. With regard to fecal fistulæ, they usually healed spontaneously; that was his experience in all but two instances that he had seen. The difficulty of making a diagnosis in abdominal pregnancies at present was not so great as formerly. The first case of abdominal pregnancy that it had been his privilege to see occurred in 1879. There were present at that time Drs. Goldthwaite, Pallen, Polk and Boldt. The diagnosis made was intrauterine pregnancy, and Dr. Boldt's chief, the late Dr. Pallen, purposed doing a cesarean section. The fetus lived a short time. In abdominal pregnancies the diagnosis was not so easy as might be supposed by some physicians.

Dr. H. N. Vineberg stated that Dr. Schauta had asserted at the International Congress in Budapest, in 1909, that in 100,000 cases of pregnancy in his clinic there had been only 70 cases complicated with fibroid growths, or, in other words, only seven in every 10,000 cases of pregnancy. They had just had two cases presented to them, and there were two others at present in the second Gynecological Service of Mount Sinai Hospital; he, himself, had had a case within the past couple of months which would be presented at the next meeting. It would seem, therefore, that this complication occurred more frequently here than in Vienna. The note that ran through the discussion at Budapest was one of extreme conservatism, and he had been guided by it in his practice. Every now and then cases occurred, however, in which surgery was imperative, as had been demonstrated by the cases presented to-night. Dr. Vineberg said he had had a case some years ago similar to the one reported by Dr. Jellinghaus which had not been recognized, and the patient was discharged from the hospital as suffering from an inoperable malignant growth. He had operated upon the case, and although the technique was very difficult, the placenta being very large and universally adherent to the intestines, abdominal wall, and the right pelvic wall, he was so fortunate as to remove all of the placenta, excepting the membrane. The patient made a good recovery without any complication. Regarding the healing of ureteral fistulæ, Dr. Vineberg said his experience did not tally with that of Dr. Boldt. He had seen some cases in which the fistula apparently healed, as the leakage permanently ceased and the patients were free from urinary symptoms afterwards.

Dr. Arnold Stuckmore said that, notwithstanding the energetic propaganda of the last ten years, the cases presented to-night made it very evident that they had much to learn in the diagnosis and management of extrauterine pregnancy. There was no biological reason why abdominal pregnancy should not occur more frequently. In every pregnancy it was simply a question of osmotic sustenance of the ovum in the earliest stages and vascularized nourishment in the later stages. The peritoneum sufficed for both, yet primary abdominal pregnancy had not yet been authentically established if they excluded pictorial evidences. The cases on record had all proven to be early tubal pregnancies extruded into the abdominal cavity. If they recalled the contention of those who, two years ago, advocated conservative treatment of ectopic pregnancy, the question arose as to how many cases among the non-operative would result in abdominal pregnancy with ultimate findings on the operating table such as had been detailed this evening. The very possibility of such sinister complications should make the strongest plea for prompt intervention and early interpretation of symptoms pointing to the existence of extrauterine pregnancy.

Dr. A. Ernest Gallant referred to a patient that he had presented to the Section five years ago, from whose abdomen he had removed a full term, dead child, eleven months after conception. For some days after operation the urine escaped from the vagina, later from the bowel, as loose watery stools. After some months the stools became normal, and all the urine escaped *via naturale*.

Dr. Arthur Stein said that what most interested him in these cases of myomata complicating pregnancy was the mode of operation, whether they should do an enucleation, supravaginal amputation, or total extirpation. Not long ago he had a very interesting case, and one in which it was difficult to decide upon what to do, even after the abdomen was opened, whether the enucleation of the myomata should be resorted to or a supravaginal amputation of the pregnant organ. The latter operation was performed. There were present two myomata, each of the size of a fist, on either lateral wall of the uterus, which was pregnant in the third month. Right after the operation the uterus made a few contractions and the ovum was half way expelled from the uterine cavity. Dr. Stein said he did the supravaginal amputation mainly out of fear of subsequent rupture of the uterus in case he had enucleated the myomata. However, in Dr. Waldo's case the mode of operation was a clear one from the very first start. One always must individualize in these cases. His patient was a primipara, twenty-six years of age. She made an uneventful recovery.

Dr. Robert T. Frank agreed with Dr. Boldt that most of the cases reported as primary abdominal pregnancies were really secondarily implanted on the peritoneum. All the cases reported at the meeting of the Section were unquestionably of the latter type. The three most authentic cases in the literature were those of Gallabin, Witthauer, and Hirst. Unless discovered very early, it would be impossible to distinguish between a primary and a secondary implantation. Gallabin's cases did not rupture until the tenth week. Witthauer's case, in which a six weeks' ovum was found attached to the omentum, might have been a fimbrial pregnancy torn from its primary site by retraction of the omentum. Hirst's cases, however, seemed unquestionably primary. Here a minute ovum was found embedded in the posterior layer of the broad ligament and the ovum plus the surrounding parts were widely excised and submitted to careful examination. No aberrant tubal or ovarian elements were found, and no disturbances of the ovular site had taken place. This case appeared to prove the possibility of primary abdominal implantation beyond doubt. Dr. Jellinghaus' case could not be used as an argument against the expectant treatment of ectopic gestation. The cases in which operation might safely be delayed were those of pelvic hematocele or tubal abortion, in which the process of growth had come to a standstill. In the case under discussion, had the diagnosis of extrauterine pregnancy been made, the

patient would unquestionably have been operated upon early, but the condition was not recognized.

Dr. S. M. Brickner said he had operated upon his patient because the tumor was evident, and was thought probably to be a dermoid cyst complicating pregnancy. The tumor was also rapidly increasing in size. With regard to Dr. Jellinghaus' case Dr. Brickner did not see the patient in May, but Dr. Frank saw her in August, when she appeared at the dispensary and he suspected an abdominal pregnancy. She was taken into the hospital and the examination convinced him that he was dealing with an intrauterine pregnancy, with a breech presentation. Here the mistake was made. With regard to the co-called "Dr. Brettauer's school of fallacies" five years ago Dr. Brickner suggested that cases of tubal abortion did not always require operation. Until, however, they had reached methods of diagnosis more refined than those that existed at present the same principles regarding operation would be continued as they had been following in the past, and, therefore, they would operate upon all cases of extrauterine pregnancy except large hematoceles. He asked that they assume that they were dealing with a case of tubal abortion; the abdomen would be opened, the diseased tube would be removed, as well as the contained hematoma. What was going to prevent the ovum from growing if it was alive at the time and was lying in the mass of blood clots in the pelvis?

Dr. Ralph Waldo, speaking regarding fibroids which complicated pregnancy, said that it seemed to him that there were many who believed to all practical purposes that there was a malignant disease present and required operation, but Dr. Waldo did not take this view at all. Even if the pelvis was closed by a fibroid, and if there were no uterine contractions, he would permit the woman to go to term if she would without interference; no interference should be made unless the uterus attempted to empty itself. He knew of two instances where the Porro operation had been performed and with two living children.

Case of Papilloma of the Bladder Treated by Fulguration; Demonstration of Method and Apparatus.—Dr. L. Henry Dawson Furniss reported the case of a woman seventy-two years of age, who for two years had had intermittent hemorrhages from her bladder. Kelly's cystoscope was employed to determine the nature of her trouble, which was found to be papillomata of the bladder; they were four in number, all on the left side of bladder, and in the line of the ureter. Dr. Furniss demonstrated the apparatus used. The examination and treatment was made with the patient in the knee-chest posture. After the third fulguration the urine cleared of blood for two days; then she began to bleed again and the hemorrhage was quite profuse. A suprapubic systotomy was performed, as she was unable to empty the bladder of blood clots. He was much interested to find the papillomta had sloughed out and the bleeding came from the largest one; this caused a sloughing of about one-eighth of an inch of the bladder wall. The patient was drained suprapubically. An hypostatic pneumonia developed and he feared that she was going to die because of it. Dr. Furniss gave a demonstration of the apparatus used.

Uterus and Suppurative Adnexa Removed by Panhysterectomy.—Dr. Herman J. Boldt presented this specimen, the interest of which centered in the history of the patient from whom he removed it. It was interesting to compare the symptoms with the pathological condition found at the time of operation, the specimen as such not showing anything unusual. There were present diffuse adhesions which firmly bound the pelvic organs to the surrounding pelvic walls and to the intestines. The patient was forty-nine years old, and the pyosalpinges surely must have been present a long time, probably a number of years, yet the complaint of pain in the lower abdomen and back dated back but three months. The specimen was an excellent illustration to prove that tubal inflammation might exist without causing marked inconvenience to the patient. It also demonstrated that pain, if present, was not a characteristic pain of any particular kind of pathological condition.

Myomatous Uterus Removed by Panhysterectomy. Dr. Herman J. Boldt said that the uterus was removed because of a typical bleeding, despite a previous bilateral salpingo-oophorectomy. The patient was forty years old and had been operated on, only the tubes and ovaries having been removed. In addition to the bleeding, there was a griping pain in the lower abdomen. The previous operation had left the woman with a suppurating abdominal fistula in the line of the abdominal incision. When the abdomen was opened, the reason why the previous operator had not completed the operation and was content to remove only the adnexa was readily understood; there were technical difficulties because of adhesions, and these were almost insurmountable. This was another verification of the fallacious idea that formerly existed in the minds of the profession, that for a bleeding myoma, castration sufficed to stop the bleeding. It also showed that small tumors might cause intense suffering, as was the case in this instance.

Ovarian Cyst with Twisted Pedicle and Hemorrhage into the Cyst, Complicating Pregnancy.—Dr. Herman J. Boldt reported the case of a woman, thirty-four years of age, who had had a child two and a half years ago. She was again pregnant four months. Six days previously she was seized with cramp-like pains in the left lower abdomen, and they had not entirely ceased. She asserted that since the beginning of her pregnancy she had had three such attacks, but the previous ones soon disappeared. The examination, soon after the beginning of the pain, was said to have revealed the presence of a small tumor about the size of a hen's egg. When the patient was examined by Dr. Boldt the tumor had markedly increased in size, the abdomen was sensitive to touch, and it was evident that a local peritonits was present; this was shown subsequently upon operation by the presence of intestinal and omental adhesions. The diagnosis of an ovarian cyst with a twisted pedicle and hemorrhage into the cyst was based upon the sudden occurrence of the pain, its character, the rapid increase in the size of the tumor, the intraperitoneal position of the tumor, and its close relation to the uterus. Upon operation the diagnosis was verified. There were two twists of the pedicle.

Anteflexio-Versio as a Cause of Functional Disorders of the Bladder, and a Method for Its Correction.—Dr. Arthur Stein presented this paper, in which he said that while the nature of changes which until recently had been grouped under the term "irritable bladder" had been recognized and treated, there remained a small group of disturbances which required further discussion. Under the title of "Functional Disorders of the Bladder in the Female, Simulating Cystitis," the writer had some time since reviewed the various functional disturbances of the bladder in women which did not originate in the bladder itself, but might be caused by affections of the pelvic connective tissue, by tumors, or by disturbances of the general system outside the pelvis. He had also referred to the fact that retroflexion and anteflexio-versio of the uterus might cause bladder manifestations which in all respects resembled those occurring in typical cystitis. Since the publication of that article he had directed his attention to this latter class of affections. A review of the literature of this subject showed only quite isolated references to the subject, and it was clear that the number of disturbances of the bladder which depended directly

upon an exaggerated anteversion of the uterus were very few. In 33 per cent. of all gynecological affections women complained of bladder disturbances of the most variegated kinds, and it was clear that only a small fraction of this 33 per cent. was caused by anteversion. However, it was time to call the attention of gynecologists to a treatment that he had found useful in cases of bladder disturbance due to anteversion of the uterus, although he had only a few cases to report. The treatment described was used only in such functional disorders of the bladder as were dependent upon uncomplicated, pronounced anteflexio-versio. When one recalled that a highly anteflexed and anteverted uterus, with its fundus overlapping anteriorly, permanently pressed upon the neck of the bladder and the upper part of the urethra, it was perfectly intelligible that at the point of contact there must be permanent mechanical pressure, the consequence of which would be a permanent irritation with all its sequelæ. The logical treatment was, of course, the removal of the cause of irritation. Before attempting this, however, it was necessary to exclude an affection of the bladder itself or any pathological changes in the kidneys by cystoscopic examination and chemical analysis of the urine. The idea of dislodging the uterus from an exaggerated anteflexio-versio and of retaining it in the corrected position had suggested itself to the writer and he had succeeded in doing this in four cases which he described. He had brought the uterus into its normal position and had held it there by means of a pessary by similar manipulations to those employed in the correction of a retroflexed uterus, except that the movements were reversed. The pessary was inserted as in retroflexion, but reversed so that the cross bar of the pessary was lodged in the anterior vault and the concave aspect of the ring was toward the promontory. This method had nothing to do with the one that was generally known as anteversion therapy, or with the so-called anteflexion pessary of the old school of gynecologists. He could not give any definite directions as to the shape of the pessary, as he adapted the ring to existing conditions and shaped it accordingly. In three of his cases he had used Hodge's ring, and in the fourth case he had constructed the ring by simply doubling up a hard rubber ring. In three of the cases cystoscopic examination and urinary analysis were negative. The history of the cases was practically the same. The patients complained of frequent micturition, both day and night, and all of them had undergone treatment without success. Examination in all the cases showed marked anteflexi-versio and a slight hyperemia at the neck of the bladder. After the insertion of the pessary in the manner described all of the patients showed marked improvement in the course of a few days. Three of the four cases were entirely cured of their trouble, and the fourth was greatly relieved; lack of complete success in this instance was probably due to the age of the patient, her nervous condition, and the length of time that the trouble had persisted before a proper effort had been made to relieve it. It was perfectly clear that this method was totally different from those mentioned by Fritsch and Dudley. Dudley referred to the insertion of a Hodge or Smith pessary into the vaginal vault in order to effect an elevation of the uterus, and Fritsch referred to the method of inserting a hard rubber ring into the posterior vaginal vault. The method here outlined consisted in inserting a Hodge pessary, or one especially shaped to meet existing conditions, into the *anterior* vaginal vault in an exactly reverse way to the method practised in retroflexion. The object was to get the uterus away from the bladder and to retain it in correct position.

Dr. H. N. Vineberg said that Dr. Stein had made a mistake if he thought that he was the first to have used a Hodge pessary in the reverse position for the relief of bladder disturbances occurring in women. Such an employment of the pessary had been in vogue years ago and was discarded as it became more customary to use the cystoscope in women to ascertain the cause of frequency of micturition. In some cases the existence of a pathological anteversion might cause bladder disturbances, but it could not act in that way if it was dependent upon an inflammatory condition at the base of the broad ligaments, or in Douglas' sac, drawing the cervix backward and with it the neck of the bladder. Flexion of the body of the uterus upon the cervix would not compress the neck of the bladder; if it could it ought to give rise to retention and not to incontinence. The situation of the neck of the bladder at the junction of the cervix with the body was such that it was not possible for the body of the uterus to press upon it, no matter how great the degree of anteflexion. The relief that the patients experienced could be explained by the pressure of the bar of the pessary upon the neck of the bladder, or upon the urethra adjacent to it, as in many of these cases there was weakening of the sphincter or a dilatation of the urethra, for the normal urethra served as an aid to the control of the vesical sphincter. For several years Dr. Vineberg investigated these cases of frequent micturition in women, and he had found that in the majority of cases there was more or less hyperemia and erosion of the trigonum. These slight changes were not recognizable by the Nitze cystoscope or any of its modifications, and had doubtless escaped Dr. Stein's observation. Dr. Vineberg said that he could cure these cases by the direct application of nitrate of silver solution, ten to twenty per cent. to the affected areas in the trigonum, with the patient in the knee-chest position. The customary method of applying nitrate of silver to the neck of the bladder by irrigation or instillation was valueless, as a rule. There was always some residual urine in the bladder which mixed with the inserted solution and rendered it inert.

Dr. Henry Dawson Furniss believed that malposition of the uterus had little to do with those bladder disturbances. If these cases were carefully examined it would be found that there was inflammation of the trigone or else in the urethra itself. If in the urethra the trouble would usually be in the proximal half, there more often than in the bladder portion. The use of the cystoscope seemed to have something to do with the relief of these cases. The massage of the urethra by the passage of the instrument produced good effects as well as the action of the boric acid solution which was used.

Dr. A. Ernest Gallant said that fifteen years ago he first inserted the pessary end for end, and very soon determined that the broad and curving upward part behind the symphysis lifted the trigone upward, did not compress the urethra, and elevated the whole uterus by supporting the cervix well back in the pelvis. In most of the cases there was a coincident inflammation of the trigone which must be treated by direct medication to its irritated surface.

Dr. Herman J. Boldt did not know what Dr. Stein meant by replacing the uterus in cases of anteflexio-versio. In these cases, so soon as the fingers were taken off the uterus returned to the same position previously occupied. When he spoke of bending a rubber ring, that simply was a method employed by Gehrung and one always used at Dr. Boldt's clinic. The irritation of the bladder was caused by the anteversion or the anteflexio-versio. The latter position of the uterus was the physiological position. The pessary itself never placed the uterus in proper position, but simply raised the uterus. There was no doubt but that vibration applied to the neck of the bladder gave relief in a large number of cases if there was no pathological condition present in the urethra or neck of the bladder. Overdistention of the bladder in many instances would be productive of good as well. The treatment to which Dr. Stein

had called attention was of early date. The use of the Hodge or Smith pessary did not relieve the condition any better than did the Gehrung pessary, but Dr. Boldt believed the latter held the uterus up better.

Dr. MAX ROSENTHAL said that in his experience about 75 per cent. of all the patients seen in the gynecological service of public dispensaries complained of frequent micturition. It was impossible to generalize in regard to the treatment of such cases. Many cases complicated with anteflexion were improved or cured of their frequency in micturition by simple routine treatment of tampons, douches, etc. On the other hand, cases with some organic bladder trouble required treatment directed to the bladder condition itself, without regard to the existing anteflexion.

Dr. ARTHUR STEIN, closing the discussion, said he believed that the mere lifting of the neck of the bladder had a great deal to do with the relief of the vesical disturbance in these cases. In regard to Dr. Furniss' remarks, two of his patients had been cystoscoped repeatedly by other physicians and without any relief whatever from this procedure.

SECTION ON PEDIATRICS.

Stated Meeting, Held January 11, 1912.

Dr. WILLIAM SHANNON IN THE CHAIR.

Chronic Colitis in a Child Three Years of Age, with Deformity and Deviation of the Sigmoid Flexure.—Dr. J. FINLEY BELL presented this child. Up to the time he first saw him the patient had never had a normal bowel movement. He cried a great deal and had considerable pain and tenesmus. During the first days of the illness irrigations were tried, but were only occasionally successful, it being impossible to pass the tube higher than six inches. During the month of May his weight markedly decreased and in September the symptoms became very much worse and as many as forty movements a day were recorded. About the middle of October goat's milk was substituted for the top milk mixture and with success for a time. The attacks of colitis, however recurred and grew more frequent and more severe and were complicated by vesical irritation. The medical, hygienic, and surgical points of interest were considered in his paper.

Torsion of the Uterine Adnexa in Hernia in Infants.—Dr. ALEXIS V. MOSCHCOWITZ presented this patient, who was admitted to Mount Sinai Hospital March 25, 1911. The day previous she was seen by Dr. Heiman, who found that she had six toes on each foot; otherwise everything appeared to be normal. Nine hours before admission the child vomited and cried and the mother noticed a swelling in the left groin. A diagnosis was made of strangulated inguinal hernia. Dr. Moschcowitz saw the patient within half an hour after admission and confirmed the diagnosis, but he also made the more exact diagnosis, that the hernia contained either tube and ovary or a portion of the uterus. At operation there was found a perfect example of an inguino-superficial hernia, with the left tube and ovary twisted in one complete revolution. The baby made an uneventful recovery. He said that this form of hernia was of unusual rarity. In 1905 Damianos made an incomplete résumé upon this malady and collected twenty-four cases; additional cases reported, including his own, brought the total up to about forty. The cases of ovarian hernia occurring in children, with acute symptoms, might be divided into three groups, those having torsion of the pedicle, those with no torsion, and those in which the torsion had not been noted. The entire subject demanded discussion from three viewpoints, the presence of ovarian hernia in infants under one year, the question of torsion of the ovary, and the diagnosis. The frequency of ovarian hernia in infants under one year and in child-bearing adults was a striking phenomenon. In older children during puberty and in virgins ovarian hernia practically never occurred. The ovary descended only as far as the brim of the pelvis during intrauterine life and remained there for a year or more; its subsequent descent was due, first, to its own weight, and, secondly, to the deepening of the pelvis. This explained why in early infancy the ovary was an extrapelvic organ and was thus rendered more liable to enter a hernial sac. It seemed that congenital hernia was as frequent in the woman as in the male. A prerequisite for all torsions appeared to be a disproportion in size between the twisting body and its pedicle. This disproportion was present to a perfect degree in the ovary. However small this organ might be, it was large in comparison with the Fallopian tube. The diagnosis of twisted pedicle in ovarian hernias in infants was made from the fact of the existence of a hernia; that it was strangulated was obvious. The diagnosis of the organ or organs contained in the sac could be made by exclusion. Of the forty cases reported, the diagnosis was made by Quadflieg only; of these cases nineteen occurred on the left side and twenty on the right. The other case was not noted. With regard to the treatment, if the case was of very recent origin, gentle taxis might be tried, if this was not successful then prompt operation was indicated. Delay in operating might mean an extirpation of the organ, but even with this sacrifice the prognosis might be said to be good.

Dr. JOHN DOUGLAS said he had had two cases of hernia of the tube and ovary. One child who was admitted to the hospital did not appear to be at all sick. The diagnosis of a hernia of the tube and ovary was not thought of. The child was five years old and the diagnosis made was strangulated omentum. The baby was operated upon and made a good recovery.

Dr. HENRY W. BERG said that it was interesting to know that these herniæ of the tube and ovaries probably occurred more frequently than was generally supposed, and it was most interesting to be able to feel these in the hernial sac; the general practitioner feeling such a mass, however, naturally would think he was dealing with some neoplasm, especially since there were no symptoms of intestinal obstruction. These were not extraordinary herniæ. Dr. Berg asked whether cases of femoral hernia were more often complicated by the presence of tube and ovary in the sac rather than inguinal herniæ.

Dr. MOSCHCOWITZ replied that his two cases were inguinal herniæ and that practically all of the other cases that had been reported in the literature were of the same variety. He believed that there was but one case of the femoral variety reported.

Dr. JOHN DOUGLAS said that unless he was mistaken there had been reported in the literature, by Andrews in 1907, ninety-nine cases of hernia of the tube and ovary and the majority of them were inguinal. There were five cases of the femoral, four of the obturator, and two of the ischiatic variety.

Dr. MOSCHCOWITZ said he only referred to herniæ occurring in young infants, and not of those that occurred in adults. He referred especially to young nurslings of the female sex.

The Benefit Derived from Treatment in Birth (Erb's) Paralysis.—Dr. HENRY W. FRAUENTHAL presented this paper to call attention to the prevailing error in the minds of the general practitioners that nothing could be done for brachial plexus paralysis. This seemed strange in view of the fact that nearly all textbooks on pediatrics advised treatment for this condition. It was quite evident that Erb's paralysis was due to forcible manipulation in the process of delivering the child in most cases. It was evident that any form of traction that pulled the head and neck away from the shoulders was the exciting cause

of the lesion and as a corollary the lesion might occur with any presentation. The results of treatment depended upon the time it was begun and its kind and character. The methods of treatment advised by him were the results of his experience in the treatment of one hundred cases, in which treatment had been instituted from within forty-eight hours after birth to those in which it was begun after twenty-two years. If the baby was seen immediately after birth much benefit might be expected by approximating the ends of the lacerated nerves. This could be done by a long sleeve, extending down over the hands, up about the neck, and being attached back of the neck by means of safety pins. If the position was to be maintained, it could be done by an appliance made of soft leather, going about the body and held by laces, as shown in the photograph. The forearm could thus be held at right angles by a screw arrangement. Should a clot be present, absorption might be hastened by using a high frequency current once or twice daily for a period of five minutes. Following this he used a combined galvanic and faradic current, interrupted seventy-two times to the minute; this was accomplished by a clock arrangement in the Victor wall plate. The current should never be strong enough to produce pain sufficient to make the child cry. A mild massage of the arm and forearm might be given. After the fourth year a series of exercises was added. The author presented cases and photographs demonstrating the results of treatment, the patients running from one-half to twenty-two years of age.

Dr. Herman C. Frauenthal said that the instruction given the mothers was a very important part in the treatment of these cases of Erb's paralysis. They were instructed to place the arm between supination and pronation and to maintain it there. These patients usually came to the clinic with their hands decidedly rotated inward. When they became older the good arm was tied inside the clothes and so they were compelled to use the bad arm. Too much electricity or massage should not be used. Neuro-muscle education, however, should be employed.

Dr. Henry W. Berg said that these cases were all classed as instances of Erb's paralysis, but many were only cases of palsy which occurred immediately after birth and made spontaneous recoveries within one or two months. In an extensive obstetric practice he had seen many of these cases, cases not due to traumatism, stretching, or pulling on the part of the obstetrician. Many cases showed signs of hematoma in the axilla, or extensive traumatism, and they belonged to an entirely different group of cases. The first group were cases of birth palsies, which had a tendency to spontaneous recovery while the later group were cases of birth palsies in which the recovery was problematical. It was very important that one should be able to predict, if possible, what cases would recover in one or two months and what cases would not; in other words they should be acquainted with the type of lesion with which they were dealing. The milder type of cases occurred because of uterine pressure exerted for sometimes as long as thirty-six hours directly upon the muscles of the shoulder and arms. These were the cases in which the arm was extended over the head, often with the breech coming first, and which had been subjected for a long time to compression over the after-coming head. There was another class of cases in which the paralysis had resulted in contractures and advanced stages of atrophy; the nerves and soft parts were injured with resulting muscular and osseous atrophy. There was a lesion in the motor, sensory, and trophic nerves, all being more or less involved. It was not so much the bone itself that was injured as the trophic nerves. In these cases there resulted marked contractures of tendons and muscles. Here came in the function of the orthopedic surgeon who employed massage and electricity and who gave some relief but only up to a certain degree.

Dr. Henry W. Frauenthal said that in many instances the reaction of degeneration could not be brought out because the patients would not submit to the strength of current required. The range of motion gotten under the treatment outlined in his paper was very surprising; even though there was shortening, there was a normal range of motion.

Chronic Colitis in Child Three Years of Age, with Deformity and Deviation of Sigmoid.—Dr. J. Finley Bell read this paper, in which he recalled that in presenting the patient he had pointed out that the case suggested a number of interesting questions involving the etiology, symptomatology and diagnosis, and treatment of chronic colitis. These questions were as follows: Were all of these cases of chronic colitis due to deformity or deviation of some portion of the colon? Were such deformities and deviations always congenital or might they be the results of acute attacks of colitis of bacterial origin, the deformity being the result of severe tenesmus or excessive irrigation? Inasmuch as many cases of colitis in adults had been shown by *x*-ray diagnostic methods to have marked deformity and deviation of the colon, some of which had been improved and some cured by surgical measures whether or not they had been congenital, if they were congenital to what extent were symptoms of the condition present during infancy and childhood? Formerly the more refined attempts at diagnosis were along bacteriological lines and gave no enduring results. The bismuth test meal and enema, with *x*-ray photography, were eminently successful in this child of three years and the writer felt firmly convinced that in all cases of chronic digestive disturbance in children this procedure should be employed. In regard to treatment the points to be considered from the medical side were that the deformity could obviously not be corrected by medical measures, hence radical success depended upon the ability of the deformed intestine to functionate normally after the mucous membrane had been treated medicinally. If improvement followed such treatment would it be lasting? These conditions in any case should be considered and watched by both pediatrician and surgeon in order that the treatment might be prompt, correct, and adequate. A new field in pediatric surgery might be opened as a result of this refinement in diagnosis. In the case reported dietary medicinal measures had been tried faithfully and without avail. Irrigations had given only temporary relief. Their continued use had so impressed the little patient that he talked of but little else and was fast becoming a confirmed juvenile neurasthenic. Dr. Bell said that he would forbear speaking at length on these questions as he wished the section to discuss them.

Dr. Leon T. Le Wald demonstrated some *x*-ray plates taken of the case presented by Dr. Bell.

Dr. Joseph E. Winters said that after the age of one year it had been his experience that the cause of the appearance of mucus in the stools was milk and irrigations. The long-continued use of irrigations at any period of life would cause the persistence of mucus in the stools. The sigmoid was long in children and was very likely to become misplaced. Any child that had a colitis with mucus in the stools would do well if fed on nothing but cereals with butter and salt. He cautioned against the use of broths, milk, and eggs, and advised giving these patients only dry cereals. Irrigations should be entirely excluded from the treatment of these cases. There frequently followed an intestinal paralysis, or a chronic "ballooning" after the use of long-continued irrigations. Dr. Winters believed that every case of colitis occurring in children of one year, or at any age after this, with no other treatment except the use of cereals with butter and salt, with no irrigations, would get well in every instance and in a surprisingly short time.

Dr. Henry W. Berg said that the pictures presented

demonstrated one very important thing, namely, that the bismuth meal brought out the outline of the stomach and intestines under the *x*-ray, which was a great advantage in diagnosis. It should be remembered, however, that there was a source of error in this procedure and that was in the relative position of the patient. The pictures showed an extraordinarily large sigmoid for a child of that age. Before anyone attempted to translate pictures of the kind presented, they should be able to distinguish the normal and the abnormal and especially in these cases without any symptomatology. Dr. Berg could not conceive any method of therapy, or feeding, which would overcome such an obstruction as appeared in the pictures. Rachitic children had extraordinarily large sigmoid flexures as compared with the size of the pelvis; the pelves in these children were as a rule very shallow. The increase in the size of the spinal column was so much greater than the increase in the length of the intestinal tract that one could readily see, that if the conditions present were not pathological they might become absolutely normal in a growing child in the seventh, eighth, or ninth year. If one should temporize then either by some surgical procedure, or by irrigations, or feeding, the child might be tided over two, three, or four years: there would then be the hope that as the body grew this disproportion might be overcome and normal function occur. Of greater importance was the diagnosis and he believed that this could be made by means of the *x*-ray pictures. A cause of constipation in many cases was the increase in the length of the sigmoid itself; because of this there was not sufficient muscular power to send the stools through the sigmoid. This was a clue to the treatment. In his experience good results followed the use of enemas of soap suds with the addition of plenty of a non-irritating oil, such as sweet oil or castor oil. If they could keep the sigmoid clear of stools, they could in all probability cure the patients.

Dr. SARA WELT-KAKELS said she thought that the anomalous position of the large intestine might be an etiological factor in the production of the colitis. The descending colon and the sigmoid flexure were very long in infants; the sigmoid had multiple flexures; this and the long meso-colon permitted it to drop into the shallow infantile pelvis; this would easily result in an undue accumulation and stagnation of feces, the production of a faulty circulation, and colitis. These conditions did not remain permanently, as about the sixth or seventh year the different parts of the intestine assumed a more normal position. She suggested to Dr. Bell the use by rectum of the gastrodiaphane to learn if he could reach the place supposed to be occupied by the sigmoid flexure.

Dr. JOHN DOUGLAS spoke of another point which should be borne in mind as an etiological factor, the general musculature of the lower portion of the intestinal canal, and especially of the sigmoid flexure and the rectum: here it was deficient in tonus as compared with the rest of the intestinal tract in infants. From a medical point of view there was in the case reported a colitis; from a surgical point of view this was a case of partial volvulus. Whether the malposition was an etiological factor of the chronic colitis or not, or whether the chronic colitis was an etiological factor in the production of the malposition, Dr. Douglas did not think it was possible to say: however, one might be dependent upon the other, a sort of vicious circle. The bismuth *x*-ray was a wonderful aid not only in making a diagnosis but in indicating the treatment as well. Many cases in which malposition occurred could be tided over and so cured under proper diet which would result in an increase in the musculature of these children. In nearly all of these cases no surgical treatment was necessary. But those cases which were not cured by medical means, especially if they were losing ground, should have recourse to surgical interference. The operation was not necessarily a dangerous one. They had to consider two operations, suspension of the sigmoid (sigmoidopexy) and resection of the sigmoid. In Dr. Bell's case a sigmoidopexy might be possible and a resection might thus be avoided.

Dr. HENRY HEIMAN would not recommend the employment of soap in these cases because it irritated the delicate mucous membrane; it would be better to use the physiological salt solution. If medical treatment failed to improve the condition, and the child was losing ground, recourse should be had to surgery. Almost forty years ago Dr. A. Jacobi had called attention to these cases. In 1886 there had been described another condition which should not be confused with the one described by Dr. A. Jacobi. Among the older children there occurred an hypertrophy with dilatation of the intestinal tract, especially of the colon, and this caused a mucous colitis and constipation. One of these types would always make good recovery: this type could adjust itself; as the pelvis grew the descending colon would assume its normal size and function. Whereas in Hirschsprung's disease, with the hypertrophy and dilatation of the lower end of the colon, the patients might come to operation.

Dr. ALEXIS V. MOSCHCOWITZ thought the baby presented by Dr. Bell a very healthy looking one. In this patient the sigmoid flexure was a good sized one and, if anything in the surgical line was thought of, a resection of the sigmoid with an end to end anastomosis should be resorted to. This was rather a formidable operation, especially upon a child of three years. He thought, however, that the child was going to recover without any recourse to surgery.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

VERMONT STATE BOARD OF MEDICAL REGISTRATION.

Montpelier, January 9, 1912.

ANATOMY.

1. Describe the tibia.
2. Describe the radiocarpal articulation.
3. Name the extensor muscles of the leg.
4. Describe the pericardium.
5. Give the origin and course of the pulmonary arteries.
6. Give the origin and distribution of the ulnar nerve.
7. Name the sinuses communicating with the nasal fossæ.
8. Give nerve and blood supply of rectum.
9. Describe the mesentery.
10. Give location of Cowper's glands, and state where their ducts empty.

BACTERIOLOGY.

1. Give requisites for spore formation.
2. Describe some of the vital actions of bacteria.
3. What are mordants?
4. Describe a cover-glass preparation.
5. State the effect of antitoxin on bacteria.

PHYSIOLOGY.

1. Describe ciliated epithelium and (*a*) state where it is found most abundantly; (*b*) What is the function of ciliated epithelium?
2. Name some of the bodily states which lessen the alkalinity of the blood.
3. What is the office of the columnæ carneæ?
4. What post-mortem tests should be applied to prove that air has entered the lungs of a supposedly stillborn child?
5. Describe the functions, and secretions of the stomach.
6. What is the function in digestion of (*a*) saliva, (*b*) bile?
7. How do the products of digestion find their way into the blood?
8. What is the cerebrospinal system of nerves, and to what parts of the body are its fibers chiefly distributed?
9. State where in the human economy the following substances are found: 1. fibrin; 2. mucin; 3. chondrin; 4. leucin; 5. hippuric acid.

10. Name the structures in the body whose functions are doubtful or unknown.

HYGIENE.

1. Into what general classes are foods divided? Give examples of each.
2. Describe the physiological action of alcohol.
3. What hygiene precautions should be observed by a pregnant woman?
4. If a chemical analysis of water revealed the presence of nitrates and nitrites (*a*) would this condemn it for drinking purposes? (*b*) If so, why?
5. Describe the preparation of patient, surgeon, instruments, and surroundings for operative procedures.

MATERIA MEDICA AND THERAPEUTICS.

1. How do tinctures differ from spirits? Give an example of each.
2. State the sources and dose of salicylic acid.
3. What is the best solution for hypodermyoclysis?
4. Give the therapeutic uses of boric acid.
5. Describe the therapeutic uses of glycerin.
6. Define expectorant. Mention three expectorants and state dose of each.
7. What is animal, and what vegetable charcoal? Explain their use in medicine.
8. Mention four drugs considered among the best tonics, and describe their action.
9. Name the digestive ferments used in medical practice, and give their sources and therapeutic action.
10. What are useful drugs to allay mucous irritation? Explain their action.

CHEMISTRY.

1. What relation has chemistry to the practice of medicine?
2. What are the principal varieties of thermometers? Describe their differences, and explain the transposition of the scales.
3. Give the physical and chemical properties of urine.
4. How are soaps made? What constitutes (*a*) hard soap; (*b*) soft soap; (*c*) castile soap?
5. Define specific gravity, atomic weight, reaction, reagent, and water of crystallization.

PRACTICE OF MEDICINE.

1. Give the synonyms of relapsing fever and how may it be diagnosed?
2. Name six infectious diseases in which the specific organism has been isolated and six in which it has not.
3. (*a*) What are your ideas as to complete or partial quarantine in the diseases mentioned in your reply to Question 2? (*b*) Give your reasons.
4. What have you been taught as to the medical treatment of appendicitis?
5. What may be done for non-obstructive constipation other than through medicines?
6. What are the etiological factors of jaundice?
7. Write a short article on purpura hæmorrhagica.
8. Of what use in diagnosis are blood pressure tests?
9. Give treatment for general progressive arteriosclerosis.
10. Will be to demonstrate use of certain instruments of diagnosis.

PATHOLOGY.

1. Discuss albuminuria.
2. Give pathology of nephrolithiasis.
3. What post-mortem changes are found in general paresis?
4. What is the pathology in infantile paralysis?
5. What is the theory as to the location of lesion in occupation neuroses?

OBSTETRICS.

1. (*a*) Name the generative organs of the female. (*b*) Describe briefly the uterus, giving its gross anatomy, relations to other structures in the pelvis, and its function.
2. (*a*) Define the term menstruation. (*b*) At what age does it appear? (*c*) What name is given to the period of life during which it appears? (*d*) At what age does it usually cease? (*e*) What name is given to the period of life during which it ceases?
3. (*a*) Name the bones which form the bony pelvis. (*b*) Give anteroposterior diameter of the brim. (*c*) Give transverse diameter of the outlet.
4. Upon what signs and symptoms would you base a diagnosis of pregnancy before the end of the third month?
5. (*a*) What is the normal duration of pregnancy in days? (*b*) What is the limit of its duration from a medicolegal point?
6. (*a*) How frequently would you examine the urine during pregnancy? (*b*) To what constituents, normal or abnormal, would you pay particular attention? (*c*) In the presence of edema of the face, hands and legs with albumen and casts in the urine, all of which increased in spite of proper treatment, what symptoms would lead you to bring on artificial labor?
7. Write a short article discussing the terms asepsis and antisepsis as applied to obstetrics.
8. Describe your attentions to the child from the time the head is born till it is delivered to the nurse, including the tying of the cord.
9. (*a*) What are the symptoms of impending eclampsia? (*b*) How would you treat them? (*c*) How would you treat the developed condition?
10. How would you guard against the occurrence of post-partum hemorrhage?

GYNECOLOGY.

1. Define the terms subinvolution, rectocele, pyosalpinx, cervicitis, metritis, vaginismus.
2. Describe the technique of catheterization.
3. What are the most common causes of sterility?
4. Give differential diagnosis between a small fibroid of the uterus and early pregnancy.
5. What are the dangers attending the use of the uterine sound?

SURGERY.

1. Give the symptoms of perinephritic abscess and describe the operation for its relief.
2. Diagnose tuberculosis of the hip-joint and give the treatment.
3. Mention the conditions requiring trephining of the skull. Describe the operation.
4. Diagnose gangrene, naming the different causes, and describe its management.
5. Classify ulcers of the leg and give treatment.
6. Give the symptoms and pathological anatomy of whitlow. Give the treatment.
7. Describe the symptoms of a perforating ulcer of the duodenum and give the surgical treatment.
8. Describe branchial cyst and the operation for its relief.
9. What are the symptoms of chronic ranula?
10. Mention the causes of post-operative ileus. Give the treatment for its relief.

LEGAL MEDICINE.

1. Mention the different signs of death and give methods for applying them.
2. What considerations would govern you in pronouncing death due to exposure to cold?
3. Describe the post-mortem appearances in death due to strangulation.
4. Mention means for detecting malingering in alleged cases of injury.
5. Differentiate the following: Hallucination, illusion, delusion, paranoia, paresis.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

VERMONT STATE BOARD OF MEDICAL REGISTRATION.

Montpelier, January 9, 1912.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 230; or Gray's "Anatomy" (1910), page 231.
2. See Cunningham's "Anatomy" (1909), page 283; or Gray's "Anatomy" (1910), page 314.
3. *Extensor muscles of the leg:* The muscles forming the quadriceps extensor (vastus externus, vastus internus, crureus, and rectus femoris).
4. See Cunningham's "Anatomy" (1909), page 793; or Gray's "Anatomy" (1910), page 551.
5. See Cunningham's "Anatomy" (1909), page 795; or Gray's "Anatomy" (1910), page 577.
6. See Cunningham's "Anatomy" (1909), page 629; or Gray's "Anatomy" (1910), page 1039.
7. *Sinuses communicating with the nasal fossa:* Sphenoidal sinus, anterior and posterior ethmoidal sinuses, maxillary sinus (antrum of Highmore), and frontal sinus.
8. RECTUM. *Nerve supply:* From sacral plexus, fourth sacral, and inferior hemorrhoidal nerves, and from inferior mesenteric and hypogastric plexuses. *Blood supply:* Superior hemorrhoidal, middle hemorrhoidal, and inferior hemorrhoidal arteries and veins.

9. See Cunningham's "Anatomy" (1909), page 1071; or Gray's "Anatomy" (1910), page 1265.

10. *Cowper's glands* are situated between the two layers of the deep perineal fascia, on either side of the membranous urethra. Their ducts open on the floor of the bulbous portion of the urethra about one inch from the glands.

BACTERIOLOGY.

1. "*The conditions under which bacteria form spores* vary with the nature of the organism. The bacillus of anthrax, as a rule, forms spores only when in contact with free oxygen; the tetanus bacillus, on the other hand, and the anaerobes in general form spores in the entire absence of oxygen. A suitable temperature is essential to the formation of spores; the anthrax bacillus forms spores most abundantly at about 30° to 32° C., and will not produce spores below a temperature of about 12°. Lack of food is apparently not an adequate stimulus to spore formation. In all cases a period of uninterrupted vegetative multiplication precedes the appearance of spores, and the conditions necessary for the production of spores seem to arrive simultaneously for most of the cells in a culture. In at least some cases the cause of spore formation is to be found in an accumulation of metabolic products in the culture; these may perhaps be acids, perhaps other injurious compounds."—(Jordan's *Bacteriology.*)

2. *Some of the vital actions of bacteria:* Fermentation; putrefaction; production of colors, gases, acids, alkalies, odors, nitrites; liquefaction of gelatin; phosphorescence; and production of diseases.

3. *Mordants* are substances used in staining to make the dye or stain hold fast (or "bite").

4. See French's "Practice of Medicine" (1910), page 1257.

5. An antitoxin does not absolutely destroy the toxins produced by the bacteria, but rather nullifies their action. It is believed that the antitoxin and the toxin enter into a sort of loose chemical combination, and that so long as this combination exists the poisonous properties of the toxins are held in abeyance.

PHYSIOLOGY.

1. *Ciliated epithelium* is a form of epithelium consisting of simple columnar, or stratified columnar cells, on the free or exposed surface of which are a number of hair-like processes called cilia. These possess power of wave-like motion in one direction only. Ciliated epithelium is found in the greater part of the respiratory tract (except the vocal cords), Fallopian tubes, upper part of uterus, Eustachian tube, part of the excretory duct of the testicle, ventricles of the brain, and central canal of the spinal cord. Its *function* is motion and protection.

2. *The alkalinity of the blood may be lessened by:* (1) Great muscular exertion, (2) anemia, (3) rheumatism, (4) fevers, (5) diabetes, (6) cholera, and (7) uremic conditions.

3. *The office of the columnæ carneæ* is: To prevent too great dilatation of the ventricles; to regulate their contraction; and to prevent the auriculo-ventricular valves from being turned into the auricles.

4. If respiration has taken place, the lungs will float on being put into water; if respiration has not taken place, the lungs will sink. Further, the lungs before respiration are situated at the back of the thorax and do not fill the cavity; whereas, after respiration, they fill the whole cavity.

5. *The functions of the stomach* are: (1) The reception of food; (2) the secretion of gastric juice; (3) the thorough mixing of the food with the gastric juice; (4) the digestion of proteids; (5) and the absorption of such part of the food as is ready for absorption.

Gastric juice is a thin, colorless fluid; acid in reaction; specific gravity about 1002 to 1010; and containing about 1 per cent. of solids. The daily secretion amounts to 10 or 15 pints. It contains: Water, pepsin, rennin, hydrochloric acid, chlorides (of calcium, sodium, and potassium), and phosphates (of calcium, magnesium, and iron). Its function is to change proteids into proteoses and peptones, and to curdle the casein of milk; it is also slightly antiseptic, and inverts cane sugar into dextrose and levulose.

The pepsin and rennin come from the central cells in the cardiac glands and from the cells of the pyloric glands. In both of these glands the pepsin preexists as pepsinogen. The hydrochloric acid is formed by the oxyntic cells. Just how a free acid is formed from the alkaline blood and lymph is not known. It has been suggested that it may occur as follows:

(1) $2Na_2HPO_4 + 3CaCl_2 = Ca_3(PO_4)_2 + 4NaCl + 2HCl$

or (2) $Na_2HPO_4 + H_2O + CO_2 = NaHCO_3 + NaH_2PO_4$;

and then $NaH_2PO_4 + NaCl = Na_2HPO_4 + HCl$.

6. The *saliva* begins to change the starches into dextrin and sugar; and the *bile* assists in the emulsification and saponification of fats, aids in the absorption of fats, promotes peristalsis, and also inhibits peptic digestion.

7. The products of digestion find their way into the blood by two routes: (1) By the blood-vessels of the gastrointestinal tract, which unite to form the portal vein; and (2) by the lymph vessels of the small intestine, which converge to empty into the thoracic duct. The water, inorganic salts, proteids and sugar go by way of the portal vein to the ascending vena cava; and the fats go by way of the thoracic duct to the junction of the left subclavian and internal jugular veins.

8. *The cerebrospinal system of nerves* consists of the nerves which are attached to the cerebrospinal axis (or such nerves as have their origin in the cerebrum, medulla, and spinal cord).

Its fibers are chiefly distributed to the voluntary muscles, the organs of special sense, skin, and other parts endowed with sensibility.

9. *Fibrin* is found in the blood and lymph; *mucin*, in saliva and synovial fluid; *chondrin*, in cartilage and bone; *leucin*, in spleen and pancreas; *hippuric acid*, in the urine.

10. *The functions of the following are doubtful, or unknown:* Spleen, thyroid, thymus, parathyroids, carotid and coccygeal glands, and the pituitary body.

HYGIENE.

1. *Foods are divided into:*

I. Inorganic. { Water. / Salts.

II. Organic. { Non-nitrogenous. { Carbohydrates. / Fats. } / Nitrogenous—Proteids. }

Example of each: *Carbohydrate*, sugar; *Fat*, fat of meat; *Proteid*, flesh of animals; *Salt*, sodium of chloride.

2. PHYSIOLOGICAL ACTION OF ALCOHOL. *Nervous system:* Alcohol is first a powerful excitant, afterward a depressant; it increases the reflex activity of spinal cord, muscles, and nerves; in large doses it produces lack of co-ordination. *Circulatory system:* It stimulates the heart muscle and increases the rapidity and force of the heart beat; there is a rise of arterial pressure. *Respiration* is stimulated by small doses, and decreased by large ones. *Temperature:* Alcohol produces a sensation of warmth, and warms the extremities by causing the heart to pump hot blood from the center of the body to the cold parts. If used in excess the temperature rapidly falls, owing to increase of heat radiation and to depression of vital power. *Bodily metabolism:* Elimination of CO_2 is generally increased; the effect on absorption of O is not known. It adds force but not tissue to the body. *Elimination:* It is largely burnt up in the body, but in excessive doses it is eliminated by the breath, skin, kidneys, and intestines. *Digestion* is aided by moderate doses, but is disordered by large amounts. (From Hare's *Therapeutics.*)

3. *Hygienic precautions to be observed by a pregnant woman:* She requires pure air, mild outdoor exercise when possible, clothing free from constrictions of all kinds; cold and draughts must be avoided; warm baths should be taken at least three times a week; during the later weeks of pregnancy the nipples should be kept scrupulously clean, free from pressure, and softened by applications of borated vaselin or cocoa butter; sleep and ample rest are requisite; coitus should be avoided; crowded apartments, theaters, churches, etc., should be shunned; constipation should be corrected, and the urine should be examined every two weeks. (From Kings' *Obstetrics.*)

4. *Nitrates* are generally due to the oxidation of organic matter of animal origin.

Nitrites generally indicate sewage contamination. The presence of nitrites should condemn the water; so should a marked amount of nitrates.

5. "The *operating-room* should be as devoid of furnishings, hangings, etc., as possible, and should be freely ventilated, light, and warm. Its floor and walls should be frequently scrubbed and washed with antiseptics. Windows when open should be properly screened to prevent the ingress of insects. *Instruments* should be boiled for twenty minutes in 5 per cent. soda solution. *Ligatures* (catgut) may be prepared by any of the usual methods: boiling in alcohol, boiling in cumol, the formalin method, or soaking in potassium iodide-iodine solution. Silk and silk-worm-gut should be repeatedly boiled in saline solution. All *dressings* should be sterilized by steam or prolonged immersion in bichloride solution 1:2000. Paraphernalia of the operating-room should be wiped with a cloth dipped in bichloride solution, 1:1000, shortly before

operation. *Patient* should, if possible, receive a full bath and a cathartic the night before operation. The operation site should be scrubbed with soap and warm water and an antiseptic dressing applied, which should be removed just before operation, the site again washed with soap and water, followed by alcohol, ether, and bichloride solution 1:2000. The whole patient should be covered by a sterilized sheet or sterilized towels securely pinned together. The *surgeon* and assistants should don sterilized caps and masks. The hands and forearms should be thoroughly scrubbed with soap and running hot water for five minutes, special attention being paid to the nails, and the subungual space cleaned by a wooden stick, then immersed in alcohol followed by bichloride 1:2000 for three minutes, or in a saturated potassium permanganate solution, with or without the addition of bichloride 1:2000. This may remain on the hands during the operation, or the hands may at once be decolorized by saturated solution of oxalic acid, after which they are rinsed in sterile saline or a dilute bichloride solution 1:3000. The surgeon should then don a sterilized gown. All subsequent dressings should be done under antiseptic precautions as regards wound, dressings, instruments, and hands." (Scott's *State Board Physiology and Hygiene.*)

MATERIA MEDICA AND THERAPEUTICS.

1. *Tinctures* are solutions of non-volatile substances in alcohol or diluted alcohol. *Spirits* are solutions of volatile substances in alcohol or diluted alcohol. *Examples:* Tincture of aconite; spirit of nitrous ether.

2. *Source of salicylic acid:* Certain plants (gaultheria and spiræa); it is also prepared synthetically from phenol and carbon dioxide, or from oil of wintergreen and solution of potash. *Dose,* 7 grains.

3. *The best solution for hypodermoclysis* is a physiological solution of sodium chloride (about 0.6 per cent.)

4. *Therapeutic uses of boric acid:* It is used as a mild antiseptic; sometimes it is given to correct fermentative dyspepsia, and also in cystitis.

5. *Therapeutic uses of glycerin:* As an emollient, laxative, and as a vehicle for other medicaments; it is sometimes given for hepatic and nephritic calculi, for trichinosis, and in vomiting of pregnancy.

6. An *expectorant* is an agent which modifies the secretion of the broncho-pulmonary mucous membrane, and promotes its expulsion. *Examples:* Fluidextract of squill, dose 2 minims; fluidextract of senega, dose 10 to 20 minims; tartar emetic, dose gr. 1/10.

7. "*Animal charcoal,* or bone-black, is prepared by burning bones in closed iron cylinders. It is composed of carbon and calcium carbonate and phosphate. *Purified animal charcoal* is bone-black from which the earthy salts have been removed by hydrochloric acid. *Vegetable charcoal or wood charcoal* is prepared from soft wood and is finely powdered. The dose is from ½ to 2 drams.

"Charcoal has the property of absorbing many times its own volume of gases or vapors. Owing to the oxygen condensed within its pores it has considerable oxidizing power, which may be utilized to destroy offensive gases, like hydrogen sulphid, and to hasten the decomposition of organic matter. Thorough wetting destroys its activity. As it is not absorbed when taken internally it exerts no specific action on the body. Charcoal is employed chiefly as an absorbent and a deodorant. In the form of a poultice it was at one time a favorite application for foul ulcers, but it has been largely displaced by more cleanly dressings. While it is a satisfactory agent for deodorizing fecal discharges it has less disintegrating action than dry earth. Internally it is sometimes useful as an absorbent in flatulent dyspepsia. It may be given as a powder or in lozenges. Animal charcoal is not used for medicinal purposes, but it is largely employed by chemists for removing coloring-matter from alkaloids. It was formerly regarded as an excellent filtering medium for drinking-water, but it has been shown to be unsafe for this purpose, since by adding phosphates and nitrates to the water it actually favors the development of bacteria." (Stevens' *Materia Medica,* etc.)

8. *Four tonics:* Strychnine, iron, quinine, and arsenic.

Strychnine raises the blood pressure, stimulates the medulla and spinal cord, sharpens the special sense organs, quickens and strengthens the respirations, increases the appetite and gastric secretions. *Iron* may increase the hemoglobin and number of red blood corpuscles. *Quinine* sharpens the appetite and promotes gastric peristalsis. *Arsenic* increases the pulse rate and the number of red-blood corpuscles, stimulates the nervous system, increases the appetite and favors digestion.

9. There are only two *official* digestive ferments, viz., pepsin and pancreatin. Trypsin is also a digestive ferment.

Pepsin is indicated as an aid to gastric digestion in gastralgia, gastric cancer and ulcer, atonic dyspepsia, and the vomiting of pregnancy.

Pancreatin is indicated as an aid to digestion, and for the predigestion of food, in convalescence, in wasting diseases, and in intestinal dyspepsia.

10. Demulcents and emollients are useful drugs to allay mucous irritation. Their chief action is mechanical and protective; they may also aid in subduing pain. The chief are: Flaxseed, acacia, tragacanth, marshmallow, licorice, white of egg, oils of various kinds, petrolatum, and glycerin.

CHEMISTRY.

1. Since chemistry enters into almost every branch of medical science,a knowledge of chemistry is of the very first importance to the practitioner of medicine; physiology and its many problems are largely based on chemistry; toxicology and materia medica cannot be understood without chemistry; bacteriology, pathology, the newer studies in immunity, problems in diagnosis, hygiene, antisepsis, etc., depend to a great extent on chemistry.

2. "Thermometers are instruments for the measurement of temperature. They are usually glass tubes having a bulb blown at one end and closed at the other, the bulb and part of the tube being filled with mercury or with alcohol, whose contraction or expansion indicates a fall or rise of temperature. . . . In every thermometer there are two fixed points, determined by experiment. The lower, or freezing point, is fixed by immersing the instrument in melting ice, and marking the level of the mercury in the tube upon the glass when it has become stationary. The higher, or boiling point, is similarly fixed by suspending the instrument in the steam from boiling water. The instrument is then graduated according to one of three scales: the Celsius, or Centigrade, the Fahrenheit, and the Réaumur. The freezing point is marked 0° in the Centigrade and Réaumur scales, and 32° in the Fahrenheit. The boiling point is marked 100° in the Centigrade, 212° in the Fahrenheit, and 80° in the Réaumur scale. The space between the fixed points is divided into 100 equal degrees in the Centigrade scale, into 180 in the Fahrenheit, and into 80° in the Réaumur." (Witthaus' *Manual of Chemistry.*)

To convert the readings of one scale into terms of the others:

$$C^\circ = \frac{5}{9}(F - 32) \qquad C^\circ = \frac{5}{4}R^\circ$$

$$F^\circ = \frac{9}{5}C^\circ + 32 \qquad F^\circ = \frac{9}{4}R^\circ + 32$$

$$R = \frac{4}{5}C^\circ \qquad R^\circ = \frac{4}{9}(F^\circ - 32)$$

3. *Urine* is a fluid, of a yellowish color, acid reaction, specific gravity of about 1015 to 1025, characteristic odor. It is made up of: water, urea, uric acid, hippuric acid, creatinin, creatin, xanthin, pigments; chlorides, sulphates, and phosphates (of calcium, sodium, potassium, magnesium, and ammonium).

4. Soaps are made by the action of an alkali on a fat. A *hard* soap is made with sodium hydroxide; a *soft* soap, with potassium hydroxide; *Castile* soap is a sodium soap made from olive oil.

5. *Specific gravity* is the weight of a given volume of a substance as compared with the weight of a like volume of some other substances taken as a standard, under similar conditions of temperature and pressure.

Atomic weight is the weight of an atom of an element as compared with the weight of an atom of hydrogen.

Reaction is the expression (by means of symbols, numbers and signs) of a chemical action. It is also used with reference to the action of substances upon certain organic pigments.

Reagent is a substance (or agent) used to bring about a reaction.

Water of crystallization. "Many substances, upon assuming the crystalline form, take with them a definite number of molecules of water, which are necessary to the maintenance of the peculiar form, and frequently the color, but which in no way modify the chemical properties of the substance. It is called water of crystallization." (Witthaus' *Essentials of Chemistry.*)

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), page 128; or Osler's "Practice of Medicine" (1909), page 109.

2. *Six infectious diseases in which the specific organism*

has been isolated: Typhoid fever, diphtheria, tuberculosis, syphilis, erysipelas, plague.

Stir in which it has not: Rheumatism, scarlet fever, measles, mumps, dengue, typhus fever.

3. See index to French's or Osler's "Practice of Medicine," under heading of these diseases.

4. See French's "Practice of Medicine" (1910), page 805; or Osler's "Practice of Medicine" (1909), page 518.

5. See French's "Practice of Medicine" (1910), page 824; or Osler's "Practice of Medicine" (1909), page 527.

6. See French's "Practice of Medicine" (1910), page 800; or Osler's "Practice of Medicine" (1909), page 534.

7. See French's "Practice of Medicine" (1910), page 538; or Osler's "Practice of Medicine" (1909), page 745.

8. See French's "Practice of Medicine" (1910), page 10.

9. See French's "Practice of Medicine" (1910), page 644; or Osler's "Practice of Medicine" (1909), page 853.

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), page 898; or Osler's "Practice of Medicine" (1909), page 672.

2. See French's "Practice of Medicine" (1910), page 938; or Osler's "Practice of Medicine" (1909), page 700.

3. See French's "Practice of Medicine" (1910), page 1128; or Osler's "Practice of Medicine" (1909), page 896.

4. See French's "Practice of Medicine" (1910), page 1118; or Osler's "Practice of Medicine" (1909), page 915.

5. In *occupation neuroses*, "the nature of the disorder is not known; it has been variously ascribed to disorders of the muscles, the peripheral nerves, and the cerebral cortex; it is likely that much of the disorder emanates from the cells of the cerebral cortex, which perhaps become exhausted from the necessarily prolonged effort to innervate the muscles; but whether this is the whole process is doubtful." (Kelly's *Practice of Medicine.*)

OBSTETRICS.

1. See Jellett's "Midwifery" (1910), pages 30 and 39; or Hirst's "Obstetrics" (1909), pages 30 and 40.

2. (*a*) Menstruation is the series of phenomena which occur periodically in the non-pregnant adult female from puberty to the menopause, consisting chiefly in a bloody discharge from the genital canal, and accompanied by various physical and psychical manifestations.

(*b*) It generally appears at about the fourteenth year.

(*c*) Menacme.

(*d*) It usually ceases at about 45 to 50 years of age.

(*e*) This period is called the *menopause.*

3. (*a*) Two ossa innominata (each consisting of ilium, ischium, and pubic bone), sacrum, and coccyx.

(*b*) The antero-posterior diameter of the brim is about 4 or 4¼ inches.

(*c*) The transverse diameter of the outlet is about 4 or 4½ inches.

4. See Jellett's "Midwifery" (1910), page 241; or Hirst's "Obstetrics" (1909), page 204.

5. (*a*) The normal duration of pregnancy is about 278 or 280 days.

(*b*) In this country there are no legal limits to the duration of pregnancy. Each case must be taken on its own merits, and will probably depend upon many factors, such as: (1) The special conditions in each case; (2) the truthfulness or untruthfulness of the witness and her lawyers; (3) the gullibility of the jury.

6. (*a*) In the early period, about once in two weeks; later, once a week, or even twice a week.

(*b*) I would pay particular attention to the amount of solids excreted (particularly to the urea), also to the presence of albumin, casts, and sugar.

(*c*) See Jellett's "Midwifery" (1910), pages 502 and 617; or Hirst's "Obstetrics" (1909), pages 249 and 630.

7. See Jellett's "Midwifery" (1910), page 139; or Hirst's "Obstetrics" (1909), pages 773 and 712.

8. See Jellett's "Midwifery" (1910), page 1143; or Hirst's "Obstetrics" (1909), pages 344 and 373.

9. See Jellett's "Midwifery" (1910), pages 617 and 620; or Hirst's "Obstetrics" (1909), pages 630 and 641.

10. See Jellett's "Midwifery" (1910), pages 891 and 350; or Hirst's "Obstetrics" (1909), page 339.

GYNECOLOGY.

1. *Subinvolution* is failure on the part of the uterus to "involute" after childbirth; the uterus remains abnormally large.

Rectocele is a bulging (of the rectum) into the posterior vaginal wall, generally due to relaxed tissues or lacerated perineum.

Pyosalpinx is a purulent inflammation of the Fallopian tube.

Cervicitis is inflammation of the cervix of the uterus.

Metritis is inflammation of the wall of the body of the uterus.

Vaginismus is a condition characterized by painful and spasmodic contraction of the vaginal orifice, more or less preventing coitus.

2. See Hirst's "Obstetrics" (1909), page 370.

3. *The most common causes of sterility* are: Gonorrhea; malformation, maldevelopment or absence of any part of the genital tract; obesity; alcoholism; fistulæ; traumatisms; dyspareunia; pelvic inflammations; lacerations; anemia; incompatibility; frequently the cause is to be found in the male.

4. To differentiate a small uterine fibroid from early pregnancy the following table (from Dudley's "Gynecology") will help; but the course of time will *prove the diagnosis.*

PREGNANCY.	FIBROID.
1. History of pregnancy.	1. Absent.
2. Uterus soft and elastic.	2. Usually irregular in form and harder.
3. Consistence varies with uterine contractions.	3. Uterine contractions not marked—very important sign.
4. Cervix soft.	4. Hard or not so soft.
5. Regular and uniform increase in size of uterus.	5. Growth slower and irregular.
6. Later, ballottement, fetal heart-tones.	6. Absent.
7. Palpation of fetus.	7. Palpation of myoma.

5. The dangers attending the use of the uterine sound are: Sepsis, perforation, hemorrhage, and induction of abortion.

SURGERY.

1. See Rose and Carless' "Surgery" (1911), page 1192; or Da Costa's "Surgery" (1911), pages 147, 1285, and 152.

2. See Rose and Carless' "Surgery" (1911), pages 683 and 684; or Da Costa's "Surgery" (1911), pages 635 and 636.

3. *Indications for trephining:* "Intracranial hemorrhage; abscess; fracture; foreign body; evacuation of cerebrospinal fluid through the lateral ventricle; as a preliminary step to osteoplastic resection and to linear craniectomy; epilepsy; bullet and other wounds; small tumors; drainage of frontal sinus; drainage of mastoid antrum and cells; thrombosis of venous sinuses." (Bickham's *Operative Surgery.*) And see Rose and Carless' "Surgery" (1911), page 759; or Da Costa's "Surgery" (1911), page 842.

4. See Rose and Carless' "Surgery" (1911), pages 103 to 119; or Da Costa's "Surgery" (1911), pages 179 to 198.

5. See Da Costa's "Surgery" (1911), pages 168 and 169.

6. See Rose and Carless' "Surgery" (1911), page 247; or Da Costa's "Surgery" (1911), pages 738 and 740.

7. See Rose and Carless' "Surgery" (1911), pages 1018 and 1054; or Da Costa's "Surgery" (1911), page 980.

8. See Rose and Carless' "Surgery" (1911), page 897; or Da Costa's "Surgery" (1911), page 395.

9. See Rose and Carless' "Surgery" (1911), page 856; or Da Costa's "Surgery" (1911), page 921.

10. See Rose and Carless' "Surgery" (1911), pages 1127 and 1134; or Da Costa's "Surgery" (1911), pages 969 and 974.

LEGAL MEDICINE.

1. *Phenomena and signs of death*, are: The complete and permanent cessation of circulation and respiration, rigor mortis, loss of body heat, pallor of the body, putrefaction.

For methods of applying the tests, see a good text-book on medical jurisprudence.

2. *Prolonged exposure to cold* causes first a lividity and then a whiteness of the extremities, ears, nose, and cheeks; this may be followed by gangrene. Pain, depression, stiffness, and congestion follow; stupor, coma, and death may supervene.

Post-mortem appearances: The skin is pale and waxy, with irregular dusky, reddish patches; the superficial parts are bloodless, while the viscera, including the brain, are congested; the heart and large vessels leading from it are full of blood, and the blood is of a brighter red color than usual.

The post-mortem changes in death from freezing are not sufficiently characteristic to justify a positive opinion on the subject. But if the body were found putrefied, it would be evidence that death was not due to freezing, for intense cold hinders putrefaction. So, too, the posture of the body might afford some aid; if the body is found

in a crouching posture, death was *probably* due to freezing, as that attitude is characteristic.

3. In *death by strangulation:* The blood is of a dark color, owing to complete reduction of the hemoglobin. The proportion of carbonic acid is increased, and owing to its excess the blood coagulates slowly or imperfectly; hence it remains fluid or forms few and soft coagula. The large veins, the pulmonary artery, and the cavities of the right side of the heart may be distended with dark fluid blood, but this is by no means necessarily the case. The left side is usually empty or nearly so. The lungs may be congested, but are often pallid and anemic, though the dependent parts usually exhibit appearances of hypostatic engorgement. The abdominal viscera, especially the kidneys, are often congested. The appearance of the brain varies; it may be anemic or more or less congested. Special signs characterize special modes of causation of asphyxia.—(From Quain's *Dictionary of Medicine.*)

4. A *malingerer* is one who pretends to be ill when he is not. To aid in the discovery: Try to ascertain if there is any motive in such claim to be ill; make frequent and thorough examinations; the examiner should be well read and expert; instruments of precision and anesthetics should be used if necessary; malingerers are apt to overdo their part.

5. A *delusion* is a belief in something which has no real existence, but is purely imaginary; and out of which the person cannot be reasoned. An *illusion* is a false or perverted impression received through one of the senses. An *hallucination* is the same as an illusion but without any material basis.

If an individual believes himself to be made of glass, and is afraid of being touched lest he be broken, he is suffering from a *delusion.* If the whistling of the wind is mistaken for a voice telling a person to do a certain thing—that would be an *illusion.* If a person fancied he heard a voice when there was nothing at all to be heard that would be an *hallucination.*

Paranoia "is a form of insanity which comes especially under the class of degenerative diseases. It is essentially characterized by a delusion or delusions of a fixed and systematized character. They are usually indeed of one kind, and the disease has perhaps for this reason been called monomania. This is, however, an unfortunate term, as we find this symptom not infrequently in other forms of insanity, as melancholia, where we always observe decidedly fixed ideas of depression. The main fundamental characteristic of this disease is a delusion which has become a part of the belief of the individual, and which he believes himself able to explain and defend."—(Witthaus and Becker's *Medical Jurisprudence*, etc.)

Paresis is partial or general paralysis.

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received but it which in the judgment of its editor will not be of interest to its readers*

Bulletin of the Ontario Hospitals for the Insane. 91 pages; paper.

Ärztliche Fortbildungskurse der freien Organisation für die medizinischen Kurse an der k.k. Universität Wien. 144 pages; paper. Rebman Company, Publishers, New York.

Nachweis und Bestimmung von Giften auf biologischem Wege. By Dr. Hermann Fühner. 176 pages; illustrated; paper; price $2.25. Rebman Company, Publishers, New York.

Die experimentelle Pharmakologie als Grundlage der Arzneibehandlung. By Dr. Hans H. Meyer and Dr. R. Gottlieb. 554 pages; paper; price $3.50. Rebman Company, Publishers, New York.

Swamp Fever in Horses. By L. VanEs, E. D. Harris, and A. F. Schalk. 353 pages; paper. North Dakota Agricultural Experiment Station (Dept. of Veterinary Science), Publishers.

Biological Products. 63 pages; illustrated; paper. H. K. Mulford Company, Publishers, Philadelphia.

Über moderne Syphilistherapie mit besonderer Berücksichtigung des Salvarsans. By Dr. A. Neisser. 46 pages; paper; price 1.50 M. Carl Marhold, Publisher, Halle.

Case Histories in Medicine. By Richard C. Cabot, M.D. Second Edition. 295 pages; cloth. W. M. Leonard, Publisher, Boston.

Medical Items.

Effect of Excessive Heat on Infants.—Liebman at the International Congress for the Protection of Infants called attention to the effect of extremely hot weather on young children. An intensely hot summer is one in which infantile mortality is much increased. This is due not to the effect of digestive disturbances due to vicious feeding but to the direct effect of the heat, a sort of heatstroke. The condition is characterized by the rapidity of the fatal outcome, the presence of convulsions, and absence of digestive troubles. Bottle-fed babies, having less resistance, are particularly exposed to this condition. The only preventive treatment is to take the children away from the heat, place them in cool places, especially in cellars. Also the clothing should be very light. In the discussion Liegert stated that at Cologne it was observed that certain houses were fatal to infants, and in them the temperature was always high. One should take account of the direct effects of extreme heat and not attribute too much to errors of feeding in infants.—*Journal de Médecine de Bordeaux.*

Value of the Albumin Reaction in Sputum.—G. P. Goggia has tested the diagnostic value of the albumin reaction of sputum in tuberculosis. He finds that all sputum contains more or less albuminoid substances and these substances may be revealed by tests. Part of them are in the fluid and part are represented by the histological elements. In those sputa which contain albuminoids in the aqueous portion one may get a true albumin reaction. The more pus there is present in the sputum the richer will it be in albuminoids, but this has little value as a test. When there is little pus the albumin reaction is more diagnostic. Only in these cases has the albumin reaction a diagnostic value in early tuberculosis, and it thus excludes the diagnosis of pulmonary emphysema.—*Annali dell' Instituto Maragliano.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended February 16, 1912.

Place	Date	Cases	Deaths
YELLOW FEVER			
Mexico: Merida	Jan. 21–27	1	1
Portuguese Guinea: Bolama	Dec. 19–25	1	1
In an engineer on a vessel			
Venezuela: Caracas	Dec. 25–31	6	..
PLAGUE			
Brazil: Para	Jan. 7–20	7	3
China: Hongkong	Dec. 24–30	1	.
Egypt	Total, year 1911	1,656	1,041
Provinces—Assiout	Jan. 1–25	12	8
Behera	Jan. 1–25	3	2
Garbieh	Jan. 1–25	1	..
Kena	Jan. 1–25	1	1
Minieh	Jan. 1–25	2	1
Hawaii: Honakaa	Feb. 9	1	1
India: Bombay	Dec. 29–Jan. 13	17	13
Calcutta	Dec. 14–30	..	10
Karachi	Jan. 1–13	23	2
Madras	Jan. 1–6	1	1
Indo-China: Saigon	Dec. 18–24	3	.
Singapore: Straits Settlements	Dec. 24–30	3	3
SMALLPOX			
Arabia: Aden	Jan. 2–15	1	1
And vicinity			
Brazil: Rio de Janeiro	Dec. 24–Jan. 6	2	..
Canada: Ottawa	Jan. 21–27	10	..
Quebec	Jan. 28–Feb. 3	35	..
China: Canton	Dec. 16–30	15	2
Hongkong	Dec. 24–30	18	15
Germany	Jan. 14–27	7	..
India: Bombay	Dec. 31–Jan. 13	27	15
Madras	Jan. 1–13	18	10
Indo-China: Saigon	Dec. 18–24	2	..
Italy: Leghorn	Jan. 14–27	28	..
Naples	Jan. 14–20	6	..
Palermo	Jan. 15–20	151	40
Turin	Jan. 15–21	2	..
Java: Batavia	Dec. 24–30	2	..
Mexico: Aguascalientes	Jan. 21–28	..	1
Chihuahua	Jan. 15–21	2	..
Juarez	Jan. 21–Feb. 3	2	2
Magdalena	Jan. 21–27	..	6
Cases in the lazaretto, St. Mazatlan	Jan. 24–30	..	4
Cases in the lazaretto, Ts. Saric	Jan. 21–27	..	6
Russia: Moscow	Dec. 24–Jan. 13	9	3
Odessa	Dec. 24–Jan. 13	3	..
St. Petersburg	Dec. 31–Jan. 6	4	3
Spain: Valencia	Jan. 14–27	35	1

[1] From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Jan. 31, 1912.

Straits Settlements: Singapore	Dec. 18–30	3	2
Turkey in Europe: Constantinople	Jan. 15–21	..	9
Janina	Jan. 22	17	8
Loros	Jan. 22	12	7
Uruguay: Montivideo	Nov. 1–30	4	1
Venezuela: Caracas	Dec. 15–31	6	.

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Original Articles.

FAILURE OF THE COLON TO ROTATE.*

BY CHARLES H. MAYO, M.D.,

ROCHESTER, MINN.

A CERTAIN percentage of surgical operations are performed for the relief or correction of conditions due directly or indirectly to some congenital deformity or faulty development of the fetus. The greater number of these defects are usually distressingly apparent, and in these cases surgical aid is sought early with the hope that the deformity may be reconstructed and reduced to a state as normal as possible. The common afflictions, such as harelip, clubfoot, imperforate anus, anomalies of external genitalia, etc., usually come under the surgeon's care in infancy or early childhood; but within the abdomen congenital deformities are so efficiently concealed that only a small percentage of them are found until adult life is reached, and then only at operation or autopsy. The various phases resulting from non-obliteration of the vitelline duct, dermoid cysts, anomalies of the female genitalia, variations in the position and relationship of the large intestine, are familiar examples of these conditions.

The relative rarity of these obscure intraabdominal abnormalities and the fact that they so infrequently give rise to definite symptoms explain in part why a diagnosis is so seldom made when trouble occurs. However, within recent years the increase in the number of explorations for obscure abdominal conditions, and the enormous increase in operations performed on the intestine for a definite purpose, make it imperative that the surgeon should become familiar with anomalies of the abdominal contents, having in mind the possible conditions.

In case of the large bowel for example, there may be complete transposition of the viscera. The whole of the colon may be on the left side of the abdomen through failure to rotate in its early development. A partial rotation may leave the cecum at any point between the normal and the right under-liver position, or the left umbilical position and the left pelvic. Because of congenital or acquired openings in the diaphragm much of the colon with other abdominal viscera may be located in the pleural cavity.

The primitive alimentary canal is a midline vertical tube connected to the spine by a fold of peritoneum. Later the primitive stomach appears as a bulbous enlargement of it in the upper abdomen, while the lower portion retains its connection with the spine and becomes the descending colon and sigmoid as well as the left part of the transverse colon. Their blood supply is derived from the inferior mesenteric artery. In the portion of the primitive gut between this part of the colon and the stomach bulb, another small bulbous enlargement appears near the central portion, which indicates the developing cecum. This distal portion, or colonic section, enlarges slowly in comparison with the proximal or small intestinal area, and all of this midsection has a common mesentery supplied by the superior mesenteric artery.

With the rapid growth of the small intestine and the slow growth of the large intestine, a rotation of the mesentery occurs, and the colon being wholly on the left side of the spine, rotates about the mesenteric axis, the cecum passing across the duodenum to the right hepatic position and descending to the right iliac fossa. By the eleventh or twelfth week the cecum lies immediately beneath the liver and to the left of the midline. It travels to the right, crossing the descending duodenum, and at the fourth month is found lying on the right side just beneath the liver. From this position it descends slowly to its adult position, which it usually approaches toward the end of fetal life, but it may not actually reach this point until some time after birth. (Cunningham.) While ordinarily the rotation may be nearly or quite completed before birth, it may fail to occur at all, or it may be arrested temporarily or permanently in any position during its circuit.

In the event of any of these abnormalities, the following complications may arise: (1) Failure to find the appendix at operation, or it may be found in the rectrocecal or in the hepatic position, or it may be in the superior midline adherent to the gall-bladder, duodenum, or stomach; or again it may be found to the left of the umbilicus or in the middle of the left pelvis. (2) In the complete failure of the colon to rotate, the duodenum is movable, it has a mesentery, and merges directly into the jejunum uncovered by the transverse colon or its mesentery. The condition should be considered *probable* when no colon is found on the right side, and *positive* if the duodenum is found as described above. (3) Failure of the colon to rotate should be considered as a possible cause in cases of obscure inflammatory conditions in the left or middle pelvis, or in the left iliac fossa, particularly in the young individual. In the middle-aged and older individual, with left-sided inflammations, it should be considered a possible condition and should be differentiated from malignancy, diverticulitis, and complete transposition of the viscera.

Approximately 300 cases of complete transposition of the abdominal viscera have been reported in the literature. In six cases which were observed at St. Mary's Hospital, three were operated upon for left-sided appendicitis—two with acute abscess.

*Read before the Western Surgical and Gynecological Association, Kansas City, Dec. 10, 1911.

Very little is found in the literature as regards failure of the colon to rotate, although it is undoubtedly a condition which should be considered as more frequent than complete transposition. The condition will be found described under various anomalies of the duodenum as well as of the colon. We have observed five of these cases during the past two years, and in only one of the cases was the abnormality diagnosed before operation. The points noted in this case were: (1) Difference in colonic percussion note over the whole of the left side; (2) general intestinal distention, and during attacks distress in lower transverse abdomen; (3) irritation of the stomach and obstipation of a pelvic appendicitis. The conditions were not acute at the time of observation, as they were in two of the others, and after a forced, thorough intestinal evacuation a bismuth acacia soup was administered and a series of interval radiographs were made which pictured the abnormal bowel condition as disclosed by its transit.

While the condition had been previously observed in the clinic at St. Mary's Hospital in the course of routine abdominal operations, some of the puzzling features in connection with the following five cases have influenced us to report them somewhat in detail. These cases are not of the partial rotation type, but rather of complete failure of the cecum to leave its earliest situation on the left iliac side.

Dr. G. E. Armstrong and Mr. John D. Malcolm,* in two comparatively recent articles, have taken up the subject from the standpoint of abnormalities, reporting cases observed in the course of operations.

Case I.—(37121), C. O., male, aged nine years. Consultation April 29, 1910. Previous history not important. When first seen patient had been suffering for twenty-four hours from severe cramp-like pains across the lower abdomen, with no definite localization. Vomiting, fever, and rigidity gave evidence of an acute inflammatory process, probably appendicitis, and immediate operation was advised. Operation April 29, 1910. A split-muscle incision was made, and free turbid fluid encountered. Although the incision was enlarged only small intestines were seen and no trace of the large bowel could be found, but the duodenum merged into the jejunum uncovered by the colon. Suspecting an anomaly, another incision was made close to the midline and the cecum with an acute gangrenous appendix was found lying in the left iliac fossa with the tip of the appendix lying over the left pelvic brim. The appendix was removed with considerable difficulty and the patient recovered after a rather stormy convalescence, during which temporary enterostomy was required. A radiogram taken some time after operation (Fig. 1) shows the cecum in the left pelvis and the whole large intestine to the left of the median line.

Case II.—(47105), G. A., male, aged forty-two years. Consultation December 20, 1910. There had been no marked bowel symptoms. A diagnosis of gastric ulcer was made, based on a definite history extending over some twelve years. Operation December 29, 1910. A general exploration disclosed a chronically inflamed appendix lying in the left pelvis with the cecum and ascending colon on the left side. The appendix was removed. An ulcer was found on the lesser curvature of the stomach which had perforated to the pancreas, and a partial resection of the stomach was necessary to remove it. Gallstones were also present, for which a simple cholecystotomy was done. Microscopic examination showed early carcinoma of the stomach. The patient made an uneventful recovery. No radiographs were obtained in this case.

Case III.—(55210), W. G., male, aged twenty-four years. Consultation June 28, 1911. Referred by his home physician for recurring appendicitis. The history obtained from this patient was definite, and during an attack his physician had elicited the point of tenderness in the right iliac fossa extending over the pelvis. Operation October 4, 1911. The usual McBurney incision was made, but diligent search failed to reveal either the appendix or any part of the large bowel. This and the fact that the duodenum was not covered by peritoneum suggested a nonrotation. A low midline incision was made and the cecum and appendix were found in the left iliac fossa. The appendix was subacutely inflamed and was removed. Recovery uneventful. Radiograph (Fig. 2) taken after the patient left the hospital shows position of the cecum and ascending colon in the left abdomen.

Case IV.—(59276). E. C. W., male, aged sixty-two years. Consultation September 25, 1911. A history was given of long-standing abdominal cramps, without definite location, and associated with jaundice of a varying degree. Exploratory operation October 4, 1911. A thick-walled gall bladder buried in adhesions was found. Pancreas showed a moderate hardening. The condition apparently being due to a recurring cholecystitis, the gall bladder was drained. In the course of exploration it was noted that no colon was apparent in the right upper abdomen, the duodenum being uncovered by the colon and having no mesentery. Seach was made for the cecum and it was found in the left iliac fossa. Radiographs taken after the patient left the hospital (Fig. 3) represented conditions as noted above.

Case V.—(60378), J. L., female, aged sixty-two years. Consultation October 21, 1911. Patient gave a history extending over some years of attacks of cramps of short duration in the epigastrium, with jaundice, fever, and chills. Following these attacks there was a local tenderness in the epigastrium for two to four days. The symptoms were inconstant; they were not suggestive of any definite upper abdominal lesion, and the possibility of some reflex disturbance was considered.

*Armstrong: "Abnormal Position of the Duodenum," Trans. Am. Surg. Ass'n, xxviii, 1910, P. 299-307.

Maylard: "The Surgery of the Alimentary Canal," 1896, P. 480-483.

Malcolm: "Two Rare Abnormalities Observed in the Course of Operations," *Lancet*, Nov. 18, 1911, P. 1401-1402.

Huntington: "Anatomy of the Peritoneum."

EXPLANATION OF PLATE.

Fig. 2.—X-ray No. 13585. Plate No. 4 of bismuth series. Condition seven hours after bismuth breakfast. Note the entire colon to left of midline. A small loop alone projects one inch to right. No bismuth present in small intestine. Condition confirmed subsequently at operation.

Fig. 3.—X-ray No. 13623. Plate No. 5 of bismuth series. Condition eleven hours after bismuth breakfast. Note position of entire colon to left of midline. Even more pronounced a condition than case N. 59276. Patient weighed over 200 pounds with a large pendulous abdomen. Confirmed at operation.

Fig. 4.—X-ray No. 13650. Plate No. 1 of full bismuth series. Radiographed immediately after injection of a bowl of oatmeal with subcarbonate of bismuth and cream. A cup of coffee and buttered toast completed the breakfast. Entire series reproduced in positive prints. Note position of stomach filled with bismuth. Curve of duodenum indicated by arrow. Note bismuth in dependent portions of small intestine. Arrow on left indicates gas in splenic flexure. Contrast with Plate No. 2.

Fig. 5.—X-ray No. 13650. Plate No. 2 bismuth series. Radiographed one hour after plate No. 1. Stomach half empty. Arrow indicates duodenum. Note mass of small intestine low in true pelvis.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

During routine examination a distinct point of tenderness was found in the left lower abdomen corresponding to McBurney's point of the right side. The patient had a uterine fibroid of which she was made aware, and a laporotomy was advised. All over the left abdomen a high degree of tympany

Fig. 1.—X-ray, No. 13694. Plate No. 6 of bismuth series. Condition 24 hours after bismuth breakfast. Note shadow of entire colon coiled in left lower abdomen and pelvis. A single loop projecting an inch to the right border of the spine. Condition found previously at operation.

was elicited, and some anomalous condition was suspected; possibly an appendix lying in the left pelvis. A series of radiographs were made after a meal of bismuth (Figs. 4-9), and the whole extent of the colon was found lying in the left of the abdomen. Operation October 31, 1911. A median incision was made and the stomach and gall bladder were found normal. The duodenum, as in the other cases, was uncovered by peritoneum. The cecum and the ascending and transverse colon were found in the left abdomen; a condition practically identical with that in the foregoing cases. The appendix was adherent, contained fecoliths, and was removed. A pedunculated fibroid, attached to the fundus of the uterus, was removed by myomectomy. The patient made a satisfactory recovery

EXPLANATION OF PLATE.

Fig. 6.—X-ray No. 13650. Plate No. 3, bismuth series. Radiographed four hours after breakfast. Upper arrow indicates duodenum, arrow below shows tract of bismuth in stomach. Note two upper arrows on left side pointing to the two flexures. Gas in splenic flexure, bismuth in hepatic flexure. Lowest arrow on left indicates cecum; above it note position of iliocecal juncture, indicated by arrow. Contrast with plates, 4, 5 and 6.

Fig. 7.—X-ray No. 13650. Plate No. 4, bismuth series. Radiographed seven hours after breakfast. Single arrow on right indicates trace of bismuth in duodenum. Stomach and most of small gut empty. Terminal portion small intestine indicated by arrows. Upper two arrows on left indicate flexures of colon. Entire colon coiled up in the left iliolumbar region.

Fig. 8.—X-ray No. 13650. Plate No. 5, bismuth series. Radiographed ten hours after breakfast. Note tract of bismuth in small intestine. Entire colon coiled in left iliolumbar region. Arrows point out the two flexures of the colon. Contrast with Plate No. 6.

Fig. 9.—X-ray No. 13650. Plate No. 6, bismuth series. Radiographed 24 hours after breakfast. The colon has straightened itself out since Plate No. 5 was radiographed. Note absence of usual curves of sigmoid. Arrows indicate position of the two flexures. In this case colon is more strongly to the right of the spine than in either of the other cases demonstrated. Condition confirmed at operation.

THE NEW YORK QUARANTINE,

AND ITS ADMINISTRATION UNDER DR. ALVAH H. DOTY.

By T. MITCHELL PRUDDEN, M.D.,

NEW YORK.

In the old days when wind and fog, thunder and lightning, and errant stars inspired epidemics of disease, it was not easy to prevent them. But stricken individuals and their associates, as sources of contagion, were simply shut up or shut out or shut in, away from well and uncontaminate folks, and so disposed of. Anybody in those days who had force enough at his command could be an effective quarantine officer. Knowledge and discretion were not greatly in demand, in such a function, and the experience of a bailiff was as good as any.

But with the shelving of superstitions and the passing of the notion that disease is a thing to be personified, not a process to be controlled; and with the identity of many disease-inspiring microbes definitely known, the requirements of a modern quarantine officer have become many and exacting.

It will not do to-day at marine quarantines to force the great ships to swing at anchor under the yellow flag, with their panic-stricken passengers and their valuable cargoes, until suspicion dies out or a dread disease abates. Every hour counts in the lives of harassed and busy folks who may be detained, and in the large investments which commerce has upon the sea.

Among the hundreds, even thousands, of clean folks and dirty folks upon the ship, the Health Officer or his representatives must detect with precision the existence of communicable maladies, and in these later days, must put his finger on the "carriers" of sinister microbes, even though these same "carriers" be very pictures of health. He must know what to do and do it instantly, in the serious emergencies which often beset his path.

This modern quarantine officer of a great port like New York must know how to care for detained passengers of all classes with the least annoyance and discomfort which the facilities placed at his disposal by the State will permit. He must not only know how to discover but also how to treat infectious disease. He must command the resources of modern bacteriology and of modern disinfection and sanitation in all their phases. He must be in immediate possession of every fresh clue in diagnosis and every latest practical suggestion in the prevention and treatment of infectious diseases which the busy workers at the bedside and in the laboratories, the world over, are daily bringing to the service of threatened and suffering mankind.

He must have intimate knowledge, day by day, of the origin and course of communicable disease in all parts of the world, must be a keen judge of the bearing of these upon a possible or probable invasion of our ports through immigrants. He will be in close touch with the Federal and other officers at the ports of embarkation who nowadays form one of the strongest bulwarks against disease invasion, through the sanitary control of immigrants and their effects.

The local health officer will work hand in hand with the administration of Federal quarantine and must in person and achievement be respected and trusted by its representatives if the two systems are to work smoothly and effectively together.

The ideal quarantine officer will be informed and determined enough to follow the dictates of modern science, but wise and humane enough to do this with the least possible interference with the comfort of passengers and the interests [illegible]

whatever may have been true in the past, an enlightened public will not now permit without effective protest.

The recent action of Governor Dix in displacing from his charge Dr. Alvah H. Doty, Health Offi-

Fig. 1.—Swinburne Island.

And experience counts heavily in the successful administration of a great service like this.

A man then of special knowledge in many fields, a man of tried ability in the diagnosis and treatment of infectious diseases, an expert in sanitation and disinfection, a man of experience, wide observation, keen perception, good judgment, wise and forceful in emergencies and withal one devoted first and always to his chosen task; such is the man who can most successfully render the service to the public health which is demanded in the great modern quarantine establishment.

Any respectable doctor will not do to-day. There is no room here for politics. Political considerations or the liquidation of personal obligations by the appointing power should stamp the man or men who exercise or permit them, as traitors to a high trust and contemptible enemies of their fellow men. To appoint to such an office as this any other than the most capable and especially fitted man who can be secured, is to juggle with the health and lives of the citizens not only of a great commonwealth, but of a great nation, and to commit an offence which,

cer of the Port of New York, in view of the distinguished service which for sixteen years Dr. Doty has rendered to the people of the States of New York and New Jersey and of the United States at large, is most discouraging to those who have the interests of the public health at heart.

The importance of the quarantine at the Port of New York and the practical bearing which its wise and successful administration has upon the control of communicable disease, not only in this city but all over the country wherever immigrants go, renders pertinent at this time a review of some facts concerning the station and service here under Dr. Doty's administration.

Entering the harbor of New York from the sea as one approaches the "narrows" with Staten Island on his left, he passes two small islands, also on his left, and about a mile apart, which are built upon a shallow sand-flat scantily covered by water at the lowest tide. The outer, smaller island (Fig. 1),

Fig. 2.—Hoffman Island.

with its group of low buildings, is Swinburne Island, where are the infectious disease hospitals of the New York State Quarantine Service. The larger, Hoffman Island (Fig. 2), has an area of a few acres, and upon it are seen two large red buildings

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with some smaller structures near by and grouped apart. These are the detention buildings of the Quarantine Service.

About three miles farther up, past the forts, which on either side guard the entrance to the upper bay, on the Staten Island shore, is the boarding station of the service (Fig. 3), consisting of the offices, laboratories, and the residence of the Health Officer of the Port, and his deputies; while at the pier in front of these lie the boarding, disinfecting, and other boats of the department.

Although the shores of New Jersey form the western borders of what we call the harbor of New York, and thus this State might legitimately share in the expense and the responsibility of the quarantine station at this port, New Jersey has continued to relinquish the privilege to watch and

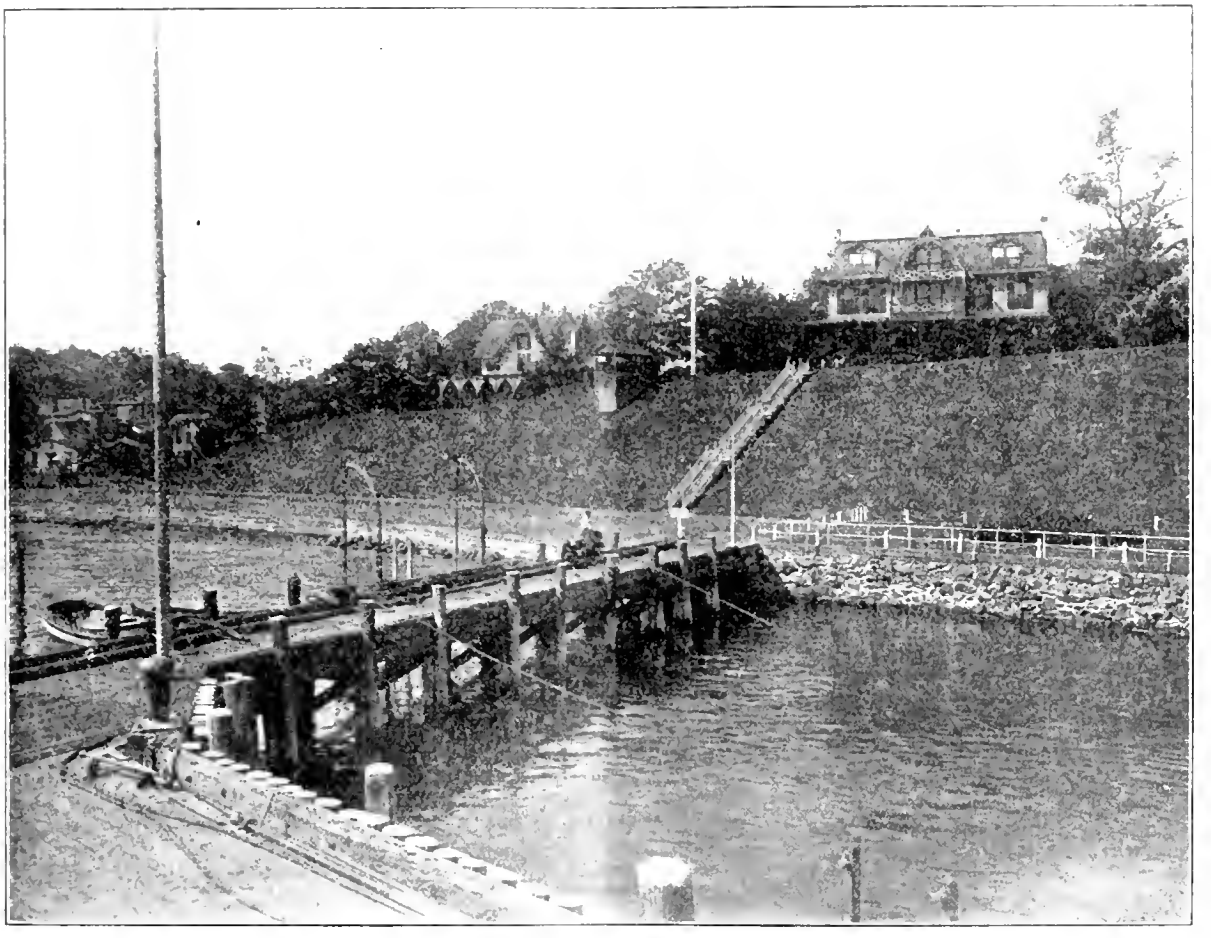

Fig. 3.—View of the Boarding Station of the New York Quarantine, looking shoreward from the wharf.

pay, and does not share in the councils of the quarantine, feeling no doubt that her interests are safe in the hands of her big neighbor.

The quarantine service at the Port of New York, the largest and in many respects the most important in the world, deals annually with immigrants often approaching and sometimes exceeding one million in number, who come in part from the very breeding places of pestilence in the far East, Africa, and South America. Some 6,000 ships are often annually inspected, some minutely, some not in the suspicious class, requiring only a formal assurance of freedom from disease aboard.

The enormous passenger traffic and the vast commercial enterprises centering at this port make it imperative that the business of the quarantine shall be conducted, as it may to-day, within the limits of safety, but with such dispatch as to form no serious bar to any of the interests involved.

Dr. Doty brought to the quarantine service, when he was called by Governor Morton in 1895, a large experience in the detection and control of contagious diseases won in a service of over fifteen years as Assistant Sanitary Inspector, Medical Inspector, and as Chief of the Bureau of Infectious Diseases in the Health Department of the City of New York. His noteworthy skill in diagnosis and his successful conduct of the important bureau in his charge had secured for him a high standing in the Department and the personal esteem of the Health Board, of which he became *ex-officio* a member on his assumption of the duties of Health Officer of the Port of New York. So closely linked are the functions of the Health Officer of this port and the Health Department of the city that the intimate knowledge of the methods of the latter which Dr. Doty brought to his new service became at once, and have remained to this day, an important factor in the harmonious cooperation of these two services devoted to the maintenance of the public health.

When Dr. Doty assumed control of the quarantine service the material plant was under the jurisdiction of the Quarantine Commissioners—a body of laymen, the motives for whose selection was best known in the councils of the dominant political party. Only the medical administration of these islands was in charge of the Health Officer until 1909, when the Quarantine Commission was abolished by the Legislature and the Health Officer placed in entire control.

Dr. Doty found the buildings on Swinburne Isl-

and old and dilapidated and the facilities for proper administration poor and inadequate. The condition of Hoffman Island, though considerably improved for purposes of detention under the spur of threatened and actual invasion of Asiatic cholera in 1892, was still most unsatisfactory in many ways.

Until October, 1910, the Department of Quarantine was maintained by fees collected from incoming vessels which, although commerce had enormously increased, gave a gradually dwindling income owing to the displacement of many small vessels by fewer larger ones.

The expenses, however, involved in the more accurate and costly procedures in scientific administration, in the increased number of attendants, and in the improved methods of disinfection and care of detained persons have necessarily increased. Fifteen years ago some two score persons were employed, now over one hundred are required, many of them highly trained for this special service.

After persistent urgency of the change by Dr. Doty the system was finally, in 1910, brought more nearly into conformity to that in other departments of the State, appropriations for maintenance being made by the Legislature and the fees collected at quarantine transmitted to the State Comptroller. Thus it is only for about a year that the quarantine service at this great port has had a regular income upon which it could depend for its maintenance and development.

In fact, Dr. Doty's administration throughout has been a constant struggle to maintain with efficiency, under inadequate appropriations the steadily rising scientific standards, to cope with such emergencies as now and then arose, and to rehabilitate a plant which, at the commencement of his service, was unfitted to the requirements of the station, the buildings dilapidated and the administration in many ways ineffective and out of date.

But the one thing which in all these years has been inflexibly insisted upon has been the efficiency, at whatever cost, of the scientific service involved in the detection and prevention of disease. That primarily is what the service is for. No doubt, under this stress the material conditions of detention which the State has afforded to those held for observation or treatment have been less attractive than could be desired, but have not, it is believed by those who know, been less salubrious than the conditions demand.

In order that he might gain a more intimate knowledge of the problems which he had to solve, Dr. Doty has in certain lulls in the service here visited the regions in which the ravages of plague and cholera are most persistent and threatening and the places from which merchandise, suspected to be a frequent source of infective germs, is constantly shipped. As a result of these personal observations, he has been able safely to make large concessions to the interests of commerce and to

Fig. 4.—Interior of the Hospital Ward, Hoffman Island

formulate with much greater precision than was formerly possible the measures of safety which the service requires.

No one in this country has done so much as has Dr. Doty to show by precept and by practice how many of the tedious and costly disinfecting processes of an earlier day were futile and unnecessary; to demonstrate how the agencies through which infective microbes are conveyed from one to another in disease outbreaks of obscure origin are seldom to be sought in the clothing and effects of well persons or in goods like rags and rugs, etc.—however dirty—but rather in incipient or mild or convalescent cases or in the newly unearthed "carriers." The establishment of these simple facts in marine as in other phases of sanitation has meant the saving of an enormous amount of futile labor. It has made possible the free movements of commerce where formerly there was endless delay and loss. It has let the passengers go free. It has largely contributed to the precision with which obscure outbreaks of communicable disease can be accounted for because it has drawn

attention away from the fictitious and centered it upon the real sources of infective stuff.

For many years Dr. Doty has maintained the service at this port in close and friendly relationship with the Federal quarantine of the Marine Hospital Service of the United States. The late Dr. Walter Wyman, Surgeon-General of the Public Health and Marine-Hospital Service, was at all times thoroughly familiar with the details of the New York Quarantine and was in cordial sympathy with the new measures which in the later years Dr. Doty instituted in the safeguarding of the port. It may be permitted now to state in this connection that only a short time before his death Surgeon-General Wyman, departing from a life-long reserve in this respect, wrote, unsolicited, a personal letter to Governor Dix in which he set forth the importance of the quarantine service here, his cordial approval of Dr. Doty's administration of it, and his earnest hope that in the interests of the public health he would be retained in his position.

Early in his service Dr. Doty requested the cooperation of a group of physicians of New York City with whom, as an Advisory Board, he might confer on various matters of policy and from whose experience in many practical phases of medical and allied sciences he might hope to profit in the service of the State. Very frequently throughout the season one or another member of the Advisory Board was called in conference in matters in which his special training might be helpful. Once yearly the board in a body visited the quarantine station to inspect the reconstruction of the plant and the new methods for increased efficiency.

From the beginning to the end of Dr. Doty's incumbency all political considerations have been excluded in appointments as in all phases of administration.

It is not necessary for the purposes of this paper to recount in detail the measures which Dr. Doty has himself taken, or in the earlier days of his administration secured through the cooperation of the Commission, to improve the quarantine plant and to bring the entire service to a higher state of efficiency.

While never throughout his incumbency have there been adequate general and specific appropriations for the improvement and maintenance of the quarantine plant and service at this port still step by step, year by year, both material facilities and methods of administration have been improved.

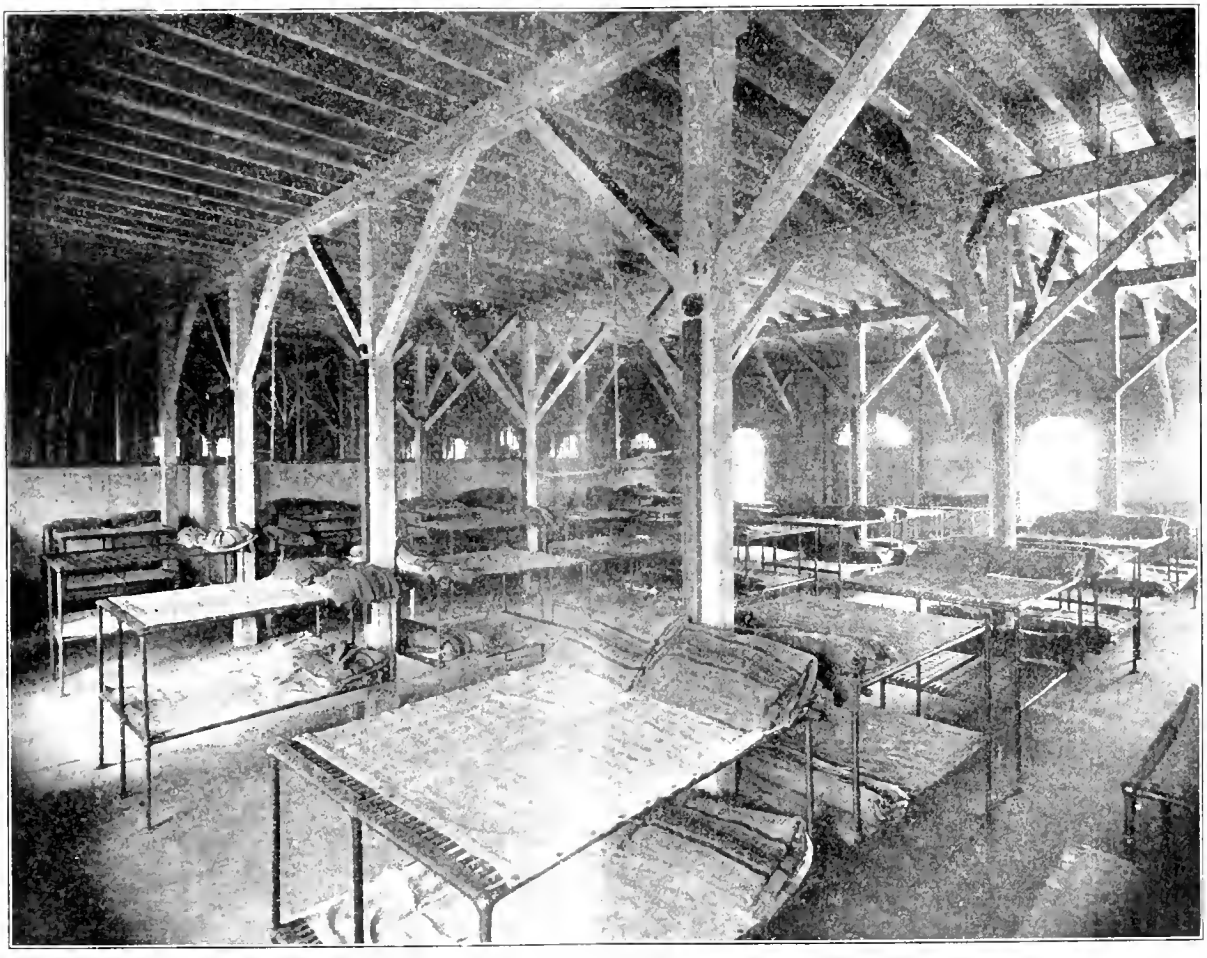

Fig. 5—Dormitory for immigrants detained for observation on Hoffman Island.

The ancient and dilapidated shacks on Swinburne Island have mostly disappeared, replaced by simple but adequate brick and concrete buildings properly constructed for the purposes of an infectious disease hospital accommodating nearly one hundred patients and administered by capable physicians and specially trained nurses. The water supply has been made safe by the installment of a new distilling plant for sea water giving some 4,000 gallons daily, and appliances for the destruction of infectious material have been provided.

Hoffman Island, during Dr. Doty's administration, has also lost many of its mediaeval characters. The enlargement of the island by a new sea wall, already begun in 1905, has been completed, the water supply has been rendered safe and more nearly adequate. The old detention buildings have

been renovated and refurnished. One of them has been reconstructed and new pavilions built for the purpose of a hospital for lesser infective maladies, such as scarlatina, measles, etc. (Fig. 4). Over 200 such patients may be cared for in the old and new buildings.

The sanitation system on Hoffman Island has been overhauled and provision made for the feeding and general care of from 1,400 to 1,500 persons detained for observation in emergencies (Fig. 5). On this island is the capacious disinfecting system installed under Dr. Doty's direction (Fig. 6).

At the lower end of the island is a cluster of new buildings carefully planned for the detention, with as little annoyance and as much of accustomed comfort as may be, of cabin passengers who may now and then be held for observation, or to complete a required period of incubation. Some of the buildings being not constantly required for passengers are used for nurses' quarters and for women and children of detained groups.

Thus it is that so far as could be done with the limited facilities at command the detention and hospital islands of the New York quarantine have been made over so as to meet as fully and effectively as may be the exigencies of this great public health service.

At the boarding station on Staten Island not less significant improvements have been made under Dr. Doty's administration.

In the first place the laboratories devoted to routine diagnosis and to research on special problems related to the service, mark the noteworthy advance within the past few years in knowledge of the infective diseases and the accuracy and minuteness of observation now often required in their detection. At the commencement of Dr. Doty's administration the service of one bacteriologist sufficed for the needs of the time. Now in emergencies from eight to ten trained men with their necessary attendants are kept busy with the routine of bacterial diagnosis. Many valuable studies have been made in these laboratories on the efficiency of special disinfectants and disinfecting processes, the exact value of which it is important to know in a service like this, in which the quick, effective, absolutely dependable destruction of infective microbes, under a great variety of conditions, is of extreme importance for the suppression and prevention of communicable disease, for the speedy releasing of detained passengers, and for the unhindered movement of merchandise.

Beside the wharf at the boarding station on Staten Island (Fig. 7) the tugs lie which convey the inspectors to incoming ships. Here also is the disinfecting steamer *Wadsworth* with steam always up, ready to go alongside a vessel, big or little, which may require its services or to move down to Swinburne or to Hoffman Island in an emergency. This disinfecting steamer is a unique instrument of protection against infectious diseases in the quarantines of the world.

The *Wadsworth* is a small steamer reconstructed for its special purpose. Here lying alongside any vessel or at a pier large numbers of persons can receive a cleansing shower while their clothing is passed through a chamber for steam disinfection, being ready and dried for them soon after their emergence from the bath. The *Wadsworth* has in practice proved to be a most important instrument in the efficiency of the service and in hastening the release of detained vessels.

The destruction of infective stuff in a great ship which has harbored some communicable disease among its passengers has always seemed a formidable undertaking. Whether it be so or not depends a good deal upon whether the man who directs the job has knowledge and common sense. Of the two perhaps the latter is the more important.

In the old days the people used to think of disease as something which existed by itself, which could attack a man or enter into him and slay him, or could lurk about in his neighborhood. So when a ship came into port with cholera, for example, on board, the quarantine officer didn't know whether the dreaded disease was confined to its victims or was dodging about among the bales of rags or boxes of merchandise or coffee sacks, and thus he felt that he must do something to the whole ship, though there was actually no reason for thinking that any other part than the immediate vicinity of the cholera victims was in any way contaminated.

What this officer actually did depended upon his epoch. Sometimes, long ago, he shut up the passengers for an indefinite time, they did well if they got off within the 40 days which give us the word quarantine—and then he burned both ship and cargo and the state paid the bills. Later a painful washing out of the vessel was gone through, or a little steam was introduced into its compartments, which at once condensing on the cold walls gave a moist, warm bath to microbes which might be lurking there, but was not at all inimical to their welfare. Or some more or less futile gas or fumes were turned loose in the ship's interior.

Long after the notion had been given up that the occurrence of one or more cases of contagious disease in one part of a ship, rendered the rest a source of danger, disinfection of ships at quarantine was maintained as a fetich, or later still as a bit of solemn mummery through which the health officer's fees could be collected.

The writer has during an earlier quarantine administration at this port, now mostly forgotten, seen the disinfection of an ocean liner, swaying at anchor in the lower bay, by the burning of a pan of sulphur on the open upper deck forward. When asked why the operation was conducted on the forward deck, the priest of this modern rite called attention, not without a tinge of superciliousness, to the fact that the wind was aft and hence the fumes did not incommode the sailors as would be the case if the ceremony were performed astern.

It took, in fact, a long time for quarantine officers, as it did others, to realize—and the conception is not yet quite domesticated in the general practice of sanitation—that the actual, potent risks of most infectious material in communicable diseases, center in the patient himself or in his excreta and in the direct contamination of persons or things in his vicinity.

When a ship comes into port to-day the attention is concentrated on the individuals who have been or are sick, and if the evidence of communicable maladies is clear the sick or suspected individuals or those who have come into intimate contact with them, their effects and their immediate surroundings in the ship, are the objects of concern to the health authorities of the port. But the ship's cargo, if the trouble has arisen in the steerage, the cabin passengers and all parts of the ship itself not subject to contamination may be safely disregarded. So ship disinfection in the quarantine routine is now usually confined to certain compart-

ments or certain rooms, to the effects of the sick persons or those of their associates and detention is limited to the stricken persons themselves or those who are thought for various definite reasons to require a period of observation to determine whether or not they may be harboring the suspected microbes and are or are not soon to manifest the symptoms of the disease.

Epidemics of communicable diseases to-day are usually concomitants of filth, insanitary living, polluted food or drink, and where none of these prevail are not to be expected and do not often occur. Hence it is that cabin passengers on the great ocean steamers are seldom seriously inconvenienced by the quarantine service.

The tasks and responsibilities of the quarantine health officer are greatly lightened to-day by the close scrutiny and cleansing processes to which

made ready for the quarantine inspector. Thus when the great ship slows down in the lower bay to meet the boarding health officer this functionary is able to cast a fairly accurate horoscope as to its immediate future as well as that of its immigrant passengers.

But it is just here that the skill, experience, judgment and resolution of the health officer are often most keenly tested.

Given some 700 to 1,000 variegated and polyglot immigrants lined up before a health officer on the deck of a slowly steaming or anchored liner, let us say without the story of any serious disease during the voyage, how is this official to decide, without delay, which, if any, of the motley group is likely to be or to become a menace to the folks ashore? The obviously ill afford no serious problem. Not a soul of those able to be about and

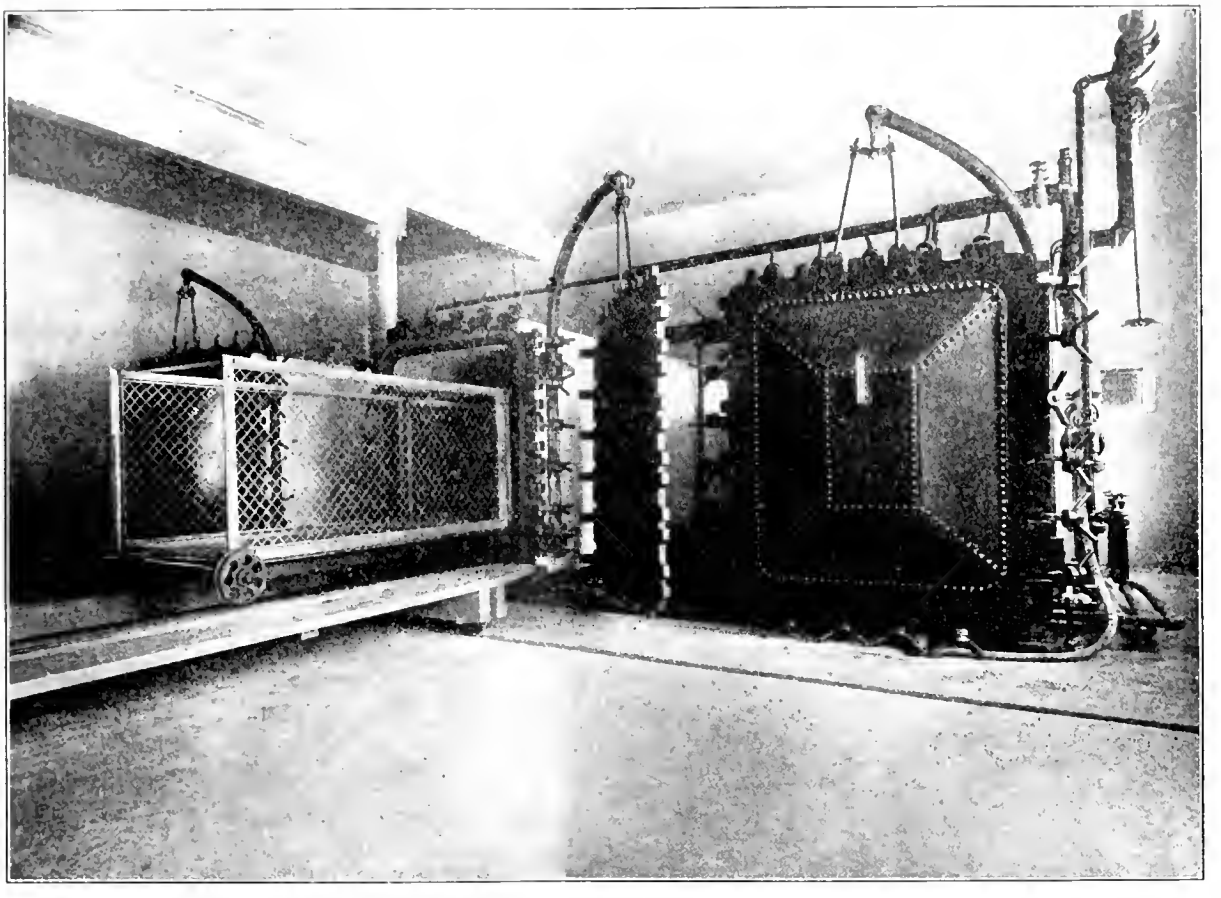

Fig. 6.—Disinfecting Chambers, Hoffman Island.

immigrants at many of the great ports of departure are subjected. Where such regulations are in force it will be known where every one of the thousands who storm the piers comes from, what conditions of health prevailed at his home before he left it. It will be known by the immigrant inspectors at these places how the epidemic tide, if such exist, is moving—up or down; what the type of disease is, mild or virulent. The would-be immigrant will be bathed and his effects disinfected should conditions indicate the urgency of these functions before ever he is permitted to set foot upon the ship.

Finally, the well-advised steamship company bearing immigrants to this port will see that the entire group is carefully watched en route and any suspicious illness wisely treated, or its victim safely isolated, if suspicion points to a communicable disease, and the complete health record of the trip

in the muster but will do his best to assume the jauntiness of health, although he feel it not. Some of them may be in the incipient stages of a serious disease which is not yet manifest either to its victim or to the most acute and trained observer. There are mild cases and there are convalescents from serious disease to be considered.

Then there are the latest additions to the responsibilities of sanitary experts—the "carriers" of microbes, who while not constantly, are always potential breeders of disease and now and then of epidemics.

Formerly, as the boarding officer passed down the lines of mustered passengers, each was forced to thrust out his tongue for inspection, under the ancient delusion that on this organ as on an open book could be read many dark secrets of our reticent interiors. But this unseemly performance

has been largely relegated to the junk shop of forgotten mummeries as a serious landmark of disease.

The passengers' own stories too were formerly considered as affording valuable evidence when the boarding officer could understand or believe them. But in these, under the conditions of haste, ignorance, bewilderment and the utmost temptation to deceive, the inspector has largely lost confidence.

There is one thing, however, which disease inducing microbes quite constantly do when once they settle down to the business of getting a living in the private bailiwick of their earth neighbor, man. They damage his delicate mechanism in many ways, and this damaged mechanism—almost sentient in its purposeful protective response to injury, releases chemical and other activities of the cells and organs from the close restraints of health, and fever follows—sometimes slight, sometimes intense. And here at last is something, this fever, whose recognition is precise because measurable. And the doctor drops the various hints of symptoms and roundabout makeshifts of observation with which he was formerly more or less content and reaches for the thermometer.

Under Dr. Doty's administration and at his suggestion a few years ago the clinical thermometer was introduced in the routine inspection of immigrants on shipboard in time of threatened yellow fever and plague. This practice is now largely followed in marine quarantine inspections at important ports. It was only after special studies instituted by Dr. Doty upon over 16,000 persons, under conditions prevailing among passengers and crews, that the data for estimating the exact significance of slight variations in the temperature were secured.

For, precise as they are, the stories of the thermometers as they come from the mouths of the inspected at quarantine must be wisely interpreted, since in many a sensitive person mild emotional disturbance or trivial ailments of various sorts may induce slight elevations of temperature which are passing and without noteworthy significance, as may be shown by a few hours under observation.

Of course, it is not at all times necessary to have recourse to the clinical thermometer. But when yellow fever and plague are prevalent in countries from which the immigrants come, it is of the greatest service. Even in such a time, if the ship doctor's record of the voyage be a clean one, after the few who may be judged to have a suspicious temperature are held for observation on Hoffman Island, often only over night or for a day, the remainder are at once allowed to go their ways.

When cholera, plague, or other serious communicable disease has actually occurred on the voyage the inspector has a more difficult decision to make. If the cases have been at once isolated and properly cared for, all that may be necessary is to remove the sick who at this port go to Swinburne Island and hold those with elevated temperatures at Hoffman Island for observation.

If, however, such cases have appeared en route without proper isolation and care, and if new cases are developing, it is commonly necessary to remove the sick to Swinburne, and the entire body of immigrants to Hoffman Island for observation, and for the disinfection of such of their effects as may require it, and to cleanse the compartments of the ship in which illness has occurred or those which could have been contaminated.

With the careful inspection and disinfection at ports of embarkation which is now common and with the immediate isolation and care of those cases of plague, cholera, etc., which may develop during the voyage, so vital for the interests of the steamship companies, and the systematic use of the clinical thermometer, it is not nowadays often necessary to hold an entire shipload of immigrants for observation. When this is done a close watch is kept upon them all for the first possible manifestation of disease which is followed by transfer to Swinburne Island. Thus it is usually found practicable after a few days to discharge the group after such disinfection as may be required. Smallpox is readily controlled, as a rule, by vaccination, but requires unremitting alertness on the part of the health officials.

By the judicious use of all these methods of the modern marine quarantine, it has been possible for Dr. Doty at the port of New York to protect the people of the country from such infective maladies as have from time to time threatened, and this with but a trifling interference with private or commercial interests. This is a great achievement in view of the large number of vessels annually entering the port and the immigrants of all classes swarming hither from all sorts of pestilence-breeding localities. It has required ceaseless vigilance and a wide knowledge of the steady advances which science has made year by year.

Few realize, though modern methods have done much to lighten the burden of his task, the harassing responsibility which rests upon the health officer in releasing from quarantine a ship load of immigrants among whom have appeared cholera or plague with all their sinister possibilities.

The modern quarantine officer, with all his resources, cannot insure the country that no case of communicable disease shall ever pass the barriers. His aim is to take those precautions which, all things considered, are required and justifiable for the common good. And the development of modern science has shown that this may be done without serious damage to anyone, either in person or pocket.

This larger view of the quarantine requirements, which tempers the claims of tradition and the theoretical exactions of science necessary in the laboratory, with the lessons which world-wide experience has taught, for many years, and far in advance of most countries, has mitigated the rigors of quarantine at English ports and at the same time secured for that country practical immunity from imported epidemic maladies.

The necessity for, and the possibility of safely achieving, this comprehensive aim of modern quarantine has been persistently urged by Dr. Doty in many noteworthy papers prepared for the medical profession at large, and for special officers of marine sanitation in this and other countries, among whom he holds a place of influence and high honor.

The problem of "carriers" is one of the most perplexing of those with which modern sanitation has to deal. It has long been known that after recovery from diphtheria, virulent bacilli might remain for various periods in the throat or mouth and render the secretions of these capable of inciting the disease in others, through unguarded spitting, coughing, and sneezing, through kissing, and in other ways. More recently the germ of typhoid fever has been shown sometimes to persist in the excreta long—even years—after con-

valescence. In this way serious outbreaks of typhoid fever have been traced to carriers who were dealers in milk and in various ways concerned in the handling of food. Similarly in times of cholera, the digestive canal of persons in health may harbor germs fully capable of inciting the disease in others, if by any mischance they should find their way into the food of susceptible persons.

"Carriers," then, are persons in whose bodies infective microbes are not destroyed, but on the contrary may flourish for long periods without detriment to their own health, while setting free enormous numbers of germs highly virulent for others.

It is only by close personal contact of carriers with others, or by such uncleanly practices as lead to the contamination of food or drink that the damage occurs.

examination of the intestinal contents of every immigrant and members of the crew on board ships entering this port under suspicion of cholera contamination. In this way several cases have been detected which must otherwise have gone free as a persistent menace to others.

What is to be done with "carriers" of cholera and typhoid germs is too large a question to be profitably discussed here. They cannot be indefinitely sequestered—well folks as they are—even for the good of the community. Doubtless a fuller knowledge of the conditions under which such sinister germs can persist in healthy persons will bring useful counsel. Or, direct means will be discovered to relieve them of their incubus.

In the meantime, here, as in many other sanitary questions, the larger view is the wiser one, and common sense and experience are the best arbitors.

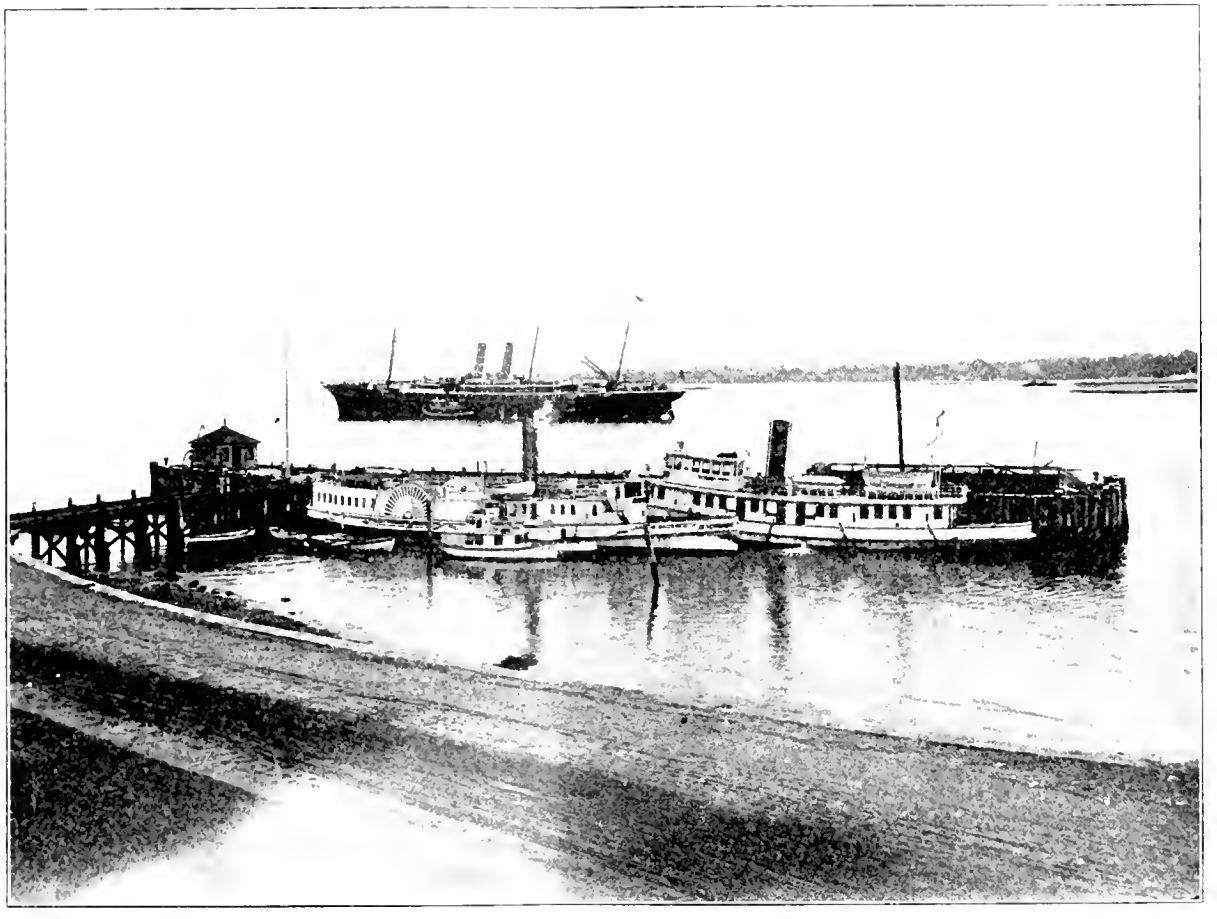

Fig. 7.—View of the wharf of the Quarantine Boarding Station, showing the department boats and a foreign vessel at anchor and under inspection by a quarantine officer.

But even carriers themselves are not always proof against infection. Let an even slight disturbance of the nice balance which we call health occur, and immediate invasion may take place with serious illness. Thus so slight a disturbance as that induced by a dose of a cathartic drug, normally, perhaps salubrious, may speedily convert a cholera carrier, harmful only to others, into a cholera victim.

How are carriers to be discovered, and what is to be done with them when they are found out? The importance of the detection of cholera carriers has only recently been emphasized by the discovery of several such persons at the New York Quarantine. Keenly alive to the significance of this discovery, Dr. Doty early last year assumed for his station the enormous burden of a bacterial

One cannot make every individual in a community germ free or germ proof, and nearly all health regulations which relate to the suppression of communicable diseases are more or less a compromise between what is ideally desirable and what is practicable, all things considered.

One of the most striking advances which science has made within the past two decades in the knowledge of quarantinable diseases is in yellow fever.

It was formerly believed that this serious epidemic disease was readily conveyed by the clothing and effects of its victims. The result was that when these were not destroyed they were subjected to disinfection, often at a great cost of time and labor. When ships came from ports at which yellow fever prevailed, these, too, it was thought must be disinfected; at least, the passengers were

objects of serious suspicion, and were often subjected to extreme annoyance and delay.

Early in Dr. Doty's administration he convinced himself from the various records of epidemics of yellow fever that there was no evidence of its spread through the clothing or effects of victims of the disease or of their associates. On this conviction he discontinued the disinfection of ships and goods from yellow fever ports, confining his attention to exposed and non-immune persons who were compelled to defer landing until the traditional five days' period of incubation should have elapsed.

When, finally, the agency of the mosquito in the conveyance of yellow fever was established, Dr. Doty's convictions and practice, which had been looked askance upon or had been the subject of active protest, were abundantly vindicated.

When Governor Dix assumed his office at the beginning of 1911, it was feared lest he might follow the tradition of some of his predecessors and regard the position of Health Officer of the Port of New York as political spoils, and as Dr. Doty's term then expired, replace him by a man of untried capacity, but of political affiliations with himself. He was early advised by many citizens familiar with administration of quarantine at this port, and with the long and distinguished service which Dr. Doty had rendered to his State, of the extreme importance of retaining so efficient an officer.

As the months passed, while it was disquieting to those who have the health and lives of our citizens at heart, that Dr. Doty was not reappointed, it was still hoped that the Governor might prove to be among those public-spirited officials who regard the welfare of the people which they are pledged to foster, as of greater importance than the clamor of office seekers or the claims of political allies.

In the autumn of 1910 Asiatic cholera assumed a threatening aspect in Europe, and the incoming ships, especially from Mediterranean ports, became the source of extreme concern to the Health Officer. But Dr. Doty had the quarantine system well in hand and with only the slightest interference either with passengers or commerce, the ships bearing infected passengers were safely cared for.

It was evident, however, that again in 1911 similar vigilance and care would be required in dealing with the tide of incomers from infected districts, and, in fact, the summer brought ship after ship with suspicious persons or actual cases of cholera on board.

While every effort was being made to prepare for the serious emergency thus expected, it was announced that Governor Dix had decided to investigate the quarantine service at this port, and Mr. Chas. N. Bulger, of Oswego, N. Y., was named Commissioner for this purpose.

The inquiry was instituted by Commissioner Bulger in New York in the early summer, and so far as fairness and propriety were concerned, soon developed into a dismal farce. The shabby treatment of witnesses not obviously testifying to the detriment of the quarantine administration; the eager elaboration of the gossip and petty complaints of a few discharged and discredited servants of the service; the solicitous fostering of the alleged grievances of a small collection of ignorant immigrants, all too easily lured to testify to any fancied hardship, was all that an assiduous exploitation of the underworld afforded in this preposterous inquisition.

Throughout the long rambling proceedings one consistent impression was always to the fore, namely, that at all hazards evidence must be secured to make Dr. Doty's removal seem justifiable or necessary.

Meanwhile, harassed as he was by the ill-timed and often preposterous demands made upon him or his associates by Commissioner Bulger, Dr. Doty stuck to his job—which just then seemed to center in keeping out of the country the infective agent of Asiatic cholera so seriously threatening, and requiring every thought and energy which the quarantine service could concentrate upon it, rather than following the antics of the exigent Commissioner and his shabby coadjutors.

The results of the inquiry were finally framed into a report to the Governor by his Commissioner, which is a masterpiece of misrepresentation, ignorance and malicious invective not often equaled in the annals of a modern state.

Dr. Doty's methods of accounting were criticized, but have been shown to be adequate, and at least all that could be expected from an officer upon whose shoulders had been suddenly thrown the business management of a great station at a time when threatened cholera invasion required his most earnest personal attention.

The quarantine at this port obviously needs and should have more liberal appropriations, provided the officer at its head is sufficiently informed in science and administration to know how wisely to expend it. There should, of course, be a professional accountant responsible alike to the Health Officer and to the Comptroller of the State.

The strictures of the remarkable sanitarian from Oswego upon the scientific conduct of the quarantine in general and of the treatment of certain ships and persons in particular, form a rather noteworthy composite of ignorance and spiteful irrelevancy. The Governor in a subsequent, violent letter to Dr. Doty, demanding his resignation, adopts the findings and the furies of his Commissioner.

The Governor is disposed to attribute to a beneficent Providence the salvation of the country from devastation due to the distribution from quarantine of cholera, which he alone, with his newly unearthed sanitary expert, has discovered. Might one respectfully suggest to his Excellency that the country will be saved from pestilence, according to a more modern view, rather by the vigilance and efficiency of local health officials who elsewhere are permitted to meet emergencies unembarrassed by ill-timed and preposterous inquisitions and scurrilous abuse from their superior officers of the State.

One by one every noteworthy charge against Dr. Doty's administration has been answered to the Governor, but these answers are all suppressed or ignored in the Governor's final letter to Dr. Doty asking for his resignation. Perhaps the only part of the Commissioner's report which deserves a moment's serious consideration is a collection of rather verbose criticisms of Dr. Doty's administration of the quarantine, in which it is attempted to show that his practice on certain occasions did not conform to the rules which he and others had somewhere laid down. To this one may say that, when all is ready at a modern quarantine station to detect disease, to clean clothing, material and ships, and to provide for sick and detained passengers, there yet remains one prerequisite to an ideal

administration, namely, the right man at the head. Sanitary science is not yet, if it ever will be, an exact science. There is always a large borderland in its administration in which good judgment, large experience and an open mind must be linked to expert knowledge if the best results are to be secured. Rules there are for quarantine service as for all phases of disease prevention. But the man who is really fitted to control such a service must be stronger and wiser than the rules, of keener insight than the devotee to formulas, and ready and willing to break or to transcend them both when the proper occasion comes.

It was the failure to recognize this factor in sanitary administration which made possible many of the callow criticisms of the Commissioner in his strident report to the Governor. Some of the very performances which seemed to this official critic to show inconsistency or unwisdom or neglect on the part of Dr. Doty were the precise things which revealed the trained sanitarian, the wise and forceful executive, and the devoted guardian of the public health.

The competent executive in sanitation must be prepared to make exceptions to all rules in some emergencies; to trample upon all traditions for the nonce: and only so—now and then, can he win a successful fight with irregular phases of disease invasion. The ignorant will be shocked, the wiseacres of tradition will wag their heads, and the malicious will revile, but the proof of the pudding is in the eating. Dr. Doty has kept threatening epidemic invasions well in hand at this port for sixteen years, some of them exceedingly strenuous ones, and though his methods appear to horrify the versatile Commissioner, and though the Governor in the plentitude of his wisdom and piety attributes our salvation to Providence, those who really know are apparently disposed to think that New York has had an uncommonly alert, experienced and successful health officer of the port.

Of course, neither Dr. Doty nor any other individual is indispensable to the conduct of even one of the world's affairs, and the New York Quarantine will continue to be administered some how.

The most disheartening feature in the situation created by Governor Dix is that we are forced to realize that at a time when the whole civilized world is turning its attention and its hope to disinterested service in the prevention of disease, not even an office like this, touching the personal welfare of so many citizens, should be free from the smutch of high official brigandage.

The health officers of the State of New Jersey will do well to take note of the risks to which Governor Dix is so jauntily exposing their charges as well as the citizens of his own and other states.

Federal quarantine officials have once felt obliged to establish for a time their own protective system outside that of New York State when they were convinced that the latter had become a menace, not a protection, to the public health. And they may well find themselves again compelled to assume a similar responsibility if this service is to be prostituted by the Governor to private or political exigencies.

Those who have cherished the hope that local self-interests might never again be permitted to interfere with the public health service, will inevitably turn to the possibilities of the permanent Federal administration of our New York Quarantine. This is, no doubt, what will ultimately take place. No suggestion of this has been made by Federal or other authorities within the past decade and a half because the administration of the service here has so universally inspired confidence.

If those, whose efforts have lately been so faithfully directed toward the establishment of a National Health Bureau or Department, could overcome the sinister influences which have thus far succeeded in thwarting their efforts, we might the more strongly and more immediately urge the establishment of a Federal quarantine at this port which should be part of the greater organization.

One does not believe that ever again in this or in other civilized communities plague and cholera and other such pests can ravage as they sometimes have, and do still, in the tropical and eastern hotbeds of disease, because the sanitary safeguards are too well known and too efficiently controlled.

Nevertheless, neither those who travel by sea nor those concerned with commerce can view without regret the unnecessary placing of the greatest quarantine service of the world in untried hands. Governor Dix has evidently made up his mind to be responsible for the few lives which would almost inevitably be sacrified through an ineffective quarantine service, and to take the risks of the larger loss in health and life and property should a not improbable more serious calamity befall. It is pertinent to ask, however, whether the people of the State of New York—to consider them alone whose officer the Governor is—are satisfied with the only too obvious motives which inspire this political juggling with their welfare.

One would like to think that Governor Dix has been deceived, that he has acted in haste, overlooking somewhat the significance of his performance, in the press of many urgent duties and engagements.

But through all his actions in the affair, recorded and unrecorded, one is forced, much against his will, to read the shabby drift of the whole matter—the displacement of a faithful officer of the State under cover of a mock investigation and a prodigious defamatory hullaballoo.

A CASE OF FULMINATING GENERAL PARESIS, WITH AUTOPSY.*

By ALEXANDER S. LEVERTY, M.D.,

NEW YORK.

PHYSICIAN TO THE NEUROLOGICAL CLINIC, INSTRUCTOR IN NEUROLOGY, CORNELL UNIVERSITY MEDICAL COLLEGE, NEW YORK, CLINICAL ASSISTANT IN THE DEPARTMENT OF NEUROPATHOLOGY, POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

THE case that I am about to report presents three interesting features: First, the extragenital seat of the initial lesion. Second, the rapid and furious course of the disease. Third, the report of the findings of the autopsy as the disease was in a relatively early stage.

Summary.—Male, age 45, finger infected in 1900, syphilitic monoplegia in 1909, cured. First symptoms of paresis January, 1911: death from paresis three months later. Autopsy, characteristic findings of paresis.

The patient was a man, American, 45 years of age, a hardware clerk without any known hereditary predisposition to insanity. The history of the grandparents on both sides is unknown. His father, however, died of phthisis at an early age. His mother died of cancer of the stomach at 60. Two

*Read before the New York Psychiatrical Society, January 3, 1912.

sisters and one brother are living. One sister had a severe attack of "nervous prostration" from which she recovered. One sister is sensitive, impulsive, and has had numerous attacks of emotional instability and general restlessness. One

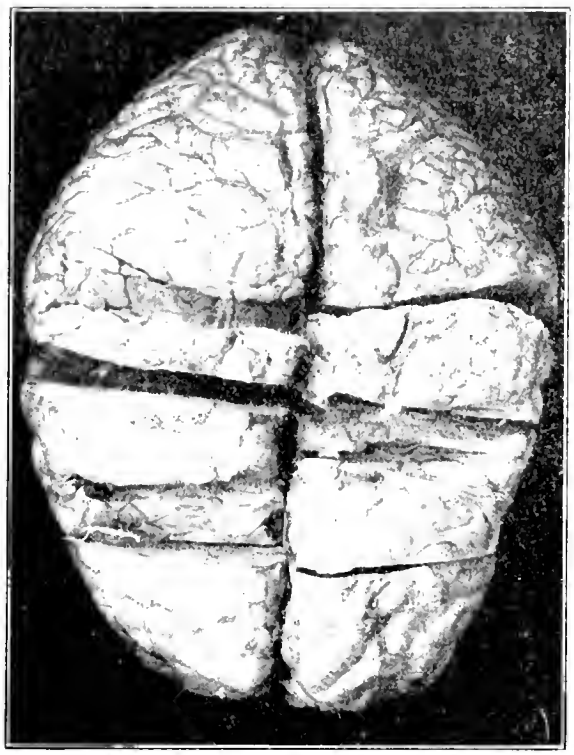

Fig. 1.—Brain in the case of acute general paresis, showing the limit of the process, the thickened edematous pia, with opaque turbid fluid under it; atrophy of the frontal cortex; increase in size and number of the pacchionian bodies.

brother is normal. The patient was in good health up to the time of his infection in March, 1900, eleven years ago. The chancre appeared on the index finger of the right hand and was the result

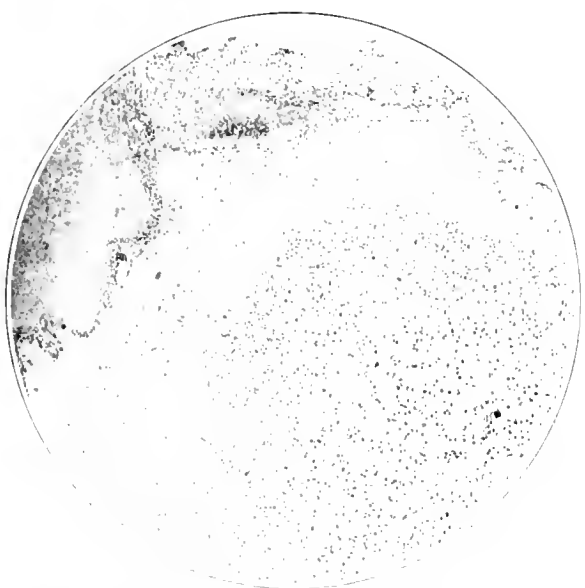

Fig. [illegible] paracental cortex, X 60. (Toluidin Blue.) Shows [illegible] engorgement of vessels, and marked infiltration of [illegible]

of a [illegible] manipulation of the genitals of an infected [illegible].

At first he thought it was a runaround and treated it with [illegible] poultices and did not consult a physician until [illegible] secondary symptoms appeared. He was treated for eighteen months, after which time he discontinued treatment. Contrary to the advice of his physician he married one year after his infection. His first child died of meningitis at less than a year. The patient was of a nervous tempera-

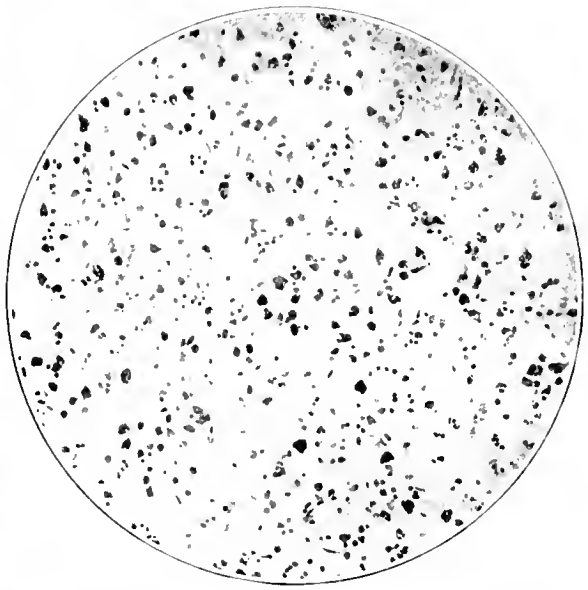

Fig. 3.—Right Paracental Cortex, X 190. (Toluidin Blue.) Same section as Fig. 2. Shows degeneration of pyramidal cells and infiltration with numerous lymphocytes.

ment. His habits had been industrious and at times he had worked very hard, but used no alcohol or tobacco in excess.

In 1906 he complained of being nervous and irritable, of pains in his head, and of inability to apply himself to his work. This condition lasted for a month, when he apparently got well. Three years later, in 1909, he was suddenly attacked with weakness and paralysis of the right arm. With strenuous antiluetic treatment he regained the use of his arm in five weeks. He remained well and attended to his business until the latter part of Jan-

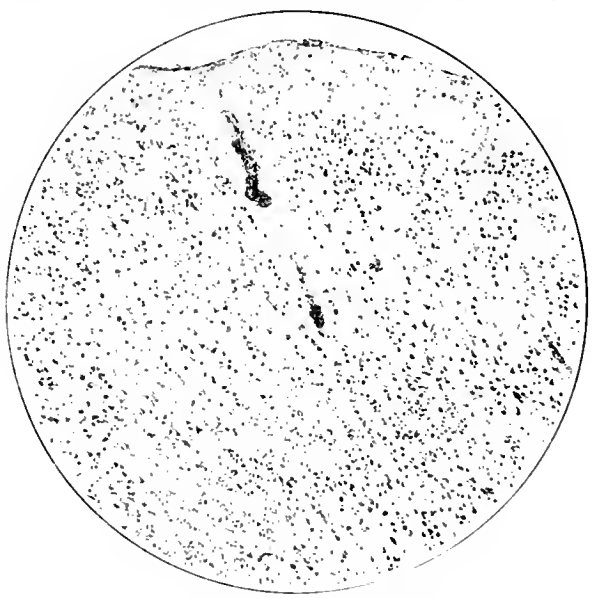

Fig. 4.—Right Temporal Cortex X 75. (Toluidin Blue.) Shows chronic meningitis, engorgement of blood vessels, and exudation of lymphocytes.

uary, 1911, when he began to express an exaggerated sense of well being, saying that he was to be taken into the firm for which he worked. On arriving home one afternoon, he displayed $200, which his employers had given him for the purpose of

taking a rest, as they had noticed a change in him, saying, "everything is all right now," and adding that when he returned to work he would be admitted to the firm. This state did not arouse the suspicions of his wife or relatives, and they did not suspect that

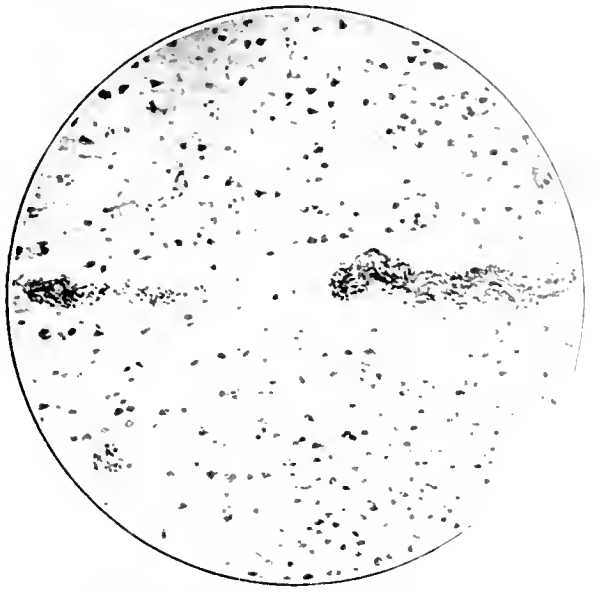

Fig. 5.—Right Temporal Cortex, from same section as Fig. 4, X 190. (Toluidin Blue.) Shows overgrowth of endothelial cells of capillaries, on the adventitial sheath of which are seen the characteristic plasma cells and many lymphocytes. There is marked degeneration of the cortical neurones.

he was mentally wrong, until he was examined.

The somatic symptoms were Argyll-Robertson pupils, tremors of the face, tongue, and hands, changes in the deep reflexes, defects of speech and of handwriting. Ten days later he became incoherent, maniacal, and furious and was sent to a sanatorium (February, 1911). The delirious mania continued until his death in April, 1911, less than four months after the onset.

The following is the report of the autopsy: Au-

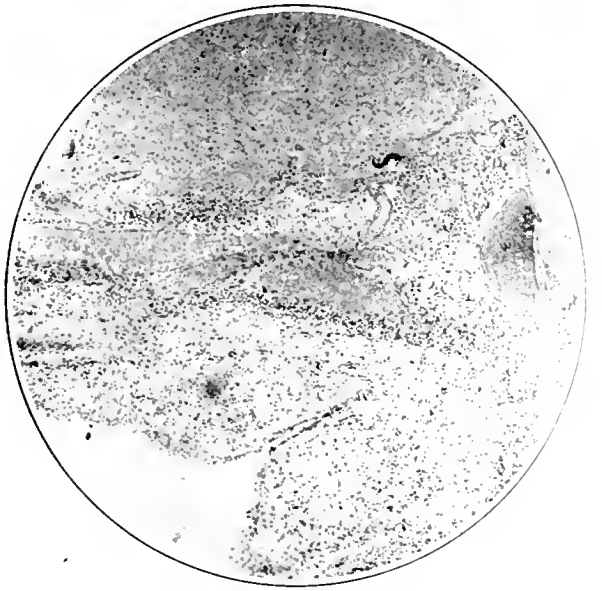

Fig. 6.—Right Frontal Cortex, X 75. (Toluidin Blue.) Shows chronic meningitis, congestion of blood vessels, with increase of cellular elements along vessel wall.

topsy was performed about three hours after death. Permission was given to examine only the head, and the body was not opened. The calvarium was somewhat thickened and the dura mater more than usually adherent to the bone over the top and front of the brain. There were no adhesions between the dura mater and the pia mater. There was nothing noteworthy in the appearance of the dura or of any of the dural sinuses. The base of the skull appeared quite normal.

The pia mater was slightly edematous especially over the frontal and vertical regions of the brain, and in these regions the pia mater was considerably thickened and appeared milky. This latter appearance terminated abruptly at the middle of the top of the brain, so that a fairly definite line could be seen, in front of which the pia was considerably thickened, while behind it the pia mater was but slightly altered. On the right hemisphere this line was at a plane about 1 in. behind that of the left hemisphere. As one palpated the brain as one would in detecting fluctuation, there was a definite decrease in resistance at this line, so that in front of it the resistance was marked as compared with that behind it.

The Pacchionian bodies were hypertrophied and increased in number. At the base of the brain the pia was slightly but not much thickened, and the

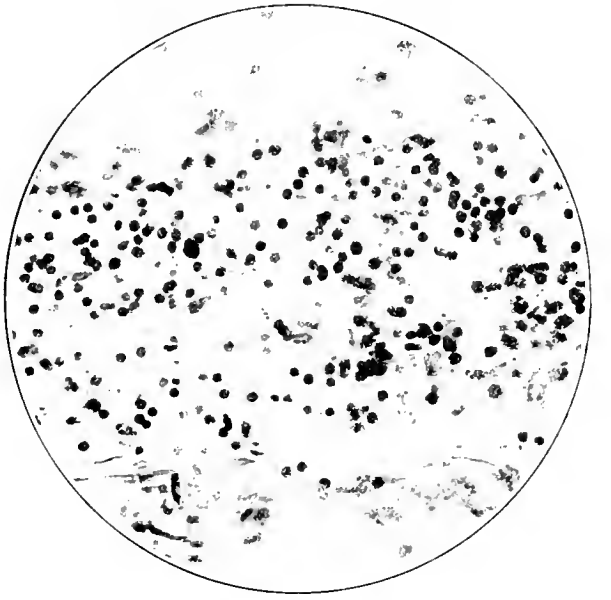

Fig. 7.—Right Frontal Cortex, same section as Fig. 6. X 250 (Toluidin Blue.) Shows exudate of lymphocytes, and felt work of plasma cells along adventitia.

vessels there looked to the naked eye delicate and normal.

The brain weighed 1,530 grams, a weight slightly above the average. The convolutions were well rounded, there was no focus of alternation detected anywhere.

Macroscopically the brain looked like a typical case of paresis, in which the disease, though it had spread to include the front half of the brain, had not yet caused much shrinkage.

Microscopically there was found a meningitis with characteristic cortical changes of the type belonging to paresis. (Fig. 1.) There was a productive inflammation of the pia mater. The meningeal changes consisted of intense engorgement of the blood-vessels, thickening of the vessel walls, exudate of lymphocytes, marked proliferation of cells in the adventitia and perivascular spaces with formation of the characteristic plasma cells. (Figs. 2 and 6.) The cortex showed proliferation of neuroglia. Many of the cells were degenerated. There was chromatolysis, with loss of central position of the nucleus, which in some cases had reached

the periphery of the cell. (Figs. 3, 5 and 7.) Mast cells and spindle cells were also present. The disease had not, even in the frontal regions, progressed very far; that is, comparing this case with many others, one can say that there the disease was in a relatively early stage. There is, however, absolutely no question as to the type of alteration found.

The autopsy was of special value, owing to the fact that the disease was in a relatively early stage, and in a case which clinically ran a rather quick and stormy course.

The cause of death, while undoubtedly intimately associated with the paretic brain process, cannot be asserted to be due immediately to it, as it appears clinically that the visceral functions were much impaired, and that toward the last these played a leading part in the termination. But just what should be ascribed to the various visceral organs it is impossible to say, as they were not examined post mortem.

707 St. Nicholas Ave.

OVERCROWDING AND DEFECTIVE HOUSING IN THE COUNTRY DISTRICTS.

By HARVEY B. BASHORE, M. D.,

WEST FAIRVIEW, PA.

COUNTY MEDICAL INSPECTOR, PENNSYLVANIA DEPARTMENT OF HEALTH.

It is hard to believe that overcrowding, a disease generally only prevalent in the great cities, is present in the country districts; yet to a close observer this will be apparent in many places. Although I had been conversant with the country all my life, I never realized that such conditions existed until I became connected with the State tuberculosis work. I little dreamed that we had situations in our villages and small towns just as bad as I had seen in the great East Side on Manhattan Island. Who would believe that rear tenements existed on a village lot—in a village of a thousand inhabitants, where land was almost as cheap as the proverbial "dirt?" Yet such does or did exist. Why not? Greed for gold is as strong in the country squire as in the city millionaire, and the owner of a few lots is going to make the most of them, whether in city or country.

Many of the workmen's houses in the small industrial villages of Pennsylvania are built in rows, so that only the end houses can have light and air on more than two sides, a condition which may become necessary in the crowded centers of population but which is not necessary in small towns. Once when I was driving through a little mountain valley in the backwoods of this State, I came across just such a settlement made up of the houses of the workmen of a nearby industry; rather, there were no houses, only one long row divided into compartments, called houses on the company's books; the conditions here were scarcely better than in a city block, and the inhabitants, pale, sallow, dirty and unkempt, living in badly ventilated rooms, showed the typical countenance of the overcrowded. Yet right here there was land in plenty, land everywhere, that nobody wanted—land for ten dollars an acre, and the people were suffering from overcrowding and defective housing because the company employing them was too penurious and too careless to build houses fit for human habitation. In another village I saw, and it still exists, a house built on the entire lot, so that the privy accommodations are actually on the street; in this case the condition was born of the greed of a bankrupt speculator.

Fig. 1.—A sample of bad housing in the country; plenty of fresh air outside, but sadly lacking on the inside.

In the case of the rear tenement [illegible] above, it is interesting to note that it has held several families, every one of which has included cases of tuberculosis, and the people in the locality are becoming so wrought up about its unhealthfulness that just at present nobody will move into it, and it is likely to be torn down before long. I am thinking of another house, or rather row of houses, which is a good illustration of the architecture so responsible for overcrowding in small towns. This row, supposed to be three houses, at one time contained seventeen people, and as there are only three bedrooms in the whole row, there was evidently a vast amount of overcrowding. The gable ends of the building show great lack of window space, presumably left in this condition with the intention of adding more "houses" to the row at some later date. Why are such houses, insanitary they surely are, built in our towns and villages? Simply because the owner hopes to make 10 or 15 per cent. on his investments; and many an opulent family lives on the proceeds of a "rotton row" that is a disgrace to modern sanitary knowledge. These people—the proprietors, I mean—generally the best people in their respective communities, fail to realize that insanitary dwellings, built perhaps in sunless rows on another street, are a menace to their own health. I just happen to recall the case of a small town in which the worst and most insanitary shack is owned by the wife of a college professor, and she herself also a prominent member of the local civic club.

Another phase of overcrowding in the country, just as in the city is the "lodger evil," especially in small towns on the "boom." I know of a certain small town, and a certain family—a typical case—in which this condition exists; the family of five adults are living in a six room house and take one boarder. They are frugal and industrious Americans and are trying to pay for their small home; and they are doing it, but at the high price of overcrowding; one daughter has died of tuberculous meningitis and another at present has the appearance of developing the pulmonary form of the dread disease. Overcrowding, too, is very often wholly due to the habits and ignorance of the people themselves, neither environment nor landlord being responsible in the least. For example, a nurse from one of our dispensaries, in her visiting work came across a certain farmhouse where five people were accustomed to sleep in one not very large bedroom which had only one small window, and even this was nailed shut; one of these five had incipient tuberculosis. These people were well-to-do farmers, living in a large twelve-room brick house, and simply crowded into one room for the sake of mistaken economy—presumably to save coal and wood.

Another phase of this kind of overcrowding is apparent in certain mountain districts of Pennsylvania, and I suppose it may be very much the same elsewhere. It has been noted in these places that the natives do not have a strong, healthy build and a color redolent of health, but the thin, pale and wan features of those suffering from the lack of pure air. Yet these people live in the purest of God's fresh air, in places akin to those where we build our sanatoria. Why is it? The explanation seems to be dependent on the personal habits of these mountaineers, who on the advent of winter

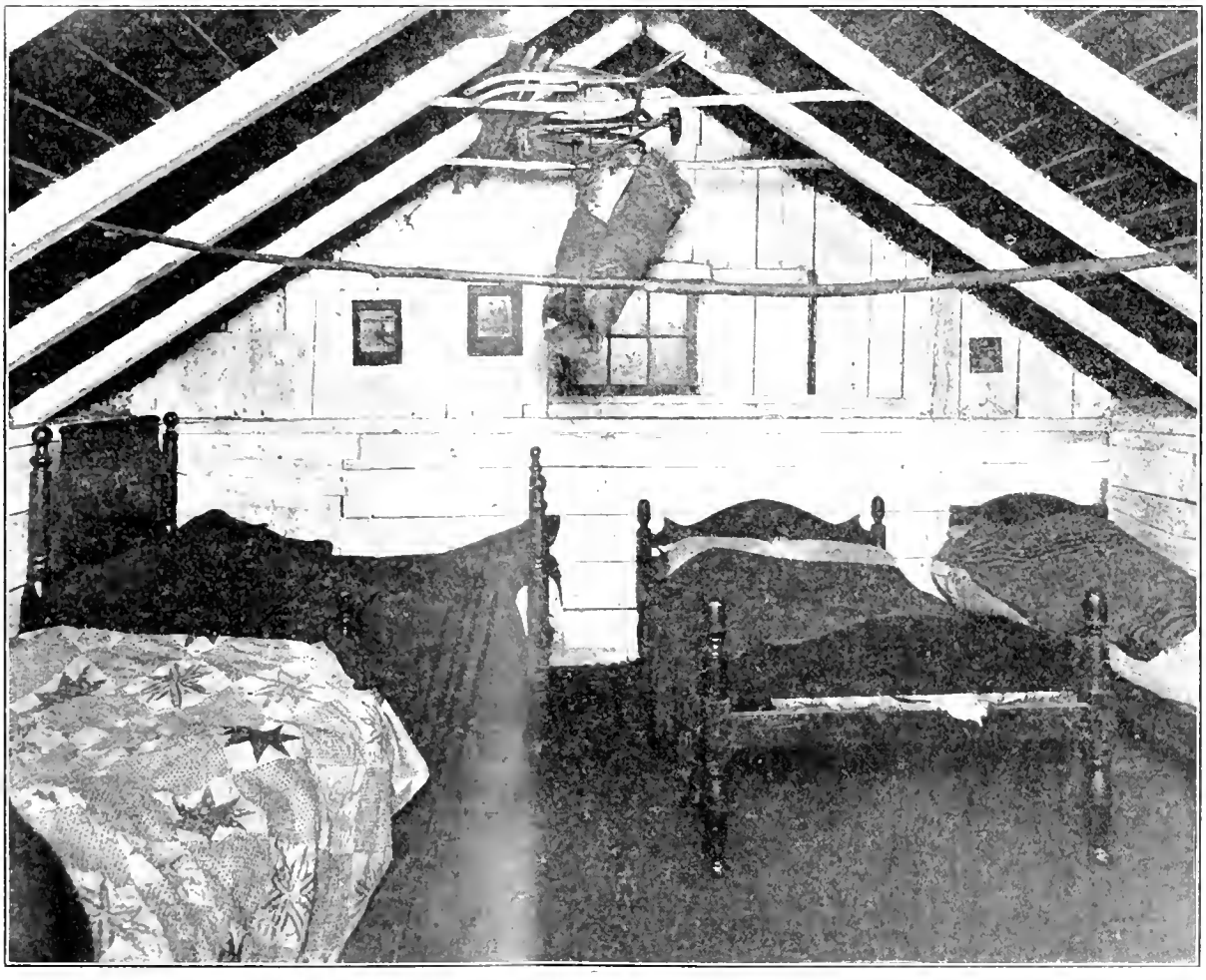

Fig. 2.—This bedroom (15x15 ft.), the [illegible] the house shown in Fig. 1, was used habitually by eight persons.

"hole-up," a good deal like certain animals. They lay in a supply of wood, but as wood is becoming scarce, and they are generally lazy and shiftless, the supply is not ever abundant, so they economize space and heat and have fire only in the cook stove. Windows and unnecessary doors are nailed shut, and here around the stove they spend most of the winter, eat and sleep in one, or at the most, two rooms; and the result? The faces you see in these mountain homes remind you of the faces you see in the densely crowded insanitary tenements of the cities. The complete outdoor life of summer is barely able to combat the bad air and the lack of air during the winter months, and a chronic condition of lowered vitality results.

The worst case of overcrowding of this sort, or of any sort, that I have ever seen appeared one day last summer when I prepared to administer immunizing doses of antitoxin to an Italian family during an epidemic of diphtheria; thirteen children lined up to "take their medicine;" in addition there were six adults, making nineteen human beings living in one house, and this house containing only six rooms. Where these people slept was almost a mystery, for there were only three beds in the house. They simply stretched out on the floor, and their pale and sallow faces told the cost, the great cost of overcrowding. You might think this was a Hester street tenement, but it happened to be a farmhouse, situated in one of the most beautiful valleys of Southern Pennsylvania, far from the smoke and din of cities.

When such conditions exist as I have described, and they certainly do exist in Pennsylvania, is it not time to endeavor to educate the people in the country, as well as in town, to better housing conditions? The old idea that the country is such a healthy place to live in is good only so far as the country is fresh from the hand of the Lord, for man's make-over in the country is generally poor, very poor. Not only does the native and the tenant need looking after but also the landlord, the careless and thoughtless landlord. Only by education can such conditions be overcome, and when they are overcome we will have made a great step toward right living and towards the elimination of that dread disease—tuberculosis.

REPORT OF CASES.*

By FORBES R. McCREERY, M.D.,

NEW YORK.

I. PERFORATION OF THE CECUM BY A FECAL CONCRETION, PROBABLY FORMED IN A DIVERTICULUM.

Mrs. W., æt. 35, primapara. The patient's previous health has been good except for habitual constipation. She was seen April 22, 1911, and gave a history of pain in the upper part of the abdomen four days before. This recurred in the epigastrium on the 21st. There was nausea but no vomiting. The pain later became localized on the right side. Menses came on April 20, five days before they were due.

On examination the left side of abdomen was seen to be relaxed, the right side only moderately tense. There was a mass a little above McBurney's point. No lesion of gall-bladder or kidney could be made out. Uterus retroverted; no other pelvic lesion. Temperature 101°, pulse 108. A diagnosis was made of appendicitis with abscess, probably retrocecal, and with a high location possibly due to an undescended cecum.

I operated that afternoon through a high intermuscular incision. The cecum presented, but the mass was still higher. The cecum was drawn out of the abdomen with moderate difficulty, bringing with it the mass. In the process the adhesions gave way, with the escape of about ½ ounce of thin, foul pus. Lying at the base of the small abscess cavity was a concretion protruding through a ragged hole in the gut. The entire mass in the lower end of the cecum was now well outside the abdomen. The appendix, which was the last to come, was normal. The concretion was removed and proved to be hardened feces the size and shape of a lima bean. It protruded through a hole in cecum between the anterior longitudinal band and the mesocecum and 1½ in. above the base of the appendix.

The wall of the cecum together with the mesocecum was so thick and soft that every other stitch employed in the attempt to enfold the gut cut through, necessitating a second row of stitches, going through the anterior longitudinal band. Of these, about one in three cut through. A third row, going well outside the anterior longitudinal band, was more successful. As the vitality of the gut was very doubtful, and I feared a fecal fistula, I split the peritoneal coat of the appendix opposite its mesenteric attachment, stripped it from the muscularis and turned it up over the suture line, tacking it down with fine catgut stitches. The balance of the appendix was then removed, and the wound closed, with drainage.

Convalescence was satisfactory; the drains were removed within a week. There was no fecal fistula, but a sinus discharging a drop or two of pus persisted until August 14. This was due to the sutures, all of which came out one by one during the summer. The concretion had probably formed in a diverticulum of the cecum, similar to those more commonly occurring in the sigmoid, but no trace of such supposititious diverticulum was noted.

II. FRACTURE DISLOCATION OF THE CUBOID—REPORT OF A CASE WITH *X*-RAY PHOTOGRAPH.

C. M., æt. 50; male; carpenter. August 8, 1911, a plank on which he was standing broke and he

fell about 6 ft. and on attempting to rise he found the anterior portion of his foot bent inwards at right angles to its normal position. He caught it and pulled it back into position, it going back with

*Read before the Surgical Section of the New York Academy of Medicine, February 2, 1912.

a distinct snap. When I saw him a few hours later the foot was badly swollen, but there was no distortion. An *x*-ray photograph taken by Dr. Cole showed a fracture through the cuboid, probably tearing a thin layer of the cortex from the cancellous portion of the bone. I judge that the fracture permitted an inward dislocation of the distal portion of the tarsus. The foot and leg were put up in plaster of paris and the ultimate result was satisfactory.

123 East Fortieth Street.

ORCHITIS WITH UNUSUAL FEATURES.

By L. BOLTON BANGS, M. D.,

NEW YORK.

The following case illustrates some of the difficulties of diagnosis in diseases of the testicle and has features which are unusual. The patient is an unmarried man aged 41, who, with the exception of typhoid fever and some neurasthenic attacks, has had no illnesses till the present. He has been subjected to severe mental and emotional strain and has led a strenuous business life. In his immediate family there is a history of tuberculosis. There is no venereal history and there are no symptoms of urinary disturbance.

In May, 1911, he received a slight blow on the right testicle. His memory of the cause and force of the blow is uncertain, but a slight swelling of the upper lobe of the epididymis resulted and persisted. He drove his motor car considerably during the summer and this always caused pain in the swollen epididymis. In August, during a match game of tennis, he struck the same testicle with the handle of the racquet, which caused increased swelling and pain. Subsequently, during a horseback ride the same organ was struck against the pommel of his saddle, which traumatism, although apparently insignificant, caused a marked aggravation of the pain and an increase in the swelling. A suspensory bandage relieved it for a time, but the pain gradually increased till, on the 28th of September, it suddenly became excruciating and radiated down the inside of his right thigh and up into the right groin. On the following day he was sent to my care and came first under the observation of my associate, Dr. Frederick W. Smith, who recorded the testicle greatly enlarged, smooth, globular, tense and exquisitely tender, the latter so marked that careful examination was impossible. The cord was slightly thickened and examination by the rectum showed that the prostate gland was slightly enlarged, smooth and insensitive. The patient was put to bed in the hospital, the testicle supported and antiphlogistine applied. He had a slight rise of temperature (to 99 3/10°), which persisted for six days. The whole condition seemed to be one of sub-acute inflammation, but the pain was enough to prevent sleep and an anodyne was required. Five days later I saw him for the first time and the pain being still very severe, hot flaxseed poultices were ordered, which gave great relief immediately, and he was able to sleep without anodynes. The poultices gave him so much comfort that he asked for a continuation of them, and three days later it was possible to palpate the organ with more accuracy. The epididymis could be differentiated from the body of the testicle, but, although palpation determined that the epididymis was nodular and enlarged to three times (perhaps more) than normal, it was still so very sensitive that its exact condition could not be defined. At this time the body of the testicle was also somewhat enlarged, globular, smooth, non-fluctuant and very tender. The tunica vaginalis seemed to be thickened to careful palpation. There were no enlarged glands. The poultices were now stopped, but pain on sitting up or on locomotion was so notable that he was kept in bed with the testicle supported. But the swelling did not diminish, on the contrary the whole organ slowly increased in size, and becoming more and more painful and tense, ten days later (October 12) a puncture of the tunica vaginalis was made. A little serum escaped, so little, that the tunica albuginea was incised. This relieved his pain immediately. He was able to get out of bed, to move about, and ten days later to leave the hospital and to come to the office for treatment. Although the pain had been relieved to large degree it was still present, subacutely, and the swelling and tenderness of the organ persisted. At the site of the puncture in the anterior surface of the scrotum gradually a fungus-like circle of granulations appeared. At no time had the diagnosis been clear. But taking into consideration that the disease was not gonorrheal; that it had begun in the globus major of the epididymis after a slight traumatism, and that it had pursued a subacute, slow and persistent course, a tentative diagnosis of tuberculosis was made. Furthermore, as for two weeks the testicle had remained about the same, showing no tendency to diminish, being (say, ten times the size of the left one) smooth and elastic, and although still painful and tender, these symptoms being less marked, it was decided to test the patient with subcutaneous injections of tuberculin. He received one injection (of Mulford's No. 1 serial) when he complained so strongly of pains all over, in back, hips and down his right leg and an increase of pain in the testicle, that, after another injection, tuberculin was discontinued, and he was sent to Dr. Cole for a radiograph. This did not reveal anything especial, and gave no diagnostic help. The whole testicle continued slowly to increase, and though the patient's history excluded syphilis, the cardinal rule in doubtful cases was obeyed and he was given hydrargyrum and potiodid with the intention of adding increasing doses of the latter. Meantime, the scrotum had become dusky, or purplish red, and on the inferior end a soft protuberance had been forming. This was tender, elastic, and apparently fluctuating. It was aspirated with an exploring needle and a bloody fluid withdrawn, which was sent to the laboratory for report, as follows:

Report No. 1. The smears consist of little blood cells mixed with a large amount of epithelia, large, flat and small round together with a moderate number of leucocytes. Increase in the number of the latter is indicative of congestion, but there is nothing to indicate inflammation (pus). The smears were searched thoroughly for tubercle bacilli with negative results. No other bacteria present.

The patient then went to his home in a distant town and on his return four days later there had been such a notable increase in the size of the testicle with augmentation of pain, that I advised immediate orchidectomy. This I performed on the following day, November 11. The incision encompassed the fungus opening on the anterior surface of the testicle. The tunica vaginalis was found to be very much thickened and its parietal and visceral surfaces were agglutinated. These were easily separated by the tips of the fingers, and

as the separation was finished a strange thing happened. The testicle dropped out of its sac into my hands like a ripe apple from its stem. No force had been used. There had been no dragging or twisting of the organ which had rested on a platform of sterile towels during the operation. There was no bleeding from the stump of the cord, but on nicking one of the veins about two inches above it bled freely. The vas deferens was identified and each element of the cord separately and carefully examined, but no pathological condition could be recognized. The entire tunica vaginalis was completely dissected from the tissues of the scrotum and sent with the testicle to Dr. Higgins for examination. For three days the patient had a rise of temperature to 100.3°, after that convalescence went on smoothly with the exception of a slight serous discharge from the lower angle of the wound where a cigarette drain had been placed. The pathologist's report follows with his comments.

"EXAMINATION OF TISSUE.

"1. Round mass, presumably testicle, 3¼ inches long by 2½ inches in the shorter diameter. The outer surface is dark red in color and somewhat uneven and here and there are a number of soft, white, slightly elevated areas filled with thick, creamy fluid. The organ is very soft and exudes on pressure a slight brown sanious fluid. Posteriorly, in about the middle, there is an irregular cavity about ¾ of an inch in depth. Extending upwards from this cavity is a ridge of tissue about one inch in width similar in appearance to the body of the specimen.

"2. Part of the tunica albuginea, the wall of which in places is about ½ inch thick.

"3. A thickened portion of the scrotum surrounding a short patent canal.

"MICROSCOPICAL EXAMINATION.

"The mass is bordered by a narrow congested layer of fibrous tissue from which broad trabeculæ of loose fibrous structure extend, dividing the organ into irregular cavities of varying size. Most of the cavities or lobules are large and of very irregular outline. Some are lined or partly lined with one or two layers of swollen, flattened, or cylindrical epithelium, but as a rule the epithelial lining of the lobules has been desquamated and lies in rows or plaques free in the cavity, which is crowded with many single, swollen, epithelial cells, cell nuclei, polynuclear and small round cells, masses of red blood cells and fibrin. In places the fibrous framework has broken down, forming very large cavities distended with blood and desquamated epithelium. The fibrous tissue, especially around the outer surface, is deeply congested and infiltrated to a moderate degree with polynuclear cells and lymphocytes. Sections from the thickened ridge traversing the posterior surface of the organ show a loose, vascular, fibrous framework densely congested and infiltrated with small, round, plasma and polynuclear cells and include a number of cross sections of the epididymis. The lumina of the latter are clear except for a few free red blood cells. In sections taken from the epididymis near to the cavity mentioned above, there are quite a number of minute areas filled with polynuclear and lymphoid cells.

"In the sections taken from the other end of the epididymis the infiltration is more of the chronic type, most of the cells being small, mononuclear, plasma or epithelioid with relatively few polynuclear cells.

"No. 2. The fibrovascular capsule (tunica albuginea) is deeply congested and densely infiltrated with many lymphocytes and plasma cells together with relatively few polynuclear cells. The inflammation here is acute, superimposed upon a chronic process.

"No. 3. Sections from the scrotum show deep congestion and acute inflammation.

"Diagnosis: Acute inflammation following contusion of the testicle with large blood effusions and laceration of the tubules; acute epididymitis superimposed upon chronic epididymitis.

"From the examination of the specimens, my opinion is that there has been a chronic epididymitis which developed into an acute epididymitis and orchitis following the contusion. The epididymitis was of the simple chronic form. At least, in none of the sections can I find any indication of tuberculous infection.

"According to the classification of one author, the contusion is of the second degree, the classification depending upon the extravasation into and the destruction of the tubules. As to why the testicle was found free in the cavity, I am unable to advance any reasonable opinion."

40 EAST FORTY-FIRST STREET.

Multiple Cephalhematomata.—Vernon and Marcomet report the case of an infant born after a breach labor in whom there were three cephalhematomata, one on each parietal bone and one on the occiput.—*Lyon Médical.*

Hypophysary Opotherapy.—H. Pater says that the idea of the internal secretion of certain glands explains many clinical, therapeutical, and experimental facts otherwise hard to understand. The administration of the extract of one of these organs exaggerates or modifies the work of other organs of different names, and exalts the work of those of the same name. An opotherapeutic product has always two actions; a direct and an indirect action. With direct action we fight against hypophysary insufficiency; in indirect opotherapy we struggle against pluriglandular insufficiencies. The experimental action of hypophysary extract is double: first on the hypophysis of the animal treated; second on other organs of its body. The extract of the entire hypophysis causes an increase of arterial tension, slowing of the pulse, and increase in the amplitude of the heart beats. A series of injections of this substance causes a hypertrophy of the hypophysis, congestion, abundance of eosinophiles, presence of much extracellular colloid material, and a secretory hyperactivity. The thyroids show a prolonged vasoconstriction, lessening of substance and of secretion. The suprarenal capsules have an exaggerated action; undergo hypertrophy and hyperplasia. The kidneys present vasodilation and polyuria. Disease of the hypophysis causes acromegaly. The extract of hypopyhysis may be used therapeutically to raise arterial tension, slow the pulse, increase diuresis, prevent painful feelings of heat and sweating, increase appetite and sleep, lessen asthenia, and psychic troubles, increase the development of the bones and muscles, and play an antitoxic rôle. Its uses are substitutive in case of imperfect function of the hypophysis; it may be used to increase resistance in a series of serious infections, typhoid, diphtheria, pneumonia, etc., where the myocardium fails and there appears an acceleration of the pulse, lowering of arterial tension, lessening of kidney secretion, etc. It is useful in acute and in chronic cardiopathies, in nervous tachycardia, in insomnia with hypotension, in uterine hemorrhages, in intestinal atony, and in surgical shock.—*Bulletin Général de Thérapeutique.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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RECENT DEVELOPMENTS IN THE PHYSIOLOGY, PATHOLOGY, AND SURGERY OF THE THYMUS.

For many years there have been recognized two distinct types of thymus pathology, namely, the so-called "mors thymica" and thymic asthma. The vital significance of the thymus has been revealed by the researches of Klose and Vogt into the causation of the *cachexia thymopriva* and *coma thymicum*, which researches have already been alluded to in these columns. A further contribution to this important subject has recently been made by D. Sokoloff in the *Archiv für Kinderheilkunde*, December 23, 1911. As the result of clinical and experimental studies this observer notes that under normal conditions the thymus continues to develop until the twelfth to the fourteenth year of life, the maximum increment of growth occurring at the sixth year. The involution of the gland is characterized by a fatty and a connective tissue degeneration, and even in advanced age the gland is still in evidence, though not in the sense of a functionating organ. The thymus stands in reciprocal relationship to the nutrition of the child, becoming atrophic in conditions of malnutrition. Extirpation of the gland in animals causes an increase in the number of red blood cells and apparently no other marked changes in the organism. This observation is directly at variance with those made by Klose and Vogt, who noted following thymectomy in dogs a resulting cachexia culminating in coma and death, and in human beings retardation and deficiency in osseous development, degenerative changes in the nervous system, and a tendency to obesity, all of which changes are attributed to an acid intoxication, chiefly with nucleinic acid. Sokoloff finds that the thymus is closely related in its activity to that of the spleen, testis, and thyroid, but chiefly with the function of the last-mentioned gland. The injection of the expressed juice of the thymus into animals may result fatally, after causing a fall in blood-pressure and a slowing of the pulse. Thymus extract has apparently no antitoxic effect, at any rate with reference to the diphtheria poison. In many cases in which thyroid feeding is of value the administration of thymus is also efficacious. Sokoloff advances the view that while the thymus is a gland whose internal secretion takes part in the metabolic activities underlying growth, nevertheless this function is also shared by other glands.

As regards the cases of sudden death that have been attributed to thymus hyperplasia, Sokoloff maintains that the lethal outcome in these cases is not the direct result of the enlargement of the thymus, but is caused by a disturbance of the bodily metabolism, of which the hyperplasia of the thymus as well as of other glands is but one manifestation. Thymic asthma, caused by the pressure on the trachea of the hypertrophied gland, is a definite pathological entity, but it should not be confused with other forms of asthma, chiefly with that resulting from tracheobronchial adenopathy. In making a diagnosis of thymic asthma it is necessary also to exclude the respiratory difficulties resulting from obstructions in the nose and nasopharynx, from enlargement of the tongue, hypertrophied tonsils, and adenoids, laryngeal stenosis, congenital laryngeal stridor, and from obstructions in the upper and lower parts of the trachea, and in various parts of the bronchial tree. One constant characteristic of thymic asthma is the fact that the dyspnea is expiratory.

The treatment of thymic hypertrophy presents problems that are exclusively surgical. These problems are attacked by Eugène Olivier* in a recently published monograph on the topographical anatomy and surgery of this organ. This writer notes that three different operative procedures have been devised for the treatment of thymic hypertrophy, namely, exothymopexy, resection of the manubrium sterni, and thymectomy. The first of these operations consists in freeing the thymus from its normal attachments, either wholly or partially, and fixing it in a high position to the infrasternal fascia. This operation is rejected by the author as being both difficult and dangerous, and for the same reason the operation of resection of the manubrium is condemned. Thymectomy, which is the operation of choice, may be accomplished most easily by means of subcapsular enucleation. The author has collected from the literature thirty-nine cases of thymectomy in which there was a mortality of fifteen. Of these deaths five were caused by infection consequent on drainage or the performance of a tracheotomy, four were caused by an error of diagnosis (the cases being instance of tracheobronchial adenopathy), three were due to the desperate condition of the infant before operation, one was caused by bronchopneumonia, and one by enterocolitis. It is concluded that a simple thymectomy, without drainage and without the performance of a tracheotomy, has a mortality practically nil.

ATHLETICS IN THE NAVY.

According to the annual report of the Surgeon General of the Navy the health of the navy during the year 1910 appears to have been satisfactory. The death rate from disease was slightly higher than in the previous year, but was below the average rate. The death rate from injuries showed

*"Anatomie Topographique et Chirurgie du Thymus," par M. le Dr. Eugène Olivier, Ancien Interne des Hôpitaux de Paris; d'Anatomie à la Faculté de Médecine. Avec 16 figures et 2 radiographies. Paris: G. Steinheil, 1911.

an increase over 1909 and was in excess of the rate of the "average year." The increase in the death rate was due to the large number of deaths from drowning. There was, however, a reduction in the total damage from disease and injury in the service indicating an improvement in the general health of the entire Navy and Marine Corps.

One of the most interesting parts of the report is that referring to athletics. It states that the bureau is of the opinion that competitive and spectacular athletics is undesirable in the service, especially among midshipmen, who are prone to overtrain for or hazard too much in a contest. It is pointed out that the function of the Naval Academy is to equip young men mentally and physically for their chosen profession. It is considered, therefore, that physical training and athletics generally should be indulged in so as to safeguard the interests of the Government and the individuals as well. The surgeon-general says with regard to football that "while football may be somewhat hazardous as played, it is the disabling after effects that in my opinion, make it questionable as a sport to be encouraged where future naval officers are being trained." The writer recapitulates the views of some authorities that the prolonged rigorous course of physical exercises necessary to excellence in physical sports is dangerous in its after effects upon those who indulge in athletic sports sufficiently to excel therein. Further, it is suggested that under the conditions of service at sea, as it becomes impossible to continue rigorous exercise, the individual will easily fall prey to degenerative changes, will tend to become obese, to lose physical stamina, and in the end will fail to render as many years of efficient service under service conditions as will the less athletic, but symmetrically developed classmate. Statistics are quoted to prove the contention that athletics carried to excess or severe training undertaken under unfavorable conditions does not conduce to long life or good health. The opinions of those in civil life best qualified are stated to be in agreement with these views, and finally a change in the methods of training and of conducting athletics generally at Annapolis is recommended. The custom now of employing professional coaches and trainers at the Naval Academy is sharply criticised. It is urged that the chief end and aim of such trainers is merely to produce winning teams, as upon this depend largely their reputation and occupation. It would be better from all points of view, thinks the surgeon-general, if graduates of the Naval Academy, with specially detailed medical officers, displaced professional trainers, and he is of the opinion that the importance of the subject would justify the assignment of such officers for the purpose.

Whatever may be the views of medical experts in training and athletics and of the medical profession generally the position of the surgeon-general and his many opportunities for studying the matter closely entitle his opinions to be received with respect and consideration. The question of athletics and training as now conducted is a vexed one and there is little agreement on the subject among either members of the profession or the laity

SANITATION OF LAUNDRIES.

No little attention has been directed of late to the matter of the hygiene and sanitation of laundries. An investigation which has been begun by the Consumers' League of New York City is of interest in this regard. The League's inspectors have so far visited 40 of the larger steam laundries. No small laundries or Chinese laundries have yet been inspected. Practically all of the laundry work for New York City is done by large steam laundries, the small so-called hand laundries acting merely as receiving stations and occasionally doing part of their own ironing. All of the clothing is divided into the two classes of colored and white goods. Each of these is made up into large bundles enclosed in a net. Colored articles from all patrons are put together, and white articles the same. The chances of a spread of contagion among the patrons from clothing which may be soiled with syphilitic or other secretions, or infected with the germs of typhoid or tuberculosis are not great since the subsequent treatment probably sterilizes the clothing; but there is a rare opportunity for the laundry employees to contract these diseases, as has occurred in several instances already reported, and probably in many more not reported.

As for conditions in the laundries themselves, certain features were found deserving of the severest reprobation. A common finding was most offensive toilet facilities for both male and female employees. Often there was no proper separation of waterclosets from the rooms in which the clothing was being treated and the odor from the closet was overpoweringly offensive. Filth, and rotten, leaky plumbing were the rule in these toilets. In many washrooms poor ventilation and leaky steam pipes were responsible for a highly overheated atmosphere loaded to the point of saturation with water vapor. The attendants in these rooms often stood and worked in water inches deep. This condition explains why rheumatism is so common among laundry employees as to deserve the appellation of an industrial disease peculiar to this trade. In the starching rooms indescribably filthy floors were found, caked deep with starch and dirt. In one instance the stables were on the same floor with the wash rooms, and the stable odors and flies filled the laundry.

The Consumers' League is preparing a white list of laundries which, in a fair measure, meet the requirements of the League. These lists will be supplied to all laundry patrons on request. White list laundries will be those in which decent retiring rooms and toilet facilities are provided for employees; where working hours are not excessive; where machinery is well guarded to prevent accident, and where cleanliness and sanitary conditions prevail. Physicians have a very definite responsibility in all that comes under the heading of preventive medicine, and few fields here are of more importance than proper regulation of industrial hygiene, from the standpoints both of the patron and of the employee. The earnest effort being made by the Consumers' League to improve laundry condition deserves the hearty cooperation of all.

The Discretion of the Surgeon.

A decision recently given in a suit brought against a prominent surgeon of this city for "trespass and assault" is of more than ordinary interest and importance in its bearing upon how far a surgeon may be allowed to use his discretion in dealing with unforeseen circumstances arising during the course of an operation. The facts of the case are, briefly, as follows: In the fall of 1908 the surgeon performed a cholecystectomy on a patient, from which she recovered nicely. Half a year later she returned, having been sent by her physician with the diagnosis, appendicitis. Careful examination prompted the surgeon to tell her that he could not say definitely whether her appendix alone was at fault, but that he would make his incision in such a way that he could examine also her pelvic organs. She replied, "Doctor, you saved my life once; I leave it to you to do what is best for me." Two days later she was operated upon. After removal of the greatly inflamed and adherent appendix, the tubes and ovaries were examined in high Trendelenburg posture. On the right side the appendages were found adherent to the posterior aspect of the much enlarged uterus, about one inch below the level of the fundus. They were loosened and put in normal position. When about to close up the abdomen, the operator saw on the opposite side a peculiar gelatinous mass which, on palpation proved to be the diseased left ovary, which needed extirpation. A median incision was made and the chronically inflamed ovary—evidently a chronic abscess encased in adhesions of old standing—was removed with difficulty. Seventeen days later the patient left the hospital, cured. Six months later she brought suit for $10,000 damages for "trespass and assault," and two years later, her husband brought suit for the same amount and for the same cause. At the trial the above history was given to the jury and four experts corroborated the correctness of the surgeon's conduct. Of course, it was not a suit of malpractice or unskilful operating, but merely a question as to whether the operator had done his duty as a conscientious surgeon in removing the organ which was an absolute menace to the welfare if not life of the patient—to which, besides, he had her consent—or whether he had overstepped his rights in the case. After both sides had been heard, the presiding justice, Judge Blanchard, dismissed the case.

Selenium in the Treatment of Cancer.

Our Berlin correspondent recently wrote of experiments by Wassermann with eosin and selenium in the treatment of mouse cancer. It was said that the remedy had proved to be positively curative in the case of malignant growths in mice, but it has not yet been tried in human cancer, at least no report of such trial has been published. As one of the drugs used by Wassermann is selenium, it is interesting to note that this has been used for the past eighteen months in New York in the treatment of human cancer, apparently with good results. In the *New Yorker medizinische Monatsschrift* for January, 1912, Eugene G. Kessler reports on the use of selenium in the treatment of cancer, claiming to have obtained very encouraging results. He was led to the use of this remedy through the observation of von Oefele and Klein that the excretion of sulphur, or sulphuric acid, in the urine was markedly diminished in cancer. Selenium, which belongs to the sulphur group, possesses the property of attracting oxygen and then giving it up again to sulphur. Kessler therefore conceived the idea that its administration in cases of cancer might contribute to the oxidation of the sulphur and so restore the equilibrium in the output of this substance, thereby effecting a metabolic change favorable to the regression of the malignant growth. Accordingly he gave it in a series of cases, one of which he reports at length. The patient was a woman, 60 years of age, who had been operated upon fifteen years ago for cancer of the breast. At the time of examination she was cachectic, the output of sulphur in the urine was greatly diminished, and the liver was enlarged and evidently the seat of a secondary cancerous growth. Treatment was begun July 27, 1910, with a milligram of selenium oxide (SeO_2) three times a day. By September 2 there had been a gain in weight of 2½ pounds and the liver dullness had receded two finger-breadths. During the treatment the patient at times gave evidence of renal irritation which the author attributed to the rapid breaking down and excretion of the cancer cells—possibly the same thing that killed the mice in the Wassermann experiments. The improvement in the general condition was, however, continuous and up to the time of the report, eighteen months after the beginning of treatment, there had been no relapse.

Pseudoneuritis Optica.

This subject has received comparatively little attention in standard works, and it is claimed that hardly any illustrations of the fundus in this affection or these affections is to be found in any atlas of the eye. The subject is of great importance, for it is not impossible that an erroneous diagnosis of choked disk might lead to a trephining. The subject naturally concerns greatly the psychiatrist, for whom anomalies of the papilla possess great significance. Sulzer, author of a monograph on true and false diagnosis of cerebral disease from the optic papilla, illustrating pseudoneuritis, has recently written a paper on pseudoneuritis (*Münchener medizinische Wochenschrift*, December 19), in which he attempts to sketch the characteristics of four distinct conditions comprised under this head. If the papilla is uncommonly red he uses the term pseudoneuritis rubra. The latter is seen in people of all shades of complexion and hair color and with all varieties of refraction. The diagnosis from true neuritis can be made only after long observation and estimation of collateral data. If there is a radiating striation of the papilla the condition is known as pseudoneuritis striata. This is a congenital anomaly, and, as in the preceding form, assertions that it occurs only with certain complexions, etc., are unwarranted. It is said to be more frequent and pronounced in negroes and apes than in whites, although it is often faintly in evidence in the latter. It is sometimes accompanied by errors of refraction, both phenomena being of the nature of slight malformations. The two other forms are known, respectively, as pseudoneuritis hyperplastica and pseudoneuritis prominens, due evidently to proliferation of glia and connective tissue. The latter is extremely rare, and, as the papilla stands out in the fundus like a button, the condition may readily be confounded with the highest degree of choked disk. The blood-vessels, however, show no alterations. The absence of enucleation or autopsy material makes it difficult to arrive at the exact nature of these conditions, so that at present we know of them only as ophthalmoscopic pictures.

News of the Week.

Contagious Diseases in New York State.—The Monthly Bulletin of the State Department of Health shows that for the month of December there were 11,032 cases, or 1,000 less than for December, 1910. Scarlet fever showed an increase in the number of cases, there being 1,480 for December as compared with 1,260 cases reported for November. There were 2,441 cases of tuberculosis reported, which was a considerable decrease as compared with the 2,692 cases reported for November. There were almost twice as many cases of measles reported for December as for November, when 1,405 cases were recorded. There were only 661 cases of typhoid fever reported during December, a decrease of 100 cases as compared with November, 1911, but a slight increase as compared with the corresponding month of 1910, when 577 cases were reported. There were 662 cases of whooping cough reported as compared with 739 cases for November. Reports were received of 166 cases of smallpox during the month of December and the State Department of Health has forwarded literature on the diagnosis of smallpox and the value of vaccination as a prophylactic against this disease to the physicians of the State and wholesale vaccination with abatement of the epidemic have been reported from several localities. During December there were 170 deaths from diphtheria, which is unusually few for this season, and the year ends with a record of less than 2,000 deaths from this cause, the fewest for any year in the annals of collated statistics of the State. In thirteen years, 1885-1897, there were in the State 71,043 deaths from diphtheria, while during the following thirteen years there have been 35,460 deaths from this cause. In other words the mortality from diphtheria has decreased one-half during the past thirteen years, while the population has increased one-third during the same time. There were 17,733 births in the State during December, 1911.

Venereal Diseases to Be Reported in New York.—At the meeting of the Board of Health on February 20, resolutions were adopted calling for the reporting of venereal diseases to the Department of Health. This is in accordance with a plan for the sanitary control of these diseases which has been under consideration for nearly a year. At the same meeting it was announced that the Board of Estimate and Apportionment had considered favorably the request for an appropriation of $55,000 for the erection of a hospital for the care of patients suffering from venereal diseases. The resolution includes a plan requiring superintendents or other officers in charge of public hospitals, dispensaries, clinics, charitable and correctional institutions, including those which are supported in part or in full by voluntary contributions, to report all cases of venereal disease applying for treatment at the institution. It is required that the name, age, sex, nationality, race, marital state, and address of every patient under observation suffering from these diseases shall be reported. All physicians are requested to furnish similar information regarding private patients though the name and address need not be given. The Board of Health will undertake to make bacteriological examinations and tests for the diagnosis of these diseases and to distribute curative sera only when the data required for registration have been furnished.

Meningitis in Oklahoma.—Meningitis seems to be spreading in southern Oklahoma, and the State Health Commission, Dr. J. C. Mahr, and the State Bacteriologist, Dr. Gayfree Ellison, have gone to Durant, Bryan County, to take charge of the situation there. Thirty-seven cases have developed in this county, 17 cases have been reported in Love County, 13 in Marshall, 11 in Osage. The disease has appeared in thirty counties and thus far there have been 157 cases with 67 deaths.

Health of the Canal Zone.—The report of the department of sanitation of the Isthmian Canal Commission for the month of December, 1911, shows that the total number of deaths from all causes among employees was 44. Of these 24 were due to disease, and 20 to violence, giving an annual average per thousand of 5.68 and 4.74 respectively. In segregating, according to race, the annual average death rate per thousand from disease among employees was for whites 5.71 and for blacks 5.68, giving a general average for disease of 5.68. For the same months of 1909 the annual average death rate per thousand from disease among whites was 8.39 and blacks 10.67, giving a general average of 10.13; and in 1910 from disease among whites 5.69 and blacks 8.79, giving a general average of 7.94. No cases of yellow fever, smallpox, or plague originated on or were brought to the isthmus during the month.

Tuberculosis Among Alaska Indians.—Dr. M. H. Foster, Passed Assistant Surgeon in the Public Health and Marine-Hospital Service, who was sent to Alaska to make a survey of conditions, has presented his report which, although accurate statistics are not available, shows that unless the Government takes prompt measures to protect the Indians, none will be left in the course of two or three generations. At Sitka accurate records have been kept by the churches and they show that for a period of five years and seven months the annual birth rate has been 72.3 per thousand and the annual death rate 85.4 per thousand. During this period, with an estimated population of 400, there have been twenty-nine more deaths than births. In the last ten years the United States Census Bureau reports that the Indian population has decreased 14 per cent.

Lepers in New York.—The death of a West Indian negress, who for a year and a half has been a member of the leper colony on Blackwell's Island, has occasioned some discussion on the part of the public as to the communicability of this disease. It is reported that one physician has seen as many as thirty cases of leprosy in New York during a single year, and that there are known to a few physicians a number of individuals who have suffered from leprosy for many years and still pursue their lives as usual without communicating the disease to any of those with whom they are thrown in contact. New York physicians, for the most part, believe that the fear of this disease in this climate is entirely unwarranted and that the public should be informed of this fact, as the fear of leprosy is more of a danger to the community than the few cases of the disease in itself. In this connection the case of the fifteen-year-old school boy whose examination at the Massachusetts General Hospital in Boston last June which revealed the presence of leprosy is of interest. Since that time the boy has lived a life of complete isolation from his kind and now the Federation of Women's Clubs of Massachusetts is petitioning the Legislature that the boy be accepted as one of the Penikese Island Colony. The boy had

the disease for four years during which time he was in constant attendance at school and there is no evidence that he has been the cause of any of the cases of the malady.

Medical Practice Act in Massachusetts to Remain Unchanged.—The Committee on Public Health has reported to the Senate that no legislation is necessary on the recommendations contained in the report of the Board of Registration in Medicine. These recommendations sought to define the practice of medicine and to do away with the exemptions which some irregular practitioners enjoy. These would if enacted into law have made the practitioner of Christian Science liable to fine and imprisonment.

Vaccination Statistics Called For.—The Medical Society of the County of Erie at its annual meeting passed resolutions stating that whereas there had been 297,288 cases of smallpox in America during the past decade and whereas the mortality and morbidity of smallpox were rapidly increasing, probably owing to the propaganda of antivaccinationists, a request be sent to all city, State, and national authorities urging them to take suitable action to provide that hereafter in reporting smallpox, mention and record should be made of the fact, time, and efficiency of vaccination and revaccination in every case.

Vaccination Statistics from the Philippines.—The following statistics are interesting as showing how smallpox has been practically eradicated from the United States Army in the Philippines.

Year.	*Troops.*	*Cases.*	*Per 1,000.*	*Deaths.*	*Per 1,000.*
1898	9,908	76	7.67	21	2.12
1899	30,280	267	6.80	78	1.99
1900	66,549	246	3.68	113	1.69
1901	59,526	85	1.43	37	.62
1902	37,768	63	1.67	12	.32
1903	23,818	27	1.13	3	.13
1904	11,996	4	.33	2	.17
1905	11,057	3	.27	0	.00
1906	12,622	3	.24	1	.09
1907	11,712	1	.09	0	.00
1908	12,130	2	.17	0	.00
1909	12,844	0	.00	0	.00
1910	12,277	2	.16	0	.00

Smallpox is constantly present in Manila and several cases occurred in the army within four days from the time the troops were landed in 1898. The large number of cases occurring during the first four years of American occupation was due to the fact that many of the men were volunteers and it was difficult to enforce vaccination and also because the vaccine brought from San Francisco and Japan became inactive in the warm climate of the Philippines. In 1900 the Board of Health of Manila produced fresh lymph from carabao calves, the excellent results of which were immediately effective, as is shown by the great drop in the number of cases the following year.

Texas Wants Government Land for Sanatorium Site.—An amendment to the army appropriation bill has been adopted which leaves to the discretion of the President and the Governor of Texas whether any part or the whole of the government reservation of 640 acres now used for army barracks and government buildings be given to the State of Texas for a tuberculosis sanatorium or not. The belief prevails, however, that the entire tract will be donated to Texas.

State Medical Society Favors Army Canteen.—The Massachusetts State Medical Society has passed resolutions favoring the restoration of the army canteen and has sent circulars to the Massachusetts delegation in Congress advocating the reestablishment of the canteen.

Dr. S. Weir Mitchell gave the principal address at the exercises commemorating the thirty-sixth anniversary of the founding of Johns Hopkins University, which were held at the University on February 22. After his address Dr. Mitchell was presented with the degree of Honorary Doctor of Laws.

Dr. Richard C. Cabot is mentioned as the probable successor to Dean Henry A. Christian of the Harvard Medical School, whose resignation has been accepted.

Dr. George E. Kline of Ann Arbor, Mich., has been elected superintendent of the Danvers, Mass., State Hospital to fill the vacancy caused by the resignation of Dr. Harry W. Mitchell, who has accepted a position at the Pennsylvania State Hospital at Warren.

Dr. Alvah H. Doty has been elected a member of the medical advisory board of the New York Health Department.

Dr. William James Mayo of Rochester, Minn., received the degree of Doctor of Laws at the anniversary celebration of the University of Pennsylvania on February 22. At the same time Dr. Alexander C. Abbott, Professor of Hygiene in the University of Pennsylvania, received the degree of Doctor of Hygiene from the University.

Dr. F. K. Ainsworth of San Francisco, chief surgeon of the Southern Pacific Company, has resigned his position as member of the State Board of Health.

A New Italian Hospital for New York.—A site has been purchased between Eighty-third and Eighty-fourth Streets and fronting on the East River on which it is proposed to erect a six or seven-story hospital building that will accommodate 600 patients. The cost of construction is estimated at $1,000,000, and while the hospital is intended primarily for Italians, it will not be restricted.

A Hospital for Selma.—The Memorial Hospital Company of Selma has been incorporated and has a capital of $10,000 with which it proposes to build a new hospital.

Lectures for St. Rose's Home.—A course of five lectures will be delivered at the Hotel Plaza during Lent by Dr. James J. Walsh, the proceeds of which will be devoted to paying for the completion of St. Rose's Free Home for Cancer Patients in Corlears Park, on the lower East Side of New York City.

Gifts to Hospitals.—The twelve-day campaign for the Muhlenberg Hospital of Plainfield, N. J., has netted the sum of $132,176.—The proceeds of the German Charity Ball, held at the Hotel Astor in New York, on January 25, netted $10,697, which was distributed as follows: German Hospital and Dispensary, $2,000; St. Mark's Hospital, $1,250; St. Francis Hospital, $1,250; German Poliklinik, $1,250; German Society, $1,250; Isabella Home, $950. Smaller amounts were distributed among several other institutions. The Hospital Saturday and Sunday Association of New York announces that it has collected $2,455 from several trades, which will be added to the annual hospital fund.—By the will of the late Caroline Thomas the sum of $5,000 is bequeathed to the Children's Homeopathic Hospital of Philadelphia, and a like sum to

the Children's Seashore Home at Atlantic City, N. J.

Harvey Society Lecture.—The tenth lecture of the present course will be given at the New York Academy of Medicine on March 3, at 8.30 P. M. The speaker will be Prof. H. S. Jennings of Johns Hopkins University, who announces as his subject "Old Age, Death, and the Meaning of Conjugation in Lower Animals."

"The American Practitioner."—The *American Practitioner and News of Louisville*, and the *New England Medical Monthly* and *Annals of Medical Practice* of Boston have been purchased by Dr. John W. Wainwright of this city and will be consolidated under the title of *The American Practitioner*. The new journal will be published monthly under Dr. Wainwright's editorial charge.

The Association of Medical Officers of the Militia of Canada will hold its fifth annual meeting in Ottawa on February 28 and 29.

Lectures at the New York Skin and Cancer Hospital.—A course of lectures will be given in the out-patient hall of the New York Skin and Cancer Hospital on Wednesday afternoons at 4.15 o'clock from March 17 to April 24. Dr. L. Duncan Bulkley will deliver the first six lectures on "Diet and Hygiene in Diseases of the Skin," and Dr. William Seaman Bainbridge will deliver the last lecture of the series on "Some Recent Methods of Treatment for Malignant Skin Diseases." Each lecture will be preceded by a half hour clinical demonstration. These lectures will be free to the medical profession.

Civil Service Examinations for State Hospital Positions.—Announcement is made that an examination will be held on March 23 for the position of Medical Superintendent, Matteawan State Hospital for the Criminal Insane; this position offers $3,000 to $4,500 and maintenance. There will also be an examination for Woman Physician, State Hospitals and Institutions, at the same time. For blanks and further details application may be made to the State Civil Service Commission, Albany, N. Y.

A New State Laboratory for Texas.—A State laboratory for the manufacture of antimeningitis serum, diphtheria antitoxin, typhoid fever serum, and smallpox vaccine is to be established in Austin. The United States Marine-Hospital Service will furnish an expert to supervise the manufacture of the serums and vaccines and the State will be represented by Dr. S. N. Key, State bacteriologist.

The Stephenson County Medical Society, which met at Freeport, Ill., on February 15, elected the following officers: *President*, Dr. R. J. Burns of Freeport; *Vice-President*, Dr. Sarah E. Hewetson of Freeport; *Secretary*, Dr. J. Sheldon Clark of Freeport; *Treasurer*, Dr. N. C. Phillips of Freeport; *Board of Censors*, Drs. Allen Salter of Lena, Mary L. Rosenstiel, and W. B. Peck, both of Freeport.

The Fourth Councillors District Medical Society of North Carolina met in Wilson on February 15 and elected the following officers: *President*, Dr. L. D. Wharton of Springfield; *Vice-President*, Dr. W. H. Smith of Goldsboro; *Second Vice-President*, Dr. W. H. Anderson of Wilson; *Secretary-Treasurer*, Dr. M. M. Saliba of Wilson.

Obituary Notes.—Dr. JAMES GERRIE died at his home in Brooklyn on February 10 at the age of 75. He was born in Canada and was graduated from the New York Homeopathic College in 1868.

Dr. EMERSON B. POTTER of Newton, N. J., died in a private hospital in New York, February 15. He was a graduate of the College of Physicians and Surgeons of New York City and also of the New York Homeopathic College. He was 55 years old.

Dr. ROBERT C. WHITE of the United States Marine-Hospital Service, a graduate of the University of Louisville, Medical Department, in 1855, died in Pensacola, Fla., after a protracted illness February 17, at the age of 70 years.

Dr. WILLIAM S. RICHARDSON of Marlboro, Mass., a graduate of Medical School of Harvard University, Boston, in 1884, died suddenly at his home February 9.

Dr. FRANKLIN NICKERSON of Lowell, Mass., a graduate of Medical School of Harvard University, Boston, in 1863, died at his home February 15, at the age of 73 years.

Dr. JOSEPH J. JOHNSON of St. Matthews, S. C., a graduate of Louisville Medical College, Ky., in 1888, died suddenly at his home February 9, at the age of 55 years.

Dr. JOHN D. W. HENDERSON of Philadelphia, Pa., a graduate of the University of Pennsylvania, Medical Department, in 1901, died at his home of heart disease February 13, at the age of 72.

Dr. WILLIAM W. KIRBY of Providence, R. I., a graduate of Tufts Medical School, Boston, in 1901, died of apoplexy February 12 at the age of 42 years.

Dr. GUSTAVE A. MUELLER of Pittsburgh, Pa., a graduate of Hahnemann Medical College and Hospital, Chicago, Ill., in 1885, died at his home February 9 at the age of 48 years. He had only recently been appointed a member of the Pennsylvania State Board of Medical Licensure.

Dr. JOHN A. A. HOFFMAN of Champaign, Ill., died on February 16.

Dr. THOMAS C. MINOR died of pneumonia at his home in Cincinnati on February 15 at the age of 65. He was a graduate of the Medical College of Ohio in the class of 1869, and was at one time Health Officer and later Police Commissioner of Cincinnati.

Dr. OSCAR PORZER of Bloomfield, N. J., died in the German Hospital at Newark, while undergoing a surgical operation, on February 20. He was 41 years of age and a graduate of the College of Physicians and Surgeons in Baltimore.

Dr. WILLIAM T. DICKESON, a graduate of the University of Pennsylvania in 1849, died at his home in Media, Pa., on February 21, at the age of eighty-five years.

Dr. KIRBY H. SMITH of Arcadia, Fla., a graduate of the Medical Department of Vanderbilt University, Nashville, Tenn., 1891, died suddenly on February 13 at the age of 50 years.

Dr. HENRY C. GHENT of Belton, Tex., died on February 13. He was born in 1831 and was graduated from Jefferson Medical College, Philadelphia, in 1856. He was at one time president of the Medical Society of the State of Texas and of the Central Texas Medical Association. He was vice-president of the American Medical Association in 1885 and had served as an assistant surgeon in the Confederate Army.

Dr. MINNIE C. ARCHER, a graduate of Franklin Medical College, Philadelphia, in 1894, died at her home in Houston, Texas.

Correspondence.

VACCINE TREATMENT OF PNEUMONIA.

To the Editor of the Medical Record:

Sir:—I have just read with much interest a communication by Dr. H. H. Sinclair, of Walkerton, Ont., entitled "Vaccine Treatment of Pneumonia." The doctor is by no means alone in his experience with the treatment of this disease by bacterial vaccines. As a matter of fact, only three days ago I discharged a patient who had had an evident pneumonia and who had been treated in this manner. This patient, a lady, aged sixty-four years, was a sufferer from chronic interstitial nephritis of fifteen or sixteen years' standing, and naturally I looked forward with much apprehension to the outcome. On the afternon of February 7 I found the patient with a decided consolidation of the upper portion of the left lung, a temperature of 103.4° F., and other evidences of pneumonia, including the pain, malaise, and the other characteristic findings. I was fortunate in securing a specimen of sputum, which on bacteriological examination showed the presence of pneumococcus, streptococcus, and the bacillus of Friedländer, the pneumococci predominating. The same evening I gave the patient 1 c.c. of a vaccine containing 30,000,000 pneumococci, and 20,000,000 streptococci. The next morning the temperature had fallen to 101.1° F., and the expectoration was loose and free, whereas before it was quite difficult to raise. The breathing was free and easy, whereas the day before it had been difficult, painful, and rapid. The pulse had dropped from 96 to 76, and was notably stronger. On the evening of the second day I gave her another dose containing the same number of bacteria and the temperature did not exceed 100° F. after that time. In fact, on the third day the patient considered herself well and wanted to get up. The highest temperature on the fourth day was 98.8° F. Now there is no doubt at all that this was a pure case of pneumonia. The physical signs were absolutely distinct and I was fortunately able to back them up by a careful microscopic examination. The use of a stock vaccine which I was fortunate in having handy made the treatment prompt and effective, and no one was more surprised than I to see the promptness of this recovery in such a supposedly bad subject. In regard to Dr. Sinclair's large doses I have nothing to say. The dosage of bacterial vaccines is by no means established, and as a result, "there is no dose," but dose enough.

Wilbur C. Hamlin, M.D

Chicago, Ill.

To the Editor of the Medical Record:

Sir:—Answering the letter of Dr. Sinclair in your issue of February 10, I would say that in the past four years I have treated twenty-nine cases of pneumonia with bacterial vaccines. There is no doubt at all that the vaccine treatment of pneumonia is as effective as the vaccine treatment of any infectious disease. It is not infallible, that is to say, it is not always a sure cure. Circumstances are met with where the patient is doomed from the start with any kind of treatment. I had such a case. This was a lady of sixty-four, weighing 260 pounds, with fatty degeneration of the heart. She took sick with a double pneumonia, temperature going to 104° F. after the initial chill. A pneumococcus-streptococcus combination vaccine was given at once. The temperature dropped to 100° F. the next day. In all five doses of vaccine were given and the improvement was such by the fourth day that I entertained hopes of her recovery, but by the sixth day she died as a direct consequence of her weak heart. Failure in such a case is no criterion, but even here life was prolonged, showing that the vaccines were of benefit. One patient with double pneumonia whom I saw with another doctor died, in my opinion, because the vaccine was not repeated often enough. This was before we had gotten over the fear of the negative phase in severe acute infections. There was a beautiful response to the first inoculation with a drop of temperature from 104.5° F. to 100° F. in twenty-four hours, with other conditions proportionally improving. The vaccine was not repeated until three days later, after a sharp rise of temperture. This time the response was not so marked, and fearing to repeat the dose, no more vaccine was given. Oxygen, heart stimulants, and supporting treatment were resorted to, but death ensued three days after the second inoculation. From subsequent experience, I am satisfied that if the vaccine had been repeated once or twice after the first inoculation at daily intervals this patient would have lived.

All my other patients recovered. When the vitality and other conditions are reasonably good uniformly good results may be looked for if the vaccine is used early, the earlier the better. I have had four cases where the vaccine was given the first day in which a crisis took place within one day, and two cases in which it occurred within two days after the inoculation. I always used stock vaccines prepared in my laboratory from selected strains procured from typical cases of pneumonia. With stock vaccines treatment can be started at once. The preparation of autogenous vaccines causes too much delay before treatment can be started. In regard to the doses, I think the doctor does not need to give 400,000,000 at one dose, but if he will give the 40,000,000 or even 30,000,000 backed up by a corresponding dose of streptococcus—for it is usual to find the pneumococcus and the streptococcus together in these cases—I think that his results will be even more satisfactory. In my work I have had occasion to come in touch with at least thirty physicians who have treated pneumonia in this manner with equally good results.

There is no doubt in my mind that in the future much will be done with this method of treatment, and my experience has shown that physicians who start the use of vaccine therapy in the treatment of an acute infection such as pneumonia, acute rheumatism, tonsillitis and other similar short infections get results which convert them to this method of treatment and make them confident users of the vaccines in the more chronic and intractable cases.

G. W. Sherman, M.D

Detroit, Mich.

Late Infection of a Laparotomy Scar.—E. Hoke reports the case of a girl aged eighteen years who in the course of an attack of acute rhinitis developed a small abscess in the scar left after an operation for perityphlitis performed three months previously. The abscess opened spontaneously and discharged a small ligature.—*Prager medizinische Wochenschrift.*

OUR LONDON LETTER.

(From Our Regular Correspondent.)

PROBLEMS OF G. P. I.—TREATMENT OF LEPROSY—RECURRENCE OF ADENOIDS—TUNING FORK WITH STETHOSCOPE—INSURANCE; HOSPITALS, COMMITTEES, AND MEETINGS—OBITUARY.

London, February 14, 1912.

THE medicolegal relationships of general paralysis of the insane formed the subject of a discourse by Sir George Savage at the Polyclinic on the 25th ult. His great experience of the disease and the frequent call for his opinion in the law courts lend special interest to the questions that may arise in connection with this disease. Sir George looks for the discovery of some treatment which will arrest if not cure it. If so, it must be in the early stage—the prodromal—which is followed by the acute, and that by a placid stage, passing into the demented one. The dangers are different in each. In the earlier the chief danger was said to be the patient being made the tool of others. Some loss of higher control lets his actions follow feeling rather than reason. The result will vary with the individual—may be seen in anger, violent language, even brutal acts, or by improper companionships, or sexual faults, or acquisitiveness. The degrading tendency of the disease, the seeking low or bad companions must tend to disorder of conduct and sometimes to violent personal attacks. In police cases this should be remembered, for the lecturer mentioned cases in which medical men had diagnosed drink from alteration of speech due to disease. In these cases there is no premeditation, and the attacks are not followed up. Often there is regret and the offer to make amends.

Loss of higher control leads to immorality of various kinds, and hasty marriages which the wives have reason to regret. Assaults on women or children, too, occur. Mostly there is a silly childishness about these acts rather than violence, and they are done openly with no attempt at denial or evasion, contrasting with epilepsy, in which the acts are brutal but are honestly denied, as there is complete loss of consciousness in these. Sir G. Savage summed up this part of his discourse by advising "in any case of assault or indecency in a middle aged man be on the lookout for the physical signs of general paralysis."

The acquisitiveness of the paralytic was explained as a reversion to uncontrolled nature in relation to property. As a child takes what is near and attracts his attention, petty thefts are committed by paralytics. Later on there may be another cause; he comes to think all the world belongs to him or he is so rich he can pay for everything. Such cases were cited; also men writing checks for large sums on banks where they had no account. They would not forge a signature—they believed they had the money. The lecturer knew one man who speculated and actually made a fortune by the time he was in the asylum. How would it have been if he had lost the fortune and the accounts remained unsettled?

Sir George had inquired as to the number of criminal lunatics suffering from general paralysis, and was surprised to find how few they were. In one asylum for criminal lunatics only eight cases in twenty years; in another fifty-eight in fifty years. This may be partly that some have been sent to other asylums or otherwise dealt with for thefts, etc.

Questions of compensation for injury have aroused more importance of late years. The lecturer admitted that though one cause is essential other elements might start the disease. He actually believed meat diet might be a factor, as doubtless alcohol is, and he mentioned that a superintendent had told him that he hardly ever gave meat diet to paralytics, and since he had done this acute phases and epileptiform seizures had disappeared from his asylum.

Testamentary capacity may present more difficulty than might appear at first sight, for our courts have admitted wills made in an asylum. It may be argued the will was made in a lucid interval or he may carry out automatically what he intended in his sane life. Generally the contents of the will influence a jury more than medical opinions.

A Parliamentary white paper was circulated on the 31st ult. containing a further report on the treatment of leprosy at the Mahaica Leprosy Asylum in British Guiana, by Dr. E. P. Minett, assistant government bacteriologist. He finds that nastin has had very little effect on the cases in which it was tried. A solution of benzoyl chloride in petroleum oil shows a somewhat higher percentage of improvement. Anesthetic leprosy runs a definite course, the disease appearing later to die out, and the patient is not then infective. Such cases recover sensation in the previously anesthetic areas and after loss of a part the scar only remains. This is a normal cause without any treatment, and it does not seem to be influenced by either nastin or benzoyl chloride. Nodular leprosy has no tendency to improve naturally except in some very rare instances, nor is it affected by either of the above named drugs. The so-called destruction of bacilli is only a natural process which varies a good deal and is also uninfluenced by these so-called remedies. Dr. Minett considers, therefore, such variation of little value, if any, as an indication of the effect of treatment. On the other hand, the benzoyl chloride in petroleum oil used as a paint on ulcerating surfaces is pronounced to be decidedly valuable, and so it is as a nasal spray. It very soon frees the discharge from bacilli. It is strongly recommended for destroying bacilli in leper asylums.

Recurrence of adenoids is rather rare; some operators have never met with it. Mr. T. Guthrie communicated his experience to the Liverpool Medical Institution on the 25th ult. He finds that age has a great influence in this respect—the younger the child operated on, the more likely a recurrence. Thus it was mostly met with under the age of four years, and might occur in such children although the operation had been as complete as possible. Between the age of four and seven recurrence is less frequent, and after seven Mr. Guthrie admitted that practically it does not occur when the operation has been thorough. He considered it was favored by attacks of specific fevers, syphilis, and by anterior nasal obstruction from bony deformities, etc. He recommended after-treatment of postnasal catarrh and attention to the general health.

At the same meeting Dr. R. J. M. Buchanan demonstrated the use of a tuning fork combined with articulation for the purpose of mapping out the organs of the chest or abdomen, and even determining changes of size or shape. The fork being struck, the stem is placed on the part and moved by degrees while the stethoscope is being used. The sound vibrations vary with the density of the underlying organ, solids from liquids being easily differentiated. So the colon could be distinguished from the stomach and small intestines. Dr.

Buchanan found he could map out consolidated lung and tumor of the mediastinum, and he said in one case he had been able to determine an alteration in the size of the kidney which was shown to be correct on operation.

It is commonly believed that the Insurance Act will have a detrimental effect on hospitals, and it is a fact that many subscribers have given notice of their intentions to withdraw their contributions. It is hoped that they may be induced to reconsider this intention, though some of a socialistic turn commend it as likely to lead to nationalization of our great charities. Germany is so often held up to us as an example that I am glad to report a hospital surgeon's recent examination of Berlin hospitals. He finds their, as some of us knew well enough, a vivid contrast to our own, and has described in *The Times* what he saw on his visit. Mr. McAdam Eccles says the German act works well on the lines it was intended to do. Every insured person has a right of admission to a State hospital—not on account of illness, but as having paid for it. This is in complete contrast with our boast of "supported by voluntary contributions." The State hospitals of Germany are, therefore, administered in a parsimonious way, only bare necessaries (good of their kind) being provided—no flowers, no chairs in the wards, and so on. A more important deficiency noticed by Mr. Eccles was in the nursing staff—a hospital with 600 beds had fifty nurses, in contrast with St. Bartholomew's, about the same number of beds and 344 nurses. The contrast is so great I feel inclined to ask if it is possible that here we may have overdone the staff, especially as at this moment St. Bartholomew's is obliged for the first time in its splendid history to issue an appeal for contributions. Up till now its endowments have sufficed for its maintenance, but the administrators are even whispering that they may have to close some wards; but I do not think the city will let that take place. To return to the statements of Mr. Eccles. He quotes a recent writer to the effect that in the State hospitals gratitude is neither shown nor expected; the service is paid for. Our students, dressers, nurses, and residents are often most gratefully remembered for their attentions, but in Germany the patients would resent it if the students came into such close relationship, for, as von Müller puts it, they have a right to be admitted and "are not at all willing to be examined by the students." You will probably agree with Mr. Eccles that the London system is better for medical education, and one reason why we turn out such humane and reliable as well as highly trained general practitioners. This system is certainly "threatened by the working of the Insurance Act when it comes to affect our large hospitals with their medical schools."

The National Medical Union has passed a vote of censure on the B. M. A. Council and a refusal to accept its report. Further, it has resolved on a renewed pledge refusing to go on any panel or committee until the six points contended for are unreservedly conceded in such manner that they cannot be altered or withdrawn in future except by an act of Parliament. The Union further asks the divisions of the B. M. A. to instruct the Council not to enter into further negotiation with or hold further interviews with the committee or commissioners.

On the other hand, the divisions of the B. M. A. are holding meetings in the different districts to discuss what directions they will give to their delegates to the representative meeting to be held on the 20th. The Council favors the policy of insisting on their six points being conceded under the regulations made by the commissioners. The objectors say that commissions can rescind whatever they agree to.

The Government whips have organized a committee to instruct people about the act by lecturing and other means. They are also responsible for a plan of instructing their lecturers. Some of these have already begun and proved their zeal and ignorance by absurd attacks on the doctors. The Chancellor has had a conference or two with the commissioners and others, and it is said he begins to see that, after all, these doctors are in earnest; they even laugh at his threat to appoint whole time men to attend the "ten million or so he has swept into the insurance net."

The large Friendly Societies have decided to become "approved societies" under the act.

This morning a circular signed by fifty practitioners has been issued advocating "a strong but moderate policy." They seem to fear that the Chancellor will meet the strong policy by suspending the medical benefit and giving the insured the equivalent in cash, in which case they believe the approved societies would step in and reorganize contract practice on the old club lines. But they forget that for the first time the profession seems united and could therefore decline the clubs. This appeal and one or two others all advocate sticking to the six points and working in conjunction with the B. M. A.

Brigade Surgeon Henry Elmsley Busteed, late of the Indian Army and assay master of the Calcutta mint, died on February 1 in London, in his 80th year. He obtained his first commission in the Indian Medical Service in 1855 and retired in 1886, when he was made C.I.E. During his service he was in the mutiny campaign, taking part in the relief of Lucknow and being awarded the medal and clasp. In 1861 he was civil surgeon at Cuddalore and in 1865 was appointed assistant assay master, and subsequently master of the mints successively at Madras, Bombay, and Calcutta. He was also Commissioner of Paper Currency. He was author of "Echoes from Old Calcutta."

Dr. David Christison of Edinburgh died on January 21, in his 83d year. He was the second son of Sir Robert Christison, his elder brother, Alexander, being the present baronet and a retired surgeon-general. He took his M.D., Ed., in 1851, and became F.R.C.P., Ed., in 1862. Six years ago he had the LL.D. conferred upon him. He went to the Crimea in the early part of the expedition. He was a naturalist of authority as well as a physician, and for many years secretary of the Scottish Society of Antiquaries. To this and other scientific societies he made many valuable contributions and wrote two or three volumes on the antiquities of Scotland.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

MANILA MEDICAL SOCIETY—INFANTILE BERIBERI—BLONDS AND BRUNETTES IN THE TROPICS—ELECTION OF OFFICERS.

MANILA, P. I., January 9, 1912.

THE regular monthly meeting of the Manila Medical Society was held on the roof of the College of Medicine and Surgery, University of the Philip-

pines, at 8.30 P.M. An unusually interesting series of papers was presented, the first being entitled, "As to Infantile Beriberi. A Preliminary Report," by Dr. Vernon L. Andrews. The work done by Dr. Andrews was largely a continuation of the study of beriberi presented in a previous paper by Drs. McLaughlin and Andrews at the first meeting of the Far Eastern Association of Tropical Medicine, in March, 1910. In this paper, however, Dr. Andrews reported that, in addition to making the diagnosis by autopsy, in a large number of instances he was able to see the cases before death and make a satisfactory clinical diagnosis, which was confirmed, in almost every instance, by his autopsy. The importance of this matter will be appreciated when it is remembered that a number of local physicians still doubt that such a disease entity as infantile beriberi exists. In practically every instance in which the child died of beriberi, its mother showed many symptoms of the disease. Dr. Andrews gave a large series of analyses of milk taken from mothers whose children had died of beriberi. These showed, among other things, that the percentage of phosphorus pentoxide (P_2O_5) was, in most instances, as great as in normal milk. This point is of importance in view of the fact that beriberi has been attributed to the lack of phosphorus in rice. The sugar was about normal; the proteids were slightly below normal. A more striking difference occurred in the fats. With one exception they were approximately 50 per cent. under the normal amount. Dr. Andrews induced a number of mothers who had symptoms of beriberi to nurse puppies, and while he has not yet a sufficiently large amount of data from which conclusive deductions could be drawn, still, in one instance, one of the nursing puppies contracted a typical case of polyneuritis. Dr. Andrews' autopsy diagnosis was beriberi.

The next paper, entitled "The Cure of Infantile Beriberi by the Administration to the Infant of an Extract of Rice Polishings, and the Bearing Thereof on the Etiology of Beriberi," by Major W. P. Chamberlain and Captain E. B. Vedder, United States Army Medical Corps, was read by Dr. Vedder. The results shown in this paper mark a distinct advance in the treatment of the condition locally known as taon, or infantile beriberi. The statistics of the Bureau of Health show that 50 per cent. of all infants born in Manila die before they reach the age of one year, and that a large percentage of the deaths are attributable to this condition. In view of the previous high mortality, the results obtained in the fifteen cases which Dr. Vedder reported were truly startling. The diagnosis in each case was concurred in by at least three independent physicians, so that the diagnostic error was eliminated as far as possible. Dr. Vedder stated that upon the administration of the extract of rice polishings the child usually showed improvement within a few hours. The child usually slept well the first night after treatment. The beriberi symptoms cleared up in the course of a few weeks, with the exception of the aphonia, which persisted generally for two months or more. This he attributed to the fact that the degenerative changes in the pneumogastric nerve were so extensive that at least this period of time was required before a sufficient degree of nerve repair could take place. The extract is made by taking 3 liters of 92 per cent. alcohol and mixing it with 1 kilogram of rice polishings and allowing it to macerate for a period of forty-eight hours. At the end of this time the alcohol is evaporated slowly, over a water bath, at a temperature which must not exceed 80° C. Considerable stress is laid upon the fact of not permitting the temperature to reach the boiling point, because there is great danger of the active principle being destroyed thereby. Water is then added to the residue and the precipitate is filtered and sufficient water added so that each cubic centimeter represents 60 grams of the rice polishings. In the discussion which followed, Dr. Heiser called attention to the fact that while beriberi had disappeared almost entirely among persons who were employed at lighthouses, among inmates of jails, insane hospitals, and other persons who were under Governmental control, yet, judging from the statistics of the city of Manila, there had been a decided increase in the number of deaths from beriberi. He said that this might, in part, be accounted for by the increased attention which has been directed toward beriberi in the past few years, and cases which had heretofore been overlooked were probably now being reported as beriberi, but, in spite of this, when one considered that the beriberi deaths in the city of Manila had increased from approximately 700 in 1907 to 1500 per annum in 1911, further reasons had to be sought for to explain this. He thought that if the knowledge that beriberi in infants could be readily cured could be made general, and the treatment supplied gratis, there was considerable hope that a marked reduction in the infant mortality would be brought about. It was, of course, understood, he said, that the primary object to be sought was to prevent beriberi in the adult, and the best hope of accomplishing this lay in the bringing about of a more general use of undermilled rice.

Dr. Richard P. Strong said that he wanted to take exception to the statement that polyneuritis gallinarum and beriberi were the same condition. He stated that it might possibly be the case, but there was yet insufficient evidence on hand to make this statement conclusive. He called attention to the fact that so far it had been impossible to produce beriberi in monkeys and guinea pigs.

Dr. Vedder, who replied, stated that it was very difficult to induce dogs and guinea pigs to eat rice. In some instances these animals preferred to starve rather than to touch it. He called attention to the experiments of Shiga, which were published in the May number of the *Archiv für Schifs und Tropen Hygiene*, in which Shiga stated that he had been able to produce beriberi in a guinea pig, and gave a report of the pathological findings.

The next paper, entitled "The Relative Resistance of Blonds and Brunettes to the Harmful Influences of a Tropical Climate," was presented by Major Weston P. Chamberlain, United States Army Medical Corps. Dr. Chamberlain gave the observations made, in some instances, on a thousand troops, which consisted in noting the resistance to disease as shown by the sick admission rate of the various hospitals. The general behavior, as shown by court-martial trials, was recorded because Major Woodruff stated in a paper that, owing to the irritating effect of the actinic ray on the lighter skinned races, they became more irritable and were inclined to commit various kinds of misdemeanors. Their habits as to sobriety were also compared. Comparisons were made as to the incidence of insanity among them, and various other tests. In all of these there was practically

no difference in the two types, when large numbers were dealt with, and in some instances the brunettes were at a disadvantage in the comparison.

The society elected officers for the ensuing year: *President*, Major Percy M. Ashburn, Chairman of the United States Army Board for the Study of Tropical Diseases; *Vice-President*, Dr. R. E. L. Newberne; *Editor* of the society's journal, Dr. W. E. Musgrave; *Secretary and Assistant Editor*, Dr. A. G. Sison. The positions of *Treasurer* and *Business Manager* and *Counselor* were laid over for action at a subsequent meeting.

Progress of Medical Science.

Boston Medical and Surgical Journal.

February 15, 1912.

A Study of the Different Approaches to the Hip-Joint, with Special Reference to the Operations for Curved Trochanteric Osteotomy and for Arthrodesis. E. G. Brackett.
Prevention of Infant Mortality by Breast Feeding. W. H. Davis.
Liver Cyst, a Rare Case (with a Moral). F. J. Cotton and A. M. Burgess.
Three Unusual Cases: 1, Cyst of the Liver; 2, Volvulus and Strangulated Internal Concealed Hernia Complicating Pregnancy; 3, Acute Torsion of Hydrosalpinix Complicating Pregnancy. R. M. Green.

Operative Approaches to the Hip-Joint.—E. G. Brackett notes that the special problems presented by this joint are dependent on the following facts: it is the deepest joint in the body; it is covered on all sides by more than one layer of muscles, the edges of which so overlap as to prevent any direct entrance without either section or very marked retraction; and it is not possible to expose more than a limited area in the neighborhood of the hip-joint without serious damage to its essential coverings, and even when an avenue of approach to the joint is clearly opened, the joint itself is still hidden and cannot be opened without damage to its intrinsic articular structures. The most practical of the routes of approach are the following: the inner, anterior, lateral, latero-posterior, and posterior routes. Each of these is described in detail.

Prevention of Infant Mortality.—W. H. Davis presents the result of a study undertaken with the object of determining the relationship between breast-feeding and the prevention of infant mortality. Letters were sent to 900 mothers who had births recorded in Boston during the previous year. Of 736 replies, 533, or 72.4 per cent., of the infants were breast-fed and 27.6 per cent. were bottle-fed. As regards the nationality of the mother, Italy leads with 83 per cent. breast-fed; Russia and Poland come next with 79 per cent. breast-fed; Ireland and the United States follow with 73 per cent. and 59 per cent., respectively; while Canada makes the poorest showing with only 51 per cent. breast-fed. There is only a slight increase of deaths among breast-fed babies during the summer months. Only 26 per cent. of infant deaths between the ages of two weeks and one year occur among breast-fed babies. And of infants over two weeks old, born of native mothers, only 16 per cent. of the deaths occur among breast-fed children; while of babies over two weeks of Italian mothers 53 per cent. of the deaths occur among breast-fed children. Bottle-fed babies between the ages of one and three months show the highest mortality, especially those babies having mothers born in the United States. The bottle-fed infant over two weeks old is six times as likely to die as the breast-fed infant. Breast-feeding of all babies would have saved in one year in the city of Boston nearly a thousand lives.

Liver Cysts.—F. J. Cotton and S. M. Burgess note the extreme rarity of liver cysts, and that many cases of so-called malignant disease of hopeless type prove, in fact, to be conditions readily relievable by simple surgical measures. They report a case of liver cyst occurring in a woman aged 60. She had all the evidences of malignant disease: loss of weight, cachexia, and the presence of an epigastric tumor. On exploratory operation there was discovered near the middle of the left lobe of the liver a smooth bluish domed mass about three inches in diameter. This mass was tapped and yielded a colorless fluid under high pressure. The cyst was emptied and drained and the patient made an uninterrupted recovery.

Unusual Cases.—R. M. Green reports a case of hepatic cyst in a colored woman aged 50 in which the clinical picture simulated that of a subserous fibroid with a twisted pedicle. He also reports a case of volvulus and strangulated internal concealed hernia complicating pregnancy in a woman aged 27. The condition in this case was apparently a congenital anomaly of the mesentery, with high position of the cecum, leaving a tent-shaped cavity, into which the small intestines passed, forming an internal concealed hernia, which, becoming strangulated during pregnancy, caused an acute abdominal emergency. A third case reported is that of a hydrosalpinx complicating pregnancy in a patient aged 26. This case presented the somewhat rare condition of spontaneous torsion of a presumably pre-existent hydrosalpinx complicating pregnancy and producing a train of symptoms exactly simulating those of acute, intercurrent appendicitis.

New York Medical Journal.

February 17, 1912.

Indiscriminate Drug Taking. A. Lambert.
Some Useful Household Medicaments. S. Solis-Cohen.
Masturbation in the Adult Male. M. Hühner.
Crile's Researches in Regard to Shock. W. P. Carr.
Local Anesthesia in Major Surgery. S. Morrow.
The Matas Operation in the Treatment of Traumatic Aneurysm. W. C. G. Kirchner.
Artificial Sterilization by Active Immunity with Spermatozoon from the Same Species. L. K. Hirshberg.
Chronic Urethral Pruritus. G. Greenberg.
Acute Poliomyelitis with Unusual Manifestations. M. Greenwald.
Interstitial Ectopic Gestation. C. R. Rohins.

Indiscriminate Drug Taking.—A. Lambert states that the dangers of indiscriminate drugging may be summed up as follows: It is often harmful and usually unintelligently useless. The drugs in themselves frequently do harm, to say nothing of the waste involved in pouring in enormous quantities of these remedies to no purpose, since the reasons for which they are taken are often incorrect. Many of these remedies do harm in that they actually injure and pervert the normal processes of the body. It is like the old Persian proverb concerning opium, which runs, that while opium may cure a disease it also produces one. All narcotic drugs, those which benumb pain and the like, have the danger of real habit formation connected with their use and when once a person is addicted to these drugs, the condition in which he finds himself is worse than the previous one for which they were taken. It is an old, trite saying of the medical profession that he who diagnosticates well will cure well, and this applies to each and every individual, whether he has taken a degree in medicine or whether he has not, and certainly the indiscriminate drugging to which the human race is to so great an extent addicted today is not based on principles of good sense and intelligence.

Household Medicaments.—S. Solis-Cohen notes the value of castor oil, which may be left in the hands of the mother without fear, and which may be administered at the beginning of most fevers or of so-called "colds," in cases of acute indigestion, in cases of ptomaine poisoning, in certain kinds of acute diarrhea, and the like. An effective household remedy is a mixture of equal parts of castor oil and spiced syrup of rhubarb. At the beginning of attacks of "colds" moderate doses of quinine are useful. Tincture of iodine is a good old household friend. Compound tincture of benzoin is useful for chapped hands, slight cuts, and bruises of various kinds. Senna and rhubarb are safe household purgatives. Other

Household remedies that have demonstrated their usefulness are spirits of camphor and aromatic spirits of ammonia.

Masturbation in the Adult Male.—M. Huhner concludes that masturbation is a real disease, causing real discomforts, and is not an imaginary condition. One should not blame every symptom the patient complains of on his masturbation, as these symptoms may be due to pathological conditions in other organs. Masturbation and pollutions are distinct conditions, although they may coexist. Masturbation is dependent upon a pathological condition of the prostatic urethra and not upon imagination on the part of the patient. Coitus will not cure masturbation and is a dangerous experiment. Masturbation is to be treated by removing the pathological condition in the prostatic urethra and not by punishment or talking it out of the patient or appealing to his self-control. Masturbation is a curable condition. The treatment consists of the following measures: prostatic massage and deep urethral instillations of a 1 to 3,000 solution of silver nitrate by means of a Bangs sound syringe. At first a small sound syringe is used; as the case progresses larger sizes are employed and at the same time the strength of the silver solution is gradually increased until a strength of 1 to 500 is reached. Treatments are carried out every five days, and the entire course of treatment takes five months.

Crile's Researches on Shock.—By W. P. Carr. (See MEDICAL RECORD, January 10, 1912, page 142.)

Local Anesthesia in Major Surgery.—A. S. Morrow concludes that local anesthesia has a field of usefulness far greater than is generally recognized at the present time and that nearly 50 per cent. of the operations now performed under general narcosis could be just as successfully done under local means, intelligently used. The author believes that we have become accustomed to depend too largely upon general anesthesia. While it is true in the average case in good condition, the dangers from a general anesthetic in the hands of a skilled anesthetist and competent operator are very small; yet it must be remembered that under similar conditions local anesthesia, producing less shock, no kidney, heart, or lung complications, no blood changes and no gastric disturbance, is still safer; and if an operation can be satisfactorily and thoroughly performed under local means then local anesthesia should be offered to the patient, if for no other reason, simply to avoid the well-known unpleasant after effects of general narcosis, regardless of whether the particular operation is classed as a major or minor one.

The Matas Operation for Traumatic Aneurysm.—By W. C. G. Kirchner. (See MEDICAL RECORD, January 27, 1912, page 141.)

Artificial Sterilization by Means of Injections of Spermatozoa.—L. K. Hirshberg sought to determine whether it were possible to create sterility by inoculating the female of a species with whole spermatic fluid from the male of the same group. The result was negative. The author states that this might be put paradoxically in a burlesque way by stating that the Mendelian law is again substantiated in these cases; for acquired sterility cannot be either produced or "thereby transmitted to the offspring."

Chronic Urethral Pruritus.—G. Greenberg notes that this is due to either local or constitutional causes. Of the former, urethral polypi are the most frequent. Other local causes are strictures, chronic posterior urethritis, prostatitis, and seminal vesiculitis, and the presence of abnormal constituents in the urine. The constitutional causes are rheumatism, gout, neurasthenia, gastrointestinal disturbances, masturbation, alcoholism, and drug habits. The treatment consists in removal of the cause, constitutional treatment, and in intractable cases the use of an ointment consisting of ichthyol, one dram; resorcin, ten grains; quinine and urea hydrochloride, one-half dram, and lanoline, two ounces. This is applied to the urethra by means of an ointment sound.

Poliomyelitis.—M. Greenwald reports a case of this condition.

Interstitial Pregnancy.—C. E. Robins reports a case of this condition, presenting the unusual feature that no bleeding occurred at any time.

Journal of the American Medical Association.

February 17, 1912

Diphtheria and Vivisection.—W. H. Park recites the history of modern progress in the treatment and knowledge of diphtheria, showing how the identity of membranous croup and laryngeal diphtheria has been recognized and the methods by which the discovery of the diphtheria bacillus and the acquisition of a remedy have been obtained. Statistics show that the deaths from diphtheria per 100,000 population have been reduced from over 200 in 1887 to 37 in 1910. In the London Hospital the mortality has been reduced from about 30 per cent. in the early nineties to less than 10 per cent. In the pre-antitoxin years, while there were fluctuations in the mortality, in no period did all the cities show even a slight decrease, but it is only when we come to the critical year, 1894, that the drop in the mortality, which has progessively continued to the present time, began.

Cancer of the Breast.—W. S. Thorne emphasizes the fact that in a certain percentage of cases tumors of the breast dignosed as malignant do not undergo malignant degeneration and that the histological arrangement of a tumor does not always necessarily determine its future life history or development. The author suggests that possibly a certain proportion of recoveries should be credited to the natural defenses of the body. The usual three years' period of recovery he considers a mistake, and he shows cases illustrating the vagaries in development and appearance of tumors diagnosed as malignant. One of these disappeared without treatment, but recurred afterward in other parts of the body after a long lapse of time. The consensus of medical opinion is that 85 per cent. of breast tumors are malignant and the radical operation is in vogue, though not always justified by the pathological findings. The radical operation is mandatory without exception, but disfiguring operations should be avoided unless unequivocally necessary.

Salt Restriction.—A. C. Croftan finds that simple salt retention does not explain all cases of edema and certain toxic factors no doubt take a part. But whenever nephritic edema is due to salt retention, restriction of the intake is rational, much more so than endeavoring to force a sick kidney into action by drugs. A certain amount of the retained salt becomes attached to the cell protoplasm (*chlorure fixé*) and this is much more slowly gotten rid

of than that which remains free in the kidneys, an addition of a small amount of salt in the diet will cause the reappearance of edema, as the cell capacity is already overtaxed. It is somewhat difficult to explain the increased excretion of chlorides following reduction of the salt intake, but the author suggests that the kidney may be rested and thus better able to do its work. Occasionally there may be an increase of edema with excessive reduction of salts due to insufficiency of the kidneys to automatically dilute and concentrate the urine. Another factor which reduces edemas when salt is restricted is the greater facility of water evaporation from the lungs and skin when the body fluids are less concentrated. Prior to chloride restriction a tolerance test for salt should be made, the chloride content of the body determined, and the urine tested on several successive days. In very acute forms of nephritic edema restriction of drink is valuable with the salt restriction and the latter should be persisted in over a considerable time. The process of salt elimination can be occasionally started by the judicious use of diuretics, though, as a rule, they can be very well dispensed with. The resumption of sodium-chloride feeding should be very gradual, even after the disappearance of the edema. Chloride restriction has other fields of usefulness, such as epilepsy, diabetes insipidus, certain cardiac conditions and obesity. It sometimes helps in diabetes, though not always. It at all events helps reduce the thirst and is worth trying. It is of the greatest value in the treatment of inflammatory serous exudates, in certain stages of croupous pneumonia and whenever it is desired to produce a bromide effect. It can also be considered an antidote against bromidism. It is, however, by no means a panacea for all nephritic edemas. With careful selection of types, however, and with methodical restriction and control salt restriction can probably never do harm and will usually do good. If employed as a routine measure without control in every case, it will more often disappoint than fulfill expectations.

Anesthesia.—J. C. Gwathmey discusses the merits of different methods of anesthesia.

Foreign Bodies in Air Passages.—E. F. Ingalls reports three cases of bronchoscopy for the removal of a tack or nail in the air passages.

Repair of Facial Defect.—R. C. Turck reports a case of extensive facial defect successfully operated upon.

Scalp Tourniquet.—E. Laplace recommends in the treatment of hemorrhage from scalp wounds the application of four turns of a quarter-inch rubber tubing around the head at the level of the external auditory meatus.

Fractures in the Base of the Skull.—R. L. Payne advocates the decompression operation as the only correct treatment for basal fractures of the skull, as indicated by the experimental results of Hill, Cushing, and Krause. Heretofore the treatment had been irregular and the mortality 64 per cent. up to within the last five years. He reports a case treated by decompression with remarkably good effects closely following.

Cerebral Hemangioperithelioma.—W. G. Spiller gives the history of a case of multiple perithelioma of the brain attended with hemorrhages which is unique in his experience, and he has not found a similar one in the literature. The tumors were very numerous in this case, and every tumor was the site of hemorrhage. They varied greatly in size, the largest measuring 2 by 3.5 cm., and some were the size of a pea or less. The case illustrates the malignancy that perithelioma may assume in the brain, as the tumors were found in the cerebellum and pons, as well as in the cerebrum. Ordinarily, endotheliomas of the brain are among the most benign of brain tumors, arising from the dura and causing atrophy of the underlying brain by pressure without infiltration. In this case most of the tumors had connection with the cortex, but some were subcortical. The patient, a man, aged 69, was suddenly taken with aphasia and paralysis about a year before coming under the author's care, and he more recently had convulsions of the Jacksonian type. He died after an attack of these.

Prolonged Anuria.—V. D. Dunn reports a case of anuria of 114 hours' duration in a middle-aged man suffering from acute edema of the kidney of unknown cause. The operation of decapsulation was performed with complete success.

Twin Ectopic Pregnancy.—E. O'N. Kane reports a case of twin ectopic gestation which had been treated for indigestion and suspected miscarriage. The abdomen was filled with blood, fluid, and clots, and a large adherent mass in the lower abdomen contained a large sac in which lay two fetuses, the cords of which lay close together, rising from a large single placenta.

Ether Valve.—D. E. Jackson describes a new form of ether valve for experimental work which he claims saves more than half the amount of ether ordinarily used.

Antibodies Produced by Tissues Living Outside of the Organism.—A. Carrel and R. Ingebrigtsen find that guinea pig's bone marrow and lymph gland cultivated for five days with goat's blood generate substances that are hemolytic for goat's red blood-corpuscles. The authors conclude that tissues living outside of the organism react against an antigen by the production of an antibody.

Hemorrhagic Disease.—F. R. Frazier reports a case of hemorrhagic disease in an infant aged 10 months successfully treated by direct transfusion of blood from the father.

Early Nerve Involvement in Syphilis.—J. G. Hackness reports a case in which manifestations of syphilis of the nervous system appeared five months after the initial lesion.

Removal of Paraffin from the Bladder.—S. D. Van Meter reports a case in which benzine was successfully used to dissolve a mass of paraffin that had slipped into the bladder from the urethra into which it had been introduced in the form of a bougie.

The Lancet

February 10, 1912.

Certain Chronic Glandular Enlargements. W. K. Hunter.
Amputation for Diabetic Gangrene. C. B. Lockwood.
The Treatment of Puerperal Septicemia by Bacterial Vaccines. G. T. Western.
The Vaccine Treatment of Simple Goiter. R. McCarrison.
The Fate of the Appendix After Abscess Formation. A. P. Dodds Parker.
A Case of Tuberculosis with Special Involvement of the Heart. P. Bahr.

Chronic Glandular Enlargements.—W. K. Hunter distinguishes two groups of chronic glandular enlargements. In the first the outstanding morbid change is a marked hyperplasia of the lymphoid cells. These cases are included under the term lymphocytoma, which comprises cases of pseudoleucemia, the lymphatic leucemias, and the lymphosarcomata, as well as any glandular enlargement due to an overgrowth of the lymphoid elements in the gland. In the second group of cases the enlargement depends on an overgrowth in the connective tissue elements in the gland. The most striking example in this group is that seen in Hodgkin's disease. There are cases of tuberculous or of syphilitic adenitis, which clinically are very difficult to differentiate from Hodgkin's disease, and the same applies to certain chronic inflammations of glands, infective in origin, but not necessarily always due to any one specific bacterium. This last type of enlargement may be called chronic simple adenitis. A third group includes tumor growths.

Amputation for Diabetic Gangrene.—C. B. Lockwood notes the high mortality of amputation for diabetic gangrene and states that death following amputation is brought about either by septic infection or diabetic coma.

Vaccines in Puerperal Sepsis.—G. T. Western has found that the mortality among those cases of puerperal septicemia in which there is definite bacteriological evidence of bacteria in the blood stream is from 85 to 90 per cent. This mortality may by inoculation with autogenous vaccines be reduced to about 55 per cent. The mortality among notified cases of puerperal fever is about 60 per cent. This mortality may by inoculation with appropriate vaccines be reduced to about 30 per cent. In cases of puerperal sepsis if it is decided to explore the uterine cavity the opportunity should not be lost of obtaining a culture at the same time. In the treatment of puerperal sepsis "stock" vaccines give inferior results, and should be used only when an autogenous vaccine cannot be obtained.

Vaccine Treatment of Goiter.—R. McCarrison reports favorable results from this method of treatment. The vaccines employed were prepared from organisms similar to the normal and harmful inhabitants of the intestines. There is at present no evidence that any one of these possesses a specific influence in the production of goiter. The conclusion is suggested that the thyroid gland is called upon to combat several poisons normally present in the human intestine. When to these is superadded the specific virus of goiter an abnormal element is introduced and an extra strain is thrown upon the gland. Unassisted, it undergoes hypertrophy in many cases, but if assisted in any one direction it is capable of performing the additional task which has been imposed upon it and of combating the abnormal virus. On the assumption that no one of the different vaccines which the author has employed contains the specific organism of goiter the author's explanation of their action in this disease would be that they cause the disappearance of the goiter by relieving the thyroid of part of its normal work, thus enabling it, without continuing in a state of hypertrophy, to destroy the specific toxin of goiter.

Fate of Appendix After Abscess Formation.—A. P. Dodds-Parker states that in this condition the appendix is never destroyed but is damaged. There is a decided liability to fresh attacks. In the present keen struggle for existence it is wiser to remove such a menace to life. The danger of a second operation is not great, and herniæ may at the same time be cured.

Tuberculosis of the Heart.—P. Bahr and G. C. Low report a case which furnishes an excellent example of a tuberculous myocarditis and with such advanced caseous masses replacing almost entirely the whole muscular substance of the heart it is extraordinary how life could have been prolonged as long as it was. The caseation and cheese-like masses were quite typical of tubercle.

British Medical Journal.

February 10, 1912.

Prognosis. T. F. Gardner.
The Early Diagnosis of Pulmonary Tuberculosis. F. W. Price.
The Influence of Strong, Prevalent, Rain-bearing Winds on the Course of Phthisis. W. Gordon.
An Address on the Prevention and Treatment of Pulmonary Tuberculosis. W. M. Crofton.
Notes on Clinical Trials with Marmorek's Antituberculosis Serum. J. P. Mitchell.
As to the Nature of the Parasites of Leprosy and Tuberculosis. A. G. R. Foulerton.
A Case of Actinomycosis of the Lung. F. Nicholson.

Prognosis.—T. F. Gardner points out the power for good or ill which the utterance of a favorable or unfavorable prognosis has on the patient. In doubtful cases physicians should hesitate to predict how long the patient will live. A hopeful prognosis has a distinct therapeutic value.

Early Diagnosis of Pulmonary Tuberculosis.—T. W. Price discusses the symptoms and physical signs that are important in making an early diagnosis of pulmonary tuberculosis.

Strong Rain-Bearing Winds and Tuberculosis.—W. Gordon notes that exposure to strong, prevalent, rain-bearing winds tends to exercise an unfavorable influence on the course of phthisis.

Pulmonary Tuberculosis.—W. M. Crofton states that the methods of combating this disease are broadly three in number: (1) the open-air treatment in hospitals and sanatoria; (2) therapeutic immunization with one or other of the tuberculins; (3) the exhibition of drugs for bactericidal purposes. Many drugs have been used in the disease, such as creosote, guaiacum, carbolic acid, formalin, etc. The one the author prefers is iodine given in chemical combination. The form which he has been using for several years is iodoform, and he has given it intravenously, intramuscularly, and by the mouth. The intravenous method is by far the most potent. It is given in quantities of ¼ to 1 grain dissolved in ether with a little liquid paraffin added two to five times a week. The veins usually selected are those of the antecubital fossa.

Marmorek's Antituberculosis Serum.—J. P. Mitchell reports good results with this remedy in ten cases in which he has employed it. Two methods of injection are used—hypodermic and rectal. The former is supposed to be beneficial in acute and rapidly advancing cases, while the latter is more efficacious in chronic and apyretic cases. The great drawback to the subcutaneous injection is supersensitiveness, which is common to the injection of all serums. The dose used was 2½ c.cm., given hypodermically, until anaphylaxis was seen, when 5 c.cm. were given rectally daily for fourteen to twenty-one days. This was followed by an interval of seven to ten days without serum, which was again followed by daily injections for fourteen to twenty-one days. This routine was carried on as long as the case demanded it. Marmorek recommends that even after recovery seems complete weekly doses of 5 c.cm. should be given for several months. There is no danger in administration apart from anaphylaxis, which can be overcome by adopting the rectal method. In certain cases the general improvement is most striking, although physical signs are not altered to a similar extent. The success obtained in some of the cases at any rate justifies further clinical trials.

The Parasites of Leprosy and Tuberculosis.—H. G. R. Foulerton suggests that the acid-fast forms of Streptothrix may represent not only persistent but also specially resistant elements. The spherical spores of the streptotricheæ are generally distinctly less resistant against injurious physical and chemical influences than are the spores of fission fungi; and it may be that a second resistant element—the acid-fast rod form—has come into existence. Thus Marino found that the acid-fast forms of the parasite of tuberculosis preserved their vitality for a considerable time in the intestinal canal of the leech, resisting the action of the digestive juices for as long as fifteen months. At the end of that time there was marked attenuation of virulence; but still inoculation of the parasites into the guinea pig was followed in some cases by a very slow infection which resulted in death. There is also evidence of a probably similar kind with regard to the parasite of leprosy. It has been suggested that growth of this organism on artificial media is favored in symbiosis with intestinal amebæ, and Williams has recorded his own experiments bearing on this question. With certain strains of his streptothrix the acid-fast-forms appeared to die out in the course of successive subcultures. Then subcultures which appeared to consist of non-acid fast diphtheroid rod segments were mixed with amebæ. At the end of forty-eight hours the amebæ were found to be full of acid-fast rod segments. But an explanation other than that which supposes favorable symbiotic influences may be suggested. There is evidence that bacteria form a part of the natural food of the intestinal

amebæ, and of *Ameba dysenteriæ* in particular. And under the circumstances it would seem most likely that the amebæ digest and assimilate the non-acid-fast segments of the streptothrix, and that in the struggle for prolonged existence other, more resistant, acid-fast forms survive, as Marino's experiments have shown to be the case with the acid-fast form of the parasite of tuberculosis which is resistant against the digestive ferments of the leech.

Actinomycosis of the Lung.—F. Nicholson reports a case of this condition.

Berliner klinische Wochenschrift.

January 29, 1912.

The Berlin Wholesale Poisoning.—Stadelmann states that the first impression made on him by the patients was that of botulism, but there were no motor palsies. In every other respect the affections seemed identical. It was, however, inconceivable that sausage poisoning could occur with male victims only, for women of the class attacked eat freely of smoked foods. As soon as it became rumored that poisonous spirits had been sold at a certain dram shop methylism was suspected. No one knows just how the rumor started, but it is believed that some of the public reported it to the police. The author personally was informed by men in the drug trade. It is grave error to believe that methylism is easily recognized from its symptoms. Pure wood spirit may be almost free from special odor or taste, and it is doubtful if many could distinguish between it and alcohol. Some of the victims died before any characteristic symptoms could develop, for, unlike alcohol, the more deadly methyl spirit does not rapidly intoxicate, some 24 to 36 hours being necessary for the development of its syndrome. It is not burned in the body to CO_2 and water, like ethyl alcohol, but is but little decomposed and slowly eliminated. Its effects are distinctly cumulative, so that while one dose may cause no ill effects, a daily repetition would soon manifest itself by a sudden explosion. A single dose of it large enough will immediately produce symptoms. The retailer got the poisoned spirits in and first sold it on December 23, and the first victims were seen on the 26th, while there were no new victims after the 31st.

Etiology of Diabetes.—Hirschfeld, as the result of a study of this subject based on some relatively new viewpoints, concludes that arteriosclerosis, together with two affections commonly supposed to stand in causal relation with it, viz., alcoholism and syphilis, has been shown to stand in no necessary causal relationship to the development of the pancreatitis, upon which diabetes so frequently depends. An entire series of facts, on the other hand, goes to show that the latter is due to bacteria or bacteriotoxins. Animal experiment, as well as chemical experience, points in this direction. It is believed, for example, that pancreatitis sometimes accompanies mumps. We know that after certain affections, such as angina and influenza, diabetes becomes aggravated; so that we may imagine an acute exacerbation of an old pancreatitis. In some cases diabetes may be attended with enlargement of the liver, which suggests that this organ and the pancreas may be involved in the same process. When these patients begin to improve under an antidiabetic regimen the swelling of the liver subsides.

Angina and Enlarged Liver.—Bortz describes what he believes to be a unique case, which occurred in the nine-year-old son of a diabetic mother, who developed an angina with deposit and high temperature. By mere chance it was found that the liver was notably enlarged. In three days the throat was well and the boy back in school. The liver resumed its normal dimensions. Glycosuria did not develop at any time. The chief interest in the case lay in the fact that, as the boy came from a diabetic family, the liver swelling might have indicated some peculiar susceptibility of that organ to general infections. The pancreas could have similarly participated (evidently it did not), and should the boy later develop diabetes the liver swelling could be regarded as a prodrome.

Deutsche medizinische Wochenschrift.

February 8, 1912.

Cirrhosis of the Liver.—Baumler sums up his lecture on this subject as follows: Cirrhosis of the liver is to be comprehended chiefly as the terminal stadium of some chronic intoxication (such as alcoholism) or as the effect of an acute or chronic infectious disease, or, finally, as a result of chronic biliary or cardiac stagnation. The picture of cirrhosis may also come about secondarily through disease processes of adjacent organs, for example, in peritonitis, especially the tuberculous form, pylephlebitis, etc. Whatever its origin, cirrhosis must always be managed by dietetics and regulation of the intestinal activities. Ascites requires, first, diuretics, then puncture, and, as a last resort, Talma's operation, which, however, must be done seasonably. If biliary stasis is present the treatment becomes that of cholelithiasis.

Origin of Carcinoma from Scar Tissue, etc.—Theilhaber states that without some antecedent atrophy of the parent tissues there can be no cancer or at least only a small proportion of cancers. The most frequent cause of atrophy is the presence of old scars, from prolonged inflammatory changes, or destruction of soft parts as a result of traumatism (including those incident to parturition); in the same category belongs the climacteric atrophy of the uterus and breasts and senile atrophy. From this point of view the surgery which removes cancer also paves the way for scar relapses, and the more extensive the operation the greater the scar area, and hence the greater the predisposition to more cancer. In a word, a large number of recurrences are not really such, but are new primary growths, and there can be no true probationary period after operation.

Parasitism and Disease.—Theobald Smith of Harvard has recently lectured at Berlin on the part played by animal plagues in human disease and in evolution in general. Without the supposition of great animal plagues in prehuman ages it is very difficult to explain the disappearance of many animal species. A widespread rat pestilence may have been the essential cause of the medieval black death, and a study of the epidemiology of all the domestic and familiar animals is necessary for the protection of posterity, since we depend upon some of the species for much of our food and clothing. Should a pestilence spring up which would annihilate cattle or sheep, for example, the sufferings of the next generations would be inconceivable. What is true of the animal world also holds good for the diseases or parasitism, of the uncivilized dwellers of the tropics. The law of Nature that the strong destroy the weak or compel them to minister to their needs is reversed when the weak and naturally insignificant become too small to be recognized or controlled, and thereupon parasitism develops, in which the nominally weak prey upon the strong. A counterreaction follows when the higher organisms become able not only to understand the nature of the parasites, but to war against them.

Treatment of Pneumococcus Meningitis.—Kleinschmidt treated a case of this condition, which was secondary to a pneumococcus angina, by means of repeated lumbar puncture and the intravenous injection on two occasions of Römer's serum and urotropin. The patient recovered.—*Medizinische Klinik.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

The reader is referred to the many excellent textbooks for the details of physical diagnosis, as it is the writer's desire to limit the suggestions in this and following contributions to the practical points which arise in connection with examinations for life insurance.

General Methods.—A strong and persevering effort during about the last ten years to raise the standard of life insurance examinations has been rewarded with substantial success. The quality of this work is now of the high order that would naturally be expected from the class of men who represent the different companies, but it still remains true that the best of examiners will occasionally forget the importance of scrupulous care and constant vigilance in their examinations when pressed by the other numerous duties incident to the life of a busy practitioner. Then, again, though the majority of examiners are men of recognized integrity and ability, candor compels medical men themselves to admit that the efforts of some of their poorly equipped or weak fellow-practitioners have not always reflected credit on the profession, either in their capacity as the family physician or as a life insurance medical examiner. The writer has been interested for a good many years in the improvement of the medical situation in so far as it related to life insurance medicine, and some of his personal experience may interest, it certainly will surprise, most examiners by showing to how low a plane poor work of this kind may reach and what the companies have had to contend with in some localities. The conditions referred to were usually encountered in sections of the country where circumstances, chiefly financial, forced men up to the last few years to seek a medical training in the local mushroom colleges which disgraced the land, especially twenty or thirty years ago. Graduates from concerns of this kind were sent out with the most superficial ideas of physical diagnosis, and if they were not tremendously inspired with ambition and also settled in obscure places where they missed the advantages of interchange of thoughts with better equipped men, they almost inevitably fell into deep ruts of empiricism, treating fevers with calomel and quinine irrespective of the nature of the disease which they rarely understood. With age and personality in their favor these men were often regarded as the most prominent physicians in their neighborhood, yet it was not uncommon to find them without the faintest idea of the requirements of physical examination or urinalysis, or even the necessary apparatus. They seldom required the applicant to remove the coat or vest for the examination, or, still worse, omitted the ceremony of a physical examination and urinalysis altogether, this complacent and congenial frame of mind arising especially when the examiner and the applicant were friends or fellow-members of some order or society. The names of these men have gradually disappeared from the lists in the endless weeding out process and been replaced by those of examiners with a higher sense of duty and better qualifications.

The examination of an applicant is of little value unless it is carefully and completely made under the following favorable conditions:

1. Privacy.—The advantages of privacy are obvious; namely, that there will be no hindrance to the applicant giving out information that he would hesitate to impart in the presence of other persons, and there will also be no disturbing element to distract the mind of the examiner. Privacy should always be insisted upon. The only exception is in the case of a woman applicant, in which event the presence of some friend during the physical examination after the questions have been answered is permissible.

2. Absence of Noise and Bustle.—This will not only help the ear of the examiner but will also allow him to concentrate his faculties on the work in hand. The action of the examiner will be upheld by the home office if he refuses to go on with the examination until a suitable place is selected.

When photographing the subject for the original of this cut, the chest was so completely exposed that the stethoscope could be applied directly over the apices without touching any clothing.

3. The Removal and Proper Arrangement of the Applicant's Clothing.—The best of diagnosticians and the keenest of ears will surely fail at times to detect some of the signs of disease through thick clothing, especially in the early stages of pulmonary lesions and in some forms of heart disease. Moreover, the clothing interferes with ocular inspection, palpation, and percussion. Nevertheless, the writer ventures the statement that fully 50 per cent. of examinations are made through thick undershirts, two shirts one of which is often starched, or even through shirts and vest. The fear of offending the applicant by asking him or her to remove sufficient clothing to permit an examination of any value often deters the examiner from making the request. This danger is purely an imaginary one provided the examiner goes about it in a calm, polite and diplomatic way. Home office examiners whose duty brings them in contact with thousands of applicants of both sexes in their homes or at their places of business, invariably and with-

out any exception secure enough exposure of the chest and abdomen to insure the proper conditions, and this arrangement is always cheerfully assented to without any visible signs of annoyance or irritation. The best method for arranging the clothing is shown in the accompanying cut.

Having removed the coat and vest, the suspenders are dropped. Both shirts are then rolled up to the level of the clavicles and held there by the applicant, leaving the examiner free to proceed with his examination of the chest and abdomen. In doubtful cases or when a starched shirt is worn, it may occasionally be necessary to ask the applicant to remove the outer shirt so as to allow a thorough auscultation at the apices. In most cases, however, the first procedure of rolling the shirts up will meet all requirements. When examining the back the shirts are similarly rolled up, the applicant holding them by a hand extended back over each shoulder. When women are to be examined there should be no clothing above the waist other than a sack or robe of some stuff thin enough to allow a satisfactory examination. Corsets should invariably be removed. The writer has examined hundreds of women in all classes of society and has never experienced any difficulty in having his requests for such an arrangement cheerfully granted.

The examiner should always remember that the home office authorities are too pressed for time to be interested in his mental processes. It is their function to secure information as to whether or not the applicant is insurable and they will usually entertain a feeling of gratitude toward the examiner who limits his answers to "yes" or "no" or to short concise ones if some further explanation is necessary. Nothing is gained when an examiner theorizes on or reports some condition which, while it is not exactly according to rule, is not pathological to the slightest degree, such as, for instance, the occasional difference found on percussion or auscultation between the sides of healthy chests, a purely cardio-respiratory heart murmur, and many others. As long as the examiner thinks such statements are important enough to appear in the medical report, they must be noted at the home office and the matter cleared up through further correspondence with consequent delay. The examiner is depended upon to ascertain whether or not the irregularity is caused by some pathological lesion or by some condition actually detrimental to the applicant as an insurance risk. There may be reasonable doubt in which case he is always entitled to as much time as he needs and he is justified under such circumstances in requesting further interviews with the applicant in order that he may ascertain the real nature of the trouble; but when he has made up his mind definitely he should simply report any abnormality present or recommend the risk, as a rule, without further comment. If the examiner with the applicant before him and his ear to the chest is not able to arrive at a conclusion, the medical director at his desk will hardly be in a position to come to any decision with only indefinite or ambiguous statements before him.

Aural Disease and Life Insurance.—Milligan and Wingrave state that the relation of ear disease to life insurance is a very difficult subject to discuss, as it involves many considerations, including the personal equation. A patient with evidence of long-standing suppuration of the middle ear with occasional labyrinthine disturbance, who obstinately refuses to undergo radical treatment, should not be accepted at any rate, but after successful treatment and an interval of freedom from all symptoms he may be accepted at a moderately increased annual premium. The authors believe that it would be extremely unfair to establish an inelastic standard of fitness or unfitness, particularly in view of the rapid progress of otological surgery. According to Swift, a history and the existence of labyrinthine disease, however obscure, should always be penalized, for although the disease itself may not directly shorten life, it may do so indirectly. The following are regarded as indications for absolute and unqualified rejection: (1) unequivocal signs of syphilis, tuberculosis, lupus, or neoplasm in the ear itself; (2) exostoses and intractable stenosis of the meatus, with or without existing discharge; (3) all suppurative middle-ear cases with vestibular complications; (4) evidence of caries or necrosis of any part of the temporal bone, with or without facial paralysis; (5) any form of aural trouble associated with an existing or past leucemia, tuberculosis, syphilis, or arteriosclerosis; (6) whenever the aural discharge is accompanied by disease of the nasal accessory sinuses; (7) all primary or secondary infections of the labyrinth with or without history or evidence of intracranial disease. Penalized acceptance may be advised in those who have undergone the radical operation and in whom there has been no recurrence of any symptoms whatever for a period of two or three years, and no evidence of cholesteatomatous accumulation or sepsis. But there should be some hesitation in accepting even with an increase of premium any such patient who suffers from recurring attacks of eczema. Deferred consideration pending complete cure should be applied to: (1) all cases of acute and chronic eczema of the meatus and auricle, especially those showing a tendency to stenosis; (2) cases of subacute and acute primary mucopurulent inflammation of the middle ear, especially those cases accompanied by nasal and nasopharyngeal obstruction. The above considerations may serve as a guide, without fixing any arbitrary distinction, which is impartial alike to the insurance company and to the applicant.—"A Practical Handbook of the Diseases of the Ear."

Life Insurance in India.—Adrian Caddy, surgeon to the Hindu Marwari Hospital, Calcutta, presents interesting points which indicate the differences between individuals presenting themselves for examination for life insurance in England and those who are examined in India. In regard to the native lives Caddy finds that the native is usually a shorter man than the European, that height for height the native weighs the same on an average as the European, and that there is no evidence to show that his tissues are any lighter than those of a European. The native is very subject to glycosuria, due probably to his carbohydrate diet; he is also liable to develop hydrocele, but the reason for this is not evident. The author is of opinion that opium and hemp drugs are not commonly consumed by the insuring classes. He maintains that Europeans do not acclimatize in the tropics, and submits as a proof of this statement the inability to withstand the tropical sun without any head covering, and after years of residence in hot climates there seems to be a greater liability to sunstroke than on arrival. He further contends that the children of Europeans who have been sent "home" when four or five years old for their education are generally not so fine physically as their parents, owing to the debilitating influence on their constitutions of the tropical climate at an important growing period of their lives. These are points which have an important bearing as regards the rating on candidates for life insurance. Little has been written on life insurance in India, and Caddy's observations are worthy of attention.—*Lancet*, February 3, 1912.

Book Reviews.

Die Storungen des Farbensinnes, ihre klinische Bedeutung und Diagnose. Von Dr. Hans Kollner, Privatdozent an der Universitäts Berlin, Assistant der Universitats-Augenklinik. Mit 33 Abbildungen im Text und drei farbigen Tafeln. Price 14 M. Berlin: Verlag von S. Karger, 1912.

The work of Kollner constitutes a volume of 428 pages. It is a comprehensive review of the subject, evidencing a most careful and exhaustive study. The various conditions of the color sense are considered under the headings: "The normal color sense," "The congenital defects of the color sense," and "The acquired defects of the color sense." At the end of the volume a chapter is devoted to a discussion of the methods of examining the color sense. An extensive bibliography accompanies the text. The work is of interest to the scientist as well as to the medical man, but is of course of much more interest to those who are devoting themselves to the study and practice of ophthalmology. The work is one that must be read carefully to be fully comprehended; consequently it will not be popular with any but the student.

The Way With the Nerves. Letters to a Neurologist on Various Modern Nervous Ailments, Real and Fancied, with Replies thereto Telling of their Nature and Treatment. By Joseph Collins, Physician to the Neurological Institute of New York. New York and London: G. P. Putnam's Sons, 1911.

The readers of the Medical Record will probably recall the "Letters to a Neurologist" that appeared in these columns about two years ago. These are now presented in book form, and, as the title suggests, aim to present to the general reading public a popularized exposition of modern neurological science. No reader will fail to be interested, even charmed, with Dr. Collins' masterly exposition of a most difficult chapter in medical science, with his scholarly style and subtle humor. The general practitioner will find this a lucid epitome of current conceptions regarding nervous diseases, such as the relationship of neurasthenia and psychasthenia, the nature of sick headache, epilepsy, of depression, hysteria, ennui, and the dual personality. Letters of more popular interest are those on mental retardation in children, the moderate drinker, the repressed emotional woman, the idle well-to-do young man, the choice of a profession for a nervous youth, jealousy, and dipsomania. For their faithful portrayal of the professional types the letters on the "bedside manner" are masterpieces of humor and gentle caricature.

No one can justly question the value of popularizing medical knowledge, whether this relates to the means of preventing diseases of infectious nature or whether it is aimed to stem the rapid increase of nervous disease. At the same time one may doubt the wisdom of placing in the hands of a neurasthenic or hysterical individual a primer on insanity. Books on general medical topics for popular reading are valuable in proportion to the intelligence of the reader. If the latter, by virtue of information gleaned from these books, presumes to become his own doctor, the possibilities of ultimate harm are at once obvious. But the public craves knowledge on this subject as well as on other branches of medicine, and there is no reason why this craving should not be satisfied. The author has accomplished the task of writing a volume that adequately reflects the modern tendencies in neurology. More than this, it is a book of distinct literary merit, scintillating with wit and allusion.

Manual of Physiology. For Students and Practitioners. By H. Willoughby Lyle, M.D., B.S. (Lond.), F.R.C.S. (Eng.), Assistant Ophthalmic Surgeon to King's College Hospital, Surgeon to the Royal Eye Hospital, Ophthalmic Surgeon to the Royal Ear Hospital, Examiner in Physiology for the Primary Fellowship of the Royal College of Surgeons of England, Formerly Lecturer on, and Senior Demonstrator of Physiology in King's College, London. With One Plate and 135 Figures in the Text. Price $4.00. London: Henry Frowde, Oxford University Press; Hodder & Stoughton, 1911.

The needs of the student and general practitioner are admirably supplied by this work, which represents a concise and at the same time comprehensive treatise on modern physiology. The bearing of the subject upon practical medicine and surgery is indicated whenever possible. The experience of the author as a lecturer on the subject at King's College, London, for sixteen years, has enabled him to study the wants of the student, and it would be difficult indeed to conceive of a better manner of providing the student, as the author has done, with a compact text-book on this extensive subject. The book is well written, clear in its statements, and amply illustrated. It may be recommended without reserve.

Über Moderne Syphilistherapie mit besonderer Berücksichtigung des Salvarsans. Von Geh. Med.-Rat Prof. Dr. A. Neisser, Dir. der Dermatolog. Univ.-Klinik und Poliklinik in Breslau. Price M. 1.50, Halle a.S. Carl Marhold Verlagsbuchhandlung, 1911.

In this concise and thoroughly up-to-date brochure of forty-six pages the author points out through the three discoveries during the past eight years, namely, *Treponema pallidum*, the ability to infect monkeys, and the Wassermann reaction, that the treatment of syphilis today is no longer purely empirical, but a rational one founded on objective facts. He advises instituting treatment at the earliest possible moment and advocates the abortive treatment. He is a firm believer in salvarsan, using it intravenously in repeated doses in conjunction with mercury.

Die Gonorrhoe des Mannes; Ihre Pathologie und Therapie. Ein Leitfaden fur Arzte und Studierende, von Dr. med. Wilhelm Karo. Berlin. Preis M. 2.80 Verlag von Julius Springer, 1911.

The author has neatly condensed his subject matter of gonorrhea in the male as systematically as could be expected in a book of 100 pages. He divides his book into six parts, namely: I. Anatomical remarks. II. Clinical Aspect of Acute Gonorrhea. III. Treatment of Acute Gonorrhea. IV. Complications of Acute Gonorrhea. V. Chronic Gonorrhea. VI. Marriage Consent in Gonorrhea. Each part is subdivided into chapters dealing respectively in a brief and concise manner with his own and other modern methods of diagnosis and treatment of gonorrhea in its different stages. The chapters on treatment deserve particular mention since they present the details usually sought for by the student and practitioner. In a book of this size the author naturally has been unable to give the space that the treatment of chronic gonorrhea deserves. He does, however, outline the salient factors necessary for its successful treatment. The absence of illustrations, and omission of citations of personal cases and statistics, gives the reader a comprehensive understanding of the subject.

Traité de la Blennorrhagie et de ses Complications. Par le Dr. Georges Luys, Ancien interne des Hôpitaux de Paris, ancien assistant du Service des voies urinaires a L'Hôpital Laribosière, Laureat de la Faculté de L'Académie de Médecine. Avec 202 figures dans le texte et 3 planches en couleurs hors texte. Price 12 francs. Paris: Octave Doin et Fils, 1912.

We have in this book of twelve chapters covering 529 pages the subject of gonorrhea and its complications. The author has been liberal in giving space to the most important phases of this disease. He begins his work with an interesting chapter on the History of Gonorrhea, quoting from the various works of numerous early observers as regards their primitive and rudimentary views on the subject. In his second chapter on the Dangers of Gonorrhea he shows by authentic citation of cases from his and other modern observers' experiences how "the reckless, the ignorant, or the guilty infected individual" has conveyed the disease to his wife and thereby "has soiled, crippled, or killed her." The sociological and medicolegal aspects of gonorrheal infections are ably discussed. The third chapter deals with the gonococcus, its mode and frequency of infection, methods of staining and cultures, as well as its toxic effects on the general system. In the succeeding chapters may be found described in detail the anatomy, pathology, symptomatology, methods of diagnosis, and complications of gonorrheal and non-gonorrheal infections. A separate chapter is devoted to gonorrheal infections in women and children. With characteristic national thoroughness the author has given merited space to the treatment of acute and chronic gonorrhea. Like the majority of modern urologists, he favors the irrigation method of treatment as against the use of the hand syringe and balsams alone in the acute infections. He has described in detail every modern method of treatment used in chronic gonorrhea. It is surprising that the author has not devoted some space to the well-known tests for the proofs of the cure in gonorrhea. Urethroscopy occupies a prominent place, covering 100 pages in this text. Luys urges its more frequent practice and considers it indispensable in the diagnosis and treatment of chronic urethral infections. Besides a description of his urethroscope, a modification of the Valentine instrument, he has illustrated a number of the early models as well as the modern types, with a description and criticism of each. The 202 cuts and illustrations with 3 colored plates are clear, thereby lending an intelligent interpretation of the text.

Society Reports.

PRACTITIONERS' SOCIETY OF NEW YORK

242d Regular Meeting Held November 3, 1911.

THE PRESIDENT, DR. J. W. BRANNAN, IN THE CHAIR.

Large Mediastinal Lymphosarcoma Arrested.—Dr. R. ABBE showed a boy operated upon by him six months ago. The patient was in a critical condition at that time, owing to a large tumor in the mediastinum and left chest, which extended to the third rib in front. The operation consisted in the removal of part of the seventh rib, and a considerable part of the tumor which grew outside the chest wall, after which applications of radium were made by the insertion of eight long slender tubes five inches into the mediastinal tumor. Dr. Abbe stated that there had been no return of the tumor at the site of removal and that the general condition of the patient had become such that the boy could attend to the ordinary amusements and occupations of his age. Then followed an exhibition of a photograph which showed the area of dullness in the patient, together with two *x*-ray negatives—one a front and the other a side view of the tumor. Dr. Abbe said that the tumor had in all probability begun in the mediastinum. Radium had been applied only once, six months ago, at the time of the operation. The photograph showed displacement of the heart, so that the apex beat was under the right nipple.

Demonstration of the Perfect Result of Beatson's Operation at Six Months.—Dr. ABBE presented a patient aged thirty-two years and apparently in perfect health who had been operated on four years before for mammary carcinoma. Two years later recurrent nodules appeared about the scar. Six months ago the patient had disseminated carcinosis as follows: On the side of the chest scores of carcinomatous nodules had merged into a dense group, the area of one's hand, and fixed upon the chest wall. Many enlarged glands were felt above and below the clavicle. In the remaining part of the chest a tumor the size of an English walnut was felt with enlarged axillary nodes and over the shoulder on the same side was a typical malignant subcutaneous nodule. The patient was cachectic and unable to continue her work. Oophorectomy was done in time. As early as the fifth day some of the recurrent nodes began to flatten and to umbilicate. Rapid changes were observed during three weeks, when many nodules had entirely disappeared. The patient spent the summer in the country and had lately returned for observation with apparent restoration to perfect health. At the present time the patient showed entire disappearance of every trace of malignant disease. One ovary at the time of removal was healthy, the other showed a pea-sized nodule of typical carcinoma. Dr. Abbe added that the results of the Beatson operation had shown that recurrence might be expected from six months to three years after oophorectomy. Even this picture of temporary favorable outcome of organotherapy which might be expected in one-third of all cases justified the operation and further hope might be justly held out that in these late recurrences the beneficial results of the *x*-ray and radium might prove helpful.

Chronic Vernal Catarrh.—Dr. ABBE showed two cases of five which had been submitted to him for radium treatment, having resisted all ordinary methods. The worst case was that of a young man of fourteen who had acquired the disease in childhood; he had an enormous thickening of the mucosa of the eyelids with granulating masses in clusters embedded in thick mucopus, and photophobia and pain. One eye only was treated at first by radium, with applications for five minutes every two months; it had remained perfectly cured. Later treatment of the other eye, begun recently, had about cured that also. The second patient shown had lately begun treatment and demonstrated the prompt beneficial effect. All five cases demonstrated the curability of this disease by the use of radium.

Advanced Mammary Carcinoma: Rapid Reduction Under Radium Treatment.—Dr. ABBE demonstrated four colored plaster-of-Paris casts of an inoperable cancer of the breast, in a patient of seventy-six years. The tumor was large, nodular, ulcerated, painful and bleeding, and attached to the chest wall. The first cast was taken before treatment two years ago. Radium was applied at intervals of three months; the ulcers immediately healed and retrograde changes began. Casts were taken every six months. Now only a few marginal spots remained with soft cicatrix.

Dr. C. L. GIBSON said that we might explain the arrest of such processes by considering that a tumor was a parasite of the body, and anything that interfered with the function or nutrition of the parent would be neglected in the parasite. Injections of various sera often produced changes as shown by the reaction of the kidneys. The effect of doing any kind of an operation or the giving of an anesthetic might produce such changes, *e.g.* we knew now that patients were cured of osteomalacia not by the ovariotomy, but by the administration of the chloroform.

Hospitals and Typhoid Carriers.—Dr. J. W. BRANNAN made this communication. He said that some three months ago his attention was attracted by an article by Meakins of Montreal in the *Canadian Medical Association Journal* entitled "Typhoid Bacillus Carriers." In view of the danger of typhoid carriers to the public health, Meakins urged that every typhoid fever patient in our general hospitals should be examined bacteriologically before discharge, and should be kept in the hospital or under strict observation until the excreta were free of typhoid bacilli. Patients under the care of physicians in private practice should be watched and frequently examined. Impressed by the suggestion of the Canadian writer, Dr. Brannan had requested Dr. Charles Norris, the director of laboratories in Bellevue and its allied hospitals, to have the feces and urine of all cases of typhoid fever examined during convalescence. Eighty-one cases in all were examined and of these eight, or about 10 per cent., had typhoid bacilli in either feces or urine or in both at some time during the course of the disease. All patients were bacteriologically free before discharge from the hospital. Had it been necessary to discharge any patients while still carriers it had been Dr. Brannan's intention to report their names and addresses and occupations to the Health Department in order that they might be kept under observation by that department.

Regulations of typhoid carriers had been enforced in parts of Germany for a number of years. In the southwestern provinces there was probably no case of typhoid fever released from control until the bacteriological examination of the feces and urine had proved negative. In England, also, typhoid carriers received a great deal of attention, especially in the English army. After treatment for a period of three months, if it was found that the soldiers were still carriers, they were given the opportunity of entering the hospital or of being discharged. In case of discharge notification was sent to the medical officer of health of the district in which the soldier was going to reside. In the service in India two convalescent depots were established several years ago, to which the convalescents of certain military stations were sent. After the establishment of these convalescent depots, namely, Wellington and Naini Tal, it was found that the admissions of typhoid fever from all stations which sent their convalescents there showed a reduction of 9 per cent. from the figures for 1907, whereas the remaining stations showed an increase of 26.6 per cent. In the endeavor to sterilize typhoid carriers various methods of treatment had been tried, such as the use of lactic acid bacilli, acidifying the

urine, the administration of antiseptics, the use of the *x*-ray, and the employment of vaccine. The surgeons of the English army had reported the following results of the use of these five different means of treatment: (1) Lactic acid bacilli caused only a temporary disappearance of the typhoid bacilli. (2) Acidifying the urine failed to cure typhoid bacilluria. (3) The administration of antiseptics invariably brought about a decided diminution in the number of bacilli both in fecal and in urinary carriers. This effect was much more marked when the maximum contact of the antiseptics with the bacilli was obtained by combining the treatment with low diet and aperients in the case of "fecal," and with diuretics in the case of "urinary" carriers. (4) The use of *x*-rays in the cases of gall-bladder infection seemed to have definite beneficial results. (5) Vaccines, like the lactic acid bacilli, caused only temporary disappearance of typhoid bacilli. It was suggested that the treatment by vaccines might have a better chance of success if combined with diuretics in the case of "urinary" carriers, and with *x*-ray treatment in gall-bladder cases. Sir Almroth Wright had pointed out that a vaccine was more likely to be efficient when the local conditions were so altered as to permit the fullest possible contact between the bacteriotropic products in the blood and the bacteria involved.

Dr. CHARLES NORRIS said that at the Fordham Hospital 17 per cent. of the convalescents showed the presence of typhoid bacilli in the stools; in the Harlem Hospital 11 per cent., while at Bellevue Hospital only 5 per cent. were found.

Dr. GIBSON asked whether the use of urotropin had proved successful in sterilizing the urine.

Dr. J. W. BRANNAN answered that it was considered a very useful drug as the result of several years' use, and was now used as a matter of routine.

Dr. W. JAMES remembered patients in which the use of urotropin produced disastrous effects; one patient had hemorrhagic cystitis.

Dr. J. C. ROPER then pointed out the fact that any inconvenience due to urotropin ceased by stopping the use of the drug.

Dr. L. B. BANGS stated that he had never seen serious inconvenience result from the use of urotropin, although he had seen cases of mild irritation of the neck of the bladder follow its use.

Dr. F. S. MEARA thought that antiseptic drugs were generally insufficient for the disinfection of the intestine, and that probably in the intestine as well as in the bladder and in the gall-bladder, there existed conditions favorable to the growth of the bacilli; conditions which he believed to be too far-reaching for the therapeutic effect of antiseptics or of the lactic acid bacillus, and that as they were practically outside the body, *i.e.* the tissues, were not amenable to the effects of vaccines.

Dr. J. C. ROPER recalled that some years ago at the New York Hospital some observers failed to isolate the typhoid fever bacilli from the urine of patients to whom urotropin had been administered. The quantity of the uric acid in the urine, he said, seemed to have an effect on the presence of the bacilli. It had been shown experimentally that typhoid bacilli grow very poorly in urines rich in uric acid. There was a very small amount of uric acid in the urine of typhoid fever patients during convalescence.

Dr. W. JAMES then asked whether Dr. Brannan had ever observed that typhoid carriers are case of difficult convalescence as compared with those who are not carriers. He recalled the case of a patient who had a long and difficult convalescence from an attack of typhoid fever; such patient remained anemic and feeble for several months and proved to be a typhoid carrier.

Dr. A. A. SMITH related the history of a case of cholecystitis in the third week of typhoid fever on whom an operation was done for relief. A fistulous opening was left from which bile passed freely which contained large numbers of typhoid bacilli. Urotropin was given to the extent of eighty grains daily with absolutely no effect in reducing the number of bacilli. The gall-bladder was finally removed and the patient left the hospital thoroughly convalescent. The cultures from the urine and feces became negative after the removal of the gall-bladder.

Dr. F. S. MEARA asked whether the use of vaccine proved beneficial in cases of colon infections, and said that in the three or four patients he had had under observation the local condition was not noticeably improved by the use of vaccine, while the general symptoms due to the absorption of toxins was greatly ameliorated.

Dr. BRANNAN, in closing the discussion, said that he had not found in the literature any observation that typhoid carriers had had an especially long and difficult convalescence. In fact, it appeared that many carriers had never had typhoid fever, but had apparently acquired the bacilli while taking care of people with the disease. In parts of Germany nurses and others in the care of typhoid fever cases were examined and a certain proportion had been found positive. As to urotropin, he said that ten years ago, when he was attending at Bellevue Hospital, it was the practice to give about thirty grains a day and he believed that this was still the practice. During the bacteriological examinations described above this was temporarily discontinued. In Europe, and especially in Germany, typhoid carriers had not been permitted to resume work in any occupation involving the handling of food or drink, such as that of cooks, bakers, dairymen, etc. In reply to Dr. Thacher, Dr. Brannan added that he also before reading the literature had expected to find better results from the use of vaccines in the treatment of typhoid carriers.

Recent Improvements in the Use of Radium.—Dr. R. ABBE read this paper (see page 255).

Dr. L. B. BANGS asked Dr. Abbe what was the difference, if any, between the action of the *x*-rays and that of radium.

Dr. ABBE replied that the first difference was in the fact that some tumors had improved under the action of radium treatment, which had not yielded under that of the *x*-rays, and that besides, radium could be applied where the *x*-rays could not. In answer to a question by Flexner, he said that the depressing action of radium on tumors was clearly demonstrated in the case of a woman with a recurrent growth attached to the ribs. The place of application was marked by a red spot on the dermatitis, and the tumor had disappeared within two weeks. In the experiments described in his paper on the oat seeds, the depressing effect could be appreciated by the result in the sprouting of the seeds, whose vitality was proportionately affected according to the distance from the radium. He had not yet studied on sections of tumors the question as to the depth to which radium action reached, but Wickham had demonstrated that it certainly reached inward one-half of an inch, though probably more effective applications could be obtained by keeping radium at a greater distance, inasmuch as by so doing there would be a gain because the application could be tolerated longer.

Orchitis with Unusual Features.—Dr. L. B. BANGS reported this case (see page 410).

Dr. W. M. HIGGINS recalled the great importance of the clinical data to throw light on the diagnosis of pathological specimens and reminded those present that at the Johns Hopkins Hospital it was a matter of routine to unite the clinical history to the anatomical specimens. Upon an examination of a small portion of the tumor taken from the superficial stratum he said he had had the impression that the case was one of epithelioma, but the next day after getting the clinical data and the examination of an-

other series of sections the condition proved to be chronic epididymitis with acute inflammation of the testicle, and that the trauma had destroyed the epithelium of the testicle. What he could not explain was why the testicle was free and why there were no signs of atrophy.

Dr. Bangs stated that he had unsuccessfully looked for the cause of the testicle being free and suggested that there might have been thrombosis of the blood vessels. Perhaps during the four days of residence in the country there had been torsion of the funiculum.

Dr. F. S. Meara stated that he had some time ago heard the reading of a paper on the torsion of the testicle that recalled this case, to which Dr. Bangs replied that there was no evidence of this condition in the case reported, although it might have occurred a long while before.

Dr. S. Flexner asked what was the nature of the histological structure of the fungoid growth from the scrotum.

Dr. W. M. Higgins reported that the tubules were obliterated, the section showing them being closed by leucocytes and red cells. In answer to the question of Dr. J. S. Thacher Dr. Higgins said that the color of the specimen was slightly red on the surface.

Dr. Abbe had seen but one case of gangrenous destruction of a testicle due to the torsion of the cord. It occurred in a young lad of eight years and required castration at the end of one week. The symptoms were those of acute severe orchitis without apparent cause, explained only at operation by rotation of the testicle clearly demonstrated as in ovarian rotation on its pedicle.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held February 2, 1912.

Dr. L. W. Hotchkiss in the Chair.

A Case of Fecal Concretion.—Dr. Forbes R. McCreery presented the patient and specimen which was removed. (See page 418.)

Gangrene of the Ileum Complicating Appendicitis.—Dr. Joseph Wiener said that a careful search of the literature had failed to reveal a single case on record similar to the one he wished to report. The patient was fifty-seven years old and had been in this country twenty-nine years. She had suffered from constipation for more than twenty years and had taken cathartics almost daily for the past fifteen years. In 1900 she had her first attack of abdominal pain, which subsided after four or five days. Four weeks later she had a similar but milder attack. Following this second attack there was no abdominal disturbance for five years. Then she had some slight abdominal discomfort but no pronounced attack. In June, 1909, she had a third attack of right iliac pain, associated with vomiting; this kept her in bed for a few days. In August, 1909, after running for a train, she complained of severe precordial pain, which persisted for a few days; ever since then any slight exertion brought on the precordial pain, which was associated with palpitation. In March, 1910, she awoke one night with vomiting, and pain in the right iliac fossa; she also had some fever. This fourth attack was more severe than the preceding ones and kept her in bed ten days. Following this attack there was almost continuous pain and discomfort in the right iliac fossa until June, 1910. During the entire summer there were no symptoms referable to the abdomen. October 15, 1910, the patient awoke with severe right iliac pain and vomited several times. On the day of operation she had severe pain all day, and vomited everything she took. No blood or mucus was noticed in the stools. Dr. Wiener first saw her in consultation October 17, 1910, with Dr. A. R. Stern of New York and Dr. Joseph Baum of Far Rockaway. While making preparations for the operation Dr. Howard Lilienthal of New York was called in consultation. They all agreed in the diagnosis of a perforative appendicitis. The patient was taken to St Joseph's Hospital, Far Rockaway. At operation the appendix was found below and to the inner side of the cecum, from which it had almost completely sloughed away. It was surrounded by a small amount of pus. A loop of small intestine was found to be completely denuded of its mesentery. The vessels in this portion of the mesentery had thrombosed, and there was no bleeding throughout the entire operation. The loop of intestine affected was in the ileum about ten inches from the ileocecal junction, and was about eight inches long. Owing to the presence of a peritonitis and of pus in the abdomen, Dr. Wiener did not believe the patient would survive an immediate intestinal resection. What was left of the appendix was quickly tied off, the affected loop of ileum was surrounded by gauze packings, and the entire wound was left open. Several strips of zinc oxide plaster were passed around the abdomen to prevent prolapse of the abdominal contents. The time of operation was about thirty minutes. On the third day there was a copious movement of the bowel. On the eighth day there was a foul discharge from the wound and on investigation they found that the loop of ileum in the wound had become completely gangrenous. It was cut away without any pain, and thereafter all stools came from the wound. Three weeks after operation the wound was granulating nicely. The finger in the wound could feel two openings in the intestine. As the wound contracted the two openings came closer and closer together. It did not seem possible that nature could ever bring about a spontaneous anastomosis of the two ends of the gut in the wound, but yet they were anxious to keep the distal loop patent, and the granulating wound had a tendency to cover it over. The wound granulated rapidly and soon almost all the stool was coming through the rectum. December 20, 1910, the patient was transferred to Mount Sinai Hospital. They were unable to understand how the two loops of intestine could have grown together, after such an extensive gangrene, without forming a stricture of the gut. Subsequently they found that such a stricture had indeed been formed, and it was only the patent fistula that prevented its giving symptoms. On January 18, 1911, there was little discharge from the fistula and the patient was allowed to go home. After a few days there were symptoms of partial intestinal obstruction, nausea and abdominal cramps, but these promptly subsided when the fistula which had apparently closed reopened and discharged profusely. The patient was readmitted January 24, 1911. As no further improvement was to be expected without interference, they decided to do an ileocolostomy. They decided that if the wall of the gut was in good condition, and if the anastomosis could be rapidly done, they might attempt a closure of the ileum. On March 6, 1911, a side to side ileocolostomy was performed. The method of suture was that of the Moynihan gastroenterostomy. The opening was made about an inch and a half long and the abdomen was closed without drainage. They hoped that most of the fecal current would be sidetracked through the new opening, and that they would then be able to bring about a closure of the fecal fistula still remaining, but they were disappointed in this. A third operation was performed on April 24, 1911, 188 days after the first, and an excision of the ileum, cecum and ascending colon was performed. About ten inches of ileum and twelve inches of large intestines were removed. On July 5, 1911, the patient left the hospital with a completely healed wound. Six months later the wound was still firmly healed, the bowels moved daily without cathartics, and her general condition was excellent. Dr. Wiener reported this case *in extenso* (1) because a fairly thorough search of the

literature failed to reveal a similar case; (2) because it showed that nature could bring about an intestinal anastomosis in a wound, even after complete gangrene of eight inches of gut; (3) because it showed the futility of expecting the fecal current to be completely diverted by a lateral ileocolostomy, without occlusion of the ileum; (4) because it demonstrated the great advantages of two or three stage operations.

Experimental Study of the Effect of Ureteral Obstruction on Kidney Function and Structure.—Dr. Edwin Beer presented this paper. The work was begun four years ago with the purpose of determining, if possible, how long a ureter might be tied off before making a ureterovesical anastomosis without sacrificing the functional integrity of the involved kidney. The work was done on sixty dogs in the Surgical Research Laboratory of Columbia University. A series of experiments was made with the object of determining the effect of direct injection of cultures into the ureter after extraperitoneal exposure without in any way injuring its lumen by artificial stenosis. Colon bacilli were injected through a very fine needle. The involved kidney and ureter were removed at varying times and regularly showed well-marked hydronephrosis and hydroureter. In the earliest case the kidney was examined nine days after the injection and the organ was enlarged and moderately dilated. In another case, after fourteen days, the kidney was removed and it was practically normal except for pronounced hydronephrosis. In another case, after twenty-one days, a good sized hydronephrotic sac was present. In none of the cases were abscesses produced in the kidney parenchyma. A second series of experiments seemed to show that hydroureter and hydronephrosis of an extreme degree, in time leading to complete parenchymatous atrophy, followed the injection of infectious organisms above a stenosis. If the same technique was followed as in the first series of experiments, plus a complete or incomplete ligature of the ureter, whether with catgut or with silk, an extreme degree of distention of the pelvis and ureter followed, unless the injected bacteria were too virulent when pyonephrosis or pyelonephritis and early death followed. The early pictures were very much like those in the first series of experiments. Thus in five days a moderate hydronephrosis had developed in one case. In another case there was a marked dilatation with some perinephritis after 11 days. In another case the same picture was found after 12 days. In cases lasting 35 days, a very large hydronephrotic sac developed despite the use of a catgut ligature in producing the stenosis. In still another case, after 56 days, nothing but a large sac was left representing the destroyed organ. A third series of experiments seemed to show that after developing primary hydroureter and hydronephrosis of a mild degree, the kidney underwent atrophy if the ureter was tied and no infection was superadded. If the same technique was used as in the second series of experiments and no organisms were introduced into the ureter there was a primary dilatation above the stenosis, which gradually receded after the first two or three weeks and the pelvis became folded upon itself and the kidney parenchyma gradually atrophied. This atrophy became so complete that at the end of five months the excluded kidney was nothing more than a firm fibrous mass measuring from pole to pole one inch and from sinus to convexity one-half inch, with folded and enlarged pelvis and ureter. From this series of cases it seemed likely that the excluded organ was able to secrete up to about the third week as evidenced by the dilatation and distention of the pelvis and ureter up to this date. It also appeared that after three weeks the function was materially impaired as the distention, probably an evidence of secretory activity, disappeared. Chemical examination of the fluid in the distended ureter showed various amounts of urea, which seemed corroborative of this viewpoint. Fluid removed three weeks after ligature showed no urea in one case; in another, fluid removed 24 days after ligature showed only .005 gm. per c.c.; whereas 14 days after exclusion, in another case, urea was as high as 5 per cent. A fourth series of experiments seemed to show that if a kidney was excluded up to three or four weeks and then the ureter implanted in the bladder, the kidney seemed capable of carrying on all the excretory work of both organs. To test adequately the functional capacity of the reimplanted kidney it was necessary to remove the other kidney. Cystoscopic examination with indigo carmine, though repeatedly made, could not be accepted as conclusive evidence of renal adequacy or inadequacy. Consequently nephrectomy of the second organ was performed. In human surgery no such test would be required. If one could reimplant an excluded kidney that had only 50 per cent. of the total renal capacity, it was that much gain, as all cases coming into this category must from the very premises have a second adequate organ. Dr. Beer related the history of a number of these experiments in detail. They showed that one dog lived very satisfactorily with the right kidney, which did all the necessary excretory work even though it had been excluded for 30 days. In another case, he excluded the kidney for 37 days, and when it was tested by the removal of the other kidney it excreted four days after the nephrectomy 650 c.c. of urine, which on testing was alkaline in reaction, contained a faint trace of albumen and 1.6 per cent. urea. Subsequently this animal developed signs of insufficiency, and vomiting set in, followed by anuria and death. From this experimental data it was evident that even after three or four weeks' exclusion of a kidney sufficient parenchyma was present to carry on the work of the organ. Whether these results in dogs could be transferred to human beings experience alone could tell. The knowledge gained, however, was suggestive, and in the future if an operator resorted to ligation of a ureter he must bear in mind the fact that the excluded kidney might be made useful again if an anastomosis was made within three or four weeks of the original exclusion.

Dr. Henry Dawson Furniss thought the paper was of the utmost interest, and he had seen five similar cases. A very important point that came up was how the kidney could functionate after such ligation had been performed. Dr. Furniss wondered if the dilatation resulting from the ligation of itself produced the cystitis in the dogs. In a number of cases in which there had been a severe cystitis, after the cystitis had cleared up, there was found a marked dilatation, particularly marked in five of his cases. Many of these obstructions were due to stone. He reported two cases in which there was an obstruction of the lower end of the ureter with a marked dilatation of the ureter. In another case of obstruction of the ureter the solution used did not appear until after twenty-five minutes, and he hoped that after a second operation this patient would be returned to health. In many of these cases no infection took place and pain in the side was seldom complained of.

Dr. Joseph Wiener asked if it would not be worth while to take a series of cases and do as Dr. Beer did, but not to do a nephrectomy, and make studies on such a series. In the cases where infection of the kidney occurred it would be worth while to re-implant the ureter.

Dr. John Gerster stated that in certain experiments upon the ureters of dogs performed at the pathological laboratory of the College of Physicians and Surgeons, Columbia University, he had obtained results confirming those of Dr. Beer with infected urinary passages, namely, the production of enormous hydronephroses. In these experiments Dr. Gerster had succeeded in implanting pieces of the femoral artery between the divided ends of the right ureter in each case. The Carrel technique of end to end

blood vessel suture was employed by means of a small plastic portion of the peritoneum. Primary union was obtained in each case, and no peritonitis followed. It was found that although the urine passed through the implanted piece of artery immediately after the anastomosis within a week, cicatricial contraction set in which resulted in complete obstruction. The cicatricial contraction of blood vessels transplanted into the urinary passages (ureter and urethra) had also been observed abroad. All the dogs suffered from general bacterial infection, distemper, etc., which promptly led to the infection of the blocked side of the urinary system. The specimens which were passed around showed the kidneys, ureters and bladder removed *en bloc* in each instance, with varying degrees of hydronephrosis upon the obstructed side.

Fracture of the Cuboid Bone.—Dr. FORBES R. MCCREERY reported this case. (See page 418.)

A New Sigmoidoscope.—Dr. FRANK C. YEOMANS demonstrated this instrument. He said that hitherto the practical methods of direct illumination of the sigmoidoscope were by small electric bulbs carried near the distal end of the tube on insulated carriers. He had adopted the method of direct lighting as devised by Dr. Hayden in his urethroscope to the sigmoidoscope. The tube was 14 inches long, graduated in inches; it was ¾ inch in diameter, and was fitted with a large flange at the proximal end, which was perforated by a small auxiliary tube and joined the main tube at an angle. A light carrier fitted tightly into the auxiliary tube and the substantial incandescent bulb was covered with a capsule bearing a plano-convex lens so set that the collected rays were refracted at a compensating angle to the light carried. This lens projected only into the main tube and in no practical way interfered with the vision or the passing of instruments for examination, diagnosis, or the treatment of lesions of any part of the bowel below the apex of the sigmoid. The ocular end of the tube was closed hermetically by a plug which contained a glass window to magnify the illuminated field at the distal end of the tube. By attaching a hand bulb to a small offset at one side of the plug, the bowel could be dilated with air to any desired degree. The same light carrier and plug fitted shorter tubes and those of larger diameter. The points of excellence in the instrument were the simplicity of construction and the ease with which it could be sterilized by boiling. Strong electric lamps were connected with it

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SECTION ON PEDIATRICS.

Stated Meeting, Held February 8, 1912.

DR. WILLIAM SHANNON IN THE CHAIR.

Case of Secondary Anemia.—Dr. CHARLES HERMANN presented a baby two years of age, whose family history was negative. The child had been breast-fed for six months and had had pertussis and some digestive disturbance. In July, 1911, when he was eighteen months of age, he was brought to the Babies' Hospital because of enlargement of the abdomen. The child had marked anemia; the spleen was six inches below the costal margin in the axillary line, and the liver one and one-half inches below the costal margin in the mammary line. At this time examination of the blood showed hemoglobin, 40 per cent.; red blood corpuscles, 2,800,000; white blood corpuscles, 13,000. Thirty nucleated red blood corpuscles were found in 300. The patient began to improve and this improvement continued until he was discharged in December, when he weighed 21 pounds and 12 ounces and the spleen was only three and one-half inches below the costal margin. Examination of the blood at this time showed hemoglobin, 70 per cent.; red blood corpuscles, 5,280,000, and only an occasional nucleated red cell was found. It was sometimes difficult to determine the primary cause of this condition. Syphilis, tuberculosis, and chronic digestive disturbances might be absent; and, furthermore, many cases of these affections were not accompanied by these blood changes. Six years ago in discussing such a case he had suggested that there was probably a congenital defect in the blood forming organs. A certain number of these cases gave a history of anemia from birth and the fact that the anemia appeared a few months after birth did not preclude the possibility of the cause acting from the time of birth. Infants were born with a certain amount of reserve iron in the liver and in twins or premature infants this amount would probably be less than normal and after a few months of an exclusively milk diet would be exhausted. Under normal conditions the blood-forming organs might be able to meet the demands, but if an intercurrent disease attacked the child they might not be able to do so. This would explain the onset of the anemia after certain constitutional diseases.

A Case of Splenomegaly.—Dr. CHARLES HERMANN presented this patient, a boy twelve years of age. His parents were healthy and he was one of eight children all living and healthy but one that died of convulsions in infancy. The patient had had measles, but no manifestations of syphilis and no chills and fever. The mother said that she had noticed the enlargement of the abdomen since the child was four years of age. Dr. James had seen the boy and diagnosed his case as one of splenic anemia. At this time the spleen extended one-half inch beyond the middle line and three inches below the level of the umbilicus; the liver extended two inches below the costal margin in the mammary line. The blood examination showed hemoglobin, 75 per cent.; red blood corpuscles, 4,390; white blood corpuscles, 4,000; polymorphonuclears, 70 per cent.; lymphocytes, 29 per cent., and eosinophiles, 1 per cent. The cervical, axillary, and inguinal nodes were palpable, but not distinctly enlarged. During the last five years the blood had been examined a number of times and the hemoglobin had been found to vary from 30 to 75 per cent.; at present it was over 50 per cent. The red cells had varied from 2,560,000 to 4,600,000, and were now 4,000,000; the white blood cells from 2,400 to 6,800, and were now 4,800; the polymorphonuclears from 51 to 70 per cent., and the lymphocytes from 29 to 48 per cent. The cells showed no abnormal changes in shape or size and the Wassermann and von Pirquet reactions were negative. During the last five years there had been no marked changes in his general condition or in the size of the liver or spleen, but on one occasion he had vomited a large quantity of blood and had blood oozing from the gums after having had a tooth pulled. He had gained 22 pounds, weighing at present 66 pounds. In this case three conditions might be possible, splenic anemia, Banti's disease, or the primary splenomegaly of Gaucher. The absence of ascites could not be positively against Banti's disease, for it was characteristic only of the third stage of that disease. However, they should expect some changes in the urine, which examination had shown to be normal, and the large liver so early in the disease would be unusual. The lack of other cases in the family was against primary splenomegaly. After having observed the patient for five years he was inclined to adhere to the original diagnosis of splenic anemia. Mercury, quinine, and arsenic had been employed without marked effect in this case. The *x*-ray treatment had also been employed without any noticeable change in the size of the spleen or the general condition of the patient. If this condition became worse it might be advisable to remove the spleen. A certain number of cases had shown distinct improvement after this operation.

Dr. NATHAN E. BRILL said he would confine his remarks to the second case as that type of associated enlargement of the spleen and liver were especially interesting to him. These enlargements were enveloped in much obscurity, especially when there was no constitutional in-

fection as tuberculosis, syphilis, or leucemia. It was almost useless to attempt an explanation of the pathology and pathogenesis of diseased conditions of the spleen until more was known of its physiology. This patient clinically appeared to present an entity to the possibility of diagnosing which he had called attention and to which he had also given the name of its discoverer, Gaucher. Dr. Brill believed that the boy was suffering from the Gaucher type of splenomegaly. The pathology of the condition was unique because the liver, the spleen, the portal system, and, as he had been the first to show, the bone marrow underwent a peculiar endothelial transformation. The proliferating endothelium showed cells whose appearance was characteristic and so far as he knew were not imitated by any other disease of those organs. The splenic parenchyma was changed into alveolar spaces filled with these cells which lay loosely therein. The cytoplasm was very abundant and therefore the cells were particularly large and presented a glistening homogeneous striated appearance. The same type of cells was found in the lymph nodes, in the bone marrow, the liver, and the walls of the portal vein in this disease. Clinically the subjects of this disease presented to his view a definite picture which differentiated it from splenic anemia and Banti's disease. These points of differentiation were the longer duration of the disease in the Gaucher type; its unpronounced anemia of a simple chlorotic type which became marked only toward the end of the patient's life, whereas it was an early and marked feature in splenic anemia; the peculiar and definite pigmentation of the skin where it was exposed; the entire absence of jaundice and ascites; the remarkable feeling of comfort and well being, though the spleen and liver might reach colossal size. The liver was also much larger in Gaucher's disease than in splenic anemia, and wedge-shaped conjunctival thickenings were present in every case of Gaucher's disease that had come under his observation, and his series had been larger than that of any other single observer. Clinically the disease appeared in two forms; one, a form affecting more than one member of a family, though the parents were not affected; and a second in which only one member of a family developed the disease. It might appear in infancy or be delayed in development until adolescence. Of thirteen cases reported up to 1908 Dr. Brill had furnished four and the diagnosis was made in these cases during life and so reported; it was subsequently confirmed by autopsy. Since that time he had seen two other cases, one in a young man whose sister also suffered from the disease and another in a gentleman of 43 years, who was the only one in a family of six brothers and sister thus affected. The blood picture was that of a simple mild anemia of the chlorotic type, but showing a decided leucopenia. Late in the disease hemorrhages from the nose, gums, stomach, and intestines might occur as well as ecchymoses on very slight injuries of the skin. The progress of the disease was much slower than in splenic anemia; one of his patients was still alive at the age of 46, though having had the disease since she was 10 years of age. Her spleen and liver almost completely filled the abdomen. Dr. Hermann's case had the enlarged spleen, the wedge-shaped conjunctival thickenings, the peculiar bronzing of the face, neck, and hands, the remainder of the skin of the body being normal, though a trifle pale. In these cases bile would not be found in the urine, though occasionally pathological urobilin of Jaffe was present. He disagreed absolutely with Dr. Hermann's statement that Gaucher's disease was not accompanied by hemorrhages from the mucous membranes of the body and he felt convinced that the patient presented was suffering with Gaucher's disease.

Dr. Charles Herman said, in closing the discussion, that he did not believe it possible in his case to make a positive diagnosis of primary splenomegaly from the clinical manifestations, only a pathological examination would be conclusive. The blood findings were certainly not characteristic. The slight pigmentation on the nose was by no means pathognomonic. Severe hemorrhage from the stomach had not been reported in any of the undoubted cases of primary splenomegaly of the Gaucher type.

An Unusual Case.—Dr. Charles Gilmore Kerley reported the case of a child, 6 years of age, who, while playing in the park, swallowed a watch. The speaker fished it out of the esophagus with a bent wire.

A Case of Food Allergy; Idiosyncrasy to Eggs, Almonds, and Oats, Due to Anaphylaxis.—Dr. Oscar M. Schloss read this paper, which was based on his observations of a patient who was now 8 years of age. The child's first experience with an egg was when at the age of 10 days he was given the white of an egg in barley water during an attack of diarrhea. There seemed to be no ill effects at that time. When 14 months of age, after having eaten a few mouthfuls of boiled egg, he began to cry and to claw his mouth. The tongue, lips, and buccal tissues began to swell and large urticarial wheals appeared about the mouth. If the child played with egg shells they produced urticaria on the hands and arms. These same symptoms invariably followed the administration of egg, no matter in what way it was taken, being noticeable even after he ate cake or roll glazed with egg. Two years ago he was given almond for the first time and the same symptoms followed as after the ingestion of egg. He had eaten other kinds of nuts without ill effects. Oatmeal also caused symptoms similar to those produced by egg. The problems for investigation in this case were indicated by the history. It seemed of interest to determine the constituents of the foods which were responsible for the toxic symptoms. It was found that cutaneous inoculation of the active substances produced a distinct urticarial wheal at the site of the inoculation which appeared in from five to fifteen minutes after the test was made. In stronger dilutions the active substance produced typical urticarial wheals by mere contact with the unbroken skin. The reaction was always immediate and always disappeared within one-half to one hour. Numerous control experiments were made to show that the reaction was specific and could not occur from chemical or mechanical irritation alone. Experiments with egg, almond, and oatmeal showed that the reaction was produced by the protein constituent only and that extracts and preparations free from protein were entirely inert. Experiments also showed that proteins from the same source varied in activity. Obviously the patient's idiosyncrasy, his hypersusceptibility to the food protein, was due to one of two causes: either he lacked some protective substance present in normal individuals or he was sensitized in the same manner as an animal became sensitized when given a single injection of a foreign protein. A number of experiments failed to demonstrate a lack of protective substance. That the condition was due to protein sensitization was shown by the fact that it was possible to sensitize guinea pigs passively by means of the patient's blood serum. Control animals developed no symptoms whatever when given the same amount of inactivated normal blood serum followed by the same amount of ovomucoid. The next problem was that of immunization. It seemed advisable to use a single protein for this purpose, as by this means it could be ascertained whether the patient's hypersusceptibility to the three dissimilar foods was in any way related. Ovomucoid was chosen as the protein for immunization and treatment was begun by the administration of 2 mg. of ovomucoid in capsules three times a day. The dose was increased very gradually at first and then more rapidly and the progress of immunization was determined by the cutaneous reaction. In a little over a month the patient

was taking 100 mg. of ovomucoid daily and the reaction began to decrease and was induced only by comparatively strong dilutions, 1-500, or stronger. At the end of two and one-half months' treatment the patient could eat one-sixth of an egg with no ill effects. From this time egg was given in small quantities daily. The proteose from oats caused no reaction in dilutions as high as 1-100 and oatmeal had been eaten a number of times with no resulting symptoms. These results seemed to indicate that the idiosyncrasy to the three foods was in some way related. During the treatment the patient was in comparatively good health and there were no symptoms referable to the administration of the ovomucoid.

Dr. HENRY KOPLIK said there was no doubt but that there were many children who could not take eggs and one should be very cautious in giving eggs to infants under one year of age. In exceptional cases not only eggs, but milk as well, were very badly borne. He had at present three patients under his care who could not tolerate milk. In one instance he had tried milk of various kinds, but none could be taken without the development of vomiting, purging, and other symptoms of serious import. He knew of two children who could not touch milk and were brought up without it. Strange to say, these children did not show the same symptoms when given mother's milk. Oatmeal acted against many children; and some could not tolerate beef juice. An interesting point was brought up regarding the v. Pirquet reaction or method in these cases; this might show what really was to blame; if these observations were confirmed they might lead to important results in the feeding of these children. The points throughout served as a warning not to force infants or children to take the various forms of foods which absolutely disagreed with them.

Dr. CHARLES GILMORE KERLEY said there were many children who could not take milk or eggs because of some special intolerance; in his experience the milk had given the more trouble. He cited an instance of a baby that died within twenty-four hours as the result of an effort to wean it and feed it cow's milk. There was no doubt but that frequently the giving of eggs or milk in young infants resulted fatally. He had seen one child practically killed by taking two ounces of milk. In another instance a child was given a 2 per cent. fat mixture and immediately signs of collapse appeared. In many instances milk could not be given until the child was 3 years of age. Some persons had idiosyncrasies for drugs and others could not take sugar without the production of disturbances. He related an instance where sugar produced hives.

Dr. ROWLAND G. FREEMAN said it was not generally appreciated how frequently cases of susceptibility to eggs in infancy occurred; it seemed to him that one-tenth of all babies showed some susceptibility. The speaker had seen a case in which rise of temperature, general urticaria, and edema of the ears, lips, and vulva occurred within three hours after the ingestion of an egg and quickly disappeared after the evacuation of the alimentary tract. They had not laid sufficient stress on the caution that should be exercised in giving the first egg to any child.

Dr. FLOYD M. CRANDALL cited an instance of two babies in one family who could not take milk without becoming very ill. Both children could take breast milk and were reared by a wet nurse.

Dr. OSCAR M. SCHLOSS, in closing the discussion, said that a cutaneous reaction was not always obtained in these cases. He was at present observing two cases of idiosyncrasy to eggs, manifested by gastrointestinal disturbances, in which there was no cutaneous reaction. In one case of hypersusceptibility to pork a cutaneous test was negative. A subcutaneous injection of pig's blood serum, however, gave rise to both local and general reaction. It was possible that the spontaneous recovery cited by Dr. Kerley was due to immunity produced by taking small amounts of the active substance as an ingredient of other foods. So far as was known at present anaphylaxis was due essentially to protein substances; whether the drug idiosyncrasy was dependent on the same or on a closely related condition was a subject for investigation.

Albumin Milk; Its Value and Indications in the Treatment of the Diarrheas of Children.—DR. HENRY HEIMAN read this paper, in which he gave the results of his experience with the "Eiweiss Milch" of Finkelstein. He said that the time-honored method of treating the diarrheas of infancy by catharsis, starvation, and the use of astringents in some instances brought about such a marked reduction in the resistance of the child that it readily succumbed to any of the numerous secondary infections to which it was exposed. The urgent need of a mode of treatment that conserved the strength of the patient and at the same time ameliorated the gastrointestinal symptoms had led the profession to hope that in the method of Finkelstein and Meyer this double need would be met. The studies of these investigators on the alimentary factors concerned in the production of intestinal fermentation showed the predominant rôle played by the carbohydrates and the salts. Intestinal fermentation was diminished by the removal or decrease of one or both of these elements. Further study demonstrated the fact that casein had a pronounced antagonistic action upon carbohydrate fermentation in the intestines. It was shown that if casein was present larger amounts of carbohydrates could be given without producing fermentation. These observations led Finkelstein and Meyer to prepare the mixture which they had called "Eiweiss Milch," consisting of casein and buttermilk. The chemical analysis of the food was as follows:

	Eiweiss milch.	Cow's milk.
Proteins	3.00	3.00
Fats	2.50	3.50
Carbohydrates	1.50	4.50
Ash	0.50	0.70

A liter of Eiweiss milk contained 370 calories. The results of the treatment of 150 cases of dyspepsia, decomposition, intoxication, and various parenteric infections were so successful that many of the German clinics adopted this treatment. The writer first used the Eiweiss milk in the latter part of the summer of 1910 and continued his observations during the entire summer of 1911. All patients admitted to the Children's Service of Mount Sinai Hospital suffering from diarrhea were given albumin milk for a period of from three to fourteen days. From this it was evident that the data obtained were derived from unselected cases. The original directions for the preparation of this milk were followed. A tablespoonful of Simon's essence of rennet (or two tablets of rennet) were added to one liter of milk, which was then placed in a water bath at 42 C. for one-half hour. It was then filtered slowly through cheesecloth by gravity without pressure for one hour. The coagulum was then washed twice in half a liter of water through a fine sieve and forced through by means of a wooden club. Then half a liter of buttermilk was added. It was found that by placing the cheesecloth in the sieve the particles of casein were more readily and uniformly forced through. A one-grain tablet of saccharin was added to the liter of milk; with this addition no difficulty was found in administering the mixture to children of any age. In general the quantity of albumin milk given corresponded to that of the usual feeding mixture prescribed for the respective age. The caloric value of the albumin milk being about one-half that of undiluted whole milk, the caloric needs of the child could be covered almost as readily by the albumin milk as by the customary diluted milk mixtures.

Finkelstein and Meyer now advised the use of carbohydrates in the form of malt soup or Liebig's extract of malt as soon as the quantity of milk ingested represented one-tenth of the body weight, even though the stools had not become entirely normal. In their series of cases malt was added to the albumin milk from the second to the eleventh day when proper gain in weight did not appear. The albumin milk feeding was continued from two to fourteen days. Most of the German observers had continued the use of the milk from four to six weeks; but, the service of the Mount Sinai Hospital being an acute one, it was found impossible to continue it for such a length of time. In no case did a relapse occur after the cessation of the albumin milk feeding. The usual procedure was to administer in the severe cases weak tea for from two to six hours before the albumin milk feeding was begun. No castor oil or laxative was given. In the less severe cases the milk was used from the beginning. It was stopped as soon as the stools became normal. Opium preparations and astringents were seldom employed, though stimulants such as caffein, camphor, and subcutaneous infusions were given. A change in the character of the stool took place in most cases in from two to five days. In nine cases mostly of the severe type the change did not take place within five days, though ultimate improvement did take place. In over one-half of the severe cases improvement in the general condition was perceptible in from two to five days. In some instances the change for the better was very striking. While albumin milk did not ordinarily produce a gain in weight unless carbohydrates were added, in most cases it checked the marked losses sustained by the patient under ordinary treatment. In the series of cases under discussion quite a number of patients showed a gain of from four to six ounces during the period of albumin milk feeding. Loss of weight was also recorded, but in only two cases was it more than one-half a pound. There were nine deaths in this series of forty-two cases, twenty of which belonged to a very severe type of the disease. This was a mortality of 21 per cent. Excluding four cases in which the albumin milk was given for three days or less, owing to the fact that the children were admitted to the hospital in practically moribund condition, they had left five deaths, or a mortality of 13 per cent. Of these forty-two cases sixteen were under 6 months of age. Seven of these belonged to the severe type of the disease, and of these three died. Very young children seemed to do as well as older ones on the albumin milk. From the generally favorable results obtained in this series of cases and from the bedside impressions the writer felt justified in concluding that a distinct advance had been made in the therapy of the diarrheas of children. The one indication for the use of albumin milk was diarrhea of no matter what origin or nature. It was especially indicated in those cases in which marked emaciation had taken place as a result of long withdrawal of food. In New York it had become possible to obtain the milk already prepared, but mothers and nurses should be instructed to shake the bottle thoroughly to prevent the casein from plugging the nipple.

Dr. John Lovett Morse of Boston said that some of the diarrheas of infancy were due to bacteria, some of which thrived on proteids, others on carbohydrates; some were due to chemical disturbances in the intestines; others to abnormalities in the blood. It was hard to see, therefore, how one and the same mixture could relieve the symptoms which were due to such different causes. Dr. Morse said that he had tried to find a rational explanation for the use of albumin milk. If the condition present in the infant was due to an organism which throve on carbohydrates it was easy to see that if the infant was fed proteids the growth of the organism would be discouraged. The addition of lactic acid to the food in the buttermilk would, however, tend to neutralize its action. If the condition was due to an organism which throve on proteids, the withdrawal of sugar and the addition of casein would, on the other hand, favor their growth. If the diarrhea was due to some lesion of the intestinal wall itself, probably caused by the fermentation of sugar, with symptoms due to the absorption of sugar and salts, it was plain that taking away the sugar and salts from the food would result in good. But lactic acid in the mixture would do harm by its irritant action on the intestinal wall. The rationale of this food, therefore, seemed to him very obscure. Dr. Morse said he had used this method of treatment in a small series of cases. The Walker Gordon Laboratory had prepared for him a mixture of cream, water, and precipitated casein, made according to Finkelstein and Meyer's methods, which contained very little lactose and salts, and which could be varied to suit the individual infant. In this way the addition of lactic acid in the buttermilk was avoided. When the acute symptoms were over and the stools had returned to the normal he added a preparation of dextrin maltose in order to get the required caloric value. This was a very useful method of feeding. The great difficulty, however, was to tell in just what class of cases this treatment would prove most useful. In a general way it might be said that it would be useful in cases in which there were numerous watery, light green stools which irritated the buttocks. These were the acute cases.

Dr. Robert Tucker Talbot said that he had seen sixty babies in a ward in which bacterial examinations of the stools had been made in most instances. They tried the modified food which was supposed to meet the biological needs of the bacteria. When they had a fermentative organism with which to deal they gave a food high in proteid, but low in carbohydrate because these organisms required carbohydrates in which to grow. They had all seen babies which had the symptoms of intestinal intoxication and where there were living bacilli in the blood, and how albumin milk could touch these organisms in the blood he could not see.

Dr. Linnaeus E. LaFetra said that if they used lactalbumin this should be gotten from the whey and not from a box. Some years ago Dr. Chapin had told him that it was more rational to add casein than lactalbumin to the milk since the casein was a nucleoalbumin and contained phosphorus and iron which were necessary for the development of the infant. He had begun the use of protein milk in the Babies' Hospital in 1910. The sixty-two infants treated had ordinary diarrheas with stools containing blood and mucus. In these stools the Shiga organism was found. These cases were all treated with the albumin milk. There were twenty-one cases of severe diarrhea among them, and these babies were placed upon the albumin milk even when they had fever and all the cases with the exception of three improved. Of these two died and the other was taken home. In the total series there were four deaths. They were given the protein milk from two to ten days and it was decided not to keep them on this food any longer unless they were gaining in weight. With the addition of albumin milk in these cases of severe diarrhea the loss of weight was less and the stools returned more quickly to normal than under any other method of treatment. All forms of diarrhea seemed to be very much benefited by the use of the albumin milk.

Dr. Charles Gilmore Kerley thought that in considering the results that Dr. Heiman had obtained with the use of albumin milk they should bear in mind the fact that the summer of 1911 had furnished a very low mortality in intestinal diseases in children. The cases that they had met with during the summer were of a mild

character. In his experience of twenty-four years with these cases he had never seen such a low mortality. The credit of this was due in a large measure to the efforts of the Board of Health and the organizations which had assisted them in their work. In the Babies' Hospital of New York the babies brought in were what were termed "dead ones." Many of them were cases of autointoxication. In Berlin they seldom met with such cases. Here they were talking of one type of cases, while in Berlin they were talking of another. There did not seem to be any common ground for comparison, as abroad they had no hot air and no humidity. This was not so, however, in Boston. With regard to giving lactalbumin in all forms of diarrheas accompanying gastric disturbances he disagreed entirely. This form of treatment might do well in children over 18 months or 2 years of age, but in children under 1 year it would not do at all. These young babies could not take lactalbumin. Dr. Kerley did not think the "Eiweiss Milch" was of general applicability; it should be used only in a selected type of cases; and when so used it gave excellent results. In properly selected cases the children took up this milk and digested it better than anything else that could be given. Dr. Kerley said that his experience with this milk during his earlier career had been somewhat unfortunate, but he now recognized that the reason was he did not understand its application.

Dr. Henry Dwight Chapin said he had used Finkelstein's method of feeding children with diarrheas for two years and he thought it had a restricted value in certain cases. He agreed with what Dr. Morse had stated, that diarrheas were due to many different causes, and that if a high protein was required it should be split up into such a form as could be easily assimilated; it was the form in which the proteid was given that rendered it digestible. He added sugar to casein milk in the form of maltose, as it was more quickly assimilated. Dr. Chapin believed that this method of feeding had a restricted value in certain types, and particularly in the dysenteric forms of diarrheas.

Dr. Henry Koplik thought that they should give Finkelstein and Meyer credit for working out according to their own ideas, a way to feed babies who were suffering from diarrhea. Finkelstein was right in stating that some of the younger babies would take the albumin milk readily, while others would not take it. This food was not always available in private practice. Finkelstein did not advocate the use of this milk in every case, and he did not see the cases of severe intoxication and decomposition that were seen in New York. Many of the cases admitted to the New York hospitals were marantic septic cases and it would be impossible to save them by any method of feeding. Dr. Koplik expressed himself as not especially impressed by this method of feeding, and said that he was not yet willing to relinquish the older methods which had proved of value in his practice. He had in several instances used the Eiweiss milch in newborn babies suffering from intestinal decomposition, but it did not seem to be sufficient to sustain the infants. There was no food ever yet invented, the speaker said, that would save all of a certain class of cases. It was not the food that cured, but the disease that killed these babies.

Dr. Henry Heiman, in closing the discussion, said that his cases were not selected. There were forty-two cases, mostly diarrhea of the catarrhal form, with blood and mucus in the stools, and there was no treatment that produced the desired results in such cases. He believed the disease was a self-limited one, like typhoid fever, lasting in the different cases from ten days up to as long as two or three weeks. He did not believe there was any food that would give the babies as many calories as the albumin milk.

Philadelphia Neurological Society

At a stated meeting held January 20 Dr. Milton K. Meyers presented a communication entitled "Epilepsy in Adult Life in Association with Thyroid Disease: Report of Six Cases, with Exhibition of the Patients." He cited a number of cases of both minor and major epilepsy in which there was obvious anatomical change in the thyroid gland, and he discussed the evidence bearing upon a possible interrelation between the two sets of conditions. Dr. Alfred Gordon presented "A Case of Juvenile Tabes." The patient was a girl 18 years old, who had presented symptoms of her condition from the age of 13. She presented inequality of the pupils with sluggish reaction to light, normal optic discs, lightning pains, and girdle-sensation, good station and gait, preserved coordination in the upper extremities, normal reflexes, together with a positive Wassermann reaction. Dr. William B. Cadwalader exhibited "A Case of Unilateral Fifth-Nerve Palsy of Syphilitic Origin." The patient was a woman, about 35 years old, who presented twitching of the right side of the face with impaired sensation in the distribution of the fifth nerve and a positive Wassermann reaction. Marked improvement took place under treatment with arsenobenzol. The opinion was expressed that the disorder was due to syphilitic infiltration of the root of the fifth nerve near its origin from the pons. Dr. Cadwalader exhibited also "A Case of Bilateral Seventh-Nerve Palsy of Syphilitic Origin." The patient was a man, about 35 years old, employed as a stationary engineer. Following exposure to cold while overheated he found difficulty in performing movements with one side of the face and on the following day similar difficulty was experienced on the opposite side of the face. Also there was marked occipital pain. The patient presented a strange expressionless appearance, with the lower jaw depressed and both eyes kept open. Speech was scarcely intelligible and the lips could not be pursed, as in whistling. While under observation girdle-pains appeared and the knee-jerks were abolished. A positive Wassermann reaction was obtained and under active treatment with mercurials and arsenobenzol the pains disappeared, the facial palsy improved greatly, and the knee-jerks returned. While it cannot be definitely maintained that the paralysis of the muscles supplied by the seventh nerve on each side was due to syphilitic infiltration of the nerves it is not impossible this acted at least as a predisposing factor and that the exposure to cold while overheated acted as a final exciting cause. Dr. Alfred Reginald Allen read the "The Presidential Address," in which he considered the views of Janet, Freud, and Babinski with respect to hysteria and its treatment.

The following officers were elected for the ensuing year: *President*, Dr. J. H. D. Rhein; *Vice-Presidents*, Drs. A. A. Eshner and S. D. Ingham; *Secretary*, Dr. George Price; *Treasurer*, Dr. S. W. Ludlum.

The Pancreatic Syndromes in Tuberculosis.—M. Lœper states that tuberculosis is frequently accompanied either by pancreatic insufficiency or by pancreatic hypersecretion. The most frequent sign of the former is diarrhea. The latter is not infrequent at the beginning of tuberculosis. Tuberculosis may lead either to sclerosis, degeneration, atrophy, or inflammation of the pancreas, or to hyperplastic reactions, which are well marked not only in the lobules but also in the islets of Langerhans. From a practical point of view the author recommends what he calls "the intensive pancreatization" of tuberculous patients and states that in many cases of tuberculosis in which sclerotic or degenerative changes of the pancreas have followed hypersecretion the stimulation of the pancreatic secretion has given him very satisfactory results.—*Progrès Médical.*

Medicolegal Notes.

Malpractice—Sufficiency of Evidence to Go to Jury.—In an action against a physician and surgeon for malpractice the principal allegation was that he had negligently left a large amount of cloth and gauze in the wound in the plaintiff's abdomen, which had remained there from November, 1906, to October, 1908, when it was removed by other physicians and surgeons. The defendant contended that there was no direct testimony of the leaving of the gauze in the wound at the 1906 operation, and if it was found as testified to by the doctors who performed the 1908 operation, it must have been placed there at a prior operation made in 1905. He swore that he did not make an incision entirely through the abdominal wall, but merely penetrated the aponeurosis of the recti muscles and that the operation was outside of the peritoneal cavity. And in this he was corroborated by the nurse. He also swore that neither at the 1905 nor the 1906 operations did he use any packing, but he did use a dressing and sponging. The plaintiff conceded that there was no direct testimony showing that the defendant left gauze in her abdomen at the 1906 operation, but contended that the circumstantial evidence that such was the fact was well-nigh conclusive. She maintained that in the nature of the case direct proof could not be furnished. She was under the influence of an anesthetic at the time of the operation, and the only other persons present were defendant, his wife and the nurse.

Three operations were performed on the plaintiff, in 1905, in November, 1906, and September, 1908. Then the gauze was removed in October, 1909. The question was, when was it placed in the wound? The nurse positively testified that there were no sponges left in the plaintiff's abdomen at the 1905 operation. She was also present at the 1906 operation and counted the sponges before the operation but not afterwards. That operation, according to the defendant's testimony, was a slight external operation for the purpose of opening an abscess. He said he packed some gauze into the opening of the abscess at that time but that he did not put it in deep. It was his theory that that was the gauze which was removed in October, 1908. The plaintiff, however, testified that shortly after the defendant placed the gauze in the abscess it pained and hurt her, and she removed it herself. This was corroborated by the doctors in the October, 1908, operation, who swore that the gauze which they removed was in the inside of the abdominal wall. Another doctor, a witness for the defense, gave it as his opinion that the gauze must have been imbedded at the place where it was found, and that witness also stated that it is possible for gauze left between the peritoneum and the muscles to remain, not only three, but fifteen years, but it could not remain if in a bad condition. The court considered that there was sufficient evidence to require a submission to the jury of the issue as to whether the gauze removed in October, 1908, was left by the defendant in the plaintiff's abdomen at the operation in November, 1906, or not. It therefore overruled the defendant's motion for a directed verdict.

Judgment for the plaintiff was, however, reversed and a new trial ordered for the reason that the trial judge in charging the jury instructed them to disregard the statements of counsel and try the matter from the evidence introduced and the instructions of the court—Zilke vs. Johnson, North Dakota Supreme Court, 132 S. W. 640.

Degree of Care Required of Physicians.—In an action for malpractice a verdict for the plaintiff was set aside on account of failure to give a requested instruction which would have limited the degree of skill required of the defendants to that possessed by physicians practising in similar localities. It was said by the court that the degree of skill which a country doctor can reasonably be assumed to possess in performing difficult surgical operations must, as a general rule, be measured and determined by a due consideration of the limited opportunities afforded in the same or similar communities, and not by the greater and dissimilar opportunities existing in larger and different communities. It would be unjust to hold him to a degree of professional ability which his environment prevents him from possessing. On the other hand, it would be equally unjust to the plaintiff in a malpractice case to permit the jury to measure the defendant's skill by the average of professional ability found to exist in other communities affording less opportunity for practice in a given medical line than the defendant's locality affords. In the former case the standard would be too high; in the latter it would be too low. In neither case would it work out substantial justice. An instruction that the defendant was bound to possess the learning, skill and experience of the average physician and surgeon in the profession of medicine was held objectionable because it failed to restrict the jury to any locality in the attempt to find the average skill of the medical profession in surgery. It was impracticable because of the difficulty of determining the average skill of the profession as a body in the treatment of a given case. Different schools of medicine often employing radically different methods of treating the same disease, the practice followed in one school would often be strong evidence of negligence, if resorted to by a member of another school. The implied agreement of the surgeon is that his surgical knowledge and experience is at least equal to that of the average surgeon practising in the same or similar localities, not to that of the average of surgeons practising in dissimilar localities. To restrict the locality doctrine to the same locality might, it was said, restrict the inquiry to a too narrow territory. The defendant's actual practice might be limited to a single town where no other physician practised, and in such a case necessarily no comparison could be made. The court could not take judicial notice as to whether the average skill of the medical profession as a body was higher or lower than that of physicians practising in localities similar to that where the defendant practised, and declare it to be one way or the other; therefore, it could not say that the charge that the degree of skill required of a country physician is such as is ordinarily possessed by the professor was not erroneous, as imposing too high a standard of medical skill as applied to the defendant.—McBride *v.* Huckins, New Hampshire Supreme Court, 81 Atl. 528.

Expert Evidence as to Cause of Condition.—In an action for injuries sustained by a railroad passenger in a collision the facts of the collision and the injuries complained of were stated in a hypothetical question to a medical expert witness and then he was asked what he would say was the cause of the passage of blood from the bowels and the injured person's sprained back. It was held that the question was objectionable as calling for a conclusion of the witness in a matter directly in issue, and not merely the expression of an opinion. The fact that the witness on cross-examination stated that if the plaintiff did not pass blood from his bowels when he was in the hospital, but some weeks after, he would not attribute the cause of his condition to his injury did not neutralize the effect of the former question and answer, as it was based upon a different state of facts. The object in such cases, it was held, is not to show, by expert medical evidence, a condition, but to account for the condition; that is, to ascertain the cause that produced the condition.—Holzen *v.* Missouri Pac. Ry. Co. (Mo.), 140 S. W. 767.

Privileged Communications.—A physician in a railroad company's hospital who attends a person brought to the hospital for treatment for injuries received in a collision while a passenger of the company sustains to the person injured the confidential relation of doctor and patient and is incompetent to testify against the objection of the injured person.—Holtzen *v.* Missouri Pac. Ry. Co. (Mo.), 140 S. W. 767.

Nonexpert Evidence as to Insanity.—In a Kentucky homicide case where the defense was insanity the medical expert witnesses for the accused said that he was a paranoiac; those for the commonwealth, that he was not. It was held that paranoia was not so peculiar a disease that no one but a medical expert who had made it a study could understand or portray it, and that non-experts should not be excluded from testifying on that account. Assuming that the accused was a paranoiac, non-experts, it was held, were equally as competent to give opinion evidence as non-experts would be in any other ordinary case of insanity. It was also said that when a non-expert witness is allowed to express an opinion that the accused is of sound mind there seems no reason why he should not also be permitted to express an opinion that he knows right from wrong. One opinion does not require more knowledge than the other, nor is one more than the other a usurpation of the functions of the jury.—Banks *v.* Commonwealth, Kentucky Court of Appeals, 141 S. W. 380.

In a Texas homicide case the rule was stated that non-expert witnesses, when they are shown to have had a sufficient knowledge of the accused for a sufficient length of time, and came in contact with him, and have had conversations and business relations with him for any considerable period of time, based solely on their own knowledge and observation, can express an opinion as to the sanity or insanity of the accused.—Jordan *v.* State, Texas Court of Criminal Appeals, 141 S. W. 786.

Basis of Physician's Opinion as to Cause of Injury.—

On a trial for personal injuries caused by being ejected from a trolley car, a physician called as a witness for the plaintiff was asked whether, having heard all the testimony of the plaintiff, he could, from that testimony and from the medical examination that he made of the plaintiff, form an opinion as to what caused the conditions that he found. It was held that there was no error in allowing him to state his opinion over the objection that no foundation was laid for the question, the objection being too general.—William *v.* St. Paul City Ry. Co., Minnesota Supreme Court, 133 N. W. 465.

Basis of Physician's Opinion.—In a trial for murder there were no eyewitnesses except the accused to the killing. He testified to such a state of facts as from his standpoint tended to show that he was acting in self-defense. Two shots were fired and a very material fact in the case was whether the first shot entered under the arm of the deceased or not. It was held that it was improper to permit a physician to testify as an expert to an opinion that the first shot was the one that entered under the arm, and that the wound on the arm was not inflicted by the same shot. It was for him to detail the character, location, etc., of the wounds and for the jury to determine this material fact.—Powdrill *v.* State, Texas Court of Criminal Appeals, 138 S. W. 114.

County's Liability for Disinfecting Buildings.—Where a county is liable for the expense of disinfecting buildings in which contagious diseases have existed persons who have formerly disinfected buildings can, in an action by a health officer against the county for the value of his services, testify as to the charges made by them for their work, they stating what they had done, the material used, its value, and the time consumed, though they were not physicians or experts in disinfecting. The county was not liable for more than the reasonable value of such services, if they were such as could be equally well rendered by non-experts. The approval of the bill for such services by the local board of health was only prima facie evidence of their value. If the board ratified the services, the existence of a prior contract for them was immaterial.—Sawyer *v.* Wapello County, Iowa Supreme Court, 133 N. W. 104.

New Instruments.

A NEEDLE HOLDER FOR THE INTRAVENOUS ADMINISTRATION OF SALVARSAN.

By HUBERT V. GUILE, M.D.,

NEW YORK,

ADJ. ASST. VSSITING PHYSICIAN, BELLEVUE HOSPITAL.

THE contrivance here described has been devised for the purpose of dispensing with the necessity of holding the needle by hand during the intravenous administration of 606. The use of this apparatus simplifies the procedure to a considerable degree and does away with a rather tedious and unnecessary task. In addition, the needle is held far more steadily than is the case when held by hand, and provided no traction is exerted upon the tubing, there is far less danger of the needle being withdrawn accidentally from the vein during the operation.

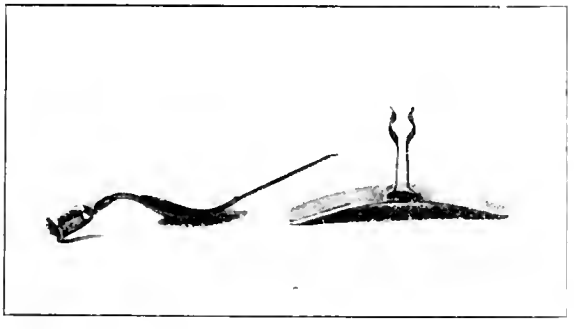

Fig. 1.—Needle and support.

The device consists of a thin nickeled brass plate, 5 cm. in length by 2 cm. in width. The under surface is slightly concave in order to conform to the convexity of the forearm. Upon the upper surface and anterior border of the plate there is attached a small spring clip which may be rotated to any desired angle by means of a swivel joint. The spring clip is 2 cm. in height, which corresponds to the distance to which the hilt of the Schreiber needle rises above the surface of the skin when the point is inserted in the vein.

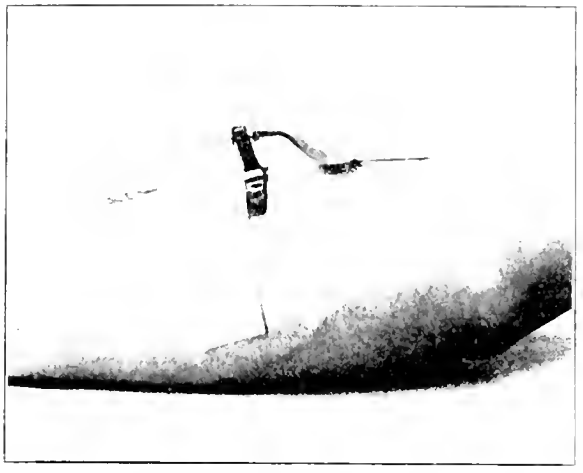

Fig. 2.—Needle held in the vein.

The use of the needle holder is as follows: All preparations for intravenous administration of salvarsan having been completed, the hilt of the needle is placed in the spring clip of the holder and the needle is thrust into the vein. As soon as we are sure that the point is well within the lumen of the vessel, as is shown by the backward flow of blood through the needle, the holder is securely strapped to the forearm by means of a strip of adhesive plaster about 13 cm. in length by 2 cm. in width. This passes over the metal base of the holder and firmly binds it to the forearm until the operation is completed.

The illustrations will explain the use of the apparatus far more clearly than words can do.

In closing, a word of caution should be given. The rubber tubing leading from the salvarsan container to the needle should be sufficiently long to prevent any possibility of traction being exerted upon the needle holder; for in this manner it is possible to pull the needle out of the vein, owing to the sliding of the skin upon the deeper structures of the arm.

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Books Received.

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HAUTVERÄNDERUNGEN BEI ERKRANKUNGEN DER LEBER. By Dr. S. JESSNER. 23 pages; paper; price .60 M. Curt Kabitzsch, Publisher, Würzburg.

THE KEY TO SEX CONTROL. By PERCY JOHN MCELRATH, M.D. 232 pages; illustrated; cloth. Published by the Author, New York City.

TUBERCULOSIS. By the International Commission on the Control of Bovine Tuberculosis. 30 pages; illustrated; paper.

HANDBUCH DER HYGIENE. Vol. 1. By Prof. Dr. M. RUBNER, Prof. Dr. M. V. GRUBER, and Prof. Dr. M. FICKER. 788 pages; illustrated; paper; price 27 M. S. Hirzel, Publisher, Leipzig.

ANATOMIE TOPOGRAPHIQUE ET CHIRURGIE DU THYMUS. By M. le Dr. EUGÈNE OLIVIER, 152 pages; illustrated; paper. G. Steinheil, Publisher, Paris.

INFECTIONS OF THE HAND. By ALLEN B. KANAVEL, M.D. 447 pages; illustrated with 133 engravings; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

HANDBUCH DER SPEZIELLEN CHIRURGIE DES OHRES UND DER OBEREN LUFTWEGE. By Drs. L. KATZ, H. PREYSING, and F. BLUMENFELD. 272 pages; illustrated; paper; price 9 M. Curt Kabitzsch, Publisher, Würzburg.

CLINICAL IMMUNITY AND SERO-DIAGNOSIS. By A. WOLFF-EISNER, M.D. Translated by REY W. MATSON, M.D. 184 pages; cloth; price $2.50 net. William Wood & Company, Publishers, New York.

ARTHRITIS. A STUDY OF THE INFLAMMATORY DISEASES OF JOINTS. By JAMES CANTLIE, M.A., M.B. 515 pages; illustrated; cloth; price $4.00 net. William Wood & Company, Publishers, New York.

THE NEW PHYSIOLOGY IN SURGICAL AND GENERAL PRACTICE. By A. RENDLE SHORT, M.D., B.S., B.Sc., F.R.C.S. 201 pages; cloth; price $2.00 net. William Wood & Company, Publishers, New York.

DELAYED AND COMPLICATED LABOR. By ROBERT JARDINE, M.D., M.R.C.S., F.R.C.P. & S. 351 pages; illustrated; cloth; price $3.00 net. William Wood & Company, Publishers, New York.

WE AND OUR CHILDREN. By WOODS HUTCHINSON, A.M., M.D. 371 pages; cloth; price $1.20 net. Doubleday, Page & Co., Publishers, New York.

THE AMERICAN YEAR BOOK, 1911. By FRANCIS G. WICKWARE, B.A., B.Sc. 863 pages; cloth; price, $3.50 net. D. Appleton & Co., Publishers, New York and London.

SKIN AND VENEREAL DISEASES. By W. L. BAUM, M.D., and HAROLD N. MOYER, M.D. 239 pages; cloth; price $1.25. The Year Book Publishers, Chicago.

NERVOUS AND MENTAL DISEASES. By HUGH T. PATRICK, M.D., and PETER BASSOE, M.D. 245 pages; illustrated; cloth; price $1.25. The Year Book Publishers, Chicago.

CONSUMPTION: ITS PREVENTION AND TREATMENT. By E. W. DIVER, M.D. 135 pages; illustrated; cloth; price 2/6 net. John Bale, Sons & Danielsson, Ltd., Publishers, London.

TRANSACTIONS OF THE THIRTY-THIRD ANNUAL MEETING OF THE AMERICAN LARYNGOLOGICAL ASSOCITION. Held at Philadelphia, May 29, 30, and 31, 1911. 315 pages; illustrated; cloth. Published by the Association.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Vol. 29. By ARCHIBALD MACLAREN, M.D. 496 pages; illustrated; cloth. Published by the Association.

JEWISH DIETARY LAWS. By N. E. ARONSTAM, M.D. 24 pages; paper; price 25c. Bloch Publishing Company, Publishers, New York.

PROCEEDINGS OF THE CANAL ZONE MEDICAL ASSOCIATION FOR THE HALF YEAR OCTOBER, 1910, TO MARCH, 1911. Vol. III, Part 2. 114 pages; illustrated; paper. Isthmian Canal Commission, Publishers, Mount Hope, C. Z.

PUBLICATIONS OF THE MASSACHUSETTS GENERAL HOSPITAL. MEDICAL AND SURGICAL PAPERS. 558 pages; illustrated; paper. The Barta Press, Publishers, Boston.

FIFTEENTH ANNUAL REPORT OF THE LOOMIS SANATORIUM. For the Year Ending October 31, 1911. 77 pages; illustrated; paper.

VERÖFFENTLICHUNGEN AUS DEM GEBIETE DES MILITÄR SANITÄTSWESENS. No. 50 SONNENBADER. By Dr. W. HABERLING. 40 pages; paper; price 1 M. August Hirschwald, Publisher, Berlin.

GELÖSTE UND UNGELÖSTE AUFGABEN DER OHRENHEILKUNDE. By A. PASSOW. 32 pages; paper; price .80 M. August Hirschwald, Publisher, Berlin.

DIE URSACHEN DES CHRONISCHEN MAGENGESCHWÜRS. By J. W. TH. LICHTENBELT 63 pages; paper; price 3 M. Gustav Fischer, Publisher, Jena.

BLOOD-VESSEL SURGERY AND ITS APPLICATIONS. By CHARLES C. GUTHRIE, M.D., Ph.D., 360 pages; illustrated; cloth. Longmans, Green & Co., Publishers, New York.

OLD-TIME MAKERS OF MEDICINE. By JAMES J. WALSH, K.C.St.G., M.D., Ph.D. 450 pages; price $2.00 net; cloth. Fordham University Press, Publishers, New York.

PRACTICAL ELECTRO-THERAPEUTICS AND X-RAY THERAPY. By J. M. MARTIN, M.D. 440 pages; containing 219 illustrations; cloth; price $4.00. C. V. Mosby Company, Publishers, St. Louis.

PRACTICAL TREATMENT. Vol. III. By JOHN L. MUSSER, M.D., and A. O. J. KELLY, M.D. 1095 pages; illustrated; price, cloth, $6.00 net; half Morocco, $7.50 net. W. B. Saunders Company, Publishers, Philadelphia.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks ending February 17 and 24, 1912.

	Feb. 17		Feb. 24	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	448	220	479	220
Diphtheria	230	35	338	25
Measles	859	10	1,289	18
Scarlet Fever	369	15	387	18
Smallpox	1	1		..
Varicella	303		274	
Typhoid Fever	51	10	26	8
Whooping Cough	53	3	61	3
Cerebrospinal Meningitis	3	4	6	2
Malarial Fever	..		..	....
Totals	2,277	288	2,861	294

The Serum Treatment of Cerebrospinal Meningitis.—A. Papapanagiotu describes his results in the treatment of fourteen cases of cerebrospinal meningitis in private practice with the anti-meningococcus serum. The patients, from the ages of eight months to ten years, all recovered. It is unusual for children under one year of age to recover from this disease, hence the results are all the more astonishing. The cases all occurred in the winter months and all were treated at their homes. The author believes that the patients themselves as soon as they are isolated become comparatively harmless, since no two cases occurred in the same family. The attendants of the patient are apt to harbor the meningococci in the nasopharynx and to become dangerous carriers of the disease. The injections of the serum should be given as early as possible in order to get the best results, and may need to be repeated three to four times. The amount given should be 30 c.c. after the age of two years and 10 to 20 c.c. in younger children. The fever at once subsides and all the general symptoms are relieved. The best evidence of the improvement is seen in the fact that the cerebrospinal fluid beomes less turbid.—*Archives de Médecine des Enfants.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended February 23, 1912.

Places	Date	Cases	Deaths
YELLOW FEVER			
Mexico: Merida	Jan. 28-Feb. 3	4	1
West Indies: St. Vincent	Feb. 19	1	..
PLAGUE			
Brazil: Para	Jan. 21-27	6	6
India: Calcutta	Jan. 31-Feb. 6	..	6
Indo-China: Saigon	Dec. 26-Jan. 1	6	..
Java: Kediri	Nov. 26-Dec. 2	1	1
Madioen	Nov. 26-Dec. 2	5	5
Mauritius	Nov. 24-30	16	12
Turkey in Asia: Jeddah	Jan. 13-15	2	..
SMALLPOX			
Canada: Quebec	Feb. 4-10	13	..
Montreal	Feb. 4-10	5	..
Windsor	Feb. 4-10	2	..
China: Hongkong	Dec. 31-Jan. 6	28	22
Shanghai	Jan. 1-7	..	1
Egypt: Cairo	Jan. 1-7	1	..
Great Britain: Bristol	Jan. 29-Feb. 3	2	..
London	Feb. 14-20	..	1
France: Paris	Jan. 14-20	8	1
Germany: Hamburg	Jan. 21-27	1	..
India: Calcutta	Jan. 21-Feb. 6	..	1
Indo-China: Saigon	Dec. 26-Jan. 1	3	..
Italy: Genoa	Jan. 16-31	13	1
Leghorn	Jan. 29-Feb. 3	15	..
Naples	Jan. 21-27	8	..
Palermo	Feb. 21-27	143	60
Java: Batavia	Jan. 1-6	2	..
Mexico: Aguascalientes	Jan. 26-Feb. 3	..	1
Guadalajara	Jan. 26-Feb. 10	..	1
Juarez	Feb. 3-10	2	..
Mazatlan	Jan. 31-Feb. 6	..	1
Porfirio Diaz	Jan. 28-Feb. 3	4	4
Portugal: Lisbon	Jan. 21-27	2	..
Russia: Batum	Dec. 1-31	1	..
Moscow	Jan. 14-20	1	1
Riga	Dec. 24-Jan. 2[1]	16	..
Oct. 1-Nov. 30; deaths, 2			
St. Petersburg	Jan. 6-13	7	2
Siam: Bangkok	Nov. 5-Dec. 2	..	185
	Dec. 2-30	..	441
Teneriffe: Santa Cruz	Jan. 21-27	..	2
Turkey in Asia: Beirut	Jan. 14-27	170	22
Turkey in Europe: Constantinople	Jan. 22-28	..	6

[1] From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, Jan. 24, 1912.

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Original Articles.

THE OCCUPATIONAL NEUROSES.*

A CLINICAL STUDY OF ONE HUNDRED CASES.

By CHARLES L. DANA, M.D.,

NEW YORK.

THE nervous troubles which affect people engaged in skilled manual occupations, and are due to the neuromuscular work itself, are not as numerous or serious as those due to poisons and poisonous fumes and dust. The number of cases of lead poisoning, for example, is probably greater in the ordinary dispensary than the number of cases of cramps, and neuralgias, and neuritis which are met with in these places. Nevertheless, they are matters of distinct importance, for with each new form of mechanical invention which calls for skilled manual labor some new occupational neurosis arises. It is worth while, therefore, to pay some attention to this class of disorders.

The forms of trouble which we meet with in manual workers may be grouped under four headings:

1. Occupational pains and symptomatic cramps.
2. Occupational neuritis and atrophy.
3. The acroparesthesias.
4. The true occupational or professional cramps.

The distribution of these disorders is shown in the following table:

Median neuritis.....	10	Acroparesthesia (hand)	8
Ulnar neuritis.....	10	Symptomatic cramps.	6
Musculospiral neuritis	2	Genuine occupational cramps	23
Circumflex neuritis.	2	Sciatic leg pains....	3
Peroneal neuritis...	2	Occupational torticollis	2
Atrophy (hand and arm)	9		
Brachialgia	20	Total.....	97

These four types of disorders are not always sharply distinguishable, and often a person may suffer from two or more of these troubles at the same time. Thus neuritis and atrophy would be accompanied by paresthesias and pain. In the occupational pains which affect the arm so severely there is probably often a certain amount of neuritis and often a certain amount of symptomatic cramp and weakness.

The very wide range of skilled labor which is affected by these disorders is shown in the tables which I have here.

It will be remembered that I am not including lead cases.

*Read at a meeting of the New York Academy of Medicine, January 4, 1912.

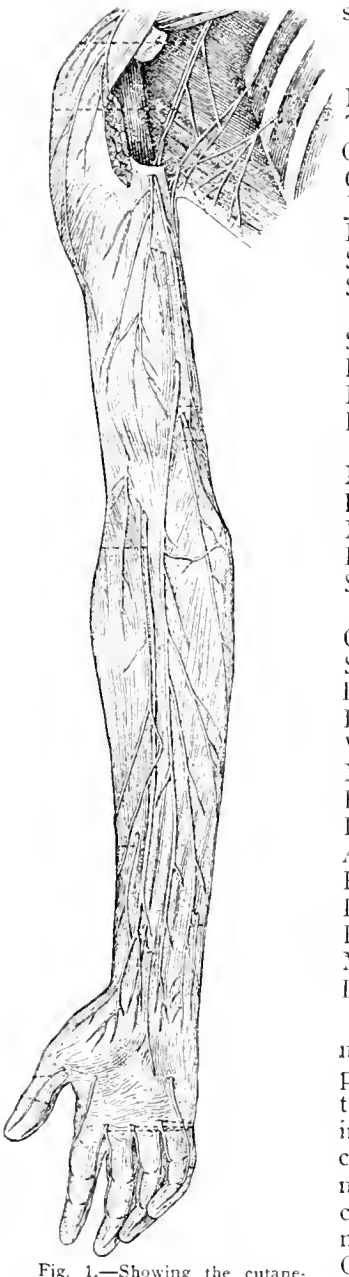

Fig. 1.—Showing the cutaneous nerves of the arm, front surface.

SOME OCCUPATIONS IN OCCUPATIONAL NEUROSES.

Pressers and ironers
Tailors
Carpenters
Cigarmakers
Jewelers
Barbers
Seamstresses
Sewing machine operators
Stone cutters
Elevator boys
Paper box makers
Lithographers (stone polishers)
Miniature painters
Lathers
Machinists
Bookkeepers
Stenographers and typewriters
Clerks
Surgeons
Laryngologists
Dentists
Violinists
Milkers
Pianists
Flute players
Auctioneers
Pavers
Housewives
Bookbinders
Modelers
Drummers

This does not by any means represent a complete list, but it covers the forms of occupation in about 100 consecutive cases of occupational neuroses which have come under observation, mostly in the Cornell Clinic for Nervous Diseases.

It will be seen that the occupations which are most frequently affected are those in which the higher class of skilled labor or craftsmanship, namely, that of the writers, telegraphers, stenographers and typewriters, musicians, and artists is employed.

Among the relatively unskilled operators it is the pressers and ironers and tailors who suffer most from occupational diseases. Indeed, after them there is in the clinics of this city a very sharp drop to the other kinds of skilled employment.

A study of the nature of the troubles shows that it is the hand and the nerves of the arm which are by far the most frequently affected. The hand with its delicate supply of nerves and muscles is one of the most complete and perfect works of creative skill, and it is not surprising that so delicate an organ should be injured by the strains, the injuries, and the overwork put upon it.

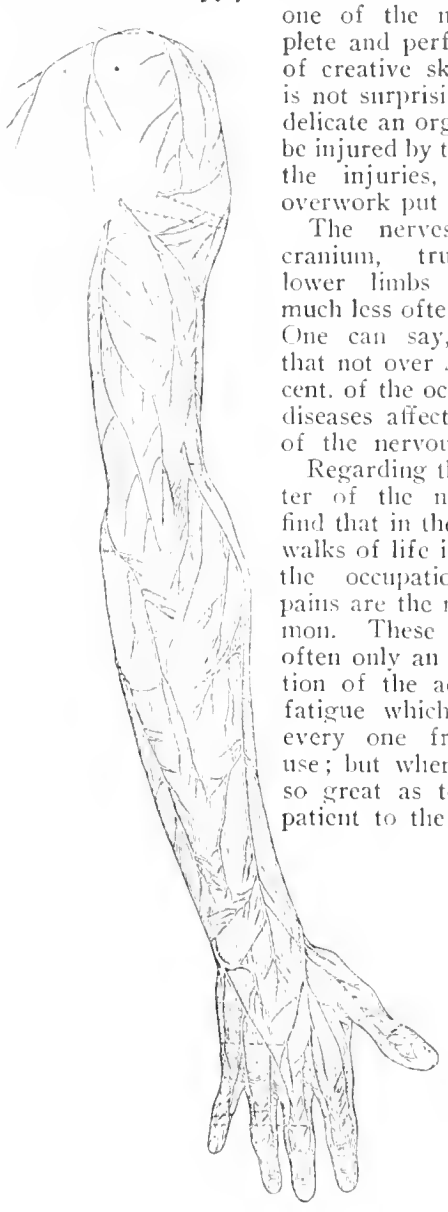

Fig. 2.—Showing the cutaneous nerves of the back of the arm.

The nerves of the cranium, trunk, and lower limbs are very much less often affected. One can say, perhaps, that not over 4 or 5 per cent. of the occupational diseases affect this part of the nervous system.

Regarding the character of the neuroses I find that in the ordinary walks of life in this city the occupational arm pains are the most common. These pains are often only an exaggeration of the aching and fatigue which come to every one from overuse; but when they are so great as to call the patient to the physician it means that the aching of the arm has become chronic—that the arm is weak and tender, and that the patient is unable to continue work for more than a short time without exhausting its power or causing so much pain that he has to cease. Very often the arm pains are accompanied with points of tenderness and with some swelling, sensations of numbness and prickling; so that a certain amount of neuritic irritation is no doubt present.

In most cases, however, the pains are not of very serious degree, except when some work is undertaken; then the arm becomes weak and very painful, and useless. It is the ironers and laundresses and pressers and tailors who come to our Clinic most often with this complaint. Violinists and professional pianists also suffer a great deal.

While occupational cramps such as those which affect writers and stenographers, and so on, are nearly as common as the brachialgias, they occur in a different class of persons, and are not seen so often relatively in the dispensary clinics.

An actual neuritis of the nerves of the arm occurs nearly as often as occupational neuralgia. This neuritis affects the ulnar nerve and the median nerve in about the same proportion. Rarely it affects both nerves at the same time. The condition is brought about by the pressure and pounding of the parts involved in the particular kind of work that is done.

We find neuritis among ironers and pressers, cobblers, jewelers, masons, and among all craftsmen who use tools that they hold tightly in the hand and with which they exert hard pressure.

Occasionally neuritis leads to distinct and extreme atrophy of the intrinsic muscles of the hand, either of the thenar or hyperthenar eminence, or both. In a few cases in which there are predisposing influences this occupational atrophy passes on to a progressive muscular atrophy.

Dr. Ramsay Hunt has described a distinct form of occupational atrophy which involves the deep plantar branch of the ulnar nerve. This deep branch is a purely motor nerve, and is the one which supplies all the muscles of the hand of the ulnar distribution. Pressure is brought to bear in such a way that this deep branch is practically crushed against the bone beneath; the terminal filaments degenerate and the muscles atrophy, without any sensory disturbances.

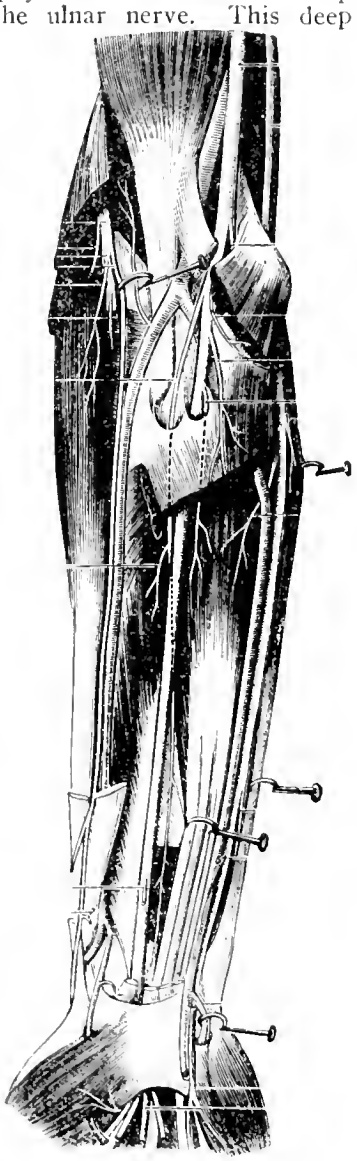

Fig. 3.—The deep nerves of the forearm, anterior surface.

The acroparesthesias which occur in occupational diseases are symptoms of irritation and pressure upon the terminal filaments of the sensory and vasomotor nerves of the fingers and hand. The patient suffers from sensations of numbness, and tingling, of burning, and redness and swelling, and sometimes of pain; but there is not usually any great amount of motor disturbance.

These occupational paresthesias occur in cigar-makers and in almost any form of manual occupation in which the fingers are subjected to continual irritation and pressure. They are most commonly seen, however, in the hands of housewives who have to do a great deal of washing, and who are subjected both to trauma and to the influences of moisture and cold.

I shall say nothing about the true occupational cramps because it is a subject that is familiar to all, and one to which I can contribute nothing new. It is to some a question as to whether occupational

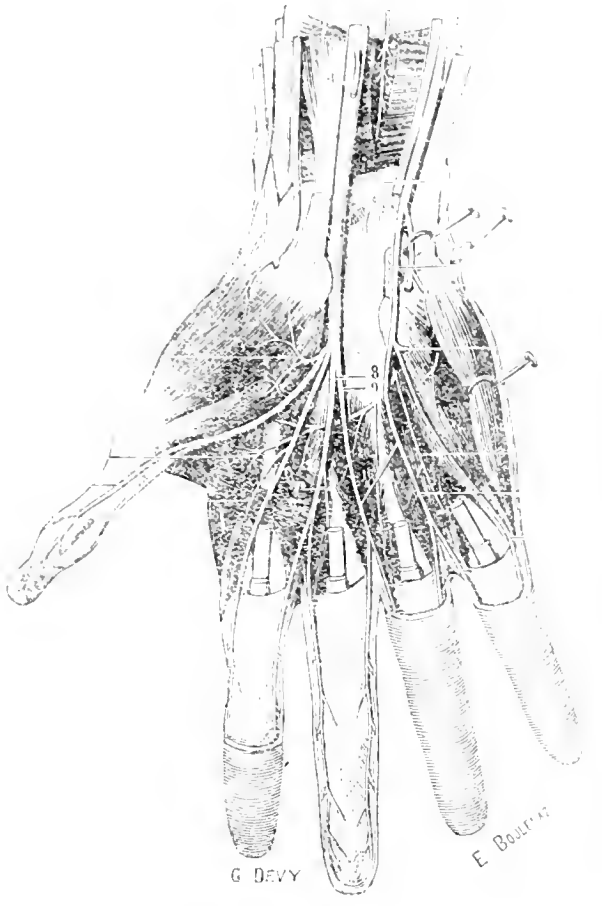

Fig. 4.—The median and ulnar nerves of the hand, deep branches.

cramps are central or peripheral—that is to say, whether they are neuroses of the type of the tics, or whether they are due to some grade of neuritis. My experience is that the true types are all of central origin, but there are often symptomatic cramps occurring in the brachialgias, or aching arms, and often some symptomatic cramps are associated with neuritis.

In comparatively rare cases the musculospiral and circumflex and long thoracic nerves are affected and we get paralysis of the shoulder and of the serratus. Such palsies occur in porters and in persons who carry heavy weights upon their shoulders.

There is no doubt that occupations have something to do with the injury of certain of the cranial nerves, notably those connected with the motor functions of the eyes, as in Miner's nystagmus; those connected with producing blepharospasms and with certain other activities of the facial nerves. Thus an occupational cramp of the facial nerve occurs in flute players and in other wind musicians, and there has even been recorded a case of autioneer's cramp (Zenner).

Some of the cases of torticollis are undoubtedly of occupational origin. I have the record of the case of a bookbinder who suffered from torticollis on account of the steady, constant, and rhythmical movements of the neck, which she had to make in doing her work.

Dressmakers, dentists, cigarmakers, and probably many other kinds of workers suffer from occupational pains of the neck, side and back.

As I have said, there are few occupational neuroses of the lower limbs. I have the record of the case of a pedaler who worked a pedal for ten hours every day, using one leg and foot, and finally developing in it occupational pains. Similar cases have been reported. In Germany there is a peculiar occupational neuritis and cramp occurring in potatoe diggers and in persons engaged in raising vegetables who are obliged to squat or get down on their knees in their labor. The tendon of the biceps femoris when the leg is flexed presses the peroneal nerve against the head of the fibula, causing pain and paralysis in this nerve. Sometimes tailors suffer in the same way.

The question of prevention is of course the one that is the most important in the present discussion of this subject. It seems to me that articles on "industrial efficiency" might be written that would cover this point, for there are hardly any of the occupational disorders of the arm and hand of which I speak that could not be prevented by a wise and more careful application of the labor. The cases of motor and ulnar neuritis, for example, are almost always due to persistent and careless pressure which injures the nerves because the instrument used is not held correctly or because the handle is not properly protected by some kind of cushion.

Fig. 5.—The deep branches of the radial nerve, posterior surface of the forearm.

Extreme cleanliness would prevent a great many of the paresthesias. Occasional periods of rest with a better direction of effort would prevent a great many cases of arm pains.

Pamphlets in which descriptions of the results that may occur to those engaged in ironing, pressing, or cigarmaking, in washing, in the handling of tools, etc., would, I think, be of distinct help. "Why Have Crippled Hands?" or "Why Have Aching Arms?" such should be the catching titles.

The disorders of which I have been speaking particularly attack those people who earn their living by the skilful use of the hand, the craftsmen of various kinds, and this is a particular and most important type of calling whose interests should especially appeal to us. And I would like again to impress upon the laity and the physician a theme which is rather dear to me, viz. that of the delicacy and value of the hand as an instrument of education as well as of labor and precision.

The use of the hand moves the industries, enriches and builds up the State, creates art, and through its deftness and precision is the essential instrument in evolving beauty and ministering to

Fig. 6.—The nerves of the back of the hand.

the esthetic; the skilful use of the hand also educates the user; a manual craftsman is a sounder and saner man because of his labor; and the training of the hand is one of the important factors in the education of the child.

The great mass of industrialists work with machinery or simply dig and delve, fetch and carry. They have no occupational neuroses except such as are due to accidents and bad living. This kind of worker is perhaps crowding out the craftsman, but we need the latter immensely in our civilization and we and he ought to do all that is possible to protect him from the neuroses and other diseases that befall him in his calling. Let us protect the laborer, but let us especially cherish the craftsman. He was the lasting glory of the Middle Ages and he is still an enormous help to the civilization of to-day.

I have thought that this paper might be used as a basis for further investigation by those, not necessarily physicians, who are interested in industrial diseases. Hence I am adding six anatomical illustrations showing and emphasizing the nervous supply of the arm and hand.

A bibliography of occupational neuroses may be found in E. Remak's article on occupational neuroses in Nothnagel's "Specielle Pathologie u. Therapie." This brings the subject down to the year 1898.

In this bibliography only two American writers are quoted.

A more recent bibliography is given by Dr. J. Ramsay Hunt in his article on Occupation Atrophies in the Neurological Report of Cornell University College, Vol. 3, 1911.

HYSTERIA AND PSYCHOTHERAPY.

By EUGENE D. BONDURANT, M.D.,

MOBILE, ALA.

PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE UNIVERSITY OF ALABAMA.

No satisfactory definition of hysteria can, at the present moment, be constructed, because there is no general agreement as to what psychoneurotic disturbances shall be included under the term and what excluded therefrom. Many physicians, including those who have little patience with nervous diseases in general and none at all with hysteria in particular, and who therefore try to think about it as little as possible, regard hysteria in a vague way as synonymous and coextensive with neurodegeneracy and as always tinged with exaggeration, pretence, and simulation. Babinski, at the other extreme, believes that hysteria is morbid suggestibility, and its symptoms the direct result of suggestion and of that alone. One may choose either of these views. I believe that Babinski's conception of hysteria as morbid suggestibility is concise, clean cut, and in at least approximate accord with demonstrated fact. None the less, the patient suffering from hysteria manifests symptoms which are not due to suggestion. These symptoms, which are the outward visible signs of the underlying neurodegeneracy, have to be admitted to a place in the clinical picture of hysteria because they are there whether we admit them or not. Babinski, recognizing the practical difficulty of trimming down the hysteria symptom complex to fit his restricted definition, proposes to drop the term hysteria and to call the morbid suggestibility syndrome "pithiatism." The view which I adopt in this paper is that hysteria is a degenerative psychoneurosis, whose characteristic symptoms are due to suggestion.

The phenomena of hysteria become more intelligible if it be borne in mind that they result from a mingling in varying proportions of the etiological factors of neurodegeneracy and morbid suggestibility. An understanding of what is meant by "degeneracy" and by "morbid suggestibility" is essential. By degeneracy is meant failure to attain in development the racial standard of anatomical structure and physiological function. The condition is one of inherited and developmental defect. The degenerate represents a reversionary variation from the racial type. The innumerable nervous symptoms of degeneracy may be grouped as functional weaknesses, perversions, and defects. Among the neurodegenerate perversions of function, heightened suggestibility is prominent, and for our present purpose, most important. Now suggestibility is inherent in the human mind. The normal man is suggestible—influenced by suggestion—deriving many of his beliefs, opinions, sentiments, and feelings from this source. Were we not suggestible, *i.e.* influenced by precept and example, we would be less readily educatable. The function or quality of suggestibility underlies all emotion, and in normal proportion and under normal restraint is an intellectual motive power of undoubted value to the man leading a normal existence in intimate association with and dependence upon his fellow man. When abnormally developed, however, or when improperly regulated and controlled by the reasoning mechanism suggestibility becomes a pro-

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lific source of error and defect in judgment, and of mental weakness, constitutes an important factor in what we denominate "nervous instability," and contributes largely to the subjective symptomatology of disease.

The extensive and vaguely delimited group of morbid conditions which we include under the term "psychoneuroses" have their common etiologic basis in degeneracy, and are collectively characterized by symptoms of generalized nervous weakness, with, in many instances, special or more conspicuous defect in some particular function, or in a small related group of functions. When morbid suggestibility is shown, and the symptoms are such as are produced by suggestion, the condition may properly be called hysteria. The morbid suggestibility group of symptoms, as has already been pointed out, is rarely met with pure and uncontaminated, usually occurring in association with other neurodegenerate manifestations. Conversely, in almost all psychoneurotic disease—in almost all disease of any kind, in fact—we find some evidences of heightened suggestibility, which means that the stress of sickness, with its malnutrition, toxemia, and disordered metabolism renders us all more suggestible, more unstable, unbalances us, weakens us, makes us "degenerate," as it makes us childish. The predisposing factor, then, in hysteria is neurotic heredity. The contributory somatic factors are malnutrition, toxemia, fatigue, and allied states. The determining factor is suggestion.

The cure of this, as of any other morbid condition, means correction of structural and functional defects. Enduring cure is conditioned upon removal of the cause. In this instance the basic cause can be removed only by stopping the reproduction of the unfit. We will have ample time to discuss this prophylactic measure before we are able to put it into effect, so we may safely leave this phase of the question for future consideration, turning our attention to the matters of present and practicable moment.

The removal of the contributory etiologic factors included under the general or local associated states of bodily disease manifestly fall within the province of the physician, and possess a present if somewhat overrated importance. They are, in practice, the points against which our chief conscious attack is directed. Recognizing the intimate relation between health and stability, between disease and degeneracy, remembering that our inherited degeneracy is but an expression of ancestral ill-health; that our previously latent symptoms of neurodegeneracy are unmasked by the associated disease, we doctors have concentrated our attention upon these associated morbid states. All of us are apt to attribute hysterical symptoms to some coexistent bodily ill, especially to that class of diseases in which we happen to feel most interest. And all of us attempt to cure hysteria by the application of that therapeutic procedure with which we are most familiar. The gynecologist attacks the problem by removing one or two ovaries, or by repairing the uterus; the surgeon by cutting out the appendix vermiformis, anchoring a loose kidney or resecting the large intestine; the ophthalmologist by correcting the eye strain; the gastroenterologist by washing out the stomach; the neurologist by rest cures, electrotherapy, and the other appurtenances of his trade. The doctor of the old school obtained equally favorable results by nauseous potions, counterirritation and venesection. Every one of these measures, and many more, meet with a certain degree of success, give a certain amount of relief from the symptoms which, at the time, the doctor and patient regard as most inviting attention. So we must acknowledge that there are about nine and sixty ways of treating hysteria, and that every single one of them is right, more or less, because they all contain the vivifying germ of suggestion.

And as to the very great therapeutic value of suggestion there is little room for difference of opinion. But on the other hand, remembering that the one determining factor in the causation of hysteria is suggestion; remembering that the specific hysterical symptoms are produced by and are a direct result of suggestion, the danger incident to the employment of any procedure possessing a powerful suggestive character must become evident. The surgical operation, the impressive or spectacular mode of medical or special treatment, sometimes removes the hysteroid local or general symptom only to replace it by some other, which disastrous outcome is likewise favored by the unhealthy introspection, and the morbid although unintended suggestions inseparable from our present attitude toward the treatment of disease. The hysterical and highly suggestible neurotics usually suffer from the ailments and morbid states which are made fashionable in the community by the activities of successful physicians, surgeons, and specialists—have the complaints which they see around them and hear talked about. They constitute the great floating class of chronic invalids, who never die, who try one thing after another for the relief of one thing after another. They infest sanatoria, fill the waiting rooms of the specialists, bedevil the doctors, worry the surgeons, and are the bane of the neurologist's existence, but withal subserve a useful purpose, in that they constitute the reliable substratum of ailing humanity upon which many doctors depend for a living. They pass from one to another, try every treatment, operation, special procedure, patent medicine, and fake cure they hear of, and in the end are possessed of seven devils worse than the first. A classic example of this class, in a twenty years' search for relief from psychoneurotic disorders due to suggestion, had the muscles of the eyes clipped and glasses fitted, a stricture of the rectum dilated, a kidney anchored, the appendix and both ovaries removed, the uterus curetted, and a cervical tear sewed up, and a gastroenterostomy done; was treated in five sanatoria and went through the usual forms of hydrotherapy, electrotherapy, massage, mechanical vibration, and manipulation; had her stomach washed out and tried all the diets; took all the patent medicines her friends told her of, established several drug habits, wore a liver pad, went to the osteopaths, tried homeopathy and Christian Science, two divine healers, and several of the newest methods of medical psychotherapy. Why? The answer is, she suffered from a succession of symptoms, caused by the morbid suggestion, inseparable from medical, surgical, special, or any other treatment which disregards the vulnerability of this class of patients to suggestive influence. The moment we suggest to or agree with the hysterical patient that the condition complained of is such as to need treatment, that moment we create the disease which we subsequently cure, or pass along to the doctor with the newest therapeutic method. Do we not sometimes do harm rather than good? Do we not make as much psychoneurotic disease as we cure? Do our

methods of treating hysteroid perversions of function surpass or even equal those of the osteopaths, Christian Science experts, and divine healers? It is an open question. Measured by immediate results they, and even the plain fakirs, often beat us out of sight. Why? They make a more or less skilful use of psychotherapeutic suggestion, without, as we do, creating new nervous syndromes to replace the old. The failure of medical practice in the treatment of hysteria and hysteroid conditions is the reason for the existence of the modern religious cures and the quack "pathies." And frank recognition of the failure of our active and materialistic methods in relieving hysteroid and pithiatic disorders lies behind the present and growing interest in psychotherapy on the part of the leaders in medical thought. I make psychotherapy synonymous and coextensive with the treatment of disease by suggestion. Suggestion is not new. It is as old as the human race. It has been used for all time by all persons who wished to make some other person, sick or well, feel, think, or act differently from what he or she was previously doing. It is older by far than the reputable science of medicine. It was the only weapon of the prehistoric tribal medicine man. Fifty years ago it made the old doctors' medicine do more good than the young doctors' medicine did. Nowadays it makes the old doctors' patients go to the young doctor with the newest and most elaborate therapeutic equipment. It is used now, today, by all of us in the treatment of every patient and of every disease —sometimes consciously, more often unconsciously. It makes the Latin prescription do more good than the same medicine purchased at the drug store under its familiar name. It makes bread pills move the bowels, hypodermics of water relieve pain, sugar of milk sure epilepsy, and surgical operations relieve hysteria. In short, it is a valuable, even though at times unbidden, assistant to us all, and the mainstay of the fakir, who after all, from a psychotherapeutic point of view, may not be such a fakir as we say he is. From thus employing psychotherapy unknowingly and without conscious purpose; from even letting ourselves be deceived by a successful result into belief in the material efficacy of some meaningless modes of treatment, we have risen to a glimmering comprehension of the importance of the suggestive element, and are beginning to consciously use, to study, to outline and describe, to label and claim as our own this psychotherapeutic waste land.

Of the systems or modes of psychotherapy which have been elaborated, named, and more or less reputably employed by physicians in modern times, hypnotism or hypnotic suggestion is the simplest and probably the most familiar. While in a limited field, hypnotism has almost limitless power of temporarily modifying feeling, belief and consciousness, as well as of removing for the time being the subjective symptoms of disease, its sphere of application is narrow, and the psychic end-result almost uniformly unsatisfactory. It does real and serious injury to the mentality of the person subjected to it, and the employment of major hypnotism in medicine at the present time may be regarded as unjustifiable and a thing of the past. Many also regard it as unnecessary, obtaining equally good or better results by one or other of the numerous modifications of the procedure varying among themselves in the mode of production of the hypnosis, its degree, the character of the suggestions given, and in the "stage setting," but agreeing in that suggestion is used as such, impressively and confidently, with the patient in the waking state, or in a state of partial or minor hypnosis.

Occupying the place formerly held by hypnotic suggestion and its modifications we now have several newer and more complicated forms of psychotherapeutic procedure in which the fact that suggestion is employed is kept in the background and emphasis is laid upon other features of the treatment. Under this heading will properly fall much of our formal modes of medical treatment, in particular the rest cures, water cures, movement cures, diet cures, etc. The most comprehensive of them all, however, as well as the one which, properly used, gives the best results, is the reeducational psychotherapeutic method of Du Bois and his followers. In this, therapeutic use is made of careful history taking, and the tactful establishment of proper relations between patient and physician, the outgrowth of unhurried attention to and interest in the psychic as well as somatic detail of the case. After careful examination the nature of the disorder, the meaning of the symptoms, the cause of the morbid feelings, the probability of cure, with outline of the method to be employed in bringing it about, are explained to the patient at length, with all needed repetition, argument, persuasion and insistence. The attempted psychic impression is of the nature of reeducation, i.e., the patient is converted to the point of view of the physician and to his beliefs about disease, and is taught right thinking as well as right living. In connection with this conversational reeducation full use is made of isolation, rest, change of environment, improved nutrition, regulation of secretions, with correction of injurious habits, and of any essential pathological condition. The symptoms of associated but nonessential local or general disorders are disregarded and the patient is taught to ignore them. In other words, care is taken to prevent injury from the suggestion which would likely follow any exhibition of interest in local pathological suggestive symptoms. This plan of treatment has given good results and obtained considerable vogue. It is less of a narrow or arbitrary system of psychotherapy and more of a general attitude toward psychoneurotic disease. It treats disease as such from the point of view of the neurologist and internist rather than that of the psychologist. It attaches little importance to drugs, electricity, manipulations, surgery or other active interference with local symptoms, and great importance to rest, occupation, nutrition, environmental influences, right living, and sane thinking. It seeks the truth and tells no lies. In short, it includes more of the elements of medical common sense and honesty than are embraced in some of the other equally well-advertised methods, and is withal a procedure which any reputable physician with the needed training in neurology and internal medicine might feel free to use without sacrifice of his materialistic conceptions of the nature of disease, and without coming into competition with the religious cults and faith cures. In truth, with some limitations and with the personal modifications and variations required to adjust it to our special field of interest and therapeutic prejudice it is employed by most of us (although all of us do not know it) in the treatment of chronic dyscrasic and psychoneurotic ailments. The Du Bois method is in brief a Weir Mitchell rest cure in which massage, electricity, etc., are substituted by a form of

argumentative and persuasive reeducational suggestion.

Of the distinctively psychologic methods of mental healing, that popularized by Freud may be taken as the type. It is also the one which is at the present time attracting most attention. It is difficult to give any very intelligible account of it in a few words, or to avoid thereby doing some injustice to Freud, but with apologies to the reader and to Freud for attempting the impossible, I submit the following as a basis for preliminary orientation. Freud's conception of hysteria is somewhat at variance with that adopted in the preceding portions of this paper, in that emphasis is not placed upon the basis of degeneracy, and the influence of suggestion as such is, as far as possible, ignored. Instead, Freud recites the fact that the mental content of any individual at any period of his existence is the resultant sum of all impressions, feelings, emotions, thoughts, states of consciousness, etc., previously experienced; and that much of this mental pabulum is elaborated into our consciousness, our personality, and put into relation with and subjected to control by the mechanism of reason: consciously remembered, given its normal emotional value; normally reacted to, and used in conscious direction of feeling, thought, speech, and conduct. Certain mental experiences, however, which are unpleasant, painful, disappointing, mortifying, especially those experiences, thoughts, and actions for which we feel regret and shame, experiences which we earnestly wish had not occurred, we try to forget, to deny to ourselves, to repress, and to drive from conscious memory. We refuse to weave them into the mental fabric, refuse to acknowledge them as ours, we try to ignore them, and in some instances do force them from consciousness and seemingly "forget" them. In so doing, since by the law of conservation nothing is lost, the "forgotten" experience is forced into the subconscious where it constitutes a species of "psychic trauma," and persists as a foreign body. In the process of forgetting we heal the superficial, conscious wound, but leave its cause, the essential injury, unremoved. These painful experiences and their memories having never been accepted and normally reacted to by the conscious emotional and intellectual mechanism, have not become incorporated with the main stream of consciousness, nor brought into proper relation with the reasoning faculty. Therefore they are not subject to the control of the will. The condition is to be regarded as a pathological splitting of consciousness, in that the experiences thus relegated to the subconscious have undergone dissociation, being detached from the main stream of consciousness. They constitute wild and uncontrolled offshoots from the mental stem. At subsequent times, these suppressed ideas, having undergone growth, development, and transformation, reappear in consciousness in an altered form, powerfully affecting conscious thought, feeling, and conduct, but being entirely unrecognized as recrudescent painful ideas. They constitute, when they thus reappear, the symptoms of hysteria. In other words, the sensory disturbances, paralyses, tremors, spasms, convulsions, aphonias, amblyopias, and other somatic as well as all of the mental phenomena of hysteria are merely reappearances, transformations, conversions of former mental pains, which have been denied their conscious recognition and normal emotional expression, and have been thereby submerged and repressed for years in the realm of the subconscious.

The correction of this splitting of consciousness, the healing of the mental trauma, the cure of the hysterical symptom, is accomplished (and can only be fully and properly accomplished) by reuniting the dissociated experience with the main stream of consciousness. This can be done by tracing the hysterical symptom back to its original cause, by uncovering the forgotten shame, confronting the patient with it, compelling its recognition and acknowledgment, making the patient live over the experience in memory and in speech, and forcing him to undergo the painful emotional accompaniments thereto. In this way it is plucked from the subconscious, and thrust into conscious and normal relation with the remainder of the mental fabric, incorporated with the conscious mind, placed under the control of the reason and of the will, and given its proper emotional expression, and educational value. As soon as the dissociated experience is thus removed, the torn and twisted limb straightened and regrafted upon the main stem, the uncontrollable pathological equivalent, the hysterical symptom, disappears and the hysteria is cured.

Freud's method of treatment is based upon the foregoing. In its practical application it consists in having the patient, after being put at rest in a recumbent posture and given a brief preliminary explanation, recount his past history in utmost detail, it being insisted upon that he tell everything, and relate all of his thoughts exactly as they occur to him. When conscious recollection is exhausted recourse is had to skilful and tactful questioning, and to the use of test words after the method of Jung. He is also asked to relate his dreams, and these are subjected to careful psychologic analysis and brought into proper relation with the conscious idea associations. By the employment of these aids to conscious memory the patient is made to recall much that was seemingly forgotten—made to empty himself of his subconscious as well as conscious memories. In the course of time the one or more deeply buried painful experiences, almost invariably youthful sexual lapses or similar causes for regret and shame, are brought to memory, confessed by the patient, often with much mental distress and emotional outpouring. And then the hysterical symptoms disappear and the patient is well.

The theoretical considerations upon which Freud's method of treatment is based embody little that is not more or less familiar in psychologic thought, although the phraseology is novel and the point of view somewhat changed. In theory the method of psychoanalysis is attractive and makes a certain appeal to minds of psychologic bent, and its study is an intellectual exercise both inspiring and instructive. Freud himself is a psychologist of exceptional attainments by innate capacity as well as high training and long experience. Neither the theory nor the practice of the psychoanalytic method, however, are original with Freud, but were employed by Pierre Janet and others many years ago. Joseph Breuer, who was Freud's teacher and in association with whom much of Freud's early work was done, used the method quite extensively in practice. Breuer and Freud were using the treatment and publishing papers in collaboration when I was in Vienna in the early nineties. The procedure has been more or less familiar in Continental Europe for some years, but only during the past few years has it attracted attention in America.

Breuer, in allusion to the psychic emptying to which the patient is subjected, bluntly named it the "cathartic method." Freud speaks of it as the "psychoanalytic method." Some of the scoffers call it the method of "soul massage." Freud's earnestness and his signal success have attracted much attention, and made many disciples, who are, it is proper to note, among the most celebrated and highly trained members of the medical profession.

Freud recognizes the limitations of the treatment and advocates its use in selected cases only, and especially in the highly educated classes and for those cases not relieved by simpler means. He disregards the role of suggestion in his psychoanalysis, or even at times denies the influence of suggestion in the results obtained. Nevertheless, when broadly viewed and when divested of its nonessential dress it is found to be a method of highly specialized psychological suggestion, employing the ages' old and perfectly familiar methods of the Catholic confessional, the therapeutic value of which Breuer and others unconsciously stumbled upon by way of the careful clinical history insisted upon by the neurologist, the internist, and the Du Bois psychotherapist. The procedure is too highly psychological to be widely applicable, too time-consuming (Freud spent some hours a week for three years "analyzing" one case), necessitates an objectionably intimate and confidential relation between physician and patient, and withal is a complicated, cumbersome, and roundabout way of accomplishing what other methods, including those of the quacks and the pseudoscientific religionists, bring about by simpler and more direct means. The one reason for its existence is found in the fact that to the overdeveloped, overeducated sexual perverts and hysterics of the dilletante and professional classes the simpler forms of psychotherapy do not always appeal. Freud's psychoanalytic procedure offers them something in the way of psychic sexual stimulation and gratification of morbid egoism and in keeping with their intellectual development. Among the reported favorable results the preponderance seems to be among sexually starved old maid teachers. While some very distinguished members of the profession in this country have announced themselves as disciples of Freud and employ his methods in practice, it is my belief that while Freud and his group have made a notable contribution to morbid psychology, and to the science of psychotherapy, and have unquestionably effected numerous cures, the method of treatment will not gain many adherents among the medical men who use the English tongue.

Before leaving the subject of psychotherapy, I ask you to remember that the treatment of disease by suggestion is inseparably incorporated with many of the religious systems past and present, some of which had their origin in and derived their chief initial impetus from the power possessed by their earthly exponents to cure disease and even to raise the dead. Before the dawn of biological science, priests and physicians were one, and treated all sickness as well as sin in the same way, casting out the devils of disease and unbelief by some form of religious psychotherapy, that is by incantation, prayer, laying on of hands, or, in later times, by impressive ritualistic and musical procedures, by the powerful suggestive influence of the confessional, by pseudo-religio-scientific syllogism, etc. Upon even the most normal and stable intelligence the oft repeated injunction, "believe, have faith, confess your sins, make atonement, and your bodily ills as well as your sins will leave you," exert, when silhouetted against the unsolvable mystery of the unknown, a suggestive influence almost incalculable, and the innumerable cures of hysteroid disease brought about by such means, not only in ancient times, but in this later prosaic twentieth century day, are evidence of the curative powers of suggestion, as well as of the fact that in discussing psychotherapy we are not dealing with anything novel or progressive. The newest religious cures of our day, the newest and most "scientific" of the medical methods of suggestion therapy, are, all of them, atavistic and reversionary in tendency, merely representing survivals of or reversionary return to the undifferentiated religio-medical practice of the days when the world was young. All systems of psychotherapy depend for success upon two factors, mystery and novelty. As soon as the mystery is solved, or the novelty worn off, the skeleton of suggestion which gave them what real power they possessed, is found no longer useful until it is dressed in new clothes and given a new, high-sounding and misleading name. For this reason all methods of treatment depending in any degree upon suggestion have given best results in the hands of their originators and their early converts. Time, investigation, wider knowledge, and unprejudiced criticism usually prove fatal to them.

Study and discussion of psychotherapeutic methods are in the plain line of duty of those who wish to contribute to medical progress. The erection of the facts of suggestibility into systems and methods of practice, and their indiscriminate use in the treatment of disease, to the exclusion of other and preferable measures of known and proven value, verge close upon quackery, to say the least. Our scientific attitude toward disease should be that of the biologist; our professional attitude, that of the physician, hygienist, and sanitarian, dealing with disease as a material process. And let the sick souls seek, if they must, their priestly comforters. Let the religious healing cults and quack pathies coin ignorance and atavistic suggestibility into dollars. But let us refuse to compete with them. Since at the present stage of our social development doctors are probably a necessary evil, and since we must even take money for curing disease, and for trying to cure it, our seemingly necessary and unavoidable psychotherapy should be employed with judgment and with restraint. However employed it should be based upon the largest measure of scientific medical knowledge obtainable and be used at least with honesty. Better than any "system" is that valuable psychotherapeutic influence which takes the form of and is synonymous with confidence in the doctor—confidence on the part of the patient, based upon the belief that the doctor knows, and is doing what is best, confidence in himself on the part of the doctor, based upon the fact that he knows that he knows what is best, and is doing it. The spirit of scientific truth should withal make us unwilling to create local hysteroid symptoms by even unconscious suggestion, should make us slow to adopt medical fads, skeptical toward the newest up-to-date therapeutic discoveries, should make us cautious in attributing the cure to the treatment, should make us more than suspect that the relief comes from the hidden, unconsciously employed suggestion.

In conclusion, let us remember that pathological credulity and suggestibility with their hysterical

and other psychoneurotic derivations are symptoms of reversionary weakness—are in themselves *prima facie* evidence of degeneracy. Some day in the fulness of time a race of men will be born with the courage to deny to the degenerate the privilege of reproducing his kind, of handing down his heritage of weakness and sorrow to succeeding generations. In that day hysteria and its psychotherapeutic cures will join witchcraft and voodooism in the museum of medical antiquities, and the religious and medical psychological suggestion mind healers will be free to employ their talents in less atavistic lines of endeavor. And then we will be able to treat hysterical and pithiatic phenomena in the right way—not by suggestion of any kind, whether used under its own or masquerading under another name, not by fakes and frauds, but by educational and eugenic measures, curing the specific symptom in the individual by simply letting it alone. Just as soon as the hysterical symptom attracts no attention, elicits no sympathy, causes no agitation, distress, nor other suggestive emotional state on the part of the onlooker, it dies for want of nourishment, and a real, basic, and indisputably lasting cure is obtained. Caused and nourished by suggestion, it perishes for the lack of it. This method of treatment will be generally employed when the millennium arrives. In the meantime, as Dr. Walton says: "Why worry? Even today an ounce of Muldoon is worth a pound of Freud."

166 Conti Street.

EXPERIENCES WITH DUODENAL ALIMENTATION.*

By MAX EINHORN, M.D.,

NEW YORK.

PROFESSOR OF INTERNAL MEDICINE AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

In two previous papers†‡ I have shown that we are able to keep the weight of the body in equilibrium for a longer period by duodenal alimentation than by any other method. Together with Dr. Rosenbloom** I stated that during duodenal alimentation there need be no nitrogen loss. In the following communication I shall record my experience with this method of treatment, which extends over a period of two years and covers in all thirty-four cases (six of which have been previously described). I shall first describe a few of the newer cases as typical examples and then tabulate all of the twenty-eight new ones.

Case I.—February 15, 1911. A. S., 37 years old, has always been well with the exception of an attack of malaria twenty-one years ago. About nine years ago his present trouble began, consisting principally of pains one hour after meals. In 1903 he was operated upon for appendicitis. As this procedure did not seem to benefit his condition, he was again operated upon in 1907 for adhesions and later, in 1909, for ulcer of the stomach. At the last operation no ulcer was found. The patient indulged moderately in alcohol and tobacco and never had syphilis. Six weeks ago he began to complain of pains in the epigastrium which radiated to the right iliac fossa. Around the umbilicus the pains are cramp-like; in the right iliac fossa they are sharp and cutting. The pain becomes more bearable when the stomach is full; one hour after meals, however, it begins again and is then associated with acid eructation, burning, and waterbrash. There has never been any vomiting or jaundice. His appetite is good, his bowels are regular, and he feels comparatively well.

Present Condition: Patient is a well-developed and well-nourished man. Heart and lungs are normal. The abdomen shows two operation scars (one in the region of the appendix, the other over the gall-bladder). Between the navel and the pubic bone there is a point of tenderness. The pressure over this point causes pain in the epigastrium. The region of the gall-bladder is also sensitive to pressure. The urine is negative, the temperature is normal, and the pulse 68-72. Examination of the stomach contents showed HCl = 64; acidity = 86. No food remnants from the day previous. Examination of the stool for blood by means of the guaiacum test was negative. The benzidin test, however, owing to the presence of imperfectly digested meat fibers, gave a positive reaction. The patient was put upon calcined magnesia and bismuth. On February 22 the thread test was used. The duodenal bucket went in to 77 centimeters. The lower 17 centimeters were stained with bile and a blood spot five centimeters in length began at 47 centimeters from the teeth. On February 27 patient was placed upon duodenal alimentation. He felt better at once. He had no sour eructation and no distress after the feedings. He was nourished every two hours, receiving eight ounces of milk, one raw egg, and a tablespoonful of lactose eight times daily. During the entire time the bowels were normal. On March 9 the duodenal tube was removed. On March 10 the thread test gave a negative result, *i.e.* absence of blood spots on the thread. The patient has since then (March, 1911) felt perfectly well without any of his former distress.

Case II.—May 15, 1910. Sister R. M. has been sick for four years. Her last attack occurred in January. She complains principally of vomiting after meals; pains in the left side of the abdomen, particularly after partaking of food; nausea; eructations, especially at night and since her operation (uterus) more frequent than before. She is constipated and during the last two years has had bright blood in the stool on three or four different occasions. Generally the bowels are constipated. On January 15 she vomited half a glassful of bright red blood and smaller amounts in February and March. During the past two years she has lost from twenty-five to thirty pounds. The patient has pains after having partaken of food (even with a strictly liquid diet), and vomits two to three times daily. Examination reveals considerable tenderness to pressure in the epigastrium and a somewhat dilated stomach. The thread test gives a negative result in reference to discoloration by blood, but shows, however, that the pylorus is permeable. The patient was placed upon duodenal alimentation. Immediately after commencing this method of treatment there were no pains in the stomach. After two weeks' treatment the duodenal tube was removed and the patient placed upon a diet of milk and eggs. Later on gruels were added. The patient felt well, gained in weight, and recovered entirely.

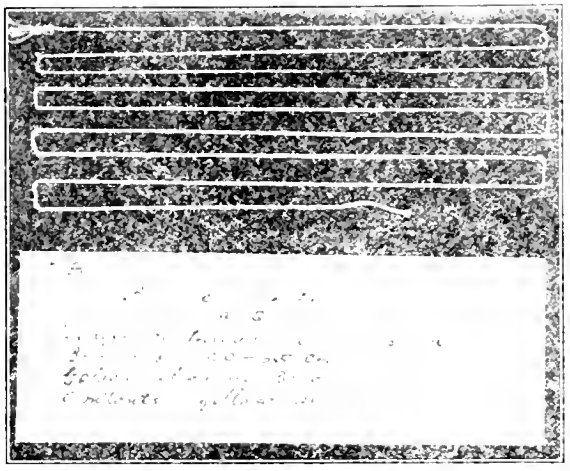
*Read before the New York Academy of Medicine February 15, 1912.

†M. Einhorn: "On Duodenal Alimentation," Medical Record, July 16, 1910.

‡M. Einhorn: "Further Remarks on Duodenal Alimentation," *Interstate Medical Journal*, 1910, No. 10.

**M. Einhorn and J. Rosenbloom: "A Study of the Nitrogen Metabolism in Three Cases of Duodenal Alimentation." *American Journal of the Medical Sciences*, July, 1911.

Case III.—December 20, 1910. Adalberto S., physician, 38 years old, had eight years ago a right-sided pleuropneumonia. Family history was negative. He does not drink, smokes a great deal, however, and for the past twenty years has been taking daily two cups of strong coffee. Although he has

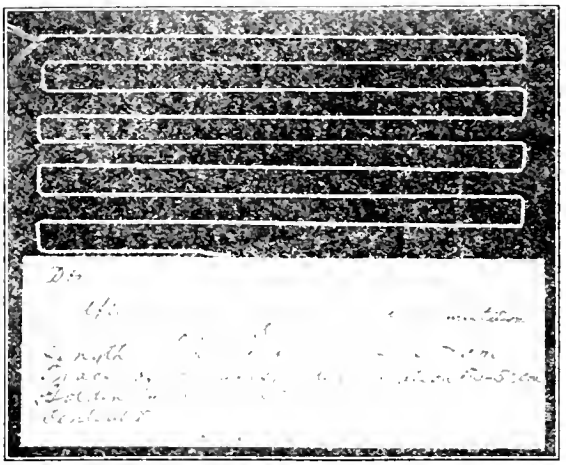


at times eaten too fast he always masticates well. Fifteen years ago he began to suffer from pains in the abdomen, occurring at first at longer intervals, later every three or four months, and for the past two years on an average once or twice a month. Nervous excitement and irregular meals make him worse. His attacks vary in intensity. In the light attacks his tongue is coated, he feels a burning and dull pain in the stomach which disappears again after a meal. The appetite is normal. In the attacks of medium intensity he has besides the symptoms just described a diminished appetite, a feeling of fullness and pressure in the epigastrium three or four hours after meals, rarely in the morning, and sometimes in the evening. Vomiting or eructations are not present. There is, however, some nausea which disappears after the taking of alkalies, especially if they cause belching. The most severe attacks, of which there have been five or six in the past two years, are accompanied by loss of appetite, nausea, and vomiting, sometimes immediately after meals, sometimes three or four hours later. The vomited matter is not distinctly acid, contains mucus, and is of a white color, sometimes reddish, however, or of a chocolate color. The attacks are not alleviated by alkalies in any manner, but only by vomiting or a recumbent position. These attacks are also frequently associated with headaches, lassitude, and somnolence. Sometimes the patient suffers from vertigo, nervousness, and a bad taste in the mouth. Occasionally slight palpitation of the heart and dyspnea occur. The movements of the bowels are punctual and regular at the same hour. There is never any blood or mucus in the stool. During the past two years he has lost five pounds. His memory is not as good and he cannot concentrate his mind as well as formerly.

Examination reveals a dilated stomach, reaching to about three fingers' width below the umbilicus. December 16, 1910, examination of the stomach contents one hour after a test meal showed HCl +; free HCl, 80; total acidity, 100. The thread test on December 17, 1910, showed a brown discoloration between 50 and 55 centimeters, and golden yellow between 60 and 80 centimeters, pointing, therefore, to an ulcer of the stomach, with permeability of the pylorus. On December 17, 1910, duodenal alimentation was begun and continued for twelve days. On January 4, 1911, after the period of duodenal alimentation the thread test showed only traces of a brown discoloration. The photographs of the thread test of Dr. A. S., both before and after duodenal alimentation, illustrate this very well (Figs. 1-2). The case of Dr. A. S. is interesting for the reason that clinically it appeared to be one of duodenal ulcer. The thread test, however, showed that the ulcer was situated in the stomach and not in the duodenum.

Case IV.—Miss Lily D., 26 years old, has always been well with the exception that she had measles, typhoid fever, and grippe. For the past four months she has been suffering from pains in the epigastrium and an acid taste in the mouth occurring generally fifteen minutes after meals. She belches a great deal but never vomits. She is constipated and has lost ten pounds in four months. The appetite is fairly good except during the last few weeks. At times she feels weak and occasionally faints, especially at church. She, however, always recovers and says that a short time ago she vomited a quart of blood. Examination of the stomach contents on February 6 reveals: HCl = 0, total acidity = 10, no occult blood. Duodenal alimentation was instituted from February 3 to 14, 1911. A thread test made on February 16 showed no blood spots.

Gastric and duodenal ulcers form the main contingent for this method of treatment, although other conditions, such as nervous vomiting and atonic dilatation of the stomach can also be favorably influenced thereby. Two years ago I made the observation that some ulcers of the stomach or duodenum are not entirely cured after two weeks of duodenal feeding, although the patient feels perfectly well or better than before. This can well be demonstrated by the thread test. In a number of cases of ulcer in which the thread test was positive, I have tried to exert a local influence upon the ulcerated surface, by coating the duodenal tube at the corresponding place with a solution of protargol. The latter is prepared as follows: protargol, 5 grams; agar, 5 grams; gelatin, 18 grams; glycerine, 25 grams; distilled water, up to 100 cubic centimeters. The solution is heated in a water bath until it assumes the consistency of a syrup and then the place on the



duodenal pump corresponding to the seat of the ulcer is dipped into this solution. It is then allowed to cool and solidify in the air and is then placed for half a minute in a 5 per cent. watery solution of formalin, after which it is dried. In coating the tube with the protargol solution we calculate back-

TABLE OF NEW CASES OF DUODENAL ALIMENTATION.

No.	Name	Diagnosis	Length of duodenal feeding	With or without coating of protargol	Thread Test		Remarks
					Before duodenal feeding	After duodenal feeding	
1	Henry T.	Ulcer near pylorus	14 days	With	Blood at 56 cm.	No blood	
2	Miss H.	Gastric ulcer	14 "	Without	Blood at 42–46 cm.	Blood trace at 46 cm.	
3	Dr. A. S.	Gastric ulcer	14 "	With	Blood at 50–55cm.	Blood trace at 50 and 52 cm	
4	Mrs. D. S. M.	Gastric ulcer and cholecystitis	14 "	With	Blood at 44–50 cm.	No blood	
5	Mr. A. B. R.	Gastric ulcer	14 "	With	Blood at 47–52 cm.	Blood at 48–52 cm.	
6	Miss J. E. C.	Duodenal ulcer	13 "	Without	Blood at 59–61 cm.	No blood	
7	Mr. O. S.	Duodenal ulcer	11 "	With	Blood from 54–58 cm.	Minute bloodspot at 61 cm.	Stomach reached to the pubes before treatment; afterwards only to navel.
8	Mr. W. P. D.	Gastric ulcer	14 "	With	Blood from 52–68 cm.	Blood from 51–65 cm.	
9	Mrs. H.	Gastric ulcer	14 "	Without	Blood from 30–45 cm.		Pylorus palpable and painful on pressure.
10	Dr. P. S. B.	Gastric ulcer	13 "	With	Blood from 45–52 cm	No blood	
11	Miss R. M.	Gastric ulcer	14 "	Without	No blood		
12	Mr. DuC.	Gastric ulcer	14 "	With	Blood at 47–52 cm.	Blood from 49–54 cm	
13	Mr. J. M. B.	Duodenal ulcer	14 "	With	Blood at 57 cm.	No blood	
14	Mr. R. S.	Duodenal ulcer	14 "	With	Blood at 67 cm.	No blood	Stomach extended to pubes before treatment; afterwards only to navel.
15	Miss V. D. H. F.	Duodenal ulcer	14 "	With	Blood from 59–64 cm	Blood traces from 57–60 cm	
16	Mr. G. H. H.	Gastric ulcer tuberculous	13 "	With	Blood from 42–52 cm	Blood 42–52 cm.	
17	Mrs. J. McA.	Gastric ulcer	10 "	Without	No blood		Stomach extended hand's width below navel before treatment; afterwards one finger above navel.
18	Rev. W. H. W.	Gastric ulcer	14 "	With	Blood from 52–55 cm.	Blood from 55–60 cm	
19	Miss Dr.	Gastric ulcer	14 "	Without	No blood		
20	Mrs. Br.	Gastric ulcer	14 "	With	Blood from 32–54 cm.	Blood (strong) 40–55 cm.	
21	Miss Do.	Gastric ulcer	14 "	Without		No blood	
22	Mr. S.	Gastric ulcer	14 "	Without	Blood from 44–50 cm.	No blood	
23	Mrs. K.	Gastric ulcer	11 "	Without	Blood from 47–52 cm.		
24	Mrs. Sch.	Gastric ulcer	14 "	Without	Blood from 48–53 cm		
25	Mr. M.	Duodenal ulcer	14 "	Without	Blood trace at 61 cm.	No blood	
26	Miss D.	Gastric ulcer	14 "	Without	Blood from 46–52 cm.	Blood (strong) from 35–53 cm.	
27	Miss F.	Gastric ulcer	14 "	Without	Blood from 38–41 cm.	No blood	
28	John T. L.	Gastric ulcer	9 "	Without	Blood from 47–49 cm.	Blood trace at 60 cm	

ward from mark 80 on the tube, as for instance if the ulcer is 44-46 centimeters from the lips, we coat the tube 44-46 centimeters from mark 80, because the latter mark is the one which lies between the lips during the treatment. It is better to make the coating a little more extensive, so that if there are slight differences in position of the tube the protargol will still act.

In order to judge more accurately the result of protargol treatment we have treated some of the cases with and some without the protargol coating. Of course we can take only those cases for comparison in which the thread test has been made before and after duodenal feeding. Of the fourteen cases undergoing protargol treatment, in whom the thread test was at first positive, it was entirely negative in five cases after duodenal feeding; in three there was only a trace of a blood-stain, whereas in six the test remained positive. In seven patients without protargol coating the thread test after duodenal alimentation was negative in four, positive once, and twice showed traces of blood. It would seem from these statistics that the coating of protargol is of no value. The number of cases, however, is too small to enable one to draw definite conclusions from them and it will be necessary to test the method in a larger number of cases.

The duodenal feeding apparatus as well as the method of its insertion I have already minutely described in my previous papers. Here I would like to state, however, that while ordinarily the duodenal pump reaches the duodenum within two to six hours, this takes much longer under certain conditions, principally when a high degree of pylorospasm is present. In several of the patients we had to wait fully twenty-four hours, in one even thirty-six hours, before the end of the tube entered the duodenum. Inasmuch, however, as the patients during the migration period of the tube from the stomach into the duodenum, partake of liquid foods by the mouth, there is not much loss by waiting.

As a nutritive medium I have used a mixture formerly suggested by me, consisting of milk, egg, and lactose (200 to 240 c.c. of milk, one egg, and 15 to 30 grams of lactose every two hours). At times we have added cream in order to increase the nutritive value: sometimes we omitted the milk sugar when there was a tendency to loose bowels. In one case, Miss E. S., we had to discard the milk entirely, since she had a marked idiosyncrasy for this substance, even when passed directly into the duodenum. Severe abdominal pains resulted as well as diarrhea. In this case we used the following scheme of nutrition: 7:30 A.M., oatmeal gruel, 180 c.c., one egg, butter, 15 c.c., lactose, 15 c.c.; 9.30 A.M., pea soup, 180 c.c., one egg, butter, 15 c.c., lactose, 15 c.c.; 11.30 A.M., the same as at 9.30 A.M.; 1.30 P.M., bouillon, 180 c.c., and one egg; 3.30 P.M., oatmeal gruel, 180 c.c., butter, 15 c.c., one egg, lactose, 15 c.c.; 5.30 P.M., pea soup, 180 c.c., butter, 15 c.c., one egg, lactose, 15 c.c.; 7.30 P.M., the same as at 5.30 P.M.; 9.30 P.M., bouillon, 180 c.c., and one egg. Total daily quantity oatmeal gruel, 360 c.c.; pea soup, 720 c.c.; eggs, 8; lactose, 90 c.c.; bouillon, 360 c.c.; butter, 90 c.c. The pea soup was made from Knorr's pea flour, one tablespoonful to 250 c.c. of water which was boiled down for from one and a half to two hours to 180 c.c.

It is self-evident that many more substances might be utilized for duodenal alimentation. The main point to be observed is that the mixture must be a very fine fluid emulsion, without any coarser particles, so as not to clog the narrow duodenal tube. It is therefore best to filter the mixture first through a fine sieve or through gauze. If these rules are observed there will rarely be any difficulty. As I have mentioned before the duodenum itself is not very sensitive; the patient does not feel when food or air is introduced into it. The duodenum is, however, sensitive to heat, cold, and distention, when the normal conditions are absent and various general symptoms result as a feeling of weakness, restless-

ness, cold perspiration, sensation of heat, or distention in the stomach, etc.

Sensations experienced during the period of duodenal alimentation: I have requested several patients to write up their sensations during the period of duodenal alimentation and reproduce a few of these descriptions as follows:

Dr. A. S.: "The swallowing of the tube is not difficult and not painful. It does not cause nausea in the stomach as one would be likely to think. The presence of the tube in the throat and mouth is somewhat disagreeable, but causes, however, no difficulty. Only during the first few days a little nausea was produced by contact with the uvula. Since sufficient food was taken (eight ounces of milk and a raw egg every two hours) no appetite was experienced during the first nine days. Later on appetite set in occasionally in the morning, but never in the day. Feeding through the tube is easy; the duodenum, however, is sensitive to excesses of temperature, either cold or warm, as well as to the amount of pressure used in introducing the food. A medium temperature and slow introduction are best, otherwise a feeling of fullness occurs, accompanied by belching." Another patient says: "The only disagreeable part of duodenal alimentation is during the initial swallowing of the tube and for the first few hours thereafter, until one has become accustomed to its presence. In the stomach itself there is no sensation whatever, either agreeable or disagreeable, after feeding. One can feel the warm temperature of the food as it passes by the lips through the tube, and a slight distention of the bowel, but neither pain nor hunger. In the morning the appetite is keener, but is, however, completely satisfied by the introduction of food through the tube." Miss F. says: "At first the sensation was pretty nearly unbearable. After the first feeding a feeling of nausea and profuse perspiration occurred. It seemed as though the food wanted to regurgitate, and frequent eructations were present. Later there was a sensation of burning in the stomach. It felt as though the food entered the stomach." Mr. L. has no sensation except a feeling of fullness and warmth at the end of feeding.

The results of duodenal feeding are very satisfactory. We must, however, add the following explanation: Subjectively all but one case (Case 10, George S., tuberculous ulcer of the stomach) were distinctly improved. That means there were present either no pains at all or only very slight pains after the partaking of food. Nearly all the patients were able to eat an ordinary mixed diet a few days after the period of duodenal alimentation. A marked increase in weight was later on observed in most of the patients. Objective improvement I was able to find in three ways. (1) In some cases, in which the pylorus could be felt as a small oval swelling (about the size of a walnut), probably caused by a spastic condition, the tumor disappeared during the period of duodenal feeding and did not return afterwards. (2) In nearly half of all the cases of ulcerations of the stomach and duodenum, in which before duodenal feeding the thread test was positive, it became negative after treatment. This would point most likely to the fact that an actual cure of the ulcer had taken place. (3) In some marked cases of ptosis and dilatation of the stomach a considerable change of the position and size of the stomach during the period of duodenal alimentation was observed. In R. S. (Case 14), O. S. (Case 7), and Mrs. McQ. (Case 17), the organ became much smaller. In all these three cases the stomach before treatment extended down to the os pubis, as could be easily demonstrated by the splashing sound; after treatment, however, the lowest part of the organ was found one finger's breadth above the navel in Mrs. McQ., and in the region of the navel in R. S. and O. S. This was found in the course of the examination, and may be of great therapeutic value.

We might try to study the influence of duodenal nutrition in atonic dilatation of the stomach. According to my observations this method of treatment ought to be successful in such cases. Taken all in all, we may assert that duodenal alimentation is a therapeutic measure of considerable value in suitable cases, and can be warmly recommended.

PRELIMINARY NOTE ON SOME EXPERIMENTS ON SEROUS SAC DISTENTION.

By A. A. SMITH, M.D.,

NEW YORK.

THE title of my paper as given on the card is misleading. I have been making some studies of the anatomy and pathology of the pericardium and pleura, especially in relation to the filling of them with fluid and the effect of such filling on the question of distensibility of serous sacs, and in respect to the pericardium and its influence on the displacement of the heart. I hoped that in connection with these studies and the use of the *x*-rays I might be able to determine the effects of displacements of the heart in pericarditis with effusion. These studies are by no means conclusive, and I might also state that they are not concluded.

First, in connection with the pericardial sac. For a long time it was thought that fluid in the pericardial sac when in considerable quantity would frequently displace the apex to the left and upward. The observations that were made placed the apex in the fourth intercostal space, and on the nipple line or to the left of it, some observers even making it higher up. These observations were based on the fact that a very decided impulse in many cases was found in the fourth intercostal space, and that the maximum intensity of the first sound of the heart was found in the same situation as the impulse, these two signs being relied on to locate the apex.

There has been a great diversity of opinion among observers as to whether this ever occurs. Dr. William Ewart contends that the apex is not lifted, but that the impulse felt in the third or fourth space is the base of the heart and not the apex. Dr. Roberts seems inclined to agree in part with this view. Balfour says the apex is pushed inward and removed from the anterior wall. Many observers contend that the apex has been noted lower than the normal situation. In such cases, however, the enlargement of the heart with a large quantity of fluid has pressed the diaphragm down, and as Dr. Ewart explains it, the heart assumes a more vertical position and is displaced more to the median line, the aortic arch becoming somewhat straightened.

Sansom makes the statement that the apex is above the normal, probably in the fourth intercostal

*Read at a meeting of the Practitioners' Society of New York, November 3, 1911.

space and to the left. To quote his own words, "the apex is tilted or floated upward." I consider the use of the term "floated," unfortunate because if the displacement is upward and to the left it could not be "floated." It makes no difference how dense the fluid is, the heart is of greater density and certainly could not be "floated." Thayer, in the Johns Hopkins Bulletin, 1904, says the position of the heart is still in dispute. "It is probably true, as Rendue and Ferrand state, that the heart remains in its normal postion while the diaphragm descends. Scott and Le Conte, in the *American Journal of the Medical Sciences*, say that it is not proven, as generally stated, that the heart is pushed away from the chest wall with a disappearance of the apex beat. The heart is fixed at the base and this leaves the apex free as a movable portion to be affected by pressure from all sides or any side. If adhesions exist between the pericardium and the heart on either the right or left side, a lateral dislocation of the heart will occur, or pressure by the filled pericardium as a whole may cause a lateral dislocation. Perhaps other unknown conditions within the pericardium will produce the same lateral displacement. It is probable that in some cases the pressure of fluid in the pericardium dislocates the heart to the right or to the left side."

Herschfelder quotes Pirogoff as saying that the heart sinks in the pericardial fluid and may lie against the vertebral column and away from the chest wall. Schaposchnikoff says the tendency of the heart is to remain near the anterior chest wall. This position is assumed even in the cadaver upon injection of the pericardial sac. The heart is held in this position, in spite of gravity, by the elasticity of the great vessels. When the vessels lose their elasticity the heart sinks to the bottom of the fluid. The apex is pushed up probably. Skoda and his followers taught that the displacement of the heart in pericarditis with effusion is downward and backward; Sibson, "the apex is displaced upward and outward by the fluid."

I have quoted all of these and could have quoted many more, to show the great diversity of opinion as to the displacement of the heart under conditions of effusion. Many factors must be taken into consideration. The elasticity or non-elasticity of the pericardial wall, the condition of the large blood vessels, the size of the heart, the quantity of blood in the heart at the time of the occurrence of the effusion, must all be taken into consideration.

A very important factor is the very great differences in the relative positions of the heart during life, with all its activities in the revolutions through which the heart passes constantly, and conditions and relative position after death.

Anatomically, the pericardium at the base of the heart has been shown to be more elastic, and consequently more distensible under normal conditions than the pericardium elsewhere.

While discussing this question at one time, a suggestion was made by Professor Edward K. Dunham which might offer an explanation of the manner in which displacement might occur. It is well known that the pericardium passes up over the base of the large vessels to a variable extent, some times as much as two inches, and this portion of the pericardium being more elastic and more distensible the accumulation of fluid distending this portion of the sac would act as a lever, and in this way do away with the objection offered by so many observers that the heart cannot be pushed up or "floated" from mere accumulation of the fluid below it.

Again, anatomically, the pericardium narrows very decidedly toward the base, and this fact, together with the greater distensibility of the pericardium at this portion of it, would add plausibility to the lever theory.

In a majority of cases the normal situation of the heart is oblique, from right to left and from above downward. This general direction readily lends itself to the explanation suggested by Prof. Dunham. It is assumed, of course, that the accumulation of the fluid must be very considerable in order to distend the sac, and that such distension occurs gradually. The probabilities are that the displacement of the heart is very variable and depends upon a great many conditions. The cases in which, as I believe, the heart is displaced upward and to the left, are those cases in which the heart anatomically is in its usual oblique position. The *x*-rays have shown that many hearts are situated normally more nearly vertical and some almost vertical, as is the case in quadrupeds; that in some instances there is a position of the heart which is much more nearly horizontal than the usual oblique position.

The distension of the pericardium at the base and over the large vessels acts as a lever to lift the heart when in this position and in this way displaces it upward and to the left. Undoubtedly inflammatory adhesions due to pathological conditions may influence the question of displacement. Again anatomically there are fibrous attachments which are normal and will probably hold the heart in such a way as to govern the question of displacement, these attachments varying in individuals.

The contention that the heart is held in position anatomically in such a way as always to prevent it from being easily displaced can hardly hold true, because the heart is very easily displaced from its normal position. As an example, the fluid effusion in the left pleural cavity, as is well known, will displace the heart very easily from its normal position to the median line, and in some instances with large effusions, even far beyond the median line to the right, showing the ease with which the heart may be displaced. Again, that tumors of large size in the abdominal cavity can displace the heart upward and to the left would seem to indicate that the heart may be easily displaced. Even tympanitic distension may do this.

I am inclined to take the position that clinically, at all events, the heart is displaced in some instances upward and to the left. Autopsies have shown that the apex may be to the left in the fourth intercostal space and held in such a position by more or fewer adhesions.

Let me give a case in part from the clinical standpoint. A patient was admitted to Bellevue Hospital a few years ago who had at the time evidences of fluid in the pericardial sac. This was readily made out. The patient's heart was apparently displaced so that the apex was in the fourth intercostal space and to the left of the nipple. This patient was kept under observation for a long time. The effusion in the pericardium gradually disappeared, but with the disappearance of the fluid pericardial friction sounds were very distinctly heard, and the apex still remained in the fourth intercostal space. My explanation at that time was that the patient had a pericarditis with effusion,

the displacement had occurred upward and to the left, the apex was in the fourth intercostal space, and that with this displacement adhesions had occurred and these adhesions were firm enough to hold the heart in its new position. This patient came to the hospital two years later and his heart apex was still in the fourth intercostal space. I merely give this as a type of a number of cases I have seen.

Experiments on the cadaver in this relation offer many difficulties; I am fully aware of that. The tissues are all in practically a fixed condition, the pericardial sac is practically wanting in elasticity, the adjacent lung structures are in a condition of quiescence, the heart itself is in a condition of quiescence so different from what it is in the processes of life, the large vessels likewise are in a condition of fixation with loss of elasticity. Even in the cadaver difficulties are experienced in the manner of introducing fluid into the pericardial sac for fear of changing the dynamics.

Professor Senior of the anatomical department of the University and Bellevue Hospital Medical College suggested a method of distending the pericardial sac, which, although it had difficulties of its own, did away with some of the objections to the experiments on the score of disturbing the relation of the pericardial sac with the surrounding structures, by opening the sac externally. The sac was distended by passing a cannula into the external jugular, passing it on down into the innominate in the superior vena cava, and then by way of the right auricle, and puncturing the heart wall without disturbing the relation of the structures. This was the method pursued in the examples which I shall give of distending the pericardial sac.

Experiment I.—Subject. Tubes with fluids of various specific gravity. No. 1 contained water, sp. gr. 1000; No. 2, bichloride of mercury solution, sp. gr. 1020; No. 3, lead acetate solution, sp. gr. 1020; No. 4, lead acetate solution, sp. gr. 1060. The shadows on the *x*-ray plate were dense in proportion to the specific gravity of the fluids in the tubes.

Experiment II.—Subject, male; Name, Bruno, age thirty-four.

Physical Diagnosis.—Subject had acute lobar pneumonia, involving the whole of the right lung.

Technique.—Injected 750 c.c. of lead acetate solution of a sp. gr. 1020.

Result.—Heart moved upward; pericardium uniformally distended.

Experiment III.—Subject, Martens Rheinhardt, age sixty-four.

Physical Diagnosis.—Subject had chronic tuberculosis.

Technique.—Injected 2000 c.c. of lead acetate solution, sp. gr. 1020.

Result.—Fluid passed through the pericardium into the right pleural cavity. The position of the body was suspended.

Experiment IV.—Subject, Pohern, Joseph; age sixty.

Technique.—Injected 1000 c.c. of lead acetate solution, sp. gr. 1020.

Result.—Injection entered the pericardium but returned into the right ventricle, the right auricle filling up and also pulmonary arteries as well as the superior and inferior venæ cavæ. This has been confirmed by autopsy.

Experiment V.—Subject, dog; weight twenty pounds.

Technique.—Dog given ½ grain of morphine sulphate. Anesthesia by ether. The dog was kept under constant artificial respiration. Pericardium injected with physiological saline solution, sp. gr. 1005.

Result.—The fluid entering the pericardium modified the cardiac activity, as shown by the following: As the fluid was injected the blood pressure dropped till finally the heart ceased to beat; upon the removal of the solution the blood pressure returned to its original height and the heart began to beat.

Experiment VI.—Subject, dog; weight thirty pounds.

Technique.—The same as in Experiment V, with a 2.4 per cent. solution of sodium chloride, sp. gr. 1015.

Result.—The same as in Experiment V.

18 West Fifty-first Street.

THE PLIGHT OF THE CONSUMPTIVE WAGE EARNER.

By JOHN F. RUSSELL, M.D.,

NEW YORK.

Associations, societies, and influential bodies of all kinds devoted to the study and betterment of the tuberculosis situation are working in perfect accord and using all their great influence in teaching and urging the practice of certain principles in the prevention and cure of tuberculosis. Harmony is desirable certainly, but it is of greater concern in an undertaking of such magnitude and so far-reaching in its effects that the principles taught and practiced, which influence, either directly or remotely, nearly every individual in the community, be correct. In certain important particulars I believe these principles to be wrong, and that their practical application results in the gravest injury to the largest and by far the most important body of tuberculous sufferers.

In order to make my meaning clear it is necessary first to review the present teaching and practice, and for this purpose they may be arranged under three heads, viz.: 1. Tuberculosis is a preventable and curable disease. 2. In the majority of cases tuberculosis is not a fatal disease. 3. The cardinal factors in curative treatment are rest, pure air, an outdoor life and nourishing food.

Prevention. The cause of the disease is known to be a bacillus, and because if all tubercle bacilli in the world were destroyed there would be no more tuberculosis every effort is being made to destroy all bacilli. The prevention of disease is the highest attainment of medicine, so, as between prevention and cure, the greatest energy is devoted to prevention—in educating and hedging about the diseased, who alone may disseminate bacilli, and in thus safeguarding the healthy against infection. The cure of the disease is secondary.

Cure. The statement that in the majority of cases tuberculosis is not a fatal disease cannot be based upon results of treatment, because the reports of cures from institutions devoted to the treatment of the disease are far less than a majority of patients treated. It must therefore rest upon reports of examinations made of bodies dead of other diseases in which cured tuberculous lesions were found. The percentage of cured lesions thus found varies with different writers, but in the main the results

of such examinations show that in a majority of cases tuberculosis is cured spontaneously. This will be alluded to again.

Present Aims. "By procuring the establishment, on an adequate scale, of hospitals for advanced cases of consumption, sanatoria for the cure of curable cases and dispensaries for early diagnosis and as centers of visiting, nursing and instruction in the homes of the poor." The latest announcement which I have seen says that there have been established over "15,000 beds for curable cases in 400 sanatoria for the open air treatment, the opening of nearly 300 dispensaries with more than 500 physicians in attendance, and with over 500 visiting nurses giving instruction in the homes of the patients." The foregoing quotations are taken from a publication of the National Association for The Study and Prevention of Tuberculosis, and it is perfectly clear from the language that no hope of cure is entertained from any method of treatment other than that provided at sanatoria. Dispensaries are not intended for the treatment of curable cases, but are employed to discover such, and, when found, send them to sanatoria, if possible, and as a means of instruction and palliative treatment. In the view of those who believe that pure air (distinguished from fresh air, the best that can be had in cities, which may contain dust and other foreign matter) and an outdoor life are essential for success, dispensary treatment can offer no prospect of cure. No systematic curative treatment is therefore practiced at these dispensaries. The hours of attendance are, broadly speaking, some time between 10 o'clock in the morning and 5 o'clock in the afternoon, Sundays and holidays excepted. The Tuberculosis Directory of The National Association for the Study and Prevention of Tuberculosis shows that for the whole United States there is but one dispensary which is open in the evening every week day, one which is open four evenings a week, four open three evenings, six open two evenings, and twenty-nine one evening.

By far the greatest number of the inhabitants of this country are occupied in some form of labor and are variously classified as wage earners, breadwinners, or, more comprehensively, as those engaged in gainful occupations. Every one who has given the subject consideration must know that in all large shops, offices, factories, everywhere, in fact, where numerous people work, there are many consumptives, the great majority of whom are curable. A large number cannot stop work even for a short time without serious sacrifice, and a still larger number cannot stop work at all lest they or their families or those dependent upon them suffer want. They cannot go to sanatoria if invited, they perhaps cannot afford to consult a private physician, or, if they do, are advised to stop work and go away; they cannot go to dispensaries because the hours of attendance at these institutions conflict with work hours or, if they do go they receive no curative treatment. If the disease is in the early stage there is so little discomfort, comparatively speaking, that the sufferers may drift on unconscious of danger, or, if they have learned that they have tuberculosis they have also learned that they cannot follow the advice offered. Their only alternative in this event is to seek the advice of quacks or use patent medicines. They find it an advantage to conceal the knowledge of their disease. If the disease advances they sooner or later reach the point where they either give up or lose their work and become dependent. They have ceased to be self-supporting; their disease is advanced; they have missed the chance of recovery. In many instances they have now reached the place where, for the first time, present methods may begin the work of prevention and cure. Of all deaths of males from tuberculosis in 1908 77.3 per cent. were deaths of males gainfully employed, whereas in the case of deaths of males from all causes only 52.3 per cent. were of those so employed.

It is bad to have tuberculosis, but to be denied curative treatment is indescribably worse. The bad is bad enough, for good health is the capital of these people, but the worst is without justification, because it is impolitic, immoral, and unnecessary.

For about fourteen years (March, 1898) I have been treating ambulant cases of uncomplicated pulmonary tuberculosis in wage earners at a dispensary without interruption to their labor. My purpose has been to work out by experience a systematic treatment which would yield the best results, and from time to time, as progress has been made, details of treatment and results have been published. The percentage of apparent cures reported and obtained in this way now exceeds the percentage of apparent cures reported from sanatoria. The following brief statement of the theory of the treatment employed at the Thompson Street Dispensary seems necessary for a clear understanding of this paper.

No one of intelligence can doubt that the immediate cause of tuberculosis is the growth and multiplication of tubercle bacilli, and on first thought nothing could seem more reasonable in preventing the disease than the effort to destroy all tubercle bacilli. In the light of recorded facts this reasoning does not lead far enough. In the first place, so many observations from trustworthy sources have been published showing the widespread occurrence of active and healed tuberculous lesions in dead bodies that even conservative writers are led to remark that if systematic inspection is made tuberculous lesions are found practically in 100 per cent. of the bodies of adults (Osler). This fact alone raises a doubt as to the feasibility of attempting to control all sources of infection, and makes the theory of isolation of all consumptives as the ultimate goal in prevention an empty dream. It should be remembered that, even if tubercle bacilli should gain entrance into the body and do not multiply no tuberculosis occurs, and if they gain entrance and do multiply and the body subsequently develops a power which prevents their further growth the disease is cured. Numerous observations of healed tuberculous lesions found in bodies dead of other diseases have been published, and show unmistakably that, in the majority of cases, the disease is cured spontaneously. The per cent. of cures so found varies with different observers and in different countries, in some instances being as high as 90 per cent. In view of these facts but one conclusion is possible, viz.: that the natural tendency of the body is to check the growth of tubercle bacilli. If the natural tendency of the body is to check the growth of tubercle bacilli, then a failure of this power is a fault of the body, and this fault then becomes the primary or fundamental cause of the disease. This method of reasoning is not new, and has been vigorously opposed, chiefly on the ground that reports showing the widespread occurrence of the disease and the findings of cured lesions have been exaggerated.

Too many reports, however, have accumulated to give this objection weight at the present time. Now if every adult over 30 years of age is tuberculous (Naegeli), and in the majority of cases the disease is cured spontaneously, the cause and prevention of the disease are presented in another light, and the burden of activity is thrown, not alone upon trying to destroy bacilli, but in trying to discover what is lacking in the treatment of those who fail to recover. The whole effort should be directed toward discovering and correcting this fault, for to correct it is to render the tubercle bacillus innocuous. It should not be thought that I am here advocating less care in preventing the entrance of tubercle bacilli into the body. Nothing could be farther from my idea. For even should the primary cause of the disease be known, and means devised for correcting it, individuals would still exist whose resistance had been lost, and who should, therefore, be protected, as far as possible, from developing the disease. My object is to show that this measure alone, if not impossible of accomplishment, falls far short of the full scope of rational preventive activities. I should mention that personally I believe the fundamental cause of tuberculosis is lime starvation, which is discussed in other papers.

Tubercle bacilli are everywhere about us, and everybody, young and old, in the usual round of human intercourse, takes them, in one way or another, into the body. It is mere vanity to believe that those who escape infection have escaped implantation. The only explanation why the whole adult world is not actively tuberculous is that in the majority of individuals the growth and development of tubercle bacilli is checked. Received in the ordinary number and way tubercle bacilli will not grow in a healthy body. It does not follow from this that the intake of an unusually large number of tubercle bacilli will not break down the natural resistance as, for instance, when an overwhelming dose is injected into a healthy animal.

Natural resistance to the growth of tubercle bacilli is a physiological power. All the powers of the body are maintained by food. The occurrence of tuberculosis at all ages, its long continuance, its exacerbations and remissions, the unexpected cures, the often rapid and surprising progress from bad to worse, are all explained on the assumption that the body alternately loses and regains some element of food essential for the normal growth and repair of tissue. If the losses exceed the gains the disease is fatal. If the gains exceed the loss the disease is cured. All grades are present from an almost equally balanced gain and loss, loss in the ascendant, in which case the disease lasts for years, to continual and extreme loss when the disease is rapidly fatal.

Rest, pure air and an outdoor life. It is evident that the general belief that rest, pure air and an outdoor life are essential agencies in the curative treatment of tuberculosis is the obstacle to be overcome in establishing systematic curative dispensary treatment in cities. That rest (for ambulant cases), pure air and an outdoor life are not necessary for the cure of tuberculosis is as certain as anything of which we have knowledge. Let us examine a few facts.

In casting about in one's mind for an example of an individual the maximum of whose time is passed in the open air of the country we naturally come upon the farmer. For at least eight, and in most cases ten months of the year, his life is spent in the open air, which in the country is pure. If pure air and an outdoor life are preventive and curative, one would logically suppose that a farmer would rarely develop tuberculosis, or, if he did, the disease would rarely prove fatal. Such is not the fact. The 1908 census reports show that in the deaths from all causes among farmers, planters and farm laborers, 8.7 per cent. were due to tuberculosis of the lungs. This does not support the logic. Farmers are freer from tuberculosis than the followers of some other occupations because the death rate for pulmonary tuberculosis reported for all occupations is 15 per cent. There can be no discussion about the healthful or unhealthful effects of various occupations. The deadly character of certain trades is proven. But why attribute the farmer's advantage to pure air and an outdoor life? If these were the factors, then miners, who spend their lives without sunlight and work in a damp atmosphere where the air is neither pure nor fresh, should show the highest mortality rate for pulmonary tuberculosis. Such is not the fact. "In the American figures miners and quarrymen, who are unfortunately associated in a single title, rank low in respect to tuberculosis to 55 years, but after that age are nearly at the top of the list. Miners appear to have a real immunity from tuberculosis, according to the English figures for all ages, and the sudden rise in mortality at 55 years may be due to retirement from this arduous occupation with advancing years." (U. S. Census, Mortality Statistics, 1909.) The mortality rate for pulmonary tuberculosis among miners and quarrymen is 8.7 per cent.

The reports of healed tuberculous lesions found in bodies dead of other diseases have before been mentioned. These reports are so numerous and so well known that it is not thought necessary to quote them in detail here.

If these statistics had been gathered from the examination of dead farmers they might be used, rightly or wrongly, as a strong argument in favor of pure air and an outdoor life. They were not so gathered. On the contrary, the examinations were made in the morgues of large cities and of large hospitals in cities. The bodies were of those who sought hospital relief in their last illness, dwellers of cities, the poorest of the poor, among whom tuberculosis is most common; the bodies of those in whom obviously rest, pure air and an outdoor life could have formed no part of the means which brought about their cure.

In explanation of these cures but one element remains, viz.: food. Probably through some happy accident of diet something was provided by means of which lost resistance was restored and the growth of bacilli checked.

Lastly, the percentage of apparent cures reported from sanatoria where the doctrine of rest, pure air and an outdoor life are practiced is far less than the percentage of apparent cures obtained at the Thompson Street Dispensary, which is situated in New York City, and where wage earners are treated without interruption to their work.

The per cent. of apparent cures reported from six well-known sanatoria, the result of treatment of patients in all stages of the disease, is as follows: Adirondack Cottage Sanatorium, 18 per cent.; Rhode Island State Sanatorium, 18 per cent.; Sharon Sanatorium, 16 per cent.; Massachusetts State Sanatorium, 16 per cent.; New Mexico Cottage Sanatorium, 34 per cent.; Loomis Sanatorium, 10 per cent. These figures give an average of 20

per cent., while at the Thompson Street Dispensary the percentage of apparent cures so far obtained, since the adoption of the lime starvation theory, is 57 per cent.

The small per cent. of apparent cures obtained at sanatoria is undoubtedly due to the fact that such institutions cannot afford to keep their patients, particularly the advanced and far advanced cases, or the patients themselves cannot afford to remain a sufficient length of time to bring about cure. While this may be a correct explanation it affords no remedy. In the very nature of things there can be no remedy for this defect. It is an unchangeable fact due to this method of treatment, and the results must, therefore, be accepted as the best obtainable under this system. On the other hand, a self-supporting consumptive can remain under treatment at a dispensary, without material disadvantage, for years.

In the reports of apparent cures from sanatoria just quoted all the incipient cases, many of whom did not show the presence of tubercle bacilli in the sputum, are included. No incipient cases are included in the Thompson Street Dispensary figures, all were advanced or far advanced in disease, and every patient's sputum showed the presence of tubercle bacilli at the beginning of treatment.

An ambulant case of pulmonary tuberculosis may be in the advanced and far advanced stage of the disease as well as in the incipient stage. Attention is called to the fact that if the cases treated at this dispensary had been selected on any ground, so far as the disease was concerned, other than that they were properly ambulant cases, and if they had consisted mainly of early stage cases, many of whom did not show the presence of tubercle bacilli in the sputum, the percentage of cures would have been much greater.

Do these apparent cures, gained under these circumstances, hold as well as those obtained at sanatoria? To answer this very important question the following comparison is made. The dispensary cases include all the apparent cures (sixty in number) since the beginning of my dispensary work March 14, 1898, up to May 20, 1906. This makes the longest period since the first apparent cure (April, 1898), more than thirteen years, and the shortest nearly six years. These patients were all treated before the adoption of the lime starvation theory. For comparison I find but one report of the ultimate results of apparent cures, viz.: Sharon Sanatorium: 79 arrested cases treated from 1891-1902, last reported upon June 15, 1907. 2.5 per cent. not heard of recently, 25 per cent. died, 72.5 per cent. still living and apparently in good health. Dispensary cases: 60 apparent cures treated from 1898-1906. 3.3 per cent. not heard from recently, 25 per cent. dead, 68.3 per cent. living and working daily, 3.4 per cent. living and not able to work.

Of the 79 arrested cases treated at the Sharon Sanatorium reviewed above, 34 only showed the presence of tubercle bacilli in the sputum at the beginning of treatment. The mild character of the disease in the remaining 45 cases, which failed to show tubercle bacilli in the sputum at the beginning of treatment, is indicated by the fact that 14 of the 18 deaths reported in detail were cases showing tubercle bacilli at the beginning of treatment. In other words, 41 per cent. of the whole number of cases showing tubercle bacilli in the sputum at the beginning of treatment died.

Of the 60 apparent cures treated at the dispensary 3 failed to show tubercle bacilli in the sputum at the beginning of treatment, and 10 were in the early stage of disease. The remainder were advanced or far advanced in disease.

The remedy for the state of affairs described in the foregoing is systematic curative dispensary treatment for all ambulant cases so arranged that the hours of attendance do not conflict with work hours. If the present sanatoria, expensive and in situations needlessly remote from centers of employment, are to be maintained their work should be restricted to the care of advanced cases with continuous fever or complications which require rest. For all other purposes they serve merely as a means of self-indulgence, which only the tuberculous rich can afford. As stated before, systematic curative dispensary treatment has been in operation for about fourteen years in New York City and its practicability proven. At the Thompson Street Dispensary the number of patients is limited strictly to fifty, and every patient is required to report twice daily in all weather, Sundays and holidays included; in the morning on the way to work and again after the last meal in the evening. The dispensary hours are 7 to 8.30 o'clock morning and evening. Once a week all patients are weighed, and the men and women are examined and notes made of their condition on alternate Sundays. Sunday is selected for weighing and examination, because it is not a work day, and, therefore, no time is lost from labor. This work requires one physician and three nurses. The nurses carry out the practical instruction* and are present at all dispensary hours. It requires but 4½ hours a week of the physician's time. Individual supervision and domination are necessary for success, hence the importance of having patients report twice daily and limiting the number to fifty cannot be emphasized too strongly. Because they are self-supporting the patients supply their food, clothing and shelter, the only expense of treatment being rent of dispensary rooms, heat, light, cleaning, salaries of nurses, etc. Based on experience at the Thompson Street Dispensary, where patients pay nothing for treatment, the average cost per patient for twelve months' treatment is about $100.

The benefits to be derived from the practical application of the idea that dispensary treatment is curative would add enormously to the value of results now obtained. If a large city like New York were dotted with such dispensaries it would quickly become known that curative treatment was to be had without interruption to work, and patients in the early stages of the disease would be stimulated to seek advice and place themselves under treatment. It would encourage and ultimately lead to systematic examination of employees, and many large stores and factories would establish their own dispensaries. The coming of patients to the dispensary twice daily disposes practically of all their leisure time, and besides giving an opportunity of thorough training in habits of personal cleanliness breaks up evil associations, if such exist. Having one member of the family in such constant, long and intimate association enables the dispensary to reach and influence the whole family.

Should a self-supporting consumptive, who can afford to pay something, be treated free of cost at a dispensary? If the answer is "no," then why not establish pay dispensaries? The expense, $8.50 a

*The necessity of fresh air, of course, is thoroughly taught.

month, could be met by many wage earners without serious inconvenience so long as they were maintained as wage earners. On the other hand, it is much cheaper for a town, city or state to treat self-supporting curable patients free than not to have them treated at all.

Comparative expense of treatment. At the New Mexico Cottage Sanatorium the average cost per patient for nine months' treatment is said by the physician-in-chief to be nearly $1,000. The yearly cost, therefore, would be $1,332. Assuming this to be the average cost of treatment at most sanatoria and the cost of treatment at dispensaries to be $100 a year, then we have the ratio 13 1/3 to 1.

These figures may be compared in a variety of ways. For instance, for every patient treated at a sanatorium, 13 1/3 patients may be treated at a dispensary; one year's treatment at a sanatorium costs as much as 13 1/3 years at a dispensary; 200 dispensaries, in any large city, treating 10,000 patients would cost $1,000,000 a year, while 10,000 patients treated at sanatoria would cost $13,320,000 a year.

But the economic bearing of this subject is not confined to the cost of treatment. Far from it. The economic value of life saving to a community depends upon the productive ability of the lives saved. How can one discuss seriously the economic value of a life-saving plan which has its widest application in the treatment of the well-to-do and the dependent and which makes no adequate provision for self-supporting wage earners?

185 Madison Avenue.

THE ACTION OF LACTIC ACID BACILLI ON THE PERCENTAGE OF GLUCOSE IN THE URINE IN DIABETICS.

REPORT OF CASES.

By PHILIP HOROWITZ, M.D.,

NEW YORK.

Case I.—A. H., male, white, 66 years old. Native of Russia. Previous history negative as far as present condition is concerned. Family history good; father died at age of 83, and mother at age of 95. Present illness: Was in apparent good health until about a month ago, when patient began to have an intense thirst and very large appetite, anad very frequent micturition. At first he paid no attention to the condition until he noticed that his clothes became loose. Today, February 2, 1911, patient has lost about 30 pounds in weight, is very weak, badly constipated, and complains of sleepiness; claims that he has drunk as much as two gallons of water a day. General physicial examination shows beginning emaciation, marked tympanitis, and distension, otherwise negative. Urine shows traces of albumin, large amounts of indican, 4.78 per cent. glucose, and traces of acetone. I put patient on a carbohydrate-free diet and gave strong cathartics to break up obstinate constipation. The symptoms, however, became more marked and the patient slept all the time. I put patient on a liquid suspension of lactic acid bacilli February 7, 1911. Patient somewhat improved and is much brighter. Examination of the urine showed a reduction of the glucose to 2.72 per cent., but larger quantities of acetone. I allowed patient some cereal as oatmeal and rice and also white bread, and continued the suspension of lactic acid bacilli, February 14, 1911. Patient very much improved and is much brighter, is not so distended, does not drink so much, and has lost sweetish taste which he complained of. Urine shows a reduction to 2.32; no acetone or diacetic acid. Continued the suspension of lactic acid bacilli. February 26, 1911: Patient feels very well; has gained some weight and looks better. He has, however, admitted that he used cane sugar in coffee and has also eaten oranges. Urine shows glucose 1.61 per cent., and traces of acetone. Allowed patient more carbohydrate and kept up the solution of lactic acid bacilli. March 6, 1911: Patient looks very good; has gained all that he has lost; drinks very little and lives on a fairly normal diet. Percentage of glucose down to 0.65 and no acetone or diacetic acid. March 13, 1911: Feels and looks very good. Glucose 0.45; trace acetone. March 20, 1911: Patient appears normal. Glucose 0.12. March 29, 1911: Patient looks normal. Eats everything. Glucose absent. No acetone or diacetic acid. September 16, 1911: Patient in good robust health, eats everything that he was used to eating and shows no glucose or acetone, though he has been without treatment for 5 months.

Case II.—Mrs. H., 48 years old. Native of Russia; present address Wilkes-Barre, Pa. Previous and family history negative. April 9, 1911: Present history dates back to about the beginning of February of the present year. For about two months she had been afflicted with an intense itch of the genitals. Marked thirst and very frequent micturition; has lost some weight and strength and has come to New York for treatment. Examination of the urine shows 0.74 per cent. glucose and traces of acetone. Having had such remarkable results in the first case, this patient was also put on the lactic acid bacilli with a moderate amount of carbohydrates. One week later the patient sent a specimen from Wilkes-Barre, Pa. It was up to 1.55 per cent. but no acetone was present. Treatment continued. April 30. The percentage of glucose still higher, up to 1.6 per cent.; no acetone; rest of specimen fairly normal. Treatment continued May 11, 1911: The patient writes that she feels very much better. The itch has disappeared, does not drink as much and feels very well. The examination of the urine showed an absence of glucose and acetone and the specific gravity, which was always above 1030 previously, came down to 1024. Treatment was still continued and the patient was allowed regular diet. May 23, 1911: Specimen shows no glucose or acetone, but was partially decomposed, so I asked the patient to come to the city. June 6, 1911: Patient appeared for treatment. Feels much better. Looks well, but wants more to eat. She has had some liver yesterday, and would like to know whether she could continue same. Examination of urine showed glucose again up to 1.43 per cent. No acetone or diacetic acid. This high percentage probably due to the ingestion of liver for on warning patient of this no more glucose appeared in the urine. June 10, 1911: Patient feels better. Urine normal. June 22, 1911: Urine normal. Patient feels very well. September 15, 1911: Received letter from patient stating that she feels very well. Urine normal. Had no treatment the entire summer. November 25: Examination of urine negative.

Case III.—Mr. K., 50 years old, native of Germany. April 15, 1911: Has never been ill until present trouble which began two years ago. He is a very heavy beer drinker and uses tobacco excessively. For the past year or more he has been losing flesh and strength, thinks he has lost about forty

pounds, is very weak, and finds it hard to get around. He claims he has become so thin that he cannot sit down for any length of time unless he sits on an air cushion. He has an intense thirst and has very frequent micturition, or, as he expresses it, "he has to live in the lavatory." He has been a conductor on the street cars but is unable to do any work now. An examination of his urine showed 5.8 per cent. glucose, traces of albumin, large amounts of indican, and an occasional hyaline cast. Patient was put on the suspension of lactic acid bacilli and a fairly strict diet and was told that he must abstain from beer entirely. April 19, 1911: Patient does not think he has to drink as much, micturition is positively less, but claims he cannot give up his beer entirely. Still drinks between eight and ten glasses of beer a day. Complains also of sleepiness. Urine shows 4.9 per cent. glucose and traces of acetone. Same treatment continued. May 30, 1911: Patient feels better and looks better. Is very much brighter and is able to get around a little. Has stopped the beer. Urine now shows only 3.78 per cent. glucose and no acetone. May 17, 1911: Patient believes that he has gained some weight, but has pains in the lower extremities and general weakness. Urine shows 3.65 glucose. Trace albumin, no acetone. Was allowed orange juice and baked potato, treatment same. May 28, 1911: Pains in lower extremities much less. Looks much better. Does not know whether he has gained much weight. The percentage of glucose still getting lower. Now it is 2.12 per cent. Same treatment. June 10, 1911: Patient very much better. Has very little pains now. He thinks he will be able to go to work soon. Has put on some weight. Allowed him a more liberal diet. Gave him cereals and a little brandy twice daily. Same treatment. September 12, 1911: I did not see patient the entire summer. But he has continued to take the suspension of lactic acid bacilli. Feels very well. Has attended to his work for the past eight weeks. He has gained considerable weight and eats almost everything. The examination of urine shows only a trace of glucose. And then only it becomes apparent on standing for some time. Treatment still continued. September 28, 1911: Patient is gaining at the average of about one to one and a half pounds per week, and feels as well as ever. Is on the cars from 7 A.M. until about 7 P.M. without any inconvenience or trouble. Urine shows only faint traces of glucose.

Judging from the foregoing cases, and from results I have obtained in other cases since the above were reported, I believe that in lactic acid bacilli we have a preparation which acts potently in the reduction of the percentage of glucose in the urine. But my experience has been too limited to warrant the assertion that the same results can be obtained in every case of glycosuria.

32 West One Hundred and Fifteenth Street.

ENVIRONMENT IN THE TREATMENT OF NERVOUS DISORDERS.

By HANSELL CRENSHAW, M.D.,

ATLANTA, GA.

NEUROLOGIST TO THE WESLEY MEMORIAL HOSPITAL.

Honest and thoughtful neurologists will probably admit that three-fourths of the nervous people who come under the specialist's care are restored to health not by any special skill, knowledge, or medication, but simply by the advantage of several weeks' residence in a suitable sanatorium. If etiology be considered in its broadest aspect it will be seen that the basal cause of all disease is unsuitable environment. But this cause is more directly operative in relation to disorders of the nervous system than in relation to disorders of other systems. Perfect harmony between the organism and its surroundings—climatic, social, esthetic, and so on—is health; partial lack of such harmony is disease; and total loss of it is dissolution, or death. If an individual, healthy at birth, could be shielded like Rasselas from contact with any but the most suitable of friends, food, and influences, he would never suffer from neurasthenia, epilepsy, or many other diseases, however undeveloped his character might remain.

Even heredity is dependent upon environment. For, if our ancestors had not encountered surroundings having an adverse effect upon their nerves, we would not have inherited from them the neurotic tendencies which here and there render us unable successfully to cope with the ordinary exigencies of life. Considering the fundamental importance of providing suitable environment for the sick, and particularly the nervous sick, it is astonishing how we, as a profession, have neglected to recognize environment as a definite therapeutic measure of prime importance. After carefully scanning the indices of a number of such representative works as Osler's "Practice of Medicine," Forscheimer's "Treatment," and Church and Peterson's "Neurology," I fail to find the word "environment" in the index of any of them. There has existed, of course, from time immemorial the practice of prescribing climate—a mountain climate for consumptives, a sea-level altitude for nervous folk, or a change of scene for victims of worry or overwork; but the great principle which I am here endeavoring to emphasize—the principle that difficulties of environment are directly responsible for the onset and continuance of many nervous diseases—seems not to have been grasped and systematically applied.

The following are some of the environmental difficulties which are responsible for various forms of nervous disease: (1) Association with persons of unsound mind may so prey upon a sensitive individual as to create in the latter delusions, hallucinations or actual insanity. Even association with persons of great eccentricity may result in damage to young and impressionable persons. Moreover, association with nagging, menacing, or wholly uncongenial business associates or relatives is often enough to bring on functional neuroses and psychoses of almost any sort. (2) An environment enforcing much solitude or great monotony may induce, in the first instance, psychoses, and, in the second instance, nervous fatigue of grave degree. An illustration of the effect of loneliness is seen in the insanity resulting in prisoners from solitary confinement. (3) An environment involving overwork or worry is calculated to bring on nervous and mental disorders ranging all the way from occupation neuroses, through neurasthenia and hypochondria, to exhaustive psychoses and manic-depressive insanity itself. In many instances, too, there exist unseen difficulties in the surroundings of our patients—difficulties arising out of "associations" in the environment which act as reminders of bygone sins, losses, or crises of perturbing proportions.

Thus, we see that the influences calculated to upset our patients and keep them upset are varied, subtle, and complex. And we should bear in mind

that seldom are the disturbing factors single, the rule being rather that many such factors work together. I am convinced that the chief element for good in the Weir Mitchell rest cure is the isolation element. When a patient takes the rest treatment in strict form, he is as absolutely isolated from friends, relatives, and the outer world as if he had smallpox. He is neither permitted to receive mail nor to read newspapers. He lies day after day and week after week upon his bed in a quiet room, ministered to by an undemonstrative nurse. In a word, he enjoys the most simplified environment conceivable. And I firmly believe that the unmistakable and permanent benefits which have made the rest cure justly famous are chiefly due to the simple and easy life which it insures to the patient.

While I am convinced that simplification of environment, such as the rest cure makes possible, is the greatest single measure for the relief of the majority of so-called functional nervous diseases, nevertheless there is an added advantage from the mere change of environment involved. In this way we can readily see how difficult it is for even the most capable of physicians to obtain the results in the treatment of nervous people that can be obtained by the specialist who furnishes the advantages not only of a change of environment for the patients coming to him, but also of the magic influence of sufficiently simple and suitable surroundings to give nature an opportunity for restoring nervous and psychic equilibrium in the truly marvelous fashion which is her own.

In conclusion I wish to condemn the notion that the rest cure may produce permanent good if applied only for a short time. It should not be shorter than eight weeks. To those who object to the expense and inconvenience of so extended a treatment the answer is that the end justifies the means. For the relief of neurasthenia proper, major hysteria, and hypochrondria—the psychroneuroses which include three-fourths of all the sufferers from nervous disease—nothing equals nature, and the only way to bring nature to bear is to isolate the patient in a suitable manner for a suitable length of time.

1027 Candler Building.

CASES OF IMPERFORATE ANUS AND MALFORMED RECTUM.

By C. P. FARNSWORTH, M.D.,

Chamberlain, S. D.

Two cases of imperforate anus and malformed rectum in girl babies have come under my observation. The first case, that of a child three years old, who had been passing the fecal matter from the vagina since birth, was brought to us by Dr. Gauger of Chamberlain, S. D., four years ago. The child was anesthetized in order to make a thorough examination. The place where the anus should be was marked by a stellate white colored spot. The vagina was dilated slowly in order to make an examination of the opening of the rectum into it. The vagina was found to be intact, the uterus was well dilated, and the rectum was found opening into it by the left upper fornix, where the left Fallopian tube normally opens into the uterus. The child was in normal health otherwise, well nourished, and intelligent. We came to the conclusion that the case was beyond our skill. Should there be anyone who has devised and executed a successful operation for a case of this kind we should be glad to refer the case to him. The parents are poor, so the case would be practically a charity one.

The second case was that of a baby three weeks old referred by the parents in October, 1911. The child seemed normal in every other way except for the complete absence of the rectum or of any spot marking it. The fecal matter was discharging from the vagina regularly. I advised the parents to wait until the child was older before any operative interference should be attempted.

While imperforate anus is quite a frequent malformation, there is but little literature that has come under by observation with reference to it. There are several forms of imperforate anus: Entire absence of the anus; abnormal narrowing of the anus; partial occlusion of the anus; absolute occlusion of the anus, and anal opening at an abnormal point. The malformations of the rectum are: Rectum entirely absent; rectum arrested in its descent; rectum opening into some other viscus; rectum and anus normal except that the ureter, bladder, vagina, urethra, or uterus opens into it. The variations in form and the situation of the large intestine are greatly influenced by the torsion and secondary growth of the early gut tube. The most pitiable of these cases are those of girls who are otherwise normal, whose malformations belonging to the third and fourth classes render them subject to humiliation.

The Hemorrhagic Diathesis.—H. Pribram points out that quite similar clinical pictures belonging to this group may be evoked by the most diverse causes. He reports a fatal case of peliosis rheumatica, of septic origin, beginning with slight manifestations but ending fatally. He also reports a case of hemorrhagic disease arising in a pregnant woman as the result of a traumatism, with stormy onset, but rapidly subsiding.—*Prager medizinische Wochenschrift.*

Sclerosis of the Rectouterovesical Fascia.—J. Oliver states that this is a disorder of some importance, since it is commonly a cause of infertility and even of sterility, as well as a not infrequent cause of dyspareunia. It resembles Dupuytren's contraction of the palmar fascia. Sometimes the fascia is more or less thickened and contracted merely, but often it presents nodulations. It is not an inflammatory change, and it seldom, if ever, involves the mucous membrane of the vagina. The fibrous tissue causing the contraction is a very coherent fibrillar tissue like tendon tissue. It is not dependent upon any traumatic influence, but is probably due to some bacterial product absorbed from the vaginal canal and circulating in the blood. It is a derangement which may appear at any time during the reproductive life of the woman after the age of twenty-one.—*Edinburgh Medical Journal.*

Spread of Infection from Tuberculous Cervical Glands.—A. L. Turner states that as to the manner in which the tubercle bacilli pass from the cervical glands to the lungs two explanations have been offered: first, by way of the deep efferent cervical lymph vessels discharging into the thoracic duct upon the left side of the neck, and on the right side through the right lymphatic duct into the large veins, thence by the right side of the heart and pulmonary artery to the lungs; secondly, by an extension of the inflammatory process from the diseased inferior deep cervical glands directly to the pleura and apex of the lung. Experimental evidence has been brought forward in support of the extension of the tuberculous disease by the first or anatomical pathway, but the author has failed to bring forward pathological post-mortem data in support of direct extension from the cervical glands to the apex of the lung.—*Edinburgh Medical Journal.*

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THE DIAGNOSTIC SIGNIFICANCE OF ABDOMINAL PAIN IN CHILDHOOD.

THE frequency with which abdominal pain occurs as a "presenting symptom" in early life and the extreme importance during this same period of making a timely diagnosis of and prompt operative interference in acute appendicitis impart perennial interest to the discussion of the differential diagnosis of abdominal pains. The "stomachache" of the small child no longer suggests to the laity even the suspicion of overindulgence in green apples, but at once conjures up the specter of appendicitis. H. Finkelstein in the *Zentralblatt für Kinderheilkunde*, January, 1912, presents a clear exposition of this subject, reviewing in a most refreshing manner the multiplicity of conditions that may underlie the expression of this most common symptom.

Leaving out of consideration those cases of acute appendicitis which present a typical and easily recognized clinical picture, the author at the outset alludes to those children who for a long time complain of abdominal pain, sometimes continuous, though varying, and sometimes occurring in attacks of a colicky nature, while vomiting very seldom and fever never occur. The question to be decided in these cases is the following: is one dealing with a case of appendicular colic with the possibility of an invasion of the peritoneum lurking in the background, or are the pains of different origin and of generally harmless import? In all of these cases the signs in the ileocecal region are either negative or inconclusive. Even if the little patient complains of pain in the lower right quadrant of the abdomen, and even though this region may give evidence of considerable tenderness on palpation, the existence of appendicitis is not thereby proved. For it may be discovered frequently that the seat of the pain is in the skin—in other words, that a cutaneous hyperalgesia, generally widespread and extending around to the back, may be present. This is one of the sensitive cutaneous areas now generally recognized as Head's zones. In the case of intestinal diseases these hyperalgetic areas are present in the abdomen and loins and always include the cecal region. The same area may be common to a number of different intraabdominal conditions: disease of the small or large intestine, constipation, diarrhea, and ulceration. Tenderness in the appendicular region does not, therefore, signify solely the presence of appendicitis.

The neuralgia secondary to a caries of the lumbar vertebræ must not be forgotten as a possible cause, while the abdominal pain that may even be localized in the right iliac region and may be accompanied by muscular rigidity, occurring as an early manifestation in pneumonia, is so generally recognized as to require no further comment. Cases that are fairly common are those of fermentative dyspepsia, not merely the pronounced forms with diarrhea and intestinal irritability, but also the lighter forms with symptoms that are not characteristic and that require further analysis. The pains in these cases are moderate but are frequently repeated, while tenderness on pressure is easily evoked the entire length of the colon. The stools, of which there are two or three daily, although sometimes only one, are lighter and softer than normal, have a sour odor and acid reaction, have a tendency to form gas, readily undergo fermentation, and contain considerable starch. By restricting the carbohydrates in the diet the fermentation is arrested and with the occurrence of formed and alkaline stools the pains do not return.

Naturally provocative of severe colic is constipation which, in some children, as the result of bad training and psychic inhibition may reach such a degree of severity as to present the syndrome of ileus—pain, enterospasm, and vomiting. These cases are to be differentiated from cases of appendicitis in constipated children by the presence of visible and palpable peristalsis. It is not generally known, but it has been definitely established, that abdominal pain may occur without any obvious cause in neuropathic children. The attacks may appear suddenly while the child is in the midst of play, but they soon pass over. There may be several attacks daily, or they may be days apart or at longer intervals. Vomiting occurs only exceptionally. Most of the patients have a diastasis of the recti, and commonly manifest neuropathic stigmata such as the facialis phenomenon, vasomotor excitability, etc. Treatment by suggestion, such as the application of a plaster, vibratory massage, faradization, frequently results in a spectacular cure. The explanation of the origin of the pain in this class of cases is a difficult one. Possibly abdominal ptosis or enterospasm may be the causative factor. In a few cases of abdominal pain there may be discovered minute hernias of the linea alba. In all of Finkelstein's cases of this nature the pains eventually disappeared, even though no treatment had been directed against the hernia. Occasionally the cause of abdominal pain may reside in an intestinal stenosis. A pronounced degree of stenosis presents symptoms identical with those of appendicular colic. In the milder cases there is a slight meteorism, vomiting is absent, the general condition of the child is good, and only the attacks of pain indicate a grave intraabdominal condition. In these cases the clue to diagnosis is furnished by a slight spasticity of the intestine. In the long run all of these children get better. There must be borne in mind, however, the possibility of intestinal obstruction caused by peritoneal new growth, usually of a

circumscribed tuberculous character. It need hardly be mentioned that the various other causes of abdominal pain which operate chiefly in adult life are also present, though to a minor degree in childhood. The presence of calculi in various parts of the genitourinary tract is a not infrequent cause of abdominal pain in early life.

The important point emphasized by Finkelstein is that localized pain and tenderness in the ileocecal region are not necessarily an indication that appendicitis is present.

CROWN-GALL AND HUMAN CANCER.

Crown-gall is a disease, so-called because it injuriously affects the crowns of trees and shrubs, but as it occurs also on roots and shoots, its appellation is somewhat of a misnomer. Dr. Erwin F. Smith, U. S. Department of Agriculture, discusses this plant disease (*Science*, February 2, 1912), and traces certain resemblances between it and human cancer.

The resemblance between overgrowths on trees and shrubs and human cancer has been frequently pointed out. This resemblance is ingeniously sketched by the author. The article, however, is too long, and the description of both crown-gall and human tumors of a malignant type is too intricate to be more than referred to. In the first instance the author asserts that crown-gall is a true tumor. The most striking point of likeness between the plant tumor and human cancer noted by the author was that in both the cell itself is a disturbing force.

The following supposition concludes the article: "Suppose we had in human cancer as its cause a microorganism multiplying in small numbers within the cell, having a definite action on cell nuclei, readily inhibited by its own by-products, losing virulence easily, passing quickly over into involution forms, which are difficult to stain, and which are so paralyzed that only a very small portion will grow at all, except from the very youngest cells, and these only after a considerable period of time has elapsed; and further, suppose that for their growth some very special technique of isolation, or some peculiar kind of culture media were necessary, then we should have precisely the same difficult conditions of isolation and determination as have confronted us in case of this similar overgrowth of plants, and ample explanation of why expert animal pathologists have been unable to see the parasite in their sections, and unable to cultivate it on their culture media, and consequently have very generally reached the conclusion that it does not exist. Granted the existence of such an organism, and we have a ready explanation for the growth of the cancer cell in defiance of the physiological needs of the organism. The hitherto inexplicable occasional change in the nature of the cell growth of tumors, that is, from epithelial to carcinomatous, and from carcinomatous to sarcomatous, also finds its explanation in the presence of a sensitive microorganism growing usually in the kind of cell originally infected, but capable under certain circumstances of invading other types of cells."

CREMATION

Cremation of the dead was practised generally by ancient nations with few exceptions. In Egypt bodies were embalmed. In Judæa they were buried in sepulchers. In China, earth burial was the custom. The Greeks, Romans, Slavs, Celts, and Germans burned their dead. Only suicides, unteethed children, and persons killed by lightning were denied the right to be burned in Greece. With regard to modern cremation Italy was the pioneer country. It was first proposed to adopt cremation in Italy in 1866, and the first cremation of a human body in a closed receptacle took place in Milan in 1876. In 1877 cremation was rendered legal in Italy. In Berlin, Leipzig, and Dresden there has been strong agitation in favor of cremation. In the United States cremation is more frequent than in any land. The British Cremation Society was established in 1874. Sir Henry Thompson, the great surgeon who operated on Napoleon III, was a firm upholder of cremation, and was the first president of the British Society.

The reasons for and against cremation have been discussed often, but it may not be out of place briefly to recapitulate them. When the population of the world was sparse and cities few, earth burial presented no grave disadvantages. Now it is a different matter entirely. Churchyards in the midst of crowded cities or cemeteries situated in populous suburbs are contrary to the laws of health. Without exaggeration they may be said to be a menace to the health of the community. Such is obviously the case when persons die from a virulent infectious disease. Indeed, the burial of those who die from plague is believed to be a distinct source of danger. According to many who have written on the subject earth burial of those who have died from diphtheria, scarlet fever, smallpox, typhoid fever, and cholera is to some extent a dangerous custom.

The objections against cremation are religious and medicolegal. The contention is made that burning bodies tends to destroy evidence of crime, and thus to facilitate the escape of criminals. But nobody ought to be cremated without independent certification as to cause of death by two physicians, or if there is then any doubt an autopsy should be made. As for the religious aspects of the matter, the greatest antagonism on the part of some Christian bodies is because of the doctrine of the resurrection of the body, and partly on account of the notion that the Christian dead body is redeemed and purified, a temple of the Holy Ghost. Nevertheless, several saints have been burned, and in reference to bodies it may be pointed out that the earthly body is but a husk. In the words of a part of the burial service "there is a natural body and a spiritual body." The spiritual body, it is taught, never dies, and it is a matter of small moment what happens to the earthly tenement.

From the sanitary standpoint the advantages of cremation are so obvious as to require no elaboration. The custom may upset long-held views, tradition, and sentiment, but from the public health point of view the arguments in support of it are unanswerable

Aberrant Thyroid and Thyroid Metastases.

A year or two ago a distinguished surgeon removed a clinically malignant growth from the occipital bone, and the pathologists to whom the tumor was submitted pronounced it an "aberrant thyroid." There was no question as to the general competence of the pathologist, and none of the medical men who learned of the diagnosis offered any criticism as to the propriety of the term employed. Nevertheless, there is, or should be, a very clear distinction between an aberrant thyroid and a malignant thyroid metastasis to bone, such as occurs in cases of simple goiter and even at times in connection with an apparently healthy thyroid. This is none the less true, even if it is possible for an aberrant thyroid to undergo malignant degeneration. An aberrant thyroid is practically the same thing as an accessory thyroid, and despite the local varieties of the latter their limits are definitely fixed. At a recent meeting of the Berlin Laryngological Society (*Berliner klinische Wochenschrift*, October 23) two men reported cases of this sort—one was retropharyngeal in site, the other retrosternal. Accessory thyroids could hardly be accounted for outside of such limits, for they should have a purely embryonal origin from misplaced embryonal tissue. In no sense can such formations be termed metastases, nor do they possess any natural tendency to malignancy. On the other hand, malignant growths having the intimate structure of the thyroid gland have often been found in the bones and especially in the vertebræ, which is the common localization. It is not surprising that now and then such growths occur in the cranial bones, especially in the occipital region. This relative proximity to the thyroid region is, of course, a pure coincidence. Despite the usual dependence of these tumors on some neoplastic alteration in the thyroid, the latter is not necessarily affected, and for all practical purposes the growths may as well be regarded as primary or essential sarcomata of bone—at least, this would be the diagnosis if the microscope were not available. The case collectors of thyroid bone metastases do not even mention aberrant thyroid in their articles, so fundamental is the distinction between the two affections.

Etiology of Cancer of the Female Genitals.

It has been the general experience that while the etiology, or rather the exciting cause, of superficial cancer is tolerably evident, we are correspondingly ignorant of the causal factors of deep-seated cancer. The very terminology of epithelioma is often suggestive of the causation—smoker's cancer, soot cancer, paraffin cancer, etc., etc., but it would require a prolonged search to find corresponding titles for carcinoma of the viscera, or even for many growths which are of superficial site but not superficial in the technical sense, as scirrhus of the breast. The day is doubtless not far off in which we may be able to group all cancers according to leading determining factors. At least we get that impression from a paper read by Theilhaber last month before the Gynecological Society of Munich (*Münchener medizinische Wochenschrift*, December 12, 1911). It is not that he tells us anything actually novel, but he parades the determining causes of great numbers of cancer in such a way that our conception of their nature is intensified and the question of prevention and cure brought home in a pointed fashion. Cancer of the cervix is practically a "scar cancer," he states. A great deal of cancer of the tubes and corpus uteri might be termed "gonorrhea cancer," because the latter develops as a result of chronic endometritis and salpingitis, due originally to the gonococcus. We also have a "climacteric cancer" and a "senile cancer." There is also an "operation cancer," which is necessarily a recurrence due to inoculation. It becomes painfully evident that the same woman may be exposed to the danger, not only of one, but many, genital cancers.

News of the Week.

Smallpox on the Cedric.—The White Star liner *Cedric*, which arrived on February 28 from the Mediterranean, had on board a case of smallpox among the cabin passengers. The victim was Henry Hayden Sands, the young aviator, who recently distinguished himself by flying over the pyramids.

Automobile Injuries.—Eleven persons were killed and fifty-seven injured by motor vehicles, exclusive of trolley cars, in the streets of New York during the month of February. In two years 263 deaths in this city have been due to that cause. The number of fatalities shows a nearly continuous increase from month to month in the past three years.

Accidents on Street Railways Fewer.—In New York City only 15 persons were killed on the transportation lines during the month of January, according to the report of the Public Service Commission. This is the lowest death toll in any month since the commission began to keep records on July 1, 1907. The total number of accidents during the month was 5,448, and although there were 3,348 persons injured, the number whose injuries were serious was only 170.

Fatalities in Train Wrecks.—According to the bulletin issued by the Interstate Commerce Commission, there were 201 persons killed and 4,283 injured in train accidents during the months of July, August, and September, 1911. This was a decrease of 120 killed and an increase of 391 injured as compared with the corresponding quarter of 1910. Accidents of other kinds on railroads at grade crossings, on tracks, bridges, etc., brought the total number of casualties up to 2,758 killed and 19,107 injured for the quarter, a decrease in the number for the corresponding quarter of the previous year. During the quarter 131 employees of railroads were killed and 23,650 injured in accidents on railroad premises.

Infant Mortality Remains Low.—A bulletin issued by the New York Department of Health shows that for the week ending February 24 there were 258 deaths of babies under one year of age as compared with 309 for the corresponding week of last year. The total number of deaths of infants under one year of age since January 1 amounts to 2,035, as compared with 2,137 for the same period of last year. During this week there were 23 deaths of babies under one year of age from diarrheal diseases as compared with 50 deaths from the same cause in the corresponding period of 1911. The Department of Health now has 33 milk stations opened, 19 in Manhattan, 2 in the Bronx, and 12 in Brooklyn, with a total of 3,011 babies in attendance.

Straus Milk Laboratories Incorporated.—The

Nathan Straus Pasteurized Milk Laboratories, with a principal office in New York City, was incorporated on February 29 for the purpose of establishing milk depots throughout the State, where they will furnish pasteurized milk free or at cost price with the view of reducing sickness among infants.

Saccharin Declared an Adulterant.—Basing their conclusions on the report of the Remsen board of consulting scientists which has conducted investigations into the effect on health of the use of saccharin, Secretary Wilson of the Department of Agriculture, Secretary Nagel of the Department of Commerce and Labor, and Secretary MacVeagh of the Treasury Department, have ruled that on and after April 1 next foods or drugs which contain saccharin will be regarded as adulterated by the Pure Food and Drugs Board and the manufacturers will be prosecuted.

Teach Preventive Medicine Through the Newspapers.—The Georgia State Board of Health, believing that a series of short newspaper letters dealing with sanitation and health subjects will appeal to the people of Georgia, has inaugurated a press service which will be offered to every newspaper in the State.

Scarlet Fever in North Haven, Conn.—Scarlet fever is epidemic in North Haven, Conn., there being about fifty cases of the disease in the town. A dance given in a public hall is supposed to have been instrumental in spreading the disease, as many of those who attended were soon after stricken with scarlet fever.

Cold Storage Turkeys Cause Ptomaine Poisoning.—Twenty cold storage turkeys served at a dinner of the Men's League of the Reformed Church of Belleville, N. J., have been the cause of many cases of ptomaine poisoning. Eight of the sufferers were reported as being in a serious condition.

New York's Death Rate Continues Low.—The death rate for Greater New York for the week ending February 24 was 16.49 per 1,000 population, while for the corresponding week of 1911 it was 17.48. There were eight deaths from typhoid fever which was double the number for the corresponding week of 1911, and 37 more deaths from ear disease. There was an increase of 11 deaths from tuberculosis and a decrease of 14 from pneumonia. Bright's disease and nephritis caused 118 deaths, which was 12 less than for the corresponding week of last year. The deaths of children under five years of age numbered 400, of which 258 were under nine years of age. Almost one-fifth of the number of deaths were among persons over 65 years of age.

Resuscitation from Electric Shock.—The meeting of the Commission on Resuscitation from Electric Shock was held in the board room of the National Electric Light Association on February 22. This commission has for its purpose the study of electric shock and the preparation of a set of rules for first aid in cases of electric accidents. The commission is composed of members of the American Medical Association, National Electric Light Association, and American Institute of Electric Engineers. The members nominated by the American Medical Association are: Dr. W. B. Cannon, professor of physiology, Harvard University, chairman; Dr. George W. Crile, professor of surgery, Western Reserve University; Dr. Yandell Henderson, professor of physiology, Yale University; Dr. S. J. Meltzer, Rockefeller Institute of Medical Research, New York; Dr. E. A. Spitzka, professor of general anatomy, Jefferson Medical College; Mr. W. D. Weaver, editor of the *Electrical World*, secretary. The member nominated by the National Electric Light Association is Mr. W. C. L. Eglin, electrical engineer of the Philadelphia Electric Light Company. The members nominated by the American Institute of Electric Engineers are: Dr. Elihu Thomson, electrician of the General Electric Company; Dr. A. E. Kennelly, professor of electrical engineering, Harvard University. The medical members unanimously advocated the Schäfer, or prone, method, as the best means in the hands of laymen for maintaining respiration in victims of electric shock, and the commission formally voted to recommend this method. A chart is being prepared which will give details of first aid in cases of accidents from electricity and will describe fully the method of applying artificial respiration. This chart is being issued by the National Electric Light Association.

The Committee on Prevention of Blindness of the New York Association for the Blind, in its annual report, states that the census of blind pupils in the United States, as compiled by the committee, shows that there are 2,018 in seventeen schools, 25 per cent. of which were blind as a result of ophthalmia at the time of birth. In their efforts to find out in how far local health officers were able to provide immediate and adequate medical care for cases of ophthalmia, they found that there was need of further provision for such care, although to what extent it was not possible to determine. Investigations in the hospitals and dispensaries of New York show that the disease prevailed much oftener than was generally believed and that the law requiring that redness and swelling of the eyes in the newborn be reported within two weeks after birth to the Board of Health was not generally obeyed. It is hoped that through this investigation and the prosecution of gross cases of neglect with attendant publicity that the law will be enforced and every case reported to the Board of Health. It is hoped that each case reported will be followed up by a competent nurse as in Boston, where, as the result of a campaign of publicity, the number of cases reported has increased from 10 in the month before the first conviction was made to 160 eight months later. Since this follow-up system has been adopted not one case has resulted in blindness. Sets of questions sent to the teachers in the public cities in New York elicited replies from principals indicating that 8.05 per cent. of the 11,280 children examined were suffering from some form of defective vision, and the general impression gained by this study was that a careful and scientific examination of school children's eyes was desirable, and that if the result of such an examination should corroborate the figures quoted above special classes would be desirable for children with seriously impaired vision. The report also states that much blindness is caused by wood-alcohol poisoning.

Protest Against the Health Department's School Inspection.—At the February meeting of the Kings County Medical Society, resolutions were passed protesting against the employment by the Health Commissioner of nurses in the diagnosis and treatment of disease in children of the public schools, and also against the establishment of dispensaries for the treatment of defects in school children.

Nurses Revise Their Charges.—The organized nurses in New York have decided on a flat rate of $4 per day instead of the weekly rate of $25. The reason for the change is given as the increased cost of living and the frequent misunderstandings between patient and nurse as to the proper charge for a part of a week.

Women Physicians Try for Ambulance Service.—At the examinations held on February 29 to fill positions in Bellevue and the Allied Hospitals four women were permitted to take the examinations for the ambulance service; one passed successfully.

Endeavor to Make Central American Ports Sanitary.—The United States Fruit Company is making preparations to maintain a medical department for the purpose of making all Central American ports as sanitary as those of Panama and to supervise the hospital and general sanitary conditions throughout the country. Dr. R. E. Swigert will be the general superintendent of the medical department with offices in New Orleans.

Texas Physicians Want State Medical Board Appointed.—The Texas State Medical Society is preparing a bill to be presented at the next session of the Legislature asking that a State Medical Board consisting of seven members be appointed by the Governor, the board to be composed of all schools of medicine.

Dr. Thomas W. Salmon has resigned his position as chairman of the New York State Board of Alienists. Dr. Salmon, who was granted leave of absence without pay by the United States Public Health and Marine Hospital Service for one year to take up his work in the Board of Alienists, has had the leave extended so as to permit him to make some studies regarding the care of the insane in the United States which will be undertaken by the National Committee for Mental Hygiene.

Dr. Eugene Du Bose Bondurant has been elected dean of the medical department of the University of Alabama, to succeed Dr. Rhette Goode, deceased.

Dr. D. J. Donahue of Glendive, Mont., has been elected President of the State Board of Health.

Dr. Fritz B. Talbot of Boston has been named as consulting physician of the newly created pediatric department of the Union Hospital of Fall River, Mass.

Dr. James R. Hayden, professor of genito-urinary surgery at the College of Physicians and Surgeons, New York, was operated on for appendicitis on March 2 at his home.

Dr. Horace David Arnold has been appointed dean of the Harvard Medical School to fill the place made vacant by the resignation of Dean Henry A. Christian.

Prof. Edward Hickling Jackson, professor of orthopedic surgery at Harvard University, and Professor James Jackson Putnam, professor of diseases of the nervous system, have been made professors emeritus.

Dr. Charles S. Minot, James Stillman professor of comparative anatomy at Harvard Univerity, has been appointed exchange professor at the University of Berlin for next year. His subject at the German university will be embryology. This is the first time that a member of the medical faculty of Harvard has been appointed as an exchange professor.

Seaside Homes for Crippled Children.—A nation-wide movement for the care and treatment of crippled and convalescent children has been inaugurated through the efforts of several well-known women of New York and Brooklyn. The movement has in view the establishment of a chain of homes along both the Atlantic and Pacific coasts where children may be taken from inland cities. Branches of the organization have already been started in many of the large cities and several homes are now in operation. Among the members of the advisory board are Dr. Henry Ling Taylor, State Comptroller; William H. Sohmer, John C. Fitzgerald, Andrew T. Sullivan, and Magnus Gross, president of the New York Teachers' Association.

Favor Continuance of Columbia and Emergency Hospitals.—The committee appointed by the Board of Trade of Washington, D. C., to reconsider the action recently taken to abandon the Columbia Hospital has decided that it would be advisable for the Government to continue to aid the Columbia and Emergency Hospitals, and has urged an appropriation of $200,000 for the construction of a municipal hospital. The report urges an appropriation of $300,000 for the erection of a new building for Columbia Hospital, and $100,000 for aid in the construction of a new emergency hospital. It is understood that a minority report will be brought in by those who take the position that private and governmental charities should be distinct, and that a municipal hospital should be erected to care for all charity work for which the Government pays.

Beth-Israel Hospital to Be Enlarged.—The annual report of Beth Israel Hospital, which is located on the lower East Side of New York, shows that during the year 1911 there were 1,948 patients who received treatment, while 2,047 were rejected because of lack of hospital accommodations. It was announced that the building fund of the hospital now amounts to $198,000, but the question remains undecided as to whether it would be better to enlarge the present hospital or to build a much larger institution elsewhere.

Babies in Brooklyn Hospital Poisoned.—A maid of all work has confessed to having poisoned eight babies in the Infants' Hospital of the Brooklyn Nursery by placing oxalic acid in the milk bottles. Four of the babies have died, and it is believed that four will recover. It is the belief of the hospital authorities that the perpetrator of this crime is insane.

Charitable Bequests.—Among the beneficiaries of the will of Harriet Demuth are the following: Mount Sinai Hospital, $1,000; Home for Aged and Infirm Hebrews, $2,000; Montefiore Home, $1,000; New York Society for the Improvement of the Poor, $1,000; Visiting Guild for Crippled Children, $2,000; German Hospital, $1,000.

The Fourth District Medical Society, which met at Columbus, Ga., on February 20, elected the following officers: *President*, Dr. H. J. Goodyear of Roopville; *Vice-President*, Dr. Martin Crook of Columbus; *Secretary-Treasurer*, Dr. Homer Boatwright of Carrollton.

The Lavaca County Medical Association, which met at Yoakum, Tex., on February 17, elected the following officers: *President*, Dr. J. F. Lay of Hallettsville; *Vice-President*, Dr. A. M. Kotzebue of Moulton; *Secretary-Treasurer*, Dr. W. Shropeshire of Yoakum; *Delegate to State Medical Association*, Dr. A. M. Kotzebue.

The Tri-State Medical Society, which met in

Columbia, S. C., on February 22, elected the following officers: *President*, Dr. A. E. Baker of Charleston, S. C.; *Vice-Presidents*, Drs. A. B. Knowlton of Columbia, S. C.; A. J. Crowell of Charlotte, N. C., and A. L. Gray of Richmond, Va.; *Secretary-Treasurer*, Dr. R. E. Hughes of Laurens, S. C.; *Members of Executive Council*, Drs. R. B. Epting of Greenwood, S. C.; Southgate Leigh of Norfolk, Va., and J. H. Wey of Waynesville, N. C.

The Bronx Medical Association has elected the following officers for 1912: *President*, Dr. Charles Graef; *Vice-Presidents*, Drs. Benjamin T. Tilton, and Francis L. Donlon; *Recording Secretary*, Dr. William J. Walker; *Corresponding Secretary*, Dr Arthur T. Butte, Jr.; *Financial Secretary*, Dr. Edward R. Cuniffe; *Treasurer*, Dr. Carl Wurm.

The Jackson County (Ga.) Medical Society at the first of its three annual meetings at Jefferson on February 13, elected the following officers for the ensuing six months: *President*, Dr. Lactus Sanders of Commerce; *Vice-President*, Dr. E. M. McDonald of Jefferson; *Secretary-Treasurer*, Dr. J. C. Bennett of Jefferson.

Obituary Notes.—Dr. Arthur Kendrick MacDonald died at his home in Princeton, N. J., on February 29, at the age of sixty years. He was graduated from the University of Pennsylvania in 1875, and was for many years the Princeton University athletic physician, and at one time attending physician to President Cleveland.

Dr. Robert A. Corbett, a graduate of the Medical Department of Victoria College in 1860, died at his home in Port Hope, Ontario, on January 27 at the age of 75.

Dr. Patrick H. Harriman of Norwich, Conn., a graduate of the New York University Medical College in 1884, died on February 19 at the age of 52 years.

Dr. William W. Knight of Sharon, Conn., a graduate of the Berkshire Medical College, Pittsfield, Mass., in 1853, died on February 18 at the age of 79.

Dr. Ralph Melville Mead died after a brief illness at his home in Brooklyn on February 16. He was graduated from the Long Island Medical College Hospital in 1882.

Dr. William B. Martin of Sherrard, Ill., a graduate of Rush Medical College, Chicago, in 1888, died recently at the age of 52.

Dr. W. A. Daniel of Traer, Ia., died on February 12 at the age of 87 years. He was graduated from Rush Medical College in 1852 and during the Civil War was commissioned as surgeon of the Twenty-fourth Iowa Regiment.

Dr. J. J. Williamson of Cleyburne, Tex., a graduate of the Medical Department of Tulane University, died at San Angelo, Tex., on January 26.

Dr. Joseph Lawrence Nevin of Jersey City, N. J., died of peritonitis on February 26, at the age of fifty-nine years. He was graduated from the New York Homeopathic Medical College and Hospital in 1878.

Dr. John P. Curley of Providence, R. I., a graduate of the Harvard Medical School in 1878, died at the home of his brother, the Rev. William S. Curley, in Fall River, Mass., on February 20, at the age of fifty-five years.

Dr. Fred. Nelson Burnett of Attleboro, Mass., a graduate of the Long Island Medical College and Hospital, died suddenly in Dorchester, Mass., on February 20, at the age of fifty-two years.

Dr. Wenceslas Jean Baptiste Chagnon died at his home in Fall River, Mass., as the result of a stroke of paralysis on February 22, at the age of seventy-four years. He was born in Rouville, Province of Quebec, in 1837, and was graduated from the medical department of New York University in 1860.

Dr. Joshua F. Lewis of Malden, Mass., superintendent of the adult poor of the State Board of Charities, died in the Massachusetts General Hospital of asthma and heart trouble, on February 26. He was born in Provincetown in 1855, was graduated from Dartmouth College in 1879, and from the Harvard Medical School in 1887.

Dr. Henry Nelson Winton, head of the department of chemistry in the Oakland College of Medicine, died suddenly on February 20. He was born in Haywards, Cal., in 1862, and was graduated from the medical department of the University of California in 1885, and from Jefferson Medical College in 1886.

Dr. William Smith, the first graduate from the school of osteopathy in Kirksville, Mo., died in Dundee, Scotland, on February 21. He taught surgery and anatomy in Kirksville for more than fifteen years.

Dr. George Henry Deming, a well-known veterinary of Springfield, Mass., died in the Wesson Memorial Hospital on February 24, at the age of fifty-four years.

Dr. Josiah Hamilton Goddard of Orange, Mass., a graduate of the College of Physicians and Surgeons of New York City in 1861, died on February 21, at the age of eighty-two years.

Dr. Ludwig Pauly, a graduate of the Chicago Homeopathic Medical College in 1879, died of pneumonia at his home in Milwaukee on February 21, at the age of eighty years.

Dr. John Henry Baker Denton of Freeport, L. I., died in St. Petersburg, Fla., on February 26, at the age of sixty-one years. He was graduated from the medical department of the New York University in 1871.

Dr. John W. Parsons died of pneumonia at his home in Portsmouth, N. H., on February 28 at the age of seventy years. He was graduated from Harvard Medical School in 1865, was president of the American Medical Association in 1884, president of the Stratford Medical Society in 1884 and 1889, and of the Harvard Medical Alumni in 1891. In 1865 he was commissioned assistant surgeon of the Twenty-fourth Massachusetts Volunteer Infantry.

Dr. Frederick B. Lawson of Newton, Mass., a graduate of Berkshire Medical College, a retired physician, died at his home in Acushnet, at the age of seventy-three years.

Dr. Fred N. Burney of Attleboro, Mass., a graduate of Long Island College Hospital, Brooklyn, in 1892, died suddenly of heart failure February 21, at the age of fifty-two years.

Dr. Edgar T. Newsome of Boston, Mass., a graduate of the Medical School of Harvard University, Boston, at one time superintendent of the Copp Sanatorium at Nashau, N. H., died on February 6 of typhoid fever, at the age of thirty-eight years.

Dr. Charles Robert Sanger, professor chemistry and director of the chemical laboratory of Harvard University, died at his home in Cambridge on February 25, at the age of fifty-two years. He was at one time Professor of Chemistry at the United States Naval Academy at Annapolis, and

later occupied the Chair of Chemistry at Washington University, St. Louis.

Dr. PATRICK H. HARRIMAN, a graduate of the New York University Medical College in 1884, died at his home in Norwich, Conn., on February 17, at the age of fifty-two years.

Dr. FREDERICK W. BUECHERT of St. Louis, Mo., died after a six months' illness at the Alexian Brothers' Hospital, on February 21, at the age of sixty-four years.

Dr. WILLIAM R. HITCHCOCK, a graduate of the New York University Medical College in 1878, died at his home in New York City on February 25, at the age of forty-two years.

Dr. HUGH P. KIBY, a graduate of the South Carolina Medical College in 1908, died suddenly at his home in Loris, S. C., on February 25, at the age of twenty-eight years.

Obituary.

LEONARD WEBER, M.D.

NEW YORK.

Dr. LEONARD WEBER, professor emeritus of general medicine at the Post-Graduate Medical School, former president of St. Mark's Hospital, and a well-known and highly esteemed practitioner of this city, died at his home on March 1, at the age of seventy-five years.

He was born in Bavaria, Germany, and was graduated from the University of Erlangen in 1860. Three years later he began the practice of medicine in this city. From 1867 to 1870 he was visiting physician to St. Francis' Hospital. In 1890 he was elected president of St. Mark's Hospital. In 1865 he became professor of general medicine in the Post-Graduate Medical School, a position he held until 1910, when he was elected emeritus professor. In October of that year the medical faculty of the University of Erlangen, Dr. Weber's *alma mater*, bestowed upon him a signal honor by renewing his diploma on the fiftieth anniversary of its granting, and announcement of this honor was accompanied by an appreciative letter from the president of the faculty.

Dr. Weber was a member of the New York County and State Societies, the New York Academy of Medicine, the American Medical Association, the American Climatological Society, and the National Association for the Prevention of Tuberculosis.

CHARLES BELL CONVERSE, M.D.

JERSEY CITY.

Dr. CHARLES B. CONVERSE, County Physician of Hudson County, N. J., for thirty-six years, and one of the best known medical men in the State, died on Monday of this week at the age of 70. He was born in Norwich, Vt., and was graduated from Dartmouth College in 1863. He studied medicine at the Georgetown University, from which he was graduated in 1870. He took a second degree from the Bellevue Hospital Medical School in 1871. He then served as interne for a year in the City Hospital, Jersey City. He began the practice of his profession in 1872. In 1876 the Hudson County Board of Freeholders appointed him County Physician, a position he held until his death.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

LISTER—VACCINE TREATMENT OF PUERPERAL SEPTICEMIA — INSURANCE DISPUTES — MR. LLOYD GEORGE'S ATTACK ON THE ROYAL COLLEGES, ETC.—PROFESSOR ODLING—KALA-AZAR—OBITUARY.

LONDON, Feb. 15, 1912.

LISTER died on the 10th inst., in his 85th year. This was an event of universal as well as medical import which, like the rest of the world, you will have learned by telegraph. The funeral is being held today. The authorities desired that it should be in Westminster Abbey, but the family declined that honor, in deference to a wish once expressed by the deceased to be placed in the same grave as his wife. A part of the service is being held in the Abbey this afternoon, which affords the opportunity of assembling in his honor to numerous scientific and medical friends. I say nothing of his work. You know it, as do your readers, and one may say, as all the scientific and medical world. There is one feeling to mingle with that of loss. He had the satisfaction of living to see the results of his labors.

In the Section on Obstetrics and Gynecology (R. S. M.) Dr. G. T. Western gave on the 1st inst. an interesting account of an investigation in the bacteriological laboratory of the London Hospital respecting 100 cases of puerperal septicemia treated with vaccines. Some two years ago a report as to 20 of these cases was given to the Hunterian Society and they were included in the present statement. The patients were admitted to the ward set apart for such cases and drawn from the neighborhood after confinement, often in unsanitary homes. In reference to the wide differences as to what should be included in the term puerperal septicemia, Dr. Western suggested that was not in most cases a condition in which multiplication of bacteria takes place in the blood to any great extent, but rather one in which there is a local infection, around which a localizing barrier has not been set up by the tissues, so that bacteria are more or less continually being carried into the circulation, where they do not long survive unless they form an embolus or get caught in a thrombus. In such case pyemic abscess might follow. Puerperal fever then would include (1) localized bacterial infection in the genital tract with toxemia; (2) such local infection from which bacteria are carried into the blood stream, continuously or discontinuously. Group 2 comprises the true septicemias, but the two groups merge so much into each other that, clinically, they cannot be separated, and perhaps this may explain the diversity of opinion as to the mortality. A carefully arranged table of the 100 cases was exhibited. Fifty-six of them were treated with vaccines. The conclusions arrived at were (1) the mortality of cases in which there is definite bacteriological evidence of bacteria in the blood stream ranges from 85 to 95 per cent.; (2) this mortality, by inoculation with autogenous vaccines, may be reduced to about 55 per cent.; (3) among notified cases the mortality was about 60 per cent.; but (4) this could be reduced about half with appropriate vaccines; (5) if in any case the uterine cavity should be explored the opportunity of obtaining a culture at the same time should not be lost; (6) stock vaccines give inferior results and should only be used when autogenous ones cannot be obtained.

In the discussion of this paper Dr. Williamson said that in some cases bacteria were only in the blood for a brief period and practically innocuous. But when they multiplied rapidly they constituted septicemia. He would not agree that the uterus was normally sterile throughout the puerperium. He strongly favored autogenous vaccines, but to obviate delay he would use a serum *pro tem.* Dr. Inglis Parsons spoke of the difficulty of determining the state of the blood. If the opsonic index were much below normal that might be a negative phase from absorption of autotoxins, or else a normal low position of the index. In the former case an antiserum was the best treatment; in the latter a vaccine. Dr. Amand Routh held that vaccine therapy was of use when puerperal infection of the uterine mucosa was localized by exudation around it (peri- and para- metritis). But if the bacteria were in the blood they would stimulate the formation of antibodies, and the addition of more bacteria, even if dead, did not seem likely to do good. Most of Dr. Western's cases had a good chance of recovery, as they came under treatment more than ten days after infection, for severe septicemia cases generally die within ten days. Dr. Topley did not think it safe to use an autogenous vaccine in 24 hours without subcultures to ensure sterility. Nor was it of no import to introduce a few living organisms in septicemia, for they would be an unknown number in a very brief period. In his reply Dr. Western admitted that success was greatest in the less rapid cases, as might be expected. The most virulent cases would be the most difficult to save, and if he could reduce their mortality 50 per cent. in other cases, to save these would bring it to zero. The differences of opinion as to the uterus being sterile he attributed to differences of the method of taking cultures rather than to the date of obtaining them.

The lecturing campaign to persuade the people of the value of the Insurance Act has been started. Mr. Lloyd George inaugurated it by a speech at what was called a conference, but the audience was strictly partisan, admission being by ticket only, obtainable from two Liberal societies. The chair was occupied by the Liberal chief whip, who promised to instruct all his paid agents to urge that only Liberals can be credited with any benefit from "our act." Mr. Lloyd George then addressed this "conference" in which there was no pretense of conferring. He accused his opponents of "misrepresentations, distortions, falsifications, downrighters," and other iniquities, but his critics are saying he must have been enumerating his own transgressions. He charged all who asked for delay with "inhumanity," but did not tell his hearers that he had himself given his insurance commissioners full power to order postponement if they found it advisable to do so. Passing from his general to his medical critics, he poured the vials of his wrath on the latter and warned them that if they continued to oppose him their last state should be worse than the present. One of his audience, calling on me the next day, was much impressed with this, and said he was sure the profession had better hasten to make some compromise, for the Chancellor was determined to hand them over to the Friendly Societies. He told me, too, that Mr. George warned them if they refused to act the country would be covered with dispensaries. I suggested that dispensaries would require doctors, and he said he felt that while the Chancellor was talking. The climax of anger was reserved for the Royal Colleges and General Medical Council, who had declined to meet the commissioners on the ground that the "medical benefits cannot be carried out with due regard to the interests of the public and the welfare of the profession without an amending act." This Mr. George called "rude ineptitude," and declared that "no strike committee in the land would have demeaned itself" by refusing to meet a government department. He sneered at critics who thought he was so simple as not to protect himself against refusal of the doctors to work the act. Large powers of suspension were inserted in the act for that very purpose and there would be no hesitation in using them. All the safeguards of the doctors in the act would be swept away if they would find themselves in the hands of the Friendly Societies without any appeal. And it will not only be those societies as heretofore, for all the trades unions and some other societies will be with them. To them will be handed the money for medical benefits, and the doctors must deal with them.

Yesterday the presidents of the two Royal Colleges issued a reply to the Chancellor's charges. Their language contrasts vividly with his, as they leave the public to judge whether their refusal to attend the commissioners' conference is rightly described by him as "curt, undignified, and discourteous." They point out that on the introduction of the bill they informed the government how it militated against the profession, but the act shows how little attention was paid to their suggestions. But the invitation of the commissioners was not to discuss these points, but to ask their aid to carry out a scheme which they have consistently maintained would be injurious to their constituents, to the insured persons, and so to the community. Whether to decline such an invitation was an example of "rude ineptitude utterly without parallel in the history of this country" they leave to the public to decide, adding that some may think the description would more aptly apply to those who initiated the measure before consulting any representatives of the profession who would have to carry it on.

Dr. William Odling, after forty years' tenure of the professorship of chemistry at the University of Oxford, has sent in his resignation, to take effect at the end of next summer term.

Sir Ronald Ross has received a telegram from Surgeon-General Gannerman of the Indian Bacteriological Laboratory, stating that Captain W. S. Patton, I. M. S., of the King Institute of Preventive Medicine, Madras, has traced the complete development of the parasite of kala-azar in Indian and European bedbugs.

Simultaneously with an increased death rate there was a fall in the birth rate of the last quarter, ending December 31. This fall was more than in any fourth quarter since the establishment of registration. The natural increase of population in England and Wales by excess of births over deaths was last quarter 85,484. The previous year's fourth quarter figures were 90,061. In 1909 they were 92,147.

Sir William H. Allchin died on the 8th inst., aged 65. You will know the "Manual of Medicine," which he edited, and some of his many practical contributions to societies and journals. He was a popular dean of the Medical School of Westminster Hospital, to which he was attached for many years, passing through the several positions up to consulting physician. He was a senator of the University

of London, and served as an examiner to that as well as to the Conjoint Board of the Army and Navy Boards. He was one of the physicians-extraordinary to the King. He qualified in 1869; took M.B., 1871; M.D., 1892. He was elected F.R.C.P., 1878; censor, 1903, and in due succession Harveian, Bradshaw, and Lumleian lecturer. He received his knighthood in 1907.

The death is also reported of Dr. D. Mackinder, M.D. and F.R.C.S. Latin, at Hove, at the age of 93.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

MEDICOLEGAL QUESTIONS CONCERNING ALIENISTS—PSYCHIATRY AND THE PUBLIC—UNJUST ACCUSATIONS AGAINST DIRECTORS OF HOSPITALS FOR THE INSANE—COMMITMENT OF THE INSANE.

BERLIN, January 30, 1912.

A FEW weeks ago the medical profession in Berlin was greatly aroused over certain legal decisions on medical questions. The entire situation has been illumined in an excellent address presented before the Berlin Medical Society by Leppmann, and entitled "Questions of the day concerning alienists." He began by establishing the fact that of all the branches of medicine psychiatry stood alone not merely in not evoking the support of the laity, but even in exciting its antagonism. The result has been that recently inmates of asylums have been released, suits for damages have been brought by former inmates against directors of these institutions, and the most preposterous assertions have been spread broadcast in the daily press. The causes of the false notions entertained by the public as to the methods of the alienists lie principally in the fact that laymen regard insanity as incurable. They do not realize that there are periodical diseases of the mind in which the affected individual at times appears to the inexpert observer to be entirely normal. This is true not only of general paralysis, but also of degenerative diseases of the nervous system characterized by delusions. In these cases the condition of the patients before entering the asylum should be the criterion rather than their condition when surrounded by the favorable influences of asylum life. Failure to observe this rule accounts for the unjust accusation that directors of asylums harbor sane individuals in their institutions. Recently attacks have been made upon the methods of running private sanatoria for the insane. A striking instance of this occurred when an attorney suddenly appeared in one of these institutions and on the basis of a court order demanded the immediate release of an inmate. This peculiar state of affairs depended, on the one hand, on the imperfect statutes, and, on the other hand, on the narrow views of the court. Not long ago in the vicinity of Berlin the rights of directors of institutions for the insane were invaded with the sanction of the prevailing law. A barrister secured a court order giving him permanent access to an insane client. In matters of this kind a special law should be enacted giving directors of hospitals for the insane the right to exclude persons who may be detrimental to the welfare of the institution.

During the past few years suits for damages have been increasing. Those actions that have been brought against surgeons for unsuccessful operations have not been as unreasonable as those brought by insane individuals. In the former the physician is often in a position in which he is unable to vigorously defend himself. For example a woman claimed damages because her physician had directed the surgical nurse to perform a cerebral puncture, as the result of which marked syphilitic infection was demonstrated and contrary sexual feelings were aroused. Several lawyers dragged this case through a number of courts for an entire year, until their client obtained a verdict of $17,500. In addition to this loss the defendant had had years of worry, loss of time, and legal expenses. All of these might have been avoided if a preliminary examination had been ordered by the court as to the sanity of the plaintiff. The laws in Germany governing commitment of patients are not far-reaching enough and do not sufficiently protect the directors of hospitals for the insane. An instance of this is furnished by the following: An individual was committed by the court for having in moments of insane jealousy accused his wife of infidelity. The higher court, although it admitted the existence of insanity, ordered his release on the basis of the fact that the patient was able to follow his occupation as a master carpenter. Following his release, the latter brought suit for damages against his wife, the physicians, and the witnesses who had testified as to his mental condition. The trial, which will undoubtedly end with the rejection of the plaintiff's claims, will nevertheless prove a source of embarrassment to the physicians concerned. These instances cry aloud for a reform in the legal procedure of committing individuals to hospitals for the insane. In a case in which complete commitment is not feasible the court should at any rate have the power of partly restraining the business activity of the individual concerned. The speaker concluded his most illuminating address with the following recommendations: First, there is needed an insanity law which will regulate to the minutest details the commitment of the insane and the rights of the directors of asylums. Second, there are necessary revisions of the statutes relative to the restriction of the freedom of insane individuals in order that the latter may be protected from injuring themselves and prevented from injuring others.

Progress of Medical Science.

Boston Medical and Surgical Journal

February 22, 1912.

The End Results of Surgery in Neurasthenics and on Neurasthenia. (With a Report of Forty-nine Cases.) E. Reynolds.
The Class Method in the Home Treatment of Tuberculosis and What It Has Accomplished. J. H. Pratt.
Primary Tumors of the Spleen. Report of a Case. G. McConnell.
Urinary Infection. B. Tenney and H. M. Chase.
The Prevention of Eclampsia. A. B. Emmons, 2d.
A Case of Chylous Ascites. Venous Peritoneal Anastomosis. Recovery. G. W. Morse.

End Results of Surgery in Neurasthenics and on Neurasthenia.—E. Reynolds summarizes as representing his own opinion a recent discussion on the subject of the end results of surgical work in neurasthenics. Neurasthenia is fundamental in the individual, i. e., typical neurasthenias appear only in individuals who are in one way or another ill developed or underdeveloped. Neurasthenia in itself is never an indication for surgical treatment, *i.e.* operations upon neurasthenics undertaken for conditions which would not warrant these operations in sound individuals are always injurious to the neurasthenic. Neurasthenia is not necessarily a contraindication to operation. Neurasthenics who are afflicted with remediable lesions which are causing symptoms sufficient to warrant operations in other individuals may expect the same benefit to their general health which would be expected in

sound individuals. In short, neurasthenics should not be denied the benefits of surgery. The author cites cases illustrative of a few of those causes of neurasthenia which are most common in gynecological practice. The first case illustrates the fact that the mere use of the generative organs may in some women precipitate a fatigue neurosis. The second case shows that imperfect generative development which is not important during maidenhood may be productive of symptoms after matrimony. The lesson taught by the third case is that a moderate autointoxication by the products of an inflammatory lesion may be the exciting cause of a neurasthenia.

Class Method in Treatment of Tuberculosis.—By J. H. Pratt. (See Medical Record, vol. 80, page 697.)

Primary Tumors of the Spleen.—G. McConnell notes the rarity of tumors of the spleen. The primary tumors of this organ are of necessity of the connective tissue type. From the trabecular cells there can develop the connective tissue tumors of the adult type, such as the fibroma, osteoma, lymphangioma, and hemangioma. The small round lymphoid cells may become greatly increased in number and give rise to considerable confusion, owing to the fact that in leucemia these cells are also increased. An endothelial proliferation may be present in many conditions, as in pseudoleucemia, Banti's disease, and primary splenomegaly. The author reports a case of endothelioma of the spleen in which there was a breaking down of splenic tissue due to the effect of a laceration aided by the erythrolytic action of the proliferating endothelial cells.

Urinary Infection.—B. Tenney and H. M. Chase state that bacteria of various sorts appear in the circulating blood and pass into the kidneys. These bacteria may filter through and leave no trace, they may damage the kidney in passing, or they may make a prolonged and destructive stay in the kidney. Meinhertz and others have shown that ligating the ureter on one side is followed by a venous hyperemia and a slowing of the venous current in that kidney. Meinhertz has found that tubercle bacilli in the blood during this condition are much more likely to settle on the affected side, in the capillaries and not in the tubules, and that they are found in connection with capillary thrombi. The authors' working theory based on these facts is that all causes producing obstructions to the flow of urine increase the chance of renal infection while they last and the rest of the process depends on the appearance of certain bacteria at the favorable moment. Their treatment based on this is the attempt to remove all causes of back pressure and to reduce the supply of bacteria in the circulating blood in all reasonable ways. When the infection is known to be tuberculous in only one kidney and the ureter is not greatly thickened, a few months of hygiene and the regular tuberculosis cure may be permissible for the patient whose financial means and disposition permit. A tuberculous kidney with a thickened ureter in the average patient seriously interferes with his comfort and his convenience, is almost certainly a progressive menace to health, leads to an extremely painful last illness, and needs nephrectomy like a malignant disease.

The Prevention of Eclampsia.—A. B. Emmons, 2d states that the prevention of eclampsia depends upon a system by which the earliest symptoms are recognized and the patient put in the care of an expert without delay. The types of women predisposed are those with constitutional nervous weakness; those under emotional strain, as unmarried girls; those with first pregnancies; those with chronic kidney disease, due often to a contagious disease in childhood, as scarlet fever; women accustomed to overeat and who are addicted to chronic constipation, and those who drink too little water. Eclampsia is more apt to occur in pregnancies developing great distention, as with twins or hydramnios. The suggestive signs and symptoms are headache; fear or dread, nervousness or anxiety; sometimes dullness or stupidity; disturbances of vision, as dimness, dizziness, spots or flashes before the eyes (albuminuric retinitis); scanty urination, with a large or small amount of albumen; swelling of the feet, hands or face; and high or increased blood pressure. A third class of symptoms may be distinguished: those which immediately precede, accompany or follow the convulsion, epigastric pain, complete anuria, jaundice, labor pains, total blindness, hallucinations, a somnolent condition, unconsciousness, and coma.

Chylous Ascites.—G. W. Morse reports a case of this condition in a man aged forty-two years. Repeated tapping was performed, but the fluid reaccumulated each time. Recovery finally occurred after anastomosis of the internal saphenous vein with the peritoneum. The etiology of this case could not be ascertained. The various causes to which chylous ascites has been attributed are chiefly the following: syphilis, filariasis, inflammation of the thoracic duct, pressure from a tumor, tuberculosis, thrombosis, rupture of the thoracic duct or transudation through its wall, and exotosis of the vertebræ.

New York Medical Journal.

February 24, 1912.

Relation of Intestinal Toxemia to Chronic Arthritis. C. C. Sutter emphasizes the fact that in some cases of chronic arthritis no definite cause can be discovered, while in others the removal of intestinal toxemia has been followed by cure or the symptoms have been relieved. On the other hand, he does not wish to create the impression that all cases of intestinal toxemia are accompanied by arthritis or that all such cases lead to organic disturbances. One must not overlook the fact also that intestinal toxemia often occurs secondary to arthritis. The toxemia which in one case may be the cause of arthritis, in another may manifest itself in arteriosclerosis; Bright's disease; cirrhosis of the liver; catarrhal otitis media; vascular and functional disturbances of the eye; skin lesions; functional disorders of the heart and vasomotor system; neurasthenia; obstinate headache; epileptoid attacks, etc. The following diseases are occasionally accompanied by arthritic manifestations: typhoid fever, bacillary dysentery, appendicitis, amebiasis, fecal retention, and various forms of ptosis of the abdominal viscera.

Creative Surgery.—R. Bellamy adopts this term as descriptive of the results obtained by him in restoring losses of continuity in tissues. He utilizes for this purpose grafts consisting of cells from the inner cellular membrane of the hen's egg, or strips of this membrane. These are applied to the wounded surface, after this has been rendered as nearly aseptic as possible. The grafts are preserved in a solution having the composition of sea-water, which solution is also used as a dressing for the grafted surface. From time to time new cells are introduced to facilitate the growth of structures or to hasten the growth of granulating surfaces. Sterile dressings are applied, but should not exclude atmospheric air, whose presence is necessary to hasten the growth of the tissues. The author reports a series of seventeen cases in which his method was successfully employed.

Sarcoma of Inferior Maxilla.—J. D. Whitall reports the case of a man aged twenty-three years, from whose

lower jaw the author removed successfully [illegible] and cervical sarcoma.

Combined Infestation with Ascaris and Hookworm.—E. Peelverta reports the case of a boy aged five years who, despite a combined infestation with ascarides and hookworms displayed remarkable powers of resistance following the receipt of an extensive lacerated wound of the arm and tetanic infection. The patient recovered.

Extradural Hemorrhage.—B. T. Tilton reports a case of emergency surgery, with inadequate instruments, performed in the Adirondack woods. The patient was a physician who had received a blow on the head, and shortly afterward presented evidences of extradural hemorrhage. The only instruments that the author could secure for making an opening in the skull were a small antiquated trephine with several teeth gone, a small gouge, and a carpenter's hammer. The trephine proved worthless, so the operator was compelled to chisel out the bone over the selected area. A collection of fluid blood estimated at about a small cupful was exposed and evacuated. There was discovered a wound in the posterior branch of the middle meningeal artery. As soon as the blood escaped, the brain began to pulsate normally and the congestion diminished. A small drain of plain gauze was inserted to prevent further hemorrhage and the wound was closed down to the drain. The patient made an uninterrupted recovery.

Fibrous Tuberculosis of the Peritoneum.—By C. L. Hall. (See MEDICAL RECORD, January 27, 1912, page 100.)

Anesthesia in Tonsil Enucleation.—G. Garthwaite-Fisher states that local anesthesia may be efficiently applied in the enucleation of the tonsil. Different solutions may be used to produce satisfactory anesthesia, but quinine and urea, alypin, and cocaine are the ones most frequently employed. The cocaine is to be used approximately in the strength of one-fifth of 1 per cent., that is, one grain of cocaine to seven drams of sterile water and one-half dram of adrenalin solution, one to 1,000. This latter prevents to some extent the absorption of the cocaine, and at the same time aids in securing a bloodless field.

Office Anesthesia.—A. E. Guedel has devised an apparatus by means of which a patient may administer to himself nitrous oxide and air for the purpose of producing brief general anesthesia, in minor operations performed in the physician's office.

Journal of the American Medical Association.

February 24, 1912

Tuberculosis of the Bones and Joints.—By H. J. Stiles. (See MEDICAL RECORD, Vol. 80, page 100.)

Treatment of Adult Joint Tuberculosis.—By L. W. Ely. (See MEDICAL RECORD, Vol. 80, page 100.)

Antityphoid Vaccination.—D. J. Davis reports the results he has obtained with this procedure in ninety-one individuals. The vaccine was prepared from four strains of typhoid bacilli recently isolated from the blood of typhoid patients and carefully identified by proper cultural and agglutination tests. The first dose contained five million dead bacilli and the second, given after ten or twelve days, contained a billion. The injections were all made on the arm over the lateral head of the triceps and the local reaction appeared in from two to four hours. The intensity varied. In some cases it was severe, the redness and swelling covering the arm from the elbow nearly to the shoulder, and in about half the individuals tenderness of the axillary glands was noticed. Occasionally slight tenderness and redness lasted over the usual period of two to four days. The general reaction began usually some hours later than the local one and was generally at its height in eight to twelve hours. It was generally most severe after the first dose. The symptoms were depression and headache, hot, dry skin, insomnia and restlessness, and a rise of temperature of not over a degree or two. No serious complications appeared in any case. A test for agglutinins was made in a number of individuals about two weeks after the last inoculation, and in all cases a positive Widal reaction was obtained. The author notes that a positive agglutination test in an individual who has had an antityphoid vaccination is of no value. According to Wright, the immunity after vaccination lasts about two years, but it probably lasts longer, and theoretically it should last throughout life. The author utters a caution in regard to the administration, pointing out that while no serious results have been observed, the typhoid vaccine has been given generally to young and healthy individuals and more severe reactions might be expected in less resistant persons. He also believes it advisable to modify the method so as to avoid the more severe reactions that sometimes occur, and a small dose at first—250,000,000 or less—would seem reasonable practice, increasing in the later doses. The administration would seem advisable for all persons having the care of typhoid cases. There should be, moreover, no let-up in the ordinary prophylactic measures against the disease.

Convalescent Carriers of Typhoid.—C. W. Gould and G. L. Qualls conclude from their investigations that a large percentage of typhoid convalescents leave the hospital as carriers. The gall-bladder is the harboring place of the bacilli which are excreted in the feces. The prostate is a factor to be considered in the male, as it excretes bacilli into the urine. People may expectorate typhoid bacilli. Hess's semisolid medium, as modified by Stokes and Hachtel, may be used to advantage for the examination of the urine and prostatic secretions. The solid color-reaction media are better adapted for stool examinations, because of the large variety of motile organisms contained in the stools. The leucocyte count of carriers is normal, averaging 8,000. The opsonic index and percentage of large mononuclear leucocytes were increased in the author's series of cases. The agglutination of typhoid bacilli by the serum of convalescents from typhoid or of the chronic carrier bore no relation to the carrier.

Streptococcus Vaccines in Scarlet Fever Prophylaxis.—W. H. Waters employed the method of Gabritschewsky in treating scarlatina as a streptococcus infection by means of the administration of broth cultures of streptococci previously killed by heat and phenol in doses of about 0.5 c.c. These doses are repeated in about a week. Cultures were made from a number of throats of scarlet fever patients and many strains of streptococci were isolated. These were combined in the manufacture of a polyvalent vaccine, standardized at 500,000,000 per cubic centimeter. The project was explained to hospital nurses, who were allowed to choose or reject the vaccine treatment as they pleased. In 1910 twenty-one non-immune nurses, who had never contracted the disease went on duty in the scarlet fever ward. Ten of these chose the treatment; eleven did not. In 1911 fifteen did similar duties. Of these, eleven received vaccines and three did not. One

received a single dose, but as she immediately contracted the disease within twenty-four hours her case is omitted. Her attack, however, was unusually mild, and it was the only one among the vaccinated nurses. Among the fourteen non-vaccinated nurses five contracted the disease.

Unequal Pupils as Early Sign in Tuberculosis.—J. L. Tuechter states that a pupillary difference as a symptom in unilateral pulmonary tuberculosis has been recognized for some time and is of some importance, deserving more attention that it has received. It is not always present, but if there is a difference it will be noted that the dilated pupil is sluggish, reacting slowly. A comparative dilatation of one pupil signifies an enlargement of the bronchial lymph-nodes on the corresponding side, and as such glandular involvement is usually tuberculous and occurs at a time when the lung itself does not show destructive changes, the author believes that the sign is most valuable in the early diagnosis of pulmonary phthisis. It is necessary to rule out ocular conditions which may cause the difference, and certain conditions of the thorax, such as tumor or aneurysm.

Paroxysmal Tachycardia.—H. M. Rich reports a case of this condition in which the heart rate was 220. The attack was controlled in the following manner: The author squeezed the chest-walls with some force attempting to exert pressure upon the upper part of the heart. It seemed that relief was obtained by direct pressure on the heart itself. If the pathology of the condition is, as Keith found, a fibrosis of the primitive cardiac streak, then the attacks are probably due to an occlusion of one or more blood vessels with a consequent derangement of the circulation in this important tissue. It seems to the author not improbable that a squeeze of the heart at this time might reopen the occluded vessel or vessels and re-establish the normal circulation with a consequent relief of the dependent phenomena.

Ovulation and Childbearing Without Menstruation.—O. T. Blankingship reports the cases of two sisters who had never menstruated, but had raised families of children. One woman had three children; the other had been married three times and had eight.

Cocaine in Ulcers.—G. L. Lydston states that in using cocaine as a preliminary to cauterization of chancroids he has come to the conclusion that the drug is useful in other ways than as an anesthetic. A tablet containing ¼ to ½ grain of the drug converts the ulcer within a few minutes into a vascular healthy surface from which exudes a bloody serum. The drug is rubbed into the ulcer lightly with a swab. The application is of great service in sluggish sores. It is a beautiful demonstration of the manner in which the drug favors hemorrhage in operations on the urethra, nose, etc. The rationale of the method is the same as that of the Bier method. Infection cannot long withstand the hyperemic assaults. The formula found specially serviceable for use by the patient is as follows: cocaine muriate, 20 grains; animal charcoal, 1 dram. Apply twice a day. Cleanse ulcer carefully with hydrogen peroxide and dry thoroughly before applying powder.

Cerebrospinal Meningitis.—E. Krulish believes that nasal sprays as ordinarily used for prophylaxis against cerebrospinal meningitis are unnecessary because of the obscure etiology of the disease. They do not destroy the germs. It is impossible to reach every portion of the nasal chamber and a normal nasopharynx is usually able to take care of itself. They are injurious from the facts that their use is likely to give the person a false sense of security and that the frequent use of the spray injures the delicate mucous membrane and lowers its vitality.

Research and Teaching in Medical Schools.—B. Ophuls sees a menace to medical progress in the foundation of special research institutes, especially when connected with educational institutions, unless they assume an educational function as well and do their share of teaching, and he is opposed to the establishment of chairs of research medicine. The mere existence of such a chair in a way reflects on the rest of the teaching faculty. Research work should be intimately associated with the clinics and the clinical teachers should be investigators. It does not follow that the only qualification a clinical professor needs is proficiency in laboratory work. There are comparatively few laboratory workers who possess all the experience and special talent required of a leading clinical teacher, but the latter should have a supplemental training in the methods of investigation.

The Lancet.

February 17, 1912

Experimental Poliomyelitis. F. E. Batten.
Some Forms of Hemorrhage Which Are Difficult of Explanation. W. Hale White.
Malignant Disease of the Testicle and the Treatment of it by Radical Operation. H. Morriston Davies.
Partial Thyroidectomy under Local Anesthesia, with Special Reference to Exophthalmic Goitre. T. P. Dunhill.
Tuberculous Disease of the Bones and Joints: Present Position of Treatment in London. R. C. Elmslie.
Tuberculosis of the Mesenteric Glands in Children: its Nature and Treatment. E. M. Corner.
Enterectomy under Spinal Anesthesia for Acute Intestinal Obstruction in an Infant 24 Hours Old; Survival for One Month. G. E. Vaugh.
A Case of Severe Vertigo: Destruction of the Labyrinth; Cure. M. Yearsley.
Removable Bladder Sutures. C. Clarke.

Some Forms of Hemorrhage Difficult of Explanation.—W. Hale White states that in purpura the hemorrhage is not explained by deficient coagulation; this may explain why hemorrhage does not stop, but not why it began. It seems that toxins circulating in the blood and causing local damage to minute vessels probably explain why septicemia and some of the exanthemata are occasionally purpuric, although here it may possibly be that the microorganisms themselves cause the bleeding either directly or by the formation of infarcts. The menstrual flow is controlled by a hormone secreted by the ovary, for excision of both ovaries is followed by a cessation of heat or menstruation, and there is considerable evidence that the transplantation of an ovary from another subject into one who has ceased to menstruate as a consequence of the loss of both ovaries will restore heat or menstruation. The author directs attention to some facts which support the belief that pathological hemorrhage due to some substance circulating in the vessels and damaging the walls of the minute vessels may occur inside the body only. The subpleural ecchymoses that are frequently evident at autopsy in many instances indicate that some toxin has damaged the minute vessels. The hematemesis so commonly occurring in young women and associated with dyspepsia, pain, and vomiting is probably the result of an endothelial toxin causing hemorrhagic erosions. There are cases of renal epistaxis, or as it is more widely termed essential renal hematuria, without any evidence discoverable to the naked eye or microscope of a lesion in the kidney. The author suggests as the most feasible explanation of these cases that in them a poison—analogous to the menstrual hormone—is formed somewhere at intervals, and this reaching the kidney by the blood, and having a special affinity for the minute renal vessels so damages them that they rupture and the blood escapes. The same explanation is offered in connection with the attacks of epistaxis occurring at puberty in boys who are seemingly healthy.

Malignant Disease of the Testicle.—H. Morriston Davies states that all tumors of the testicles must be regarded as malignant. The history of previous venereal disease, the association of the swelling of the testicle with an injury, the length of the history dating perhaps from childhood, must not be allowed to outweigh clinical evidence. One should always suspect a tumor of the testicle when there is an oval swelling which is not translucent and comparatively painless. When the tumor is in

addition soft or elastic, and the surface shows slight lobulations the suspicions are confirmed. Increased pulsation of the cord is in favor of tumor, but is not pathognomonic. A solid tumor may be so elastic as to give the feel of a fluid swelling. The aberrant clinical manifestations of a testicular neoplasm must be constantly borne in mind. If the diagnosis is uncertain and the possibility of growth is entertained the tumor must be explored. Should the tumor be syphilitic, no harm will have been done; if tuberculous, or a hematoma, operation is the correct treatment. When the diagnosis of tumor is confirmed the complete radical operation, consisting of removal of testicle, cord, lymphatics, and surrounding fascia, and of the lymphatic glands in the region of the aorta and vena cava, must be done, unless the lumbar glands are extensively involved, or there are evidences of metastases elsewhere.

Tuberculous Mesenteric Glands.—E. M. Corner states that the results of his experience are that tuberculous mesenteric glands are found in practically every child submitted to an abdominal operation. The author believes that tuberculosis enters the body largely by way of the intestines, chiefly through the lymphatics of the ileocæcal region, and that, therefore, tuberculosis of the mesenteric glands originates there. Though there is a considerable risk of the generalization of tuberculosis from the infected mesenteric glands, in this situation the disease is not necessarily fatal. The children suffer from ill-health and abdominal pains referred to the umbilical region. These pains come on at night and sometimes after eating. The loss of appetite is often accompanied by some disturbance of the action of the bowels, more often inactivity and constipation than looseness of the bowels. The author has often done abdominal exploration on such children with chronic ill health, vague abdominal symptoms and discomfort, with or without a tumor on abdominal palpation. From a considerable experience with such cases he states that tuberculous mesentric glands and a somewhat dilated appendix containing fecal material, but otherwise not obviously diseased, are always found.

Removable Bladder Sutures.—C. Clarke has devised for closing wounds of the bladder sutures which he terms "tube sutures." These consist of the following parts: (1) Strands of ordinary strong silkworm gut; (2) short pieces of glass tubing, 2 inches long and ¼ inch in diameter, and (3) small brass or steel rings, ½ to 1 inch across. The sutures of silkworm gut are passed with a curved needle through the muscular coat of the bladder on both sides of the opening. Each suture is inserted not less than ¼ inch from the edge of the incision and emerges on the cut surface, just short of the mucous membrane of the bladder. The two free ends of the suture are threaded through a glass tube and drawn tight; they are then secured in this position by being firmly tied over the rim of one of the metal rings. The loop of silkworm gut which projects from the end of the tube and passes through the bladder wall acts like the loop of a wire polypus snare and holds the two sides of the bladder incision firmly in contact with each other. The other end of the silkworm-gut suture, knotted over the edge of a ring, is on a level with the surface of the abdomen and is easily accessible for the removal of the suture. To remove the suture the silkworm gut is divided close to the knot, and the knotted end is then pulled on until the suture is withdrawn. One hand at the same time holds the glass tube steadily in the wound. The silkworm gut remains quite taut after ligature in the tubes, and does not adhere to the bladder wall on removal. The tube sutures are easy to insert and to remove. No buried sutures are left in the bladder wall to form a focus for suppuration. The bladder can with safety be sewn up after cystotomy and the patient saved the discomfort of suprapubic drainage. In septic conditions of the bladder the glass suture tubes provide a ready channel of escape for any inflammatory exudates which may collect along the bladder incision. In cases where the bladder has to be reopened after operation, as, for example, to arrest hemorrhage, remove clots, or to provide drainage, the suture tubes afford a ready guide to the bladder incision.

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The Correlation of Symptoms and Signs in Some Abdominal Diseases. B. G. A. Moynihan.
An Address on Compressed Air Illness and Experimental Research. L. E. Hill.
On Artificial Respiration with Oxygen. Sir Lauder Brunton.
Intrinsic Cancer of the Larynx: Operation by Laryngo Fissure: Lasting Cure in 80 per cent. of Cases. StC. Thomson.
A Peculiar Case of Esophageal Dilatation. P. S. Hichens.
A Case of Angioma of the Oropharynx. W. Sanderson.
Early Excision of Boils. J. Cropper.
The Value of Vital Blood Staining in the Study of the So-called "Infective Granule." A. Balfour.

Correlation of Symptoms and Signs in Some Abdominal Diseases.—B. G. A. Moynihan states that in more than one-half the cases in which an operation for gastric ulcer was deemed expedient by reason of the wearisome persistence of pain, vomiting and an occasional hematemesis, their stubbornness or open rebellion against the most assiduous and approved treatment, the stomach showed no evidence of textural change. A lesion could be found quite different from that expected—an adherent or obstructed appendix, a tuberculous ulceration of the ileum or the cecum, a prolapsed and perhaps obstructed stomach, or a calculous cholecystitis. The author states in spite of a diligent search which he has made during the past two years, he has been able to discover only very infrequently the "kink" in the ileum described by Lane. Whenever this is present he believes that it is secondary to appendicitis. The view he takes of "gastric ulcer" as described in the textbooks of to-day is that in the majority of cases it is not primarily or chiefly a lesion in the stomach, but consists of a persisting chronic infective lesion in, as a rule, some abdominal organ, and that in this focus more acute infections from time to time arise which cause those transient exacerbations in, or additions to, the symptoms which are sustained more quietly throughout the whole course of events. Whether the more quiescent symptoms are due to a secondary infective gastritis, to an enhanced or erratic activity in the secretions of the gastric juice, or to those irregular muscular conditions which are known as "pylorospasm," or to any combination of these, seems to be quite uncertain. According to the textbooks gallstones exist in the gall-bladder in 90 per cent. of the cases without giving use to any symptoms. The author takes issue with this statement. He states positively that gallstones never exist in any circumstances without the production of quite characteristic symptoms. Many of the so-called "functional" dyspepsias are associated with cholelithiasis. In patients who are undoubtedly suffering from cholelithiasis the occurrence of attacks of colic, rather milder in intensity than usual but of far greater frequency—say, four or six attacks in two weeks—especially if the attacks are associated with a mild form of chill, a "gooseflesh" sensation in the skin and a slight shiver, and if there is continuous loss of weight, the presence of a stone may with reasonable confidence be predicted.

Compressed Air Illness.—L. E. Hill states that it is not the exposure to increased atmospheric pressure that causes the condition known as caisson disease, but it is decompression that causes the trouble. There is no risk in going into or staying in a caisson; "*on ne paie quen sortant.*" The cause of the illness was suggested by Hoppe-Seyler and made clear by Paul Bert, whose experiments on animals showed that nitrogen is dissolved in the blood and in the tissue fluids in proportion to the pressure of the air. The dissolved gas on too rapid decompression bubbles off and effervesces in the blood of animal or man.

The bubbles, by blocking up the capillaries and cutting off the blood supply here and there, produce the symptoms. Exposure to high atmospheric pressure has no ill effect until the pressure becomes so great that the partial pressure or concentration of oxygen acts as a tissue poison. The illness which occurs on decompression is prevented by making the period of decompression sufficiently slow to allow time for the dissolved nitrogen to escape from the lungs.

Intrinsic Cancer of the Larynx.—St. C. Thomson notes that whereas extrinsic cancer of the larynx is usually a hopeless condition, it is quite otherwise with intrinsic cancer of this organ. He finds that by means of the operation of laryngo-fissure it is possible to obtain cure of the latter in 80 per cent. of the cases. He reports a series of ten cases, all of whom were males, whose ages varied between 43 and 68. The death rate from the operation was nil. As regards the diagnosis, huskiness more or less persistent, was the principal subjective symptom. In the majority of cases the diagnosis is made at once from the clinical appearances alone. The impaired mobility of the affected cord is, when present, a valuable symptom.

Esophageal Dilatation.—P. S. Hichens reports a case of this condition in an achondroplasic dwarf aged thirty-five years, who for three years before he presented himself for treatment suffered from pain and frequently from vomiting immediately after eating. An esophageal bougie was arrested 17 inches from the teeth, and on attempting to wash out the stomach with a stomach tube, the latter was arrested at the same distance from the teeth, and the fluid came back immediately quite clear and not all acid. The diagnosis seemed to be stricture of esophagus with subsequent dilatation. The diagnosis was confirmed by radiographic examination. The patient died, apparently from starvation, four years after he came under treatment.

Berliner klinische Wochenschrift.

February 5 and 12, 1912.

Present State of Lung Surgery.—Fraenkel and Körte state that pneumotomy is an indication of necessity in certain forms of pulmonary abscess and in acute gangrene. The contraindications are based on widespread diffusion and asthenic states. In subacute bronchiectasis the conditions are somewhat similar, but there is not that need of haste in operating which obtains with abscess and gangrene, for in bronchiectasis there is always a possibility of spontaneous improvement. Compression therapy (artificial pneumothorax) is an amplification of lung surgery, which is especially adapted to phthisis which predominates on one side, and to circumscribed or unilateral fetid bronchitis. The indications for thoracoplastic operations are not yet definitely fixed owing in part to the natural severity of the intervention.

Methylism.—Hirschberg gives an historical sketch of our knowledge of this subject from the viewpoint of an ophthalmologist. As editor of the *Centralblatt für Augenheilkunde* he has consulted the files of the latter since its first appearance in 1877. In 1876 an episode occurred at Caen, in France, at the local prison which was not unlike the recent experience in Berlin. The men drank varnish made from wood alcohol. The symptoms comprised headache, gastralgia, vomiting, profuse sweating, coma, delirium, and in one case death. The pupils were widely dilated. One man who recovered readily from the intoxication was found to be blind as a result of acute double optic neuritis. Other men probably drank the poison in small quantities without apparent injury. During the next twenty years the subject is not once mentioned in the *Centralblatt*. About 1899, however, cases of blindness from adulterated spirits began to appear. In 1897 a wholesale poisoning occurred in Indian Territory, U. S. A. In one series of five individuals two died, two recovered completely, and one was blinded. Many episodes have since been reported from various parts of the United States, and among the offending substances which contained wood alcohol were Jamaica ginger, peppermint essence, bay rum, and cologne water. In 1899 the first case for Germany was reported by Kuhnt, and with this exception, not one case had ever occurred in that country until the recent Berlin episode. The victim worked in a methyl alcohol factory and had taken but one swallow of the product, but this was sufficient to blind him. In 1904 Buller and Wood collected notes of 122 deaths and 156 cases of blindness from acute methylism, practically all from English-speaking countries. In 1904 the first case to occur in Russia was reported, while five years later cases began to appear in Hungary.

Sokodu.—Under this name Frugoni of Florence describes the rat-bite disease of the Japanese. This a malady of protozoan origin and frequent occurrence in China and Japan; but that it is not an exotic disease is shown by its recent occurrence in Tuscany. The author has also found descriptions of it by Packard, the American surgeon, as far back as 1872, although its nature was not comprehended. Its occurrence has also been noted within the past two years in London. The author's case was in part as follows: Male peasant, aged 54, seen November, 1910, had been bitten by a rat two years earlier. After an incubation period of fifteen days' inflammation and ulceration set in at the scar and evidences of acute toxemia appeared. The proper lymph nodes became enlarged and a peculiar exanthem appeared. From that time periods of good health alternated with relapses without any actual periodicity. In the course of one such relapse, which was characterized by an eruption undistinguishable from erythema multiforme and by general prostration, there were noticeable ocular symptoms without any impairment of vision. These consisted of conjunctival injection, chemosis, and right-sided exophthalmos. The diagnosis was made from the history of rat bite and the known course and manifestation of the disease sokodu. The exophthalmos was due evidently to the formation of an acute edema in the retrobulbar connective tissue. The edema of the conjunctivæ was of the same nature, as were also the cutaneous efflorescences. It was necessary to exclude the presence of intestinal parasites, and this was done by establishing the absence of eosinophilia. Sokodu, then, is characterized chiefly by recurrent erythema multiforme.

Warfare Against Diphtheria.—Prof. Dietrich of the Institution for Contagious Diseases at Charlottenburg discusses the severe epidemic of this affliction which is visiting Berlin at the present time. So severe a visitation has not been experienced for decades. The preventive measures in force for some years past are thus seen to be unable to cope with the disease at its worst. This is due to the fact that in earlier years our knowledge of the modes of transmission was defective. At present we know that sources of immediate contagion may practically be disregarded. The part played by the permanent carrier of germs has long been known, but exact details have been wanting. It has been thought that any one might be a chance carrier, and that the bacillus might be present in the throats of any class of people as a mere saprophyte. At present evidence points to the fact that a carrier of the sort to be feared is almost necessarily some one who has been in close proximity to an actual patient for a considerable period, and who does not himself contract the disease. In future all who have thus been exposed in a family should be followed up. Naturally the actual patient becomes a carrier, too, but this fact has for many years been recognized and acted upon by quarantine. In children of school age the problem of the carrier is somewhat simplified by the custom of keeping sound children of the family out of

school for a definite interval. The preventive injections of antitoxin are only partially effective in sterilizing carriers. During the present epidemic the local authorities were much encouraged by the fact that it has not become necessary thus far to close any of the public schools.

Medical Aspects of the Italo-Turkish War.—Theilhaber spent last December in Tripoli. He found the heat excessive at noon, although in general it was tempered with winds. Resident physicians and apothecaries are not plentiful and entire areas are without any representation of this sort. The extreme poverty and fatalism of the natives make it imposible for such professions to be supported. As a German physician the author's aid was sought, but no one expected to pay anything. The most obvious affections were ophthalmias, malaria, and phlegmons. Hospitals and dispensaries are unknown and there is no conception of hygiene and sanitation. Under such favorable conditions for plagues it is not readily understood what compensatory factors exist which antagonize them. In the past centuries they have been common and severe enough. The common use of familiar utensils, cigarettes, etc., and the universal custom of kissing even among grown men do not seem to spread disease among the troops. There was a military lazaret which contained only wounded men who as a class had received no first aid, nor, in fact, any suitable care. As a rule vital organs were not affected. The Turks were naturally much advanced in modern culture when compared with the Tripolitans. They have a Red Crescent Society based on the various Red Cross organizations, and the few physicians in its employ, together with some volunteers, were gradually introducing civilized methods among the natives. They were hampered in all respects—by want of supplies, poor transportation facilities, official red tape, etc. The French and German Red Cross Societies who were endeavoring to operate among the Tripolitans were also hampered in various ways. The former sought to use Tunis as a base of action. The Italians apparently refused to allow any of these foreigners to pass through their lines.

Münchener medizinische Wochenschrift.

January 30 and February 6 and 13, 1912.

Bloodless Treatment of Piles.—Boas, starting with the fact that prolapsed hemorrhoids may readily be reduced if done at once after prolapse has occurred, has developed a technique, based on mechanical principles only, for combating the affection. The cases adapted for his treatment are characterized by the ready reducibility of the hemorrhoidal mass. The application of Bier's cups to the anus also leads to a diagnostic criterion, for if hemorrhoidal nodes appear under the influence of suction the case is eligible for the treatment, although it by no means follows that the latter will prove curative. The cups are now used regularly in the expectation that the stasis and edema which result will lead to the obliteration of piles by thrombosis. The method in detail is as follows: The patient is put to bed for a period of five days, at the close of which he may or may not be moved to a reclining chair. As a rule, the actual period for treatment is from eight to fourteen days, at the close of which the occupation may be resumed. The cups are applied from half an hour to an hour, or, in general, until edema is produced. The more intense the edema and the longer it persists, the better the prognosis. The author evidently expects to cure his cases in a single session, for he does not mention consecutive sittings during the brief period of treatment. The constriction produced by the edema has all the force of a ligature. In four years' experience the author has never seen gangrene or any other serious complication. He has cured thirty patients during this period, and commends his method as by far the best of the bloodless procedures.

Classical Symptoms of Cerebral Plexiform Angioma.—Isenschmid speaks of the rarity of this condition, which makes diagnosis difficult. He analyzes a case in a child of nine which appeared to date from a mild skull injury six years earlier. The first symptoms appeared when the child was four years old in the form of attacks of headache, vomiting, and vertigo. Choked disks appeared later as evidence of a periodically increased intracranial pressure. Two attacks were attended with unconsciousness and Jacksonian epilepsy, followed by transitory hemiparesis. In a subsequent attack consciousness was retained and there was no convulsion, only slight hemiparesis. A loud systolic murmur was heard over the skull, most pronounced over the right ear. The arteries leading to the brain were dilated, especially on the right side, and there was a mass of dilated veins at the outer border of the right orbit. The diagnosis was greatly facilitated by a radiogram, which revealed the circulatory anomalies. The patient improved after ligation of the right common carotid. A second case occurred in an adult, likewise dependent originally on a series of cranial injuries of unknown severity (patient was a mason's apprentice in youth and was often hit by falling objects). At the age of twenty-four he began to suffer from headaches and attacks of unconsciousness at long intervals. At thirty-two he had developed a spastic hemiparesis of fluctuating intensity and, generally speaking, the course and symptoms of the case were much like those of the preceding. The nature of the lesion was suspected, along with possible intracranial aneurysm. Upon the patient's decease from pneumonia an autopsy could not be obtained. It was deduced that the angioma occupied the right temporal region.

Industrial, Universal Argyrosis.—Koelsch excludes from consideration not only local industrial argyrosis, but the general and local types due to the medicinal use of silver preparations. The type of the industrial form is disseminate local, not universal. The latter form has been known since 1896, when Schubert described the cases of some Bohemian artisans who used certain silver solutions for coating glass pearls. A little of the solution was taken into the mouth, so that to all intent the argyrosis which resulted was of the same genesis as the medicamentous variety. The author, however, has recently studied quite a different type, in which the silver must have reached the tissues either through inhalation of dust or penetration through the skin, or both. The subjects, both women, were workers in silver leaf, and their task was to cut the leaves and lay them in the books. One subject, aged 27, had worked at her occupation steadily for fourteen years. The discoloration of the skin was first noted when she was 18, and it increased steadily for the next four years, since which period there has been no further change of any sort. The discoloration affects chiefly the exposed parts and visible mucosæ, evidently because sunlight exerts a distinct reducing action. It is, however, evident to some extent on the covered integument. The other patient was 50 years old, had begun to follow the occupation at the age of 14, and first noticed the discoloration at the age of 21. Both women were delicate in appearance and both were blonds. Each one exhibited anemia and disordered digestion several years before the appearance of the argyrosis. Such cases are naturally hopeless, for while the condition is in theory amenable to chemotherapy, the substances which would have to be administered are all highly toxic. Blonds and anemic women should not work with silver, and if they cannot choose, the silver line on the gums should be watched for as a safety signal.

Destructive Action of Radium Emanation on the Integument.—Mesernitzky describes an illustrative

ase. A worker with radium was experimenting with a small glass tube containing emanation to the amount of 130 mg. It was necessary for him at times to hold the tube in both hands, one end between two fingers and the thumb. After two weeks he noticed reddening of the ends of both thumbs, and shortly afterward of the ends of the index and middle fingers. In the course of a few days these red areas became thickened, livid, and slightly necrotic. Pus formed and desquamation also resulted. For the entire evolution, beginning with the first exposure, five weeks were required. The author has seen similar cases, but never before one in which pus formed. The subject was a particularly healthy one, so that general predisposition could be excluded. The case is not to be confounded for a moment with lesions which might result from exposure to large doses of radium and tends to show that emanation is not necessarily an indifferent gas.

Bromine-Urea Derivatives as Hypnotics.—Glombitza discusses several of these synthetics which have been introduced into practice under various proprietary names. Since veronal has obtained widespread recognition attempts have been made to secure preparations of the same therapeutic efficacy which will not lend themselves to suicidal attempts and injurious self-dosing. Veronal contains a double ethyl group, to which its efficacy is doubtless largely due and the synthetic chemists have sought to introduce this group into a molecule containing bromine and urea. Some of the products have been on the market for a long time. Thus far the most that can be said pro and con is that they do not seem to be toxic or cumulative in proper doses and do not tend to addiction; that the possibility of intoxication in large doses and combination with other hypnotics is by no means excluded; that the therapeutic action is uncertain; and that owing to the relatively large doses demanded the cost is excessive.

Vaccination and Rabbit Control.—Poundorf gives a full account of the methods by which the vaccine manufacturers at a government institute make use of rabbits to assist in standardizing and otherwise controlling their product. The animals are vaccinated from a stock vaccine. Should the latter be no longer virulent, the result is negative or atypical. In successful vaccination the temperature begins to rise during the third day; at this period it is possible to vaccinate other rabbits. During the next twenty-four hours the rabbit is killed and the vaccinia area excised *en masse* and nailed to a board. The virulent material is then scraped off with a curette. The dead animal is now examined very carefully for the possible presence of tuberculosis or other disease. In nine years' experience at the institute it has never been necessary to reject vaccine because of disease in the animals. This vaccine may be used for human vaccination, and the reaction is somewhat milder than when bovine virus is used. After rabbit vaccine has taken it is impossible to vaccinate successfully with bovine virus. Rabbits may be inoculated successfully with variola pus from human subjects. Pus obtained from the rabbit was inoculated into a calf, pus from the latter into another rabbit, while from another calf inoculated from the latter a child was successfully vaccinated. The vaccinia was typical save for a number of accessory vesicles developed inside the affected area. Vaccinated rabbits are able to communicate vaccinia to others in ordinary common intercourse. In this way primary lesions have occurred in the eyes with destructive consequences, and epidemics of vaccinia may occur among the rabbit colonies. The chief sources of exposure are friction and crawling into the same burrow.

Typhoid Carrier in an Educational Institution.—Bernhuber describes the following episode: Two boys in a boarding school were taken at the same time with typhoid, as was also an officer of the institution. Three others of the pupils or teaching body were also attacked in the same manner, but their cases were not under observation at the same time and place. Nine years earlier and five years after the first establishment of the school the first case of typhoid had occurred, a pupil having been the victim. There was no other case during the ensuing five years. At the end of this period there was a petty epidemic which comprised two kitchen maids and a pupil; one year later another kitchen maid was attacked and went home for treatment. A sister took the disease there and died. At the same time a pupil was attacked and went to his home, returning to school after his recovery. In the next year a preparatory student who was fed from the school kitchen, but did not live in the building, chanced to die of erysipelas. A servant girl of his household then developed typhoid and before the expiration of the year two more pupils were attacked by the latter. Other cases developed later, making sixteen within four years. Naturally the water supply, drains, etc., had been accused and much money spent on sanitation, all to no purpose. The existence of a carrier was now suspected, and the feces of the kitchen personnel were investigated. The head cook, a woman of seventy, was found to be a carrier. Her stools contained a pure culture of Eberth's bacillus. Two girls who had been through the fever were found to be sterile in this respect. The cook had had typhoid twenty-two years earlier. She had been at the school since its foundation and had been in the family of the school head for thirty years, as had a younger sister, who presented a few bacilli in her stools for a short time only.

Erysipelas Treated with Antidiphtheritic Serum.—O. Polák reports good results from this method of treatment. The average stay of the patients in the hospital was reduced from twenty-five to thirteen days. Twenty-four to thirty-six hours after the injection of the serum the temperature fell to normal, provided there were no complications.—*Casopis Lékarú Ceskych.*

Traumatic Rupture of the Aorta.—S. D'Antona states that there are many varieties of rupture of the aorta corresponding to the mechanism of its production, the conditions of elasticity and resistance of the vessel walls, and the blood pressure at the time of injury. The author reports three cases, all of which resulted from serious accidents and ended fatally. He then attempts to unravel the mechanism of the production of these accidents, basing his examination on physical and physiological data, on the nature of accident, and the seat and conformation of the lesion. In direct wounds such as gunshot wounds, there are two methods of production depending on an abnormal increase of blood pressure, and an excessive tension on the vessel walls. The majority of lesions are due to an increase of vascular pressure. Traction has little effect on the aorta on account of the latter's position against the spinal column. Violent extension of the spinal column does little harm. The arch and beginning of the descending portion of the aorta are the parts generally injured. Increased blood pressure is felt by the aorta on account of the normally high pressure in it, the quantity of blood that it contains, and the velocity with which it flows. The sudden arrest of the body in a fall produces a suddenly increased blood pressure in the aorta. The author believes that the projection of the ventricular wave is one of the marked elements in the injury sustained. The portion of the aorta corresponding to the cicatrix of Botalli is most subject to traumatic rupture. The intima and media are injured independently of each other and in an opposite direction. The intima yields to the dilating force because its fibers are longitudinal, while the circular fibers of the media are firmer.—*Archivio per le Scienze Mediche.*

Insurance Medicine.

STATISTICS OF DIABETES IN FRANCE.

At a recent meeting of the Académie des Sciences Dr. Le Goff read an interesting paper dealing with the increase in diabetes as a cause of death as registered in the French statistics. In 1880 there were 128 deaths in the city of Paris registered as due to diabetes, which gave an average of .044 per 10,000 inhabitants. In 1885, that is, five years later, the number of cases had increased 100 per cent., the deaths numbering 261 and giving an average of 1.105 per 10,000 of the population. In 1890 the deaths numbered 304, showing an average of 1.345 per 10,000. In 1895 there were 370 fatal cases; in 1900, 427 people died from diabetes; in 1905, 443. The latest statistics given were those of 1909, during which year 525 deaths occurred, or a death rate of 1.930 per 10,000 inhabitants.

From these figures it is seen that in thirty years the number of deaths from diabetes has quadrupled, which is in reality an enormous increase, and some reason for this must exist. Le Goff gave as reasons for the great increase: (1) Diabetes occurs more among the well-to-do classes who eat and drink large quantities and who take little or no exercise. (2) The great increase in the quantity of sugar which is consumed nowadays, for it has been noticed that in the countries in which the greatest amount of sugar is consumed the statistics of diabetes are higher than in the other countries. In 1910 the consumption of sugar per head in England was 40.710 kilos; in America, 31.100 kilos; in Switzerland, 26.77 kilos; Scandanavia, 18.97; Holland, 17.68; France, 15.700; Belgium, 12.64. From these figures it is noted that the consumption of sugar in France is much below that in England, but we may suggest that a possible factor in the production of diabetes may be the wine drinking which exists in France in contradistinction to the spirit drinking in England. It is well known that the effects of wine are a potent factor in the production of liver disease, with a resulting derangement of the sugar metabolism, and this may account in one way for the great increase in mortality from diabetes in France.

Insurance of Persons Residing in or Removing to a Tropical Climate.—Braun says that he could not find any classified data which could be utilized in judging the increased risk taken in insuring persons residing in the tropics. It seemed evident that an increased premium should be required, yet there were no facts for estimating the amount of increase reasonably called for. He has therefore taken the trouble to gather much available information in regard to this problem.

While mortality among Europeans who have taken up residence elsewhere is different from the mortality in Europe, it differs but little in case the new places of residence are in the temperate zone. Thus mortality in New South Wales, in South Africa, in the temperate regions of South America as well as in Canada and the United States of America, is much the same as in Europe. Japan shows somewhat higher mortality among children and youth, but about the same figures among adults.

In subtropical and tropical lands, on the other hand, the figures are much less favorable. In India the mortality is twice, and for certain ages three times as high as European figures. In the German colonies of tropical Africa the mortality, likewise, is from one and one-half to three times the mortality in European Germany. Infectious diseases and diseases of the gastrointestinal tract show an especially high mortality in tropical regions.

Three classes of applicants must be differentiated: those who have returned from the tropics to the temperate climate; those who reside in the tropics; those who expect to travel or to take up residence in the tropics.

The first group of applicants must, of course, be judged by the results of medical examination, which ought to show whether any damage has resulted from life in the tropics; the second group is of interest only to such insurance corporations as have established or intend establishing business branches in the tropics; the third class presents the most actual interest at the present time.

If an applicant declares that he has no intention of removing to another climate, and later does so, the insurance companies have usually continued their policies at the usual rates, as the number of such unexpected removals is too small to make it worth while to classify them into a separate group. Certain insurance companies, however, issue limiting clauses in their policies in regard to indemnity in case of traveling or removing to another climate; most of the American and English companies are very liberal in this respect and their policies may be termed "world" policies. If an applicant declares that his intention is to travel in tropical climates or to reside there, every element must be considered in deciding the character of the policy to be issued. His health must be judged in relation to the dangers he is exposed to in the special climate of his new residence. In the future, conditions of the policy to be issued must be worked out after a study of the mortality in the tropics, but at present this is not possible. Braun has therefore collected available information about the special risks of the tropical climates.

The characteristics of a tropical climate consist of intense sunlight, the height of the average air temperature, the absence of great differences between seasonal temperatures as well as between those of the day and night, and the usual stability of the barometer. Humidity is likewise a very important factor, and its degree is frequently of such a height as to make almost unendurable a fairly high temperature. The absence of large variations in the daily temperatures diminishes loss of heat from the human body by simple radiation, and thus puts extra work on internal organs. The activity of the heart and of the lungs is usually increased. Disturbances of the digestive and of the nervous systems are frequent consequences.

Sunstroke, heat prostration, nervous irritability and prostration may, of course, be prevented by proper food, clothing, and shelter. The infectious diseases of the tropics, on the other hand, are much harder to escape. Malaria, blackwater fever, and yellow fever belong to such diseases. Modern sanitary measures, exemplified by the events in Havana and in Panama under American control, have diminished very much the dangers of these diseases, but still the mortality from them much exceeds that in the temperate zone.

Certain special points must be considered in judging a "tropical" risk. The occupation of the applicant is of greater importance than in the usual risks because it may decide whether the patient is to be more or less exposed to the dangers of tropical life. If the applicant is married and is accompanied to the tropics by his wife, the danger seems to be less according to some statistics. Age is of little consequence. Acclimatization is an important factor and all details about previous life in the tropics, if there have been any, must be carefully considered. The health of the individual is of more importance in the tropical risks, and all applicants with weakness of the circulatory or the nervous systems should not be taken as risks.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, January 1, 1912.

Book Reviews.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M.D., Professor of Psychiatry, Columbia University. Seventh edition, revised. Octavo volume of 932 pages, with 338 illustrations. Price, cloth, $5.00 net; half morocco, $6.50 net. Philadelphia and London: W. B. Saunders Company, 1911.

The seventh edition of this standard text-book on nervous and mental diseases does not differ very greatly from its immediate predecessor either in size or in the method of treatment of the subjects. In the part on Nervous Diseases a description of amyotonia congenita has been added, and some of the sections, notably those on pellagra, poliomyelitis, and cerebrospinal meningitis, have been quite extensively revised. The chapters in the psychopatic section have been rearranged and in part rewritten to make it accord with the prevailing system of classification of mental diseases. Not that the author recommends the classification, for he thinks that any attempt at classification in the present state of our knowledge of the pathology of insanity is futile. The difficulty of the subject is made plain by the fact that no less than forty classifications of insanity have been made, most of which would long since have been lost had not their authors taken the precaution of having them put into print. Dr. Peterson enumerates six of the latest and best of these and then gives the statistical and clinicopathological classification adopted by the New York Commission in Lunacy for use in the State Hospitals. After treating of the toxic and infection-exhaustion psychoses in the general etiological section, he divides his chapters into manic-depressive insanity, dementia præcox, senile dementia, general paresis, paranoia, neuropsychoses and idiocy, imbecility, and feeble-mindedness. This is a good working classification and perhaps the best for practical use that can be made in the present state of knowledge of the subject.

Blood-Vessel Surgery and Its Applications. By Charles Claude Guthrie, M.D., Ph.D., Professor of Physiology and Pharmacology, University of Pittsburgh; Former Professor of Physiology and Pharmacology, Washington University; Instructor in Physiology, University of Chicago; Demonstrator of Physiology, Western Reserve University, etc. Illustrated. London: Edward Arnold. New York: Longmans, Green & Co., 1912.

This book is the third of a series of monographs by first-hand authorities on medical and surgical subjects of immediate interest, the series to be known as the International Medical Monographs. As the general editors justly say in their preface, amidst the press and rush of modern research, and the multitude of papers published in many tongues, it is necessary to find men of proved merit and ripe experience, who will winnow the wheat from the chaff, and give us the present knowledge of their own subjects in a duly balanced, concise, and accurate form.

This is a very laudable aim, and if the editors can only live up to it they will undoubtedly have done a great service for the medical profession. And if they choose as authors such authorities on their particular subjects as is Professor Guthrie on blood-vessel surgery they assuredly deserve to succeed. The work of Guthrie is too well known in this country to require detailed reference. Together with Carrel he has assisted in revolutionizing this form of surgery, and in the words of the general editors they have brought within the realms of possibility, under favorable conditions of locality, the removal of an aneurysm and the restoration of vascular continuity by the insertion of a sterilized graft taken from the post-mortem room.

The chapter dealing with the transplantation of tissues is in part an exposition of the most marvelous results obtained by Guthrie, that of the successful grafting of hen's ovaries without vascular anastomosis. It would seem as the outcome of these experiments that the evidence is in favor of soma, or foster-mother, influence in the after-breeding of hens thus treated, as all the controls have bred true. These experiments cannot fail to be of great interest to those concerned with the problems of heredity.

The last chapter of the book, too, is in a high degree instructive. In this Guthrie discusses resuscitation and shock. He attributes traumatic or physical shock to a general inhibitory state and of course his suggestions for treatment are in line with this theory. Blood-vessel surgery is a very excellent résumé of the most recent knowledge on the subject written by the man who has done the most and best original work therein. The book itself is well printed and the illustrations are numerous and, what is more to the point, are satisfactorily clear and serve the purpose for which they are intended, namely, to elucidate fittingly the text. If all the books of the series are up to the standard of this last then there can be little doubt of their success from the scientific and material standpoints.

Die experimentelle Bakteriologie und die Infektionskrankheiten mit Besonderer Berücksichtigung der Immunitätslehre. Ein Lehrbuch für Studiernde, Ärzte, und Medizinalbeamte von Dr. W. Kolle, o.ö., Professor der Hygiene und Bakteriologie an der Universität und Direktor des Institutes zur Erforschung der Infektionskrankheiten in Bern; und Dr. H. Hetsch, Stabarzt in der Medizinalabteilung des Kriegsministeriums in Berlin. Dritte, erweiterte Auflage. Zwei Bände. Berlin und Wien: Urban und Schwarzenberg. Price $8.50 and postage. New York: Rebman Company, 1911.

It is gratifying to note that the popularity of this work is sufficient to justify the publishers in the issuance of a third edition within three years of the appearance of the second. This permits the authors to keep their book in line with the really extraordinary progress which is making in bacteriology. Of course, many important changes have been made. The chapters on immunity, anaphylaxis, spirochetal infections, trypanosomes, and syphilis have been almost entirely rewritten, and the evidence of extensive revision is apparent through the rest of the book. Epidemic poliomyelitis, Weil's disease, trachoma, and verruca peruana have been added to the list of infectious diseases, and space is devoted to serodiagnosis and chemotherapy. It is sufficient to say that the third edition maintains the high standard set by the previous ones. The illustrations deserve special comment. They are numerous, and well executed, and many are beautifully colored.

Grundlinien einer Gesunden Lebensweise. (Briefe an einen gebildeten Laien.) By Dr. med. Paul Sittler, Colmar i. Els. Price 1.30 mark. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

This little volume of 74 pages contains many helpful hints for those interested in the subject of hygienic living. Among the topics treated are the feeding of infants and children, dangers of artificial feeding, suitable diet for adults, dangers of excessive use of meat, water as food, clothing, and hygiene of dwellings.

Die experimentelle Pharmakologie als Grundlage der Arzneibehandlung. Ein Lehrbuch fur Studierende und Ärzte von Dr. Hans H. Meyer, Wien, und Dr. R. Gottlieb, Heidelberg, Professoren der Pharmakologie. Zweite, neubearbeitete Auflage. Berlin und Wien. Urban und Schwarzenberg. Price $3.50 and postage. New York: Rebman Company.

In the revision of this well-known work for its second edition the authors have rewritten the chapters on the pharmacology of the genital organs and the pharmocological influence of the cause of disease. The plan of the book in taking up the action of drugs by physiological systems offers a distinct advantage not found in the study of a drug in its entire action. The section on "etiotropic" drugs, that is, those directed against the cause of disease, has naturally increased greatly in importance, and it is gratifying to find it so thoroughly adequate to the demands that will be made upon it. This able exposition of chemistry, physiology, and pharmacology forms a sure foundation for true scientific therapeutics and will be appreciated as such.

Health for Young and Old. Its Principles and Practice. By A. T. Schofield, M.D., M.R.C.S., etc. Author of "Hygiene for Schools," "Fit for Work," etc. An Unconventional Manual. Price $1.50. New York and London: G. P. Putnam's Sons, The Knickerbocker Press, 1911.

This volume, which the author calls unconventional, does not contain the ordinary statistics or diet tables found in many works on hygiene. The object of the book is to outline general hygienic rules appropriate for individuals of various ages. The effort is made to discourage introspection and the attitude of anxiety in regard to one's individual health. Various subjects are discussed in a helpful and pleasing way. The text is arranged in chapters which are considered under two sections: The Principles of Hygiene and the Practice of Hygiene. A variety of subjects is offered to the reader, for the writer tells us what to breathe, what to wear, what to eat, what to do, and how to wash. He also considers health in its relation to age and sex, town and country life, and how to restore health. The book is completed by a good index.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held February 15, 1912.

DR. GLENTWORTH R. BUTLER, VICE-PRESIDENT, IN THE CHAIR.

Presentation of Portrait of John A. Wyeth, M.D., LL.D.—Dr. SIMON BARUCH said that he had the honor of presenting this portrait, painted by J. Campbell Phillips, in behalf of the many friends of Dr. John Allan Wyeth. They desired to add it to the gallery of presidents now gracing the hall. With due regard to that innate modesty which was a dominant characteristic of their friend he would refrain from reciting the many valuable services which Dr. Wyeth had rendered to the medical profession and to his specialty, surgery. Nor was it necessary, for they were all aware that Dr. Wyeth had been the recipient of every honor in the gift of his colleagues. He had been president of the county and State medical societies, of the Academy of Medicine, and of the American Medical Association. Dr. Baruch asked the indulgence of his hearers while he read a few of the numerous letters that he had received indicating the character of the men who had participated in this movement and which revealed the motives which had prompted the admirers of Dr. Wyeth to do him honor. The first was from the "grand old man" who never failed to respond to any call in the interest of his profession, Dr. A. Jacobi. The second letter was from one of Dr. Wyeth's predecessors in the chair, Dr. Joseph D. Bryant. The third letter was from a man known for his scientific contributions, Dr. I. Adler, who wrote that Dr. Wyeth had done a great deal of good in his profession and had made the New York Polyclinic what it was going to be, a really first-class institution. The fourth was from one of those brothers who had converted a small city in the West into a surgical mecca and whose institution and work were the marvel of the world's surgeons, Dr. W. J. Mayo, who wrote: "My dear Dr. Baruch, I notice in the JOURNAL that you are the chairman of a committee to obtain a portrait of my old friend and teacher, Dr. John A. Wyeth. I enclose a contribution. I would send more, but I presume your object is to give as many men as possible the opportunity to join in this testimonial to the greatly beloved master of surgery." Dr. Baruch said that there was nothing that he could say that would add weight to these encomiums and added: "Mr. President, the portrait of Dr. John A. Wyeth is now the property of the New York Academy of Medicine."

Experiences with Duodenal Alimentation.—Dr. MAX EINHORN presented this paper. (See page 450.)

Duodenal Alimentation.—Dr. WILLIAM GERRY MORGAN of Washington, D. C., read this paper in which he related his experience with duodenal feeding. For the benefit of those not acquainted with the duodenal tube he outlined the technique of its use. The tube was swallowed by the patient at bedtime with the aid of water. When the first mark on the tube was at the teeth the bucket on the end was entering the stomach. The second mark indicated the distance from the mouth to the pylorus. During the night the capsule, provided there was no obstruction, would usually have passed the pylorus and the third mark should then be at the teeth indicating that the end of the tube was *in situ*, well down in the duodenum. One could make sure that the tube was in the duodenum in several ways. Gentle traction would develop a slight resistance if the tube was in the duodenum. Aspiration through the tube would often recover golden yellow duodenal juice and not gastric secretion. If the patient was given some liquid to drink by mouth and aspiration was immediately performed it would not be returned through the tube as would be the case if the latter were coiled up in the stomach. The food that had been found most satisfactory was a mixture of milk, sugar of milk, and raw egg. The amount given at a feeding should be small at first, 100 c.c. every hour from 7 A.M. to 9 P.M., increased until 280 or 300 c.c. were taken at each feeding. When the patient was taking 280 c.c. of milk, one egg, and one tablespoonful of sugar of milk at each feeding he was getting approximately 2,840 calories for the total eight feedings in twenty-four hours. As the average individual required when in bed under 2,000 calories to maintain his nitrogenous equilibrium it could be seen that there was a liberal amount in excess of needs for the purpose of building the patient up. In treating his first patients Dr. Morgan thought it would be an advantage to employ a method like that of Murphy for giving salt solution per rectum and he had made use of gravity from a pint irrigating jar, connecting its tube with the duodenal tube by a glass connection and setting the rubber petcock so that the nourishment entered the duodenum slowly, about twenty-five minutes being required for the larger feedings. Duodenal feeding was not, as a rule, suitable in the home as there were a number of points to which it was necessary to adhere rigidly or untoward happenings would occur. The food should be administered at the body temperature as that normally entering the duodenum from the stomach was of this temperature and the duodenum was not accustomed to shocks of too high or too low temperature and resented such insults by distressing symptoms of shock. The food should be allowed to enter the duodenum slowly; too rapid administration would cause flatulency and often the same train of symptoms as variations of temperature. The food mixture should be heated slowly, but should not be made too hot lest it become thick and lumpy from cooking of the egg. After heating it should be strained; this would help in preventing the tube from becoming occluded. At the termination of each feeding a syringeful of water at the body temperature should be injected; then the petcock closed; the syringe filled with air; the petcock again opened and the air injected, after which the petcock should again be closed before the syringe was disconnected. This kept the tube clear and clean. The management of the petcock was not a trivial matter; if it was not turned off when the syringe was removed some of the food would likely rush back into the bucket and lower tube and be converted by the trypsin into a cheesy lump, defying removal until the tube was removed. Duodenal feeding was indicated in certain ulcers with severe symptoms which would hitherto have been treated at the beginning by rectal feeding for some time, but which did well when put on duodenal feeding at once. If an ulcer had not yielded to a thorough course of medical treatment duodenal feeding should be tried before resorting to surgery. While this method of treatment would not cure all cases of ulcer and some might have to be operated upon later, the general condition of the patient was decidedly improved so that he was a better surgical risk. Ulcers at the pylorus, producing obstruction, might be treated with duodenal alimentation provided the duodenal tube could be passed into the gut, but if the pylorospasm persisted they then demanded gastroenterostomy. Duodenal alimentation should not be given too long a trial in ulcer at the pylorus because of the danger of malignancy. In other ulcers this method of treatment should be instituted in nearly all cases after ordinary medical means had failed to produce a cure and would often bring about very happy results. He had never had a case in which no improvement whatever was noted. Many complete cures had resulted and the remainder were greatly benefited. The cases that were not of long duration had almost without exception done well. Dr. Einhorn had recommended the local application of healing agents by painting argyrol in nearly insoluble form on the tube at the point where it rested against the ulcer. The writer

had not had a large experience with this method, but he had administered various drugs through the tube for other conditions arising during the course of duodenal feeding. In the diarrheas which often accompanied duodenal ulcer prompt relief was often secured by one grain of argyrol in an ounce of warm starch water given through the tube. Flatulence caused by the milk not agreeing perfectly could often be controlled by the addition of thirty drops of glycerine to the feeding. If flatulence still persisted five drops of ichthyol in a little water through the tube was generally followed by good results. Where the stool showed deficiency of bile the administration of one or two minims of dilute hydrochloric acid in one ounce of water through the duodenal tube caused the yellow bile color to reappear promptly. The author had also secured excellent results in the treatment of duodenal catarrh by using a long duodenal tube. Results had been most striking in cases of visceroptosis of marked degree with ischochymia where it seemed as though the stomach was incapable of emptying itself and passing along sufficient of the forced feeding to increase weight and restore the general tone. The stomach was given a rest and at the same time food could be introduced into the body in sufficient quantities to cause increase in weight and improvement in muscle tone. One of the cases cited nicely illustrated this point. The author felt convinced that duodenal feeding constituted a mark of great progress in medicine, filling a long-felt want; it was a method of resting the stomach and at the same time affording the economy abundant nourishment.

Dr. Henry Dwight Chapin said that he was called upon to speak from the standpoint of the condition of the pylorus and stomach in these cases. Dr. Einhorn had spoken of the stomach as being a reservoir; if that was true in adult life, it was particularly true in early life. It seemed to be a sort of receiving chamber through which the food could percolate into the bowels and there be digested. The musculature of the stomach and bowels in infants was weak, and this explained the failure, in so many cases, of attempts in forcing the contents of the stomach through the pylorus. In addition, in early life there were very thin muscular fibers and there was a tendency to spasm, a pylorospasm, such as was seen in the muscular fibers of the sphincter of the anus where many infants had a simple spasm, who were very constipated, and the fecal mass was not allowed to pass through. This same thing was noticed in cases of intussusception where the bowels was so distended. This was also found in the bronchial tubes where there was a weakened musculature. Dr. Chapin said that two years ago he had made a study in a series of cases, all weak infants, of the musculature of the stomach walls and of how long the food remained in the stomach, and in only two cases did he find the stomach emptied in the time it should have been. There were eighteen failures to empty the stomach in the allotted time. The fermentation test was present in thirteen of these cases, probably because of the food remaining in the stomach too long. In nineteen of the cases at the end of three hours only six approximately emptied the stomach of its curds and whey in this time. Butyric acid was present in six of them. Hydrochloric acid in six, combined hydrochloric acid was found in a fairly large amount. With this weak musculature of the stomach, with a pyloric spasm, there was a serious condition to deal with. This condition of pylorospasm was a condition that Dr. Chapin believed to be more frequent than was generally supposed. The question was, what should they do regarding it? Hitherto they had washed out the stomach every two hours, etc. He had had a number of cases in which a relief of the spasm at the pylorus was obtained by the use of paregoric, given a few drops at a time, about one hour before feeding. This seemed to relax the spasm. However, he had recently been using the tube devised by Dr. Hess, one that was somewhat larger than the one used by Dr. Einhorn, and which could be passed through the pylorus. There was a suction produced and the contents were received into a receiving chamber which showed just what they were dealing with. He had fed cases slowly, taking from ten to fifteen minutes. He had one case at present with all the typical symptoms of spasm of the pylorus, constant vomiting, loss of weight, constipation, and with a beautiful wave from the pylorus.

Dr. C. J. MacGuire said that in 1910 he had a number of cases of hemorrhage from gastric and duodenal ulcers and the results of the treatment then employed were not at all satisfactory. He always labored under the disadvantage then of having to support his patients by means of rectal alimentation. He then read a brochure by Dr. Einhorn and what was contained therein appealed to him. Until he had seen the demonstration just made he did not realize how simple this method of feeding was. He reported the case of a patient, twenty-six years of age, who had had three severe hemorrhages within five or six days and the girl was in an exsanguinated condition. She was treated for this condition for four days and without relief and was then taken to Dr. Einhorn, who introduced his duodenal tube. During the first two days the girl's weight decreased and she lost during this time about two pounds, but then she began to gain in weight. She suffered no discomfort. The tube was retained for thirteen or fourteen days and was then removed. Her weight during this period of time increased from 117 to 122 pounds. The patient left the hospital in December and was absolutely cured and had since been in good health. Another case Dr. MacGuire saw was one of a similar character, but more desperate. For four days the patient had been supported by rectal alimentation. The tube was introduced and allowed to remain for twenty-four days and, as a result, the patient's weight increased, and even after the removal of the tube the weight continued to increase. This patient was now enjoying life and showed no symptoms of gastric distress whatever. In duodenal alimentation they aimed to give the stomach a rest and to support the patient. There should always be considered the general health of these patients, and especially in those cases where operation had been refused; in these cases duodenal alimentation would prove of great benefit. Dr. MacGuire said that both of these cases occurred in his service at St. Vincent's Hospital; in both the usual treatment for gastric and duodenal ulcer hemorrhage was carried out for four days when duodenal alimentation was started. In the second case the weight increased from 110 pounds (March 4) to 130 pounds (May 4). The red blood count in the last case fell to 1,800,000. When the patient left the hospital this count had reached 4,100,000. His contention was that an ulcer was most likely to heal in a subject who was fairly well developed and nourished by duodenal feeding than in one merely fed by rectal alimentation.

SECTION ON SURGERY.

Stated Meeting, Held April 7, 1911

DR. HENRY DAWSON FURNISS IN THE CHAIR.

Unilateral Renal Hematuria: Decapsulation.—Dr. Henry Dawson Furniss reported the case of a man forty-one years old. When eighteen years of age he had typhoid fever. In July, 1900, he was thrown from a wagon and received an injury of the lumbar region; there was no hematuria and recovery was prompt. This history was taken on January 3, 1911. Three weeks before the patient noticed that the urine contained blood which varied in amounts. At times it was port-wine in color, at other times coffee-colored. There always seemed

to be more in the morning specimen. The radiographs of the kidneys, ureters, and bladder were negative. The cystoscopic examination showed the bladder to be normal. The urine from the right kidney was bloody, that from the left was clear. The examination of the eyes was negative. The blood pressure was 125 mm. On January 13 the kidney was explored through a lumbar incision and appeared to be normal. A decapsulation was done and a small wedge-shaped piece of the kidney from the convex border was removed for examination. For three days after the operation the urine contained as much blood as before operation. On the fourth it began to clear up, on the fifth day none was found macroscopically; on January 23 the urine was normal. The patient left the hospital on January 26. Dr. H. T. Brooks examined the tissue removed and reported that it showed very little deviation from the normal. The most marked change consisted of occasional small wedge-shaped areas of fibrosis, with the base toward the capsule, and confined to the cortex. The capsule, except at these points, was not thickened nor infiltrated with round cells. A few tubules in the cortical portion were filled with a coagulated, transparent, homogeneous (hyaline) material resembling sections of casts; others were filled with blood. Blood was also observed within the capsular spaces of several of the Malpighian bodies, and the capillaries of some of the glomeruli belonging thereto were widely dilated with blood. Except for an occasional tubule filled with hyaline coagulated material the medulla presented nothing abnormal. The larger vessels showed no degenerative changes. How much of these alterations, except the slight fibrosis mentioned, was produced by the removal of the tissue was, of course, impossible to state. On April 6 the patient stated that, except for an attack of appendicitis shortly after reaching home, he had been in good health since leaving the hospital, and that within the past four weeks he had gained nineteen pounds in weight. He had had no return of the hematuria. The specimen of urine presented was perfectly clear.

Chronic Suppurative Pyelitis (Ascending).—Dr. Furniss reported the case of a woman sixty-five years old. In December, 1907, she had had a pan-hysterectomy performed for carcinoma of the uterus. Shortly after there developed a ureterovaginal fistula on the left side which Dr. Furniss repaired by a plastic operation through the vagina in August, 1908. She was relieved and was well until two months ago, when she began to be troubled with irritability of the bladder. The urine was quite turbid and there was a heavy sediment. Cystoscopy revealed a normal bladder mucosa, with clear urine coming from the right kidney. The left ureter appeared as a round opening, the diameter of a match stick; from this purulent urine was seen escaping. On March 25, 1911, the left kidney was removed. The kidney was smaller than normal and was quite adherent; the pelvis and the calices were much distended; the kidney structure was thinned out from the pressure atrophy. In the two weeks since the operation the patient had improved very much. There was very little irritability of the bladder and the urine was clear.

Epidural Hemorrhage, Complicating Epilepsy.—Dr. Walter C. Cramp presented a patient who had been subject to epilepsy for seventeen years. One day before admission to Bellevue Hospital, during an attack, he fell and then walked two flights of stairs to his room where, twenty-four hours later, he was found unconscious with paralysis of the left arm and leg. There was edema over the right parietal region. His pulse was 60 and respirations were loud. The blood-pressure was 120. The patient was very restless but could be aroused from his stuporous state by shaking. Operation revealed an epidural clot over the right motor area; there was also a fracture of the skull in this area extending into the base. There was a rupture of the posterior branch of the middle meningeal artery. On the day following the patient could move the left arm and leg; two days after operation he could speak intelligently, give his correct address, and could move the extremities freely. When discharged he had normal use of his left arm and leg.

Penetrating Stab Wound of the Abdomen Involving Mesentery and Intestine.—Dr. Walter C. Cramp presented this patient. The knife entered two inches below the umbilicus, slightly to the right of the median line. When admitted to the hospital six inches of omentum protruded from the wound; this was washed off with saline solution and excised. The peritoneal cavity was filled with blood. A wound one and a half inches long was found at the base of the mesentery which was the site of the profuse hemorrhage. Three wounds in the jejunum involved all the coats; there was also a wound in the transverse colon. The patient was discharged after a stay of eighteen days in the hospital.

Infection with Bacillus Aerogenes Capsulatus.—Dr. Cramp reported this case. The patient fell through an elevator shaft, receiving a compound fracture of the os calcis and astragulus. After twenty-four hours gas escaped from the wound and the tissue became emphysematous. The patient was treated by an open incision, peroxide of hydrogen, and exposure of the wound to the air. Twenty-four hours after there was no gas escaping from the wound. The culture taken showed the presence of the *Bacillus acrogenes capsulatus* and streptococci. It became necessary to amputate the leg and then the thigh. This was performed under spinal anesthesia.

Multiple Lacerations of the Intestines.—Dr. Henry G. Bugbee reported this case, which showed the extensive injuries which might be obtained by a penetrating wound of the abdomen. A splinter from a piece of wood penetrated the patient's abdomen, and within an hour he was placed on the operating table. There were two lacerations of the transverse colon, and lacerations of the jejunum as well, one-half to two inches in length. The operation was rapidly performed. No large vessels, fortunately, were injured, and the patient made an uneventful recovery.

Gunshot Wound of the Head.—Dr. William Henry Luckett presented a man, twenty-one years old, a lumberman, who received a gunshot wound of the left temporal region. At the time of admission he had considerable difficulty in speech, evidently understanding, but unable to articulate clearly. There was no astereognosis. His chief complaint was pain in the head. There was no paralysis. The *x*-ray showed the bullet in two pieces as though split longitudinally. One piece was apparently just outside the skull, the other just beneath it. Both pieces were easily removed, and the patient made an uneventful recovery.

Butcher's Cleaver Wound of the Brain.—Dr. Luckett presented a patient who had been struck on the head with a butcher's cleaver. He bled profusely, but did not lose consciousness. There was no bleeding from the nose. On admission to the hospital his temperature was 97° F., pulse 88, respiration 20. The local injury consisted of a lacerated wound of the scalp slightly to the left of the sagittal suture at the vertex of the skull, and was about three inches in length. A portion of the left parietal bone was lifted away as a lid; it was movable, and there was a linear fracture three-quarters of an inch from the sagittal suture. The temperature never went above 100° F. Two days after admission the patient was examined by Dr. Leszynsky, who found the sensorium to be clear, pupils equal, and reaction normal. The corneal reflexes were normal. There was no rigidity of the neck or extremities. The facial innervation and the tongue were normal. All the movements were normal except that there

was inability to extend completely and abduct the fingers. There was no astereognosis. There were no objective sensory disturbances. The deep reflexes were equal and exaggerated in all four extremities. The plantar reflexes were normal. Four days after admission some clots and lacerated brain tissue were removed; the bone was replaced and the scalp wound was closed by suture and dressings applied. After the operation the temperature rose to 102° F., pulse 100, and respirations to 22. On the fifth day after the operation conditions appeared to be normal, although the patient seemed stuporous and ecchymosis appeared under the left eye. There were a paralysis of the right arm and exaggerated right knee jerks. There was also motor aphasia. One day after the operation the patient was again examined by Dr. Leszynsky. There was an ecchymosis of the left upper and lower lid, and the eye was closed. The motor aphasia still persisted. There were a right facial paralysis and a complete flaccid paralysis of the right upper extremity. The right knee-jerk was slightly exaggerated. There was neither clonic rigidity nor Babinski's sign. The corneal reflexes of the right side were abolished. The condition presented was probably one due to subdural hemorrhage over the middle and lower third of the precentral convolution. Eleven days after admission a left subtemporal decompression was performed, with trephine and rongeur; there was found a large clot beneath the dura at this point. This was evacuated. Eight days later the patient was able to speak for the first time since operation. His arm was still paralyzed, but apparently there was some improvement. The paralysis at one time was so complete that the head of the humerus began to slide from the glenoid cavity. The use of massage and passive motion helped the patient to concentrate his mind on his efforts at active motion. The patient continued to improve daily. When he was discharged from the hospital the wound in the skull was practically closed, although the dura was plainly visible and the pulsations of the brain were easily seen.

Stab Wound of Head.—Dr. LUCKETT presented a patient who was stabbed in the head by a penknife about six weeks prior to operation. The wound was dressed at another hospital, where the knife blade escaped notice. The wound healed, but broke down several times and discharged pus. On admission to the hospital he complained of pain in the head; he also had chills and fever, convulsive attacks and dizziness, and was indisposed. On January 10 the patient had a convulsive seizure lasting ten minutes, with temporary loss of speech and paralysis of the left arm. On January 11 he was examined by Dr. Leszynsky, who found the patient conscious and able to answer questions intelligently. There was no disturbance of speech. The tongue was normal. There was a slight facial paresis. There was no rigidity of the neck. The pupils showed equal reaction. The left upper extremity was generally paretic, but the patient was able, with some difficulty, to completely elevate and extend the extremity. There was complete wrist-drop, with loss of grasping power from paralysis of the flexor group of muscles. He could supinate, but not pronate, the forearm. The triceps muscle was paretic. The elbow and wrist-jerks were normal. There was no astereognosis. The lower extremities were normal. On January 11 an *x*-ray was taken, and this showed a foreign body embedded in the brain in the right parietal region. Dr. Luckett trephined over the spot and removed a button of bone with the blade intact. The blade was about one and one-quarter inches in length. On the day following the operation the patient had several convulsions. On January 27 there was a complete flaccid paralysis of the entire left upper extremity. The left wrist and elbow-jerks were exaggerated. There were *complete astereognosis* and incomplete loss of muscular sense. There were no objective sensory disturbances. The knee-jerk was slightly increased. There was no clonus; Babinski's sign was not present. The diagnosis in this case was an injury to the subcortical portion of the motor tract affecting particularly the arm center, with indications of probably descending degeneration. The patient was discharged on February 24 with fair power in the flexors and extensors of the arm, but the wrist-drop remained and the flexors of the hand were very weak.

Fracture of the Base—Decompression.—Dr. LUCKETT reported the case of a man, forty-two years old, who had been struck by a trolley car. When he was admitted to the hospital he was bleeding profusely from the right ear. His pulse was strong and respirations were normal. There was a lacerated wound of the scalp two inches in length, over the right frontal region, and one about the same length over the right occipital region. Depression was felt through the occipital wound. There was a facial palsy on the right side. The first night in the hospital he was very noisy and irritable. The facial palsy was probably due to a fracture of the petrous portion of the temporal bone or to a hemorrhage into the Fallopian canal. A lumbar puncture revealed a large amount of blood. An *x*-ray showed a fracture extending through the right temporal bone extending into the base. After eight days with no improvement in his condition it was decided that an operation was demanded. Ten days after the injury a right subdural decompression operation was performed and a large extradural clot was found. The dura was incised and about two ounces of clear fluid escaped. Twelve days after the operation the right facial palsy had entirely disappeared. There was a gradual return of muscular and mental power, and the patient was discharged cured less than one month after admission.

Extensive Fracture of the Base Without Symptoms.—Dr. LUCKETT reported the case of a boy, twelve years old, who was hit by a car. When admitted he had a depression of the skull in the occipital region; there were also contusions of the face and skull. There was false motion and crepitus at about the middle of the left femur. When first seen he had motion in the right upper and lower extremities. In the ambulance he developed clonic convulsions and became unconscious, but regained consciousness shortly after admission. In the right occipital region there was felt a bony ridge with a slightly movable fragment. A spinal tapping showed pure blood. The physical examination showed the left femur with a point of false motion, crepitus, and very severe pain in the upper third. There was some swelling, but no ecchymosis. There were no signs of external violence.

Severed Flexor Tendons at Wrist—Tenorrhaphy After Interval of Four Weeks.—Dr. WINFIELD SCOTT SCHLEY reported the case of a boy who had his tendons at the wrist severed. He was immediately taken to a doctor in the neighborhood who ligated the radial artery and sutured the wound without reuniting the severed tendons. Four weeks later Dr. Schley opened the wound and did a tenorrhaphy with perfect results. The tendons appeared to have had new sheaths formed for them.

Mesenteric Thrombus—Resection of Twenty-two Inches of Intestine.—Dr. SCHLEY reported this case. The patient was taken ill twenty-four hours before admission to the hospital with sharp pains especially in the lower abdomen. Two hours after the beginning of his attack he vomited. No blood was passed and the bowels moved normally. No gas was passed. There were neither rectal nor urinary symptoms. He had a temperature of 100.3° F., respiration 24. His leucocyte count was 20,000. The abdomen was moderately distended, with some rigidity. He was thought to have some abdominal lesion and an exploration was made. Upon opening the abdomen about 100 c.c. of bloody serum escaped; the mesentery was found to be chocolate colored, and its veins thrombosed. It was

necessary to remove 22 inches of intestines which were filled with a brown, bloody detritus. The third day after the resection the colon was irrigated. The patient still had within him the button; otherwise he was apparently normal in every way.

Tuberculous Peritonitis.—Dr. SCHLEY presented a man with the most advanced tuberculous peritonitis complicating pulmonary tuberculosis he had ever seen. There was an exceedingly extensive involvement. He did a laparotomy which was followed by a slight improvement in the patient's condition. The abdomen was again opened and the cheesy masses were less prominent. A third operation was performed and then the temperature subsided and his general condition improved decidedly. The patient was kept in the open air and sunlight, creosote was administered, and at the present time the patient was almost entirely free from his active tuberculosis.

Pancreatic Cyst—Acute Development—Study of Ferments.—Drs. CHARLES H. PECK and W. G. LYLE reported the case of a woman, twenty-nine years old, who was admitted to Roosevelt Hospital on October 26, 1910, complaining of pain and tenderness in the upper abdomen, accompanied by fever and general malaise. Since her sixteenth year she had suffered with flatulency and epigastric distress after eating. After two miscarriages she gave birth to three children; the last two were living and in good health. Fifteen months ago, during pregnancy, she had three attacks of severe lancinating pain which radiated to the shoulder and downward to the lumbar region. This continued about twelve hours. Two of these attacks were accompanied by syncope. Since the birth of her child she had had, within eleven months, four similar attacks; she always vomited shortly after the pain began; this was usually one or two hours after meals, and the pain lasted from twelve to twenty-four hours. The patient had had neither typhoid nor jaundice. She did not pass bloody or clay-colored stools, and never noticed blood in the vomitus. On admission her temperature was 101.2° F. and pulse 84. The leucocyte count was 18,000 and the polymorphonuclears were 79 per cent. The Widal test was negative, and the gastric contents were practically normal. On examination a tender mass, thought to be an enlarged liver, was found in the upper right quadrant of the abdomen, extending across the epigastrium. After several days' observation, during which the pain and tenderness continued and the temperature ranged from 101° to 102° F., an operation was performed on November 1. The liver was found to be normal. The gall-bladder contained six good-sized facetted stones and about thirty small ones. Its wall was practically normal. There was no dilatation of the ducts, and no stones were found in them. The head of the pancreas was greatly enlarged, hard, and nodular. No areas of softening or necrosis were found. The diagnosis of cholelithiasis with a marked pancreatitis was made and a cholecystotomy was performed. The drainage tube was kept *in situ* twelve days; bile continued to escape from the tract several days longer. The pain, abdominal tenderness, fever, nausea, and prostration continued, and it soon became evident that the epigastric swelling was increasing. Twenty-two days after the cholecystotomy the second operation was performed. The swelling in the epigastric region proved to be a collection of fluid which lifted the stomach and transverse colon forward. It was incised through the gastrocolic omentum and about 1,500 c.c. of watery fluid were evacuated. While it occupied in general the position of the lesser omental cavity it seemed certain that there was not a collection of fluid in that cavity, but rather that the anterior wall of the sac was formed by the *posterior* parietal peritoneum which had been lifted forward, for large masses of necrotic pancreatic tissue lay in the bottom of the cavity, several of them attached by fibrous bands, evidently the remains of the pancreatic vessels or ducts. The amount of viable pancreatic tissue which was left could not be determined, nor could the exact position of the area of necrosis, though they were apparently in the region of the head. Drainage was free and pieces of necrotic tissue escaped with the fluid. The convalescence was slow, but uninterrupted, and the patient left the hospital on December 28. She had since reported having gained in both weight and strength. The formation of the cyst was evidently the direct sequel of the pancreatitis observed during the first operation. Localized necrosis of a considerable mass of pancreatic tissue had occurred, and with this extravasation of fluid and the rapid collection of the large amount found. The anterior cyst wall was formed by the posterior parietal peritoneum. The posterior wall was formed by the posterior parietes and the pancreas. The formation of this cyst in the way described would seem to suggest that many pancreatic cysts might have a similar origin, beginning with a pancreatitis, localized necrosis, and the pouring out of pancreatic secretion. As the cases seldom came under observation until the process was more chronic, the direct proof of this origin was seldom at hand. The examination of the fluid from the cyst was made by Dr. Lyle in the Research Laboratory. It contained a very active ferment which proved to be erepsin, a proteolytic enzyme which readily digested peptones and albumoses, but differed from trypsin in that it did not digest native or coagulated albumins, with the exception of casein. The ferment in another case under observation at the same time, in which the cyst had been present for about one year, was trypsin.

An Unusual Case of Strangulated Femoral Hernia with Comments Thereon.—Dr. G. FRANKLIN SHIELS reported the case of a woman, fifty-four years of age, the mother of four children, who had been operated upon nine years since for repair of the perineum and cervix. The patient was extremely rheumatic and had cardiac insufficiency. She was taken suddenly while walking with slight pain in the groin, followed by violent colicky pain in the epigastric region. Three hours later she became aware of swelling in the groin. She continued to have some pain in the back and epigastrium associated with a sense of bearing down. Dr. Shiels saw the patient thirty-two hours after the beginning of her trouble, and found a swelling the size of a tangerine orange over the inner third of Poupart's ligament, which was firm and resilient to the touch, and which lay below and to the outer side of the spine of the pubic bone. A diagnosis of strangulated femoral hernia was made, based upon the suddenness of occurrence, the colicky pain, and the nausea. Attempts at reduction failed. Dr. Shiels stated that in his opinion no effort at taxis lasting longer than five minutes should be made in any case of hernia with symptoms of obstruction or strangulation, and that operation should be done at once. The sac was easily freed from the surrounding tissue at operation; this had been bruised by the early efforts at reduction made by the attending physician. It was filled with a non-odorous, flake-free, dark, serosanguineous fluid. At the deepest part of the sac was found a portion of the bowel not larger than an oxheart cherry, firmly strangulated by the ligament of Hey, purple-black in color, but glistening. The bowel was freed and returned to the peritoneal cavity. The sac was thoroughly freed high up, ligated, and removed. An uninterrupted recovery followed. Dr. Shiels said that he reported this case because of its extremely sudden occurrence, without special strain, and the remarkable absence of urgent and violent symptoms. He wished to point out the failure of many writers and teachers to call sufficient attention to the anatomical mechanism which caused the hernia to find its way to a point over Poupart's ligament, thus leading to its being mistaken for an inguinal hernia and to futile and misdirected efforts at reduction, *i.e.* taxis upward, outward, and inward, instead of downward, to bring the hernia

ver the external femoral opening, backward to place it in the canal, upward and inward to return it within the abdominal cavity. The experienced surgeon should remember the relationship of the hernia to the pubic spine and should at once make a differential diagnosis, for the femoral hernia was, in contradistinction to that of the inguinal type, always below it and to its outer side. He also reported the case because he had predicted so accurately the condition which existed before operation, because he had seen a case some years ago so exactly like this one in every detail and at operation only a portion, and not the whole circumference, of the bowel was strangulated, having been pushed laterally into the canal and nipped by Hey's ligament. The extreme rarity and sudden occurrence of femoral hernia he thought was due to the so-called femoral canal *not* being a canal except potentially, and *not* having any contents, while the inguinal canal *was* at all times a canal, and thus was a weaker point of attack in those having a hernial tendency. He directed attention to the fact that after removing the sac high up nothing was done in the way of closing or obliterating the femoral canal, since nothing further was needed to bring about the radical cure of femoral hernia. The various procedures resorted to for the purpose of producing a barrier to the descent of the hernia were quite unnecessary. Dr. Ochsner of Chicago had been emphasizing this point, which it had been the custom of the writer to practise and to teach since 1895. When the sac was removed high up the walls of the potential canal fell together and through the irritation produced by the operation an exudation of plastic lymph occurred which, becoming organized, obliterated the canal. Finally, he observed that the early epigastric pain had ceased to be regarded by surgeons as indicative of stomach or duodenal trouble alone, since operation had repeatedly proved that it might be a symptom of involvement of any organ covered by or coming in contact with the peritoneum. This was no doubt due to the coming together of the extensive sympathetic system of the abdominal organs in the solar and splanchnic regions.

Hemorrhagic Infarcts of the Small Intestine.—Dr. Howard D. Collins read this paper and reported three cases. He said that circulatory disturbances of the blood supply of the small intestine that presented themselves to the surgeon were usually of such a character as to ultimately produce a gangrene of the gut. In addition to injury to mesenteric vessels by trauma, constriction of the vessels by volvuli, intussusception, strangulated hernia, etc., which might be called obstruction by external causes, there were those of internal causation, such as emboli and thrombosis of the mesenteric vessels. Moist gangrene was the only type observed provided the artery alone or the vein alone was occluded. That anemic gangrene did not occur when the artery alone was stopped was easily explained by the fact that the mesenteric veins had no valves, and consequently the affected part was bathed in venous blood by a return engorgement from connecting veins. Dr. Collins reviewed the experiments of Longcope on dogs which led to the conclusion that extreme narrowing of the mouths of the superior mesenteric artery or celiac axes, or both, in dogs was soon compensated for by a collateral circulation, so that a gradual thrombosis of one or both vessels might take place without serious detriment to the health of the animal. Longcope also concluded that sudden occlusions of the superior mesenteric artery resulted in hemorrhagic infarcts of the intestine. If the analogy between dogs and humans held true there must be cases where a slow-forming occlusion of the superior mesenteric artery occurred with gradual, but more or less complete, cessation of the blood supply by the normal channels to the small intestine, and yet gangrene be averted by collateral or anastomatic vessels. Such cases probably pass unrecognized, while in those cases where the occlusion was sudden the symptoms were so severe as to cause anxiety, and usually led to operation. The principal symptoms were sudden pain of a marked degree, abdominal rigidity and tenderness, fever, either marked constipation or stools mixed with blood. Hiccough was often present, as well as a leucocytosis of high count. Another symptom was a doughy sensation in that part of the abdomen overlying the turgid swollen gut; this doughy area moved about as the position of the gut was changed. Later on the gangrene produced a septic peritonitis. The prognosis depended upon the amount of gut to be resected and the condition of the patient. There was a type of disturbance of splanchnic circulation which presented as its pathological lesion single or multiple small hemorrhages in the wall of the gut, usually the ileum, without any thrombosis or embolus of the superior mesenteric artery or vein while lying between the mesenteric layers of the peritoneum. The hemorrhagic spots usually lay between the muscularis and serosa or in the submucosa, and were placed opposite the mesentery. These areas varied from one to three centimeters in diameter. The writer had called this condition "intestinal apoplexy." Dr. Collins described three cases which Maragliano had reported, all of which had septic peritonitis when he first saw them. All of these cases died, and autopsy showed not only the perforated ulcers of the lower part of the ileum, but in addition several areas of hemorrhage like those just described. Sprengel had also described a case that gave the signs of intestinal obstruction, which on operation showed some bloody serum and numerous intramural hemorrhages scattered through the small intestine. Two of Dr. Collins' cases had been mild, only a single spot of hemorrhage having been found, while the third had multiple areas. All were subjected to operation and all recovered. Two other cases had occurred in the City Hospital, both in the service of Dr. Potter. One was supposed to have typhoid, and died suddenly. Autopsy showed many minute hemorrhages in the wall of the small intestine, none having perforated. In reviewing these cases it might be argued that the symptoms in the first two cases were out of all proportion to the lesions found, but on the other hand the cessation of symptoms after the operation was very remarkable. It might also have been questioned whether these patients would not have recovered without operation, the hemorrhagic spots resolving without perforation. He was of the impression that perforation would surely have occurred and resection furnished the most reliable means of forestalling that accident. The writer had nothing to offer as to the etiology of these cases.

PRACTITIONERS' SOCIETY OF NEW YORK.

243d Meeting, Held December 1, 1911.

The President, Dr. J. W. Brannan, in the Chair

Preliminary Note on Some Experiments on Serous Gas Distention.—Dr. A. A. Smith read this paper. (See page 462.)

Dr. Smith supplemented his paper by remarking that the first experiments on the cadaver were directed to demonstrate that the pericardium would distend with liquids. The experiments showed that there is a limit to such a distention; such a limit being of 750 c.c., although a maximum of 1200 c.c. could sometimes be reached. Several *x*-ray photographs demonstrated that the pericardium was distended at the base of the heart, and that the heart was displaced toward the chest walls to the left side. One of the photographs demonstrated the leakage in the pleura from the distended pericardium on perforation of pleura by the point of the needle. The experiments were concluded by introducing the liquid in the pericardium by penetrating through the right auricle, passing through the jugular vein,

the innominate, the superior vena cava and the right heart, and by perforating the heart muscle, thus leaving the pericardium intact. The result of the experiments on the dogs (under ether, of course, and with due precautions for the animals) did not interfere with Dr. Dunham's theory. It resulted that the pericardium distended uniformly, and that when the liquid reached a given pressure it greatly interfered with the function of the heart, while, when the pressure was relieved the heart resumed its natural function; this for several times.

The experiments for the distention of the pleura in the cadaver were not as successful, particularly on account of the difficulty of penetrating the pleura with the liquid. Dr. Smith showed one of the *x*-ray photographs to demonstrate the displacement of the heart toward the right side to the fifth intercostal space, and in commenting upon it, expressed his doubts whether such a result could be obtained on the cadaver. A demonstration by a photograph followed, showing the chest of a woman who entered the hospital with pleuritis, with effusion on the left side, and displacement of the heart to the right mammillary line, and a photograph of the same patient, thirteen days after the thoracentesis, showing the heart at the medium line. The speaker believed there were several causes that prevented the distention of the pleura in the cadaver, particularly the fact that in not less than 60 per cent. of the cases there were adhesions. Finally, he exhibited an *x*-ray photograph of a patient from whose chest 3,200 c.c. of liquid had been taken, and added that the maximum of liquid injected in the pleura of a cadaver was 1,800 c.c.

Dr. R. Abbe referred to the displacement of the heart in connection with liquid in the pericardium, and cited a case of tumor of the mediastinum, in which there was a marked displacement of the heart.

Dr. L. A. Conner stated that he believed that the results of Dr. Smith's experiments, proving that the slow and gradual distension of the pericardium permits the accumulation of a large quantity of fluid without greatly altering the function of the heart, explained why the function of the heart is but slightly impaired in those cases of pericarditis, in which the formation of the liquid is slow, although its actual quantity may be greater than in other forms of rapid formation with impairment of the function. As to displacement of the heart, he thought that might perhaps depend upon the specific gravity of the liquid which sometimes causes the heart to be lifted toward the chest's walls, and sometimes, instead, pushed downward.

Dr. J. Ewing suggested that perhaps the volume of the heart and the elasticity of the pericardium had a marked influence on the position of the organ and on the quantity of the liquid that the pericardium contained.

Dr. J. S. Thacher said that Dr. Smith's report of the experiments in certain features reminded him of a case of pericarditis reported by Dr. Howland. In both instances extreme extention of the pericardium produced a rounded bulging toward the right with a reentrant angle between the pericardium and the liver.

Dr. J. W. Brannan asked Dr. Smith if he could tell the maximum quantity of fluid found in cases of pericarditis.

Dr. Smith answered that the literature on the subject stated that in one case 2,200 c.c. was found, while in another 3,000 c.c. of exudate was found.

Dr. Brannan asked Dr. Ewing whether cases of rupture of the pericardium had ever been observed.

Dr. Ewing did not recollect any and never measured the quantity of the liquid.

Dr. Smith said that the results of his experiments with liquids of different specific gravity and with gelatinous liquids did not seem to bear out the suggestion that the density of the liquid may have an influence on the displacement of the heart. He believed that he could assert that inflammation and the slow filling of the pericardium might, instead, have a great deal to do with it. It was difficult to determine by experimenting on the cadaver how much distention the pericardium would bear without rupture. The pleura did not stand a rapid distention; live animals did not tolerate the distention of the pleura and the condensation of the lung tissues.

Necrosis of the Extremities in a Child.—Dr. J. S. Thacher presented the history and photographs of a child suffering from necrosis of the extremities, ending in complete loss of the hands and feet with the exception of parts of the fingers of one hand. This case presented an unusual series of exacerbations and remissions of circulatory disturbances in the extremities—of peripheral syncope, congestion, asphyxia, and necrosis. The surfaces at different times became pale or cyanosed or bright red or dark red or black; sometimes hot, at other times cold; with irregular exacerbations and remissions and variations from one phase to another, resulting from time to time in death and loss of tissue. At times tissue apparently beyond the possibility of recovery would suffer only a very superficial loss and at times would gradually resume its normal appearance. But ultimately both feet and one hand were lost, with the adjacent third of the leg or forearm, and portions of the fingers of the other hand. The patient was a negro child, under observation at the Roosevelt hospital for over a year. On admission she was 19 months old. On the previous day she complained that the right leg had been bitten, and a small red spot was noticed by the mother just above the ankle and the ankle and foot were swollen. Later in the same day the child complained that the other foot had been bitten and this foot was found to be swollen and blue. On admission both feet were swollen to the ankles and tender and moderately hot. Two days later the left foot was blue and a few hours later normal in color. The following day both feet were blue and an almost black discoloration appeared on the extensor surfaces of the first three fingers of the right hand. After this the changes spoken of above came and went in a startling manner in all four extremities, also in mild degree over both patellæ and on the pinna of the right ear. The child evidently experienced but little pain, being usually happy and playing with her toys, except when the parts were dressed or the doctors approached her bed. During the summer the stumps granulated, healed, and except for the absence of the lost parts, the girl seemed to be quite well, and gained in weight. At the time of this report she has just returned to the hospital with a little fever and reappearance of discoloration in the stumps. Early in her stay in the hospital she was given a long and generous treatment with iodide and inunctions of mercury, but her chief improvement occurred after this was stopped. In her previous history nothing of importance was learned except that she had had a cold through the previous summer. On admission there were moderate signs of rickets—epiphyses enlarged, abdomen prominent and head square in shape. There were also a few scattered, indurated papules on the face and on the right leg. The blood vessels appeared normal to palpation. The pulsation in both radials, the left posterior tibial and left dorsalis pedis were easily palpable and the vessel walls did not seem to be thickened. The coagulation time of the blood was determined at 3½ minutes. The Wassermann reaction was positive. From this specific reaction and the disastrous outcome it was thought that there must be organic changes in the shape of endarteritis at least partially obliterating, but from the repeated remissions and temporary recoveries, apparently complete, there was evidently a large spastic element, as in Raynaud's disease.

Dr. A. A. Smith asked whether there were signs of syphilis.

Dr. THACHER answered that the evidence of syphilis was a positive Wassermann reaction, and that no corroboration was obtained from the history, except in the report of a prolonged cold during the previous summer; no stigmata were discovered, except rather poor nutrition and some small papules on the skin.

Dr. L. A. CONNER inquired as to the condition of the arteries.

Dr. THACHER answered that on palpation the vessels appeared to be normal, that even the pulsation of the dorsalis pedis of one of the feet could be felt. No microscopic examination of the tissues was made, the parts lost being necrotic.

Dr. C. L. DANA said that the general opinion of neurologists now was that cases of Raynaud's disease or symmetrical gangrene were due to vascular conditions and were not due to neurotrophic influences. While the angiospasm might produce whitening of the fingers it did not cause actual gangrene.

Dr. F. P. KINNICUTT stated that in a case of Raynaud's disease which he had the sections seemed to prove that it was a disease of the vessels, not a nervous disease.

Dr. J. EWING, on request of Dr. Dana, said that he had never seen a case like the one described.

Dr. KINNICUTT said that the case reported by Dr Thacher, in view of the age of the patient was one of great interest. In the light of anatomical studies of juvenile and presenile spontaneous gangrene, an endarteritis obliaterans, an arteriosclerosis, an obliterating angiothromhosis had been variously described by different observers as the pathological process present.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

NEW HAMPSHIRE STATE BOARD OF MEDICAL EXAMINERS.

January 9 and 10, 1912.

ANATOMY.

1. With what bones does the superior maxillary bone articulate?
2. What muscles flex the fingers? Give method of attachment of ligaments of the same.
3. Describe fully the peritoneum.
4. Give location of apex beat, and area of dullness of the normal heart.
5. State fully the method of exit of the nerves from the spinal cord through the foramina in the vertebral column.
6. Describe the ligamentum nuchæ.
7. Enumerate and describe the pectoral muscles.
8. Give origin, course, termination, and branches of brachial artery.
9. Bound and give contents of popliteal space.
10. What tissues are severed in reaching an appendix by the right semilunaris incision?

PHYSIOLOGY AND HYGIENE.

1. Give the normal temperature of the body and two physiological reasons for increased temperature.
2. What is the physiological function of lymph and chyle?
3. Name the physical properties of normal urine.
4. Describe the normal and abnormal motor processes of the stomach.
5. What is Wallerian degeneration? How may it be made use of in studying the course of a tract of nerve fiber?
6. Describe the causes for each step in the passage of oxygen from the atmospheric air to the tissues.
7. What are the healthful preservatives for foods?
8. What diseases should be reported to the board of health, and why?
9. What are the sources of bacteria in milk, and how would you control?
10. What are the physical and chemical characteristics of healthful water?

CHEMISTRY.

1. Explain the difference between a (*a*) solid, (*b*) liquid, (*c*) gas.
2. (*a*) Define capillary attraction. (*b*) Why is it so called? (*c*) Mention some familiar examples.
3. What is electrolysis?
4. What is the composition of baking powders? How are they adulterated? What is their mode of action?
5. Define chemical affinity (chemical force, or attraction, chemism), and give example.
6. Describe the purification of water by distillation and by filtration.
7. What is the effect of diluting tincture of iodine with water, and what practical application is drawn therefrom?
8. What is the action of KHO when taken internally, and what antidotes should be used?
9. Why is zinc sulphate incompatible with the vegetable astringents?
10. In what parts of the body does uric acid occur, and in what form does it exist?

PATHOLOGY AND DIAGNOSIS.

1. Name and describe the germ of syphilis.
2. Give the probable cause and symptoms of calculi of pancreas.
3. Describe a case of Rocky Mountain spotted fever and mention its probable cause.
4. Describe the gonococcus and the method of staining for microscopical examination.
5. Give the causes and symptoms of hemothorax.
6. Give the symptoms and pathology of elephantiasis.
7. Describe a case of Hodgkin's disease and give its pathology.
8. Give the symptoms of disease of the coronary arteries.
9. Describe a case of hay fever and mention some of its probable causes.
10. Give the symptoms of brain tumor.

THERAPEUTICS.

1. What do you understand by Cheyne-Stokes respiration, and under what conditions may it occur?
2. Give the etiology and treatment of acute sciatica.
3. Describe, briefly, the conditions that would lead you to diagnose chronic interstitial nephritis, and give your treatment.
4. What symptoms would lead you to diagnose gastric ulcer and what would be your treatment?
5. What is Bell's palsy and what pathological conditions may produce it?
6. Give the symptomatology and treatment of tetanus.
7. Give the therapeutics of ergot and the symptoms of acute and chronic ergotism.
8. Give the therapeutics of chloral hydrate and the symptoms of a toxic dose of the drug.
9. Under what conditions would you expect enlargement of the spleen?
10. Give the symptoms of acute pancreatitis.

OBSTETRICS.

1. Describe the change in position which the uterus undergoes during pregnancy.
2. What is "morning sickness," when does it begin, how long does it generally continue, and what are its causation and treatment?
3. What are the danger signals of impending eclampsia?
4. What are the symptoms of an inevitable abortion?
5. What are the dangers to the mother during the second stage of labor?
6. Symptoms and conditions leading you to diagnose death of the fetus.
7. How can you distinguish between first and subsequent pregnancies?
8. Give indications calling for podalic version.
9. What conditions of the mother might be mistaken for pregnancy?
10. Treatment of placenta prævia.

SURGERY.

1. Describe a method of reduction of a dislocation of the inferior maxillary bone.
2. What is a Colles' fracture? How would you treat it?
3. What are sources of wound infection?
4. What do you understand by primary and secondary shock?
5. Describe intravenous saline transfusion and give dangers of the operation.
6. How and where would you trephine for cerebral hemorrhage?
7. What do you understand by complete operation for mammary cancer?
8. Describe operation for gallstones.
9. Describe Bassini's operation for inguinal hernia.
10. Give the differential diagnosis of pelvic peritonitis and impaction of feces

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

NEW HAMPSHIRE STATE BOARD OF MEDICAL EXAMINERS.

January 9 and 10, 1912.

ANATOMY.

1. The *superior maxillary bone articulates with:* Frontal, ethmoid, nasal, malar, lacrymal, inferior turbinate, palate, vomer, and its fellow of the opposite side; sometimes, also, with the sphenoid.

2. *Muscles that flex the fingers:* Flexor sublimis digitorum, flexor profundus digitorum, flexor minimi digiti, lumbricales, and interossei. For method of attachment of their ligaments, see Cunningham's "Anatomy" (1909), pages 341, 342, and 340; or Gray's "Anatomy" (1910), pages 476, 477, and 494.

3. See Cunningham's "Anatomy" (1909), page 1097; or Gray's "Anatomy" (1910), page 1244.

4. The *apex beat of the heart* is in the fifth left intercostal space, about 3¼ inches from the median line.

The *area of complete cardiac dullness* is included between a line drawn from the center of the sternum on a level with the fourth costal cartilage, to the apex of the heart, and a line drawn from the same point down the lower third of the mid-line of the sternum. Below, this area merges into the liver dullness. (From Gray.)

5. See Cunningham's "Anatomy" (1909), page 607; or Gray's "Anatomy" (1910), page 1017.

6. "The *Ligamentum nuchæ* is a fibrous membrane which, in the neck, represents the supraspinous and interspinous ligaments of the lower vertebræ. It extends from the external occipital protuberance to the spinous process of the seventh cervical vertebra. From its anterior border a fibrous lamina (fascia nuchæ), is given off, which is attached to the external occipital crest, the posterior tubercle of the atlas, and the spinous process of each of the cervical vertebræ, so as to form a septum between the muscles on each side of the neck. In man it is merely the rudiment of an important elastic ligament, which, in some of the lower animals, serves to sustain the weight of the head." (Gray's *Anatomy.*)

7. See Cunningham's "Anatomy" (1909), pages 323 to 326; or Gray's "Anatomy" (1910), pages 456 to 462.

8. See Cunningham's "Anatomy" (1909), page 830; or Gray's "Anatomy" (1910), page 642.

9. BOUNDARIES OF THE POPLITEAL SPACE. *Externally, above:* By the biceps. *Externally, below:* By the plantaris and external head of the gastrocnemius. *Internally, above:* By the semimembranosus, semitendinosus, gracilis, and sartorius. *Internally, below:* By the inner head of the gastrocnemius.

Contents: Popliteal artery and vein, external and internal popliteal nerves, termination of external saphenous vein, small sciatic nerve, articular branch from obturator nerve, lymph glands, and loose adipose tissue.

10. Skin, fascia, linea semilunaris, subserous areolar tissue, and peritoneum.

PHYSIOLOGY AND HYGIENE.

1. The *normal temperature* of the body is between 98° and 99° F.

Two physiological reasons for increased temperature: Muscular exercise, and ingestion of food.

2. *Function of lymph:* (1) It conveys nutriment to all cells not directly reached by the blood; (2) in the intestines, it absorbs nutrient material (chiefly fat) and pours it into the blood stream for distribution; (3) it takes certain waste matters to the blood to be later eliminated by the lungs, kidneys, and skin.

Function of chyle is to absorb nutrient material (chiefly fat) from the intestine and pour it into the blood stream for distribution.

3. *Normal urine* is a yellowish fluid, secreted by the kidneys, to the amount of about 1200 to 1500 c.c. daily; specific gravity, about 1015 to 1025; acid reaction (due to acid sodium phosphate); it has a characteristic odor, and a salty taste.

4. See Gray's "Anatomy" (1910), page 1280.

5. *Wallerian degeneration:* "When a nerve is divided the first result is a loss of its function. Inasmuch as each nerve-fiber develops from a cell which later nourishes it, if the connection between the two is severed the nerve-fiber undergoes Wallerian degeneration, and in the case of a nerve which is made up of nerve-fibers the whole nerve undergoes this change. This degeneration consists, in the case of medullated nerves, in the death of the axis-cylinder, the breaking up of the medullary sheath into drops of myelin, which are later absorbed, and the multiplication of the nuclei of the primitive sheath. In non-medullated nerves the only result is the death of the axis-cylinder. Degeneration begins very soon after the section—within a day or two—and throughout the entire severed portion of the nerve at the same time. Thus the course of a nerve, or a collection of nerves, may be traced throughout its entire extent. These changes are believed to be due to the severance of the nerve from its trophic center. If an anterior root of a spinal nerve is divided, the distal end, being separated from the gray matter of the cord which is its center of nutrition, undergoes degeneration, while the end which remains connected with the cord retains its integrity. If a posterior root is divided between the cord and the ganglion, the degeneration takes place between the cord and the ganglion; while if divided below the ganglion, the degeneration takes place in that portion separated from the ganglion, showing that the ganglion is the nutritive center for the posterior root." (Raymond's *Physiology.*)

This method is made use of in studying the course of a tract of nerve fibers, as follows: "Sections of the cord in which the degeneration has taken place are stained with Marchi's solution; the degenerated fibers stain black, while the other portion remains practically unstained. A tract in which this degeneration takes place below the injury or point of section is a *descending tract*, and the degeneration is a *descending degeneration;* while a tract in which the process occurs above the lesion is an *ascending tract*, and the change, an *ascending degeneration.*" (Raymond's *Physiology.*)

6. "The oxygen in the various under-mentioned media has the following partial percentage pressures of an atmosphere:

Atmospheric air	20.96	per cent.
Alveolar air	18.00	"
Arterial blood plasma	14.00	"
Tissues of the body	0.00	"

What then takes place is this: The oxygen (being a fluid) flows from the place of high pressure to the place of low pressure, and hence diffuses down from the inspired atmospheric air into the alveoli. From the alveoli it now passes through the thin endothelial lining of the alveolus, and the thin endothelial lining of the capillary into the blood plasma. It continues to accumulate in the blood plasma until it has a partial percentage pressure of 14 per cent. of an atmosphere, and it then begins to combine with hemoglobin in the red-blood corpuscles, and so the partial percentage pressure of the oxygen in the blood plasma falls below 14 per cent. of an atmosphere. More oxygen now passes into the blood plasma, raising the partial percentage pressure once more to 14 per cent., and then more oxyhemoglobin is formed. Finally, in this way, nearly the whole of the hemoglobin is converted into oxyhemoglobin. The oxygen passes again from the blood plasma (the place of high pressure) to the tissues (the place of low pressure). In this way its partial percentage pressure in the blood plasma becomes less than 1 per cent. of an atmosphere, and therefore at once the oxyhemoglobin breaks up into oxygen and hemoglobin. This oxygen, passing into the blood plasma, raises its partial percentage pressure once more to 14 per cent. of an atmosphere, and then oxygen begins once more to pass to the tissues from the blood plasma, and oxyhemoglobin to be broken down into oxygen and hemoglobin." (Lack's *Introduction to Physiology.*)

7. *Healthful preservatives for food* are: Drying, exclusion of air and exposure to cold.

8. *Diseases to be reported to the board of health:* Measles, German measles, scarlet fever, smallpox, chickenpox, typhus, relapsing fever, croup, diphtheria, typhoid, Asiatic cholera, tuberculosis, plague, tetanus, anthrax, glanders, epidemic cerebrospinal meningitis, leprosy, trachoma, suppurative conjunctivitis, puerperal septicemia, whooping cough, yellow fever, malaria and any other diseases that may be ordered by the board of health.

Why? (1) To prevent the spread of such diseases, and so to preserve the health of the community; and (2) because neglect to report the same will render the physician liable to penalty.

9. *Sources of bacteria in milk:* The milk itself; the animal from which the milk is obtained; the surface of the udder, the hands of the milker, the cans and containers, the water used for washing the cans or for adulterating the milk, and dirt from any extraneous source.

Control can only be obtained by cleanliness, constant and rigid inspection, with prompt punishment for infraction of sanitary rules.

10. *Characteristics of a good (drinking) water:* (1) It should be clear and limpid. Cloudy and muddy waters

should be avoided. (2) It should be colorless. A greenish or yellowish color is usually due to vegetable or animal matter in solution or to organisms. (3) It should be odorless; especially free from sulphuretted hydrogen or putrefactive animal matter. (4) It should not be too cold, but should have a temperature of from 46° F. to 60° F. (5) It should have an agreeable taste; neither flat, salty, nor sweetish. A certain amount of hardness and dissolved gases give a sparkling taste. It should contain from 25 to 50 c.c. of gases per liter, of which 8 to 10 per cent. is carbon dioxide and the rest oxygen and nitrogen. (6) It should be as free as possible from dissolved organic matter, especially of animal origin. (7) It should not contain too great an amount of hardness. A certain quantity of saline matter is necessary, however, to give it a good taste. It should not contain over three or four parts of chlorine in 100,000 parts of water. (From Bartley's *Chemistry.*)

CHEMISTRY.

1. A *solid* is a form of matter in which the relative positions of the molecules are fixed and constant. In a *liquid* the molecules glide past each other and the substance assumes the form of its container. In a *gas* the molecules tend to get away from each other and to occupy a greater space. In a *solid* both volume and form are definite; in a *gas* both volume and form are indefinite; and in a *liquid* the volume is definite and the form is indefinite.

2. *Capillary attraction* is the force which causes fluids to rise through very fine tubes or through the pores of a loose material. The term is derived from the Latin *capillaris*, which means *like a hair;* and capillary attraction is so called because it is best exhibited in fine tubes like hairs.

3. *Electrolysis* is the process of electrical conduction accompanied by the separation of the constituents of the electrolyte, or the decomposition of a chemical compound by passing an electric current through it. The primary products of electrolysis are called ions; those which separate at the positive electrode or anode are called anions; those which separate at the negative electrode or cathode are called cations.

4. *Baking powders*, when pure, should consist of cream of tartar, sodium bicarbonate, and a little flour. *Adulterations* employed are: Alum, acid calcium phosphate, potassium chloride, ammonium carbonate. Baking powders *act* by the decomposition of the $NaHCO_3$ by the cream of tartar, with sudden liberation of CO_2, minute bubbles of which permeate the dough and increase its porosity. (From Scott's *State Board Chemistry.*)

5. *Chemical affinity* is that force which unites atoms together to form molecules; hence, it is the force which unites the two atoms of hydrogen and one atom of oxygen in the molecule of water, H_2O.

6. *Distillation* consists in vaporizing the water and subsequently condensing it by means of cold, and then collecting. By this means water is obtained chemically pure. *Filtration* effects the separation of all particles of undissolved suspended matter, without any alteration of substances that are held in solution.

7. The addition of water to the modern tincture of iodine has no effect beyond diluting it; this is due to the presence of potassium iodide. In the absence of this latter, an insoluble precipitate would be formed. The "practical aplication" to be drawn is, obviously, not to add water or anything else to any substance without knowing what the result will be.

8. Potassium hydroxide acts as a caustic, disintegrates the tissues, and may corrode or perforate the stomach. It is a corrosive rather than a poison. Antidotes are: Dilute vinegar, neutral oils, milk.

9. Zinc sulphate is incompatible with the vegetable astringents, because a mixture of the two would cause a precipitate.

10. Uric acid occurs in the urine, in calculi, in chalky deposits or tophi in the joints of the gouty, in the blood, liver, and spleen. It occurs chiefly as the disodic salt.

PATHOLOGY AND DIAGNOSIS.

1. The germ of syphilis is the *Treponema pallidum*, also called the *Spirochæta pallida*. It is a slender spirillum, with regular turns, the curves varying in number from three or four to twelve or even twenty; it is about 4 to 20 mikrons long, actively motile, with a fine flagellum at each pole; it is flexible, hard to stain, and has not been cultivated on artificial media. How it divides is not known. It stains best with Giemsa's eosin solution and azur.

2. See French's "Practice of Medicine" (1910), page 880; or Osler's "Practice of Medicine" (1909), page 580.

3. See French's "Practice of Medicine" (1910), page 452; or Osler's "Practice of Medicine" (1909), page 368.

4. The *Gonococcus* is a diplococcus with a special predilection for the mucous membrane of the urethra and vagina. It is sometimes found on the conjunctiva. The appearance is that of two coffee beans; the gonococcus is found in the pus cells, stains with ordinary anilin dyes, but not by Gram's method. It is aërobic, and can be cultivated on human blood serum; it will not grow on gelatin, agar, bouillon, or potato. It was discovered by Neisser.

To demonstrate *gonococci:* On a cover-glass make a smear with the discharge as thin as possible, and let it dry in the air; cover it with a freshly made solution of anilin-oil-gentian-violet for one or two minutes; wash it in distilled water; leave it in Gram's solution for two minutes; wash it in 95 per cent. alcohol until decolorized; wash it in distilled water; counterstain with a dilute carbolfuchsin without heat, or with a saturated aqueous solution of Bismark brown; wash in distilled water, dry with filter paper, mount, and examine with an oil-immersion lens. The gonococci will appear as *diplococci within the leucocytes*, which have been *decolorized by Gram's stain*, and have taken the counterstain

5. HEMOTHORAX. *Causes:* Pleurisy (particularly when tuberculosis, cancer, or scurvy, is also present), wounds of chest wall, rupture of an aneurysm, fracture of ribs.

Symptoms: The same as in pleural effusion; see French's "Practice of Medicine" (1910), page 707; or Osler's "Practice of Medicine" (1909), page 645.

6. See Rose and Carless' "Surgery (1911), page 361; or Da Costa's "Surgery" (1911), page 1247.

7. See French's "Practice of Medicine" (1910), page 533; or Osler's "Practice of Medicine" (1909), page 738.

8. See French's "Practice of Medicine" (1910), page 622; or Osler's "Practice of Medicine" (1909), pages 823 and 841.

9. See French's "Practice of Medicine" (1910), page 657; or Osler's "Practice of Medicine" (1909), page 594.

10. See French's "Practice of Medicine" (1910,) page 1136; or Osler's "Practice of Medicine" (1909), page 989.

THERAPEUTICS.

Cheyne-Stokes respiration "is a condition in which the respirations gradually increase in volume and rapidity until they reach a climax, when they gradually subside, and finally cease for from ten to forty seconds, when the same cycle begins again. It may occur in tubercular meningitis, cerebral hemorrhage, embolism, thrombosis, aneurysm of basilar artery, uremia, heart disease, etc." (Hughes' *Practice of Medicine.*)

2. See French's "Practice of Medicine" (1910), page 1030; or Osler's "Practice of Medicine" (1909), page 1039.

3. See French's "Practice of Medicine" (1910), pages 927, 930, and 932; or Osler's "Practice of Medicine" (1909), pages 697 and 700.

4. See French's "Practice of Medicine" (1910), pages 765, 767, and 768; or Osler's "Practice of Medicine" (1909), pages 473, 476, and 477.

5. See French's "Practice of Medicine" (1910), page 1042; or Osler's "Practice of Medicine" (1909), page 1019.

6. See French's "Practice of Medicine" (1910), pages 415 and 416; or Osler's "Practice of Medicine" (1909), pages 259 and 261.

7. ERGOT. *Therapeutic indications:* To promote uterine contractions during third stage of labor; fibroids, menorrhagia, postpartum hemorrhage. Some forms of amenorrhea and dysmenorrhea, dysentery, arterial hemorrhage, congestive headache, laxity of sphincters, of bladder or rectum, hemorrhoids, aneurysm, diabetes, urinary incontinence, direct paralysis of the sphincter vesicæ, atonic spermatorrhea.

Acute ergotism. "In a large dose ergot acts as a gastro-intestinal irritant, causing nausea and vomiting, gastralgia, colic, thirst, and purging. It slows the heart, raises the arterial tension greatly, dilates the pupils and produces pallor, vertigo and frontal headache. It stimulates the contraction of unstriped muscular fiber, especially affecting the sphincters and causing contraction of the sphincter of the bladder, making micturition difficult if not impossible. It produces cerebral and spinal anemia, a great fall of the body-temperature, coldness of the surface, tetanic spasms, and violent convulsions."—(Potter's *Materia Medica*, etc.)

Chronic ergotism "occurs in two forms, the convulsive and the gangrenous—either usually excluding the other. The convulsions are tetanoid spasms of the flexor muscles, the uterus, the intestinal fibers, and the muscles of respiration, ending in coma and death by asphyxia. The gangrenous form begins with coldness and numbness of the

limbs, formication of the skin all over the body, loss of sensibility and abolishment of the special senses, bulke of blood and ichor, followed by dry or moist gangrene of the lower extremities, buttocks and other parts, epileptiform convulsions, coma and death. Autopsies show changes in the posterior columns of the cord, resulting probably from spinal anemia." (Potter's *Materia Medica*, etc.)

8. CHLORAL HYDRATE. *Therapeutics:* It is used as a hypnotic and antispasmodic; it is useful in mania and delirium tremens; as a gastric antiseptic and sedative, also in epilepsy and neuralgia; it is a useful antipruritic, and is a good application for sores and ulcers; it is the antagonist in strychnine poisoning.

Symptoms of a toxic dose are: Deep sleep, muscular relaxation, lowering of body temperature, and abolition of reflexes and sensibility.

9. *Causes of enlargement of the spleen:* "*Excessive chronic enlargement* is most frequently due to leukemia, splenic anemia, or chronic malaria; lesser degrees may be met with in cirrhosis of the liver, rickets, pernicious anemia, passive congestion, or actual portal obstruction. *Acute enlargement* is most often encountered in septicemia, malarial fever, typhoid and typhus, erysipelas, acute miliary tuberculosis, tuberculous peritonitis, cerebrospinal meningitis, smallpox, diphtheria, scarlet fever, relapsing fever, infaret, plague and certain other tropical diseases. (Green's *Medical Diagnosis.*)

10. See French's "Practice of Medicine" (1910), page 876; or Osler's "Practice of Medicine" (1909), page 574.

OBSTETRICS.

1. See Jellett's "Midwifery" (1910), page 213; or Hirst's "Obstetrics" (1909), page 182.

2. See Jellett's "Midwifery" (1910), pages 234 and 475; or Hirst's "Obstetrics" (1909), page 187.

3. See Jellett's "Midwifery" (1910), page 617; or Hirst's "Obstetrics" (1909), page 630.

4. See Hirst's "Obstetrics" (1909), page 277.

5. *Dangers to the mother during the second stage of labor* are: Syncope, hemorrhage, rupture of uterus, eclampsia.

6. *Symptoms of death of the fetus* during the later months of pregnancy are: Cessation of the signs of pregnancy, the abdomen and uterus are both diminished in size, the fetal heart sounds and movements cease, there is no pulsation in the cord, the mother's breasts become flaccid and occasionally secrete milk. If the fetus has been dead for some time crepitus of its cranial bones may be elicited.

7.

PRIMIPARA.	MULTIPARA.
The fourchet is present.	The fourchet is missing.
The perineum is tense and deep.	The perineum is relaxed and probably torn.
The labia are in apposition.	The vulva is frequently patulous.
The vagina possesses tonicity, and is rough and rugous, with a granular feel.	The vagina is relaxed and smooth.
The cervix is long, soft, and conical; the os is undilated.	The cervix is large, cylindrical, short, not so soft, and probably lacerated; the os is patulous.
The abdomen is full, rounded, tense, and resisting to the touch.	The abdominal walls are relaxed and non-resisting to the touch; the skin is loose and wrinkled.
Dark, purplish-red striæ appear late in pregnancy.	The striæ may be both white and livid, the former being present from the beginning of pregnancy.
The breasts are full, firm, and sensitive to pressure.	The breasts are flabby, pendulous, and non-sensitive to pressure.
The nipples are usually small and undeveloped or even inverted.	The nipples are large and well developed.
Striæ are absent upon the breast.	Striæ are frequently to be found.

—(From Dorland's *Obstetrics.*)

8. See Jellett's "Midwifery" (1910), page 1048; or Hirst's "Obstetrics" (1909), pages 827 and 830.

9. *Conditions of the mother which might be mistaken for pregnancy:* Ascites, ovarian cysts, uterine fibroids, other pelvic tumors, subinvolution of uterus, pseudocyesis, hematometra, amenorrhea, obesity, over-distended bladder.

10. See Jellett's "Midwifery" (1910), page 716; or Hirst's "Obstetrics" (1909), page 577.

SURGERY.

1. See Rose and Carless' "Surgery" (1911), page 910; or Da Costa's "Surgery" (1911), page 669.

2. See Rose and Carless' "Surgery" (1911), pages 518 and 521; or Da Costa's "Surgery" (1911), pages 581 and 583.

3. *Sources of wound infection:* Air; water; patient's skin, hair, or clothing; hands of surgeon, assistants, or friends; instruments and dressings; solutions; insects.

4. *Shock* is the name given to a sudden and general depression of the vital powers, due to some strong stimulation (such as injury or emotion), acting on the vital centers in the medulla and producing vasomotor paralysis. Shock is *primary* when the symptoms appear promptly; it is *secondary* when the symptoms don't appear for several hours (often observed after railway accidents, intoxication, etc.).

5. See Rose and Carless' "Surgery" (1911), page 278; or Da Costa's "Surgery" (1911), page 465. *Dangers of the operation are:* Entrance of air into the vein, dyspnea, cyanosis, sepsis.

6. See Rose and Carless' "Surgery" (1911), pages 776 and 759; or Da Costa's "Surgery" (1911), pages 804 and 842.

7. See Rose and Carless' "Surgery" (1911), page 964; or Da Costa's "Surgery" (1911), page 1433.

8. See Rose and Carless' "Surgery" (1911), page 1077; or Da Costa's "Surgery" (1911), page 1036.

9. See Rose and Carless' "Surgery" (1911), page 1100; or Da Costa's "Surgery" (1911), page 1131.

10. See Rose and Carless' "Surgery" (1911), pages 983, 986, 990, and 1137; or Da Costa's "Surgery" (1911), pages 971 and 1004.

BULLETIN OF APPROACHING EXAMINATIONS

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery	Montgomery	July 9
Arizona*	Ancil Martin, Phoenix	Phoenix	April 1
Arkansas	F. T. Murphy, Brinkley	Little Rock	May 14
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco	April 2
Colorado	David A. Strickler, Empire Building, Denver	Denver	April 2
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Mar. 12
Delaware	J. H. Wilson, Dover	Dover	June 18
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	April —
Florida*	I. D. Fernandez, Jacksonville	Jacksonville	May 6
Georgia	C. T. Nolan, Marietta	Atlanta / Augusta	May —
Idaho*	O. J. Allen, Bellevue	Boise	April 2
Illinois	J. A. Egan, Springfield	Chicago	April —
Indiana	W. T. Gott, Crawfordsville	Indianapolis	July 9
Iowa	G. H. Semner, Des Moines	Des Moines	
Kansas	H. A. Dykes, Lebanon	Topeka	
Kentucky	J. N. McCormac, Bowling Green	Louisville	
Louisiana	A. B. Brown, Cusach's Bldg. New Orleans	New Orleans	May 30
Maine	F. W. Searle, Portland	Portland	Mar. 12
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 18
Massachusetts*	E. B. Harvey, State House Boston	Boston	Mar. 12
Michigan	B. D. Harison, 205 Whitney Building, Detroit	Ann Arbor	June 11
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	April 2
Mississippi	S. H. McLean, Jackson	Jackson	May 14
Missouri	Frank B. Hiller, Jefferson City	Kansas City	
Montana*	Wm. C. Riddell, Helena	Helena	April 2
Nebraska	E. A. Carr, Lincoln	Lincoln	May 8
Nevada	S. L. Lee, Carson City	Carson City	May 6
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	July 9
New Jersey	H. G. Norton, Trenton	Trenton	June 18
New Mexico	J. A. Massie, Santa Fe	Santa Fe	April 8
New York	H. H. Horner, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	May 14
N. Carolina	B. K. Hays, Oxford	Hendersonville	June 11
N. Dakota	G. M. Williamson, Grand Forks	Grand Forks	July 2
Ohio	Geo. H. Matson, Columbus	Columbus	June 11
Oklahoma*	J. W. Duke, Guthrie	Oklahoma City	April 9
Oregon	B. E. Miller, Portland	Portland	July 2
Pennsylvania*	N. C. Schaeffer, Harrisburg	Philadelphia / Pittsburg	June —
Rhode Island	G. T. Swartz, Providence	Providence	April 4
S. Carolina	H. E. Buozer, Columbia	Columbia	June 11
S. Dakota	L. G. Hill, Watertown	Deadwood	July 1
Tennessee	C. A. Abernathy, Pulaski	Memphis / Nashville / Knoxville	May 1
Texas	J. D. Mitchell, Forth Worth	Austin	June 27
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	April 1
Vermont	W. Scott Nay, Underhill	Burlington	July 9
Virgina	R. S. Martin, Stuart	Richmond	June 18
Washington*	F. P. Witter, Spokane	Tacoma	July 2
W. Virginia	H. A. Barbee, Point Pleasant	Parkersburg	April 8
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	May 28
Wyoming	A. B. Tonkin, Riverton	Riverton	Mar. 13

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

THE POCKET ATLAS OF THE FUNDUS OCULI, with Note and Drawing Book. Text by G. LINDSAY JOHNSON, M.A., M.D., F.R.C.S., with drawings from life by Arthur W. Head, F. Z. S. 205 pages; illustrated; paper; price $2.50 net. F. A. Hardy & Company, Publishers, Chicago.

ANNUAL REPORT OF THE DEPARTMENT OF HEALTH OF THE CITY OF NEW YORK. 1909. 395 pages; cloth. Board of Health, Publishers.

HANDBOOK OF MENTAL EXAMINATION METHODS. By SHEPHERD IVORY FRANZ, Ph.D. 165 pages; paper; price $2.00. The Journal of Nervous and Mental Disease Pub. Company, Publishers, New York.

ANNALI DI MEDICINA NAVALE E COLONIALE. 1911. Vol. II. 650 pages; paper. Direzione e Amministrazione Ministero Della Marina, Publishers, Rome.

STUDIES IN PSYCHIATRY. Vol. I. By members of the New York Psychiatrical Society. 222 pages; illustrated; paper; price $2.00. The Journal of Nervous & Mental Disease Pub. Company, Publishers, New York.

BLAIR'S POCKET THERAPEUTICS. By THOS. S. BLAIR, M.D. 373 pages; leather. The Medical Council Company, Publishers, Philadelphia.

THE TRAGEDY OF CORIOLANUS. By STUART P. SHERMAN, Ph.D. 189 pages; cloth; price $.35 net. The Macmillan Company, Publishers, New York.

WAR LETTERS OF WILLIAM THOMPSON LUSK, Captain, Assistant Adjutant-General U. S. Volunteers 1861-1863. Afterward M.D., LL.D. 304 pages; cloth.

THE TAYLOR POCKET CASE RECORD. By J. J. TAYLOR, M.D. The Medical Council Co., Publishers, Philadelphia.

SECOND REVIEW OF SOME OF THE RECENT ADVANCES IN TROPICAL MEDICINE, HYGIENE, AND TROPICAL VETERINARY SCIENCE. SUPPLEMENT TO THE FOURTH REPORT OF THE WELLCOME TROPICAL RESEARCH LABORATORIES AT THE GORDON MEMORIAL COLLEGE, KHARTOUM. By ANDREW BALFOUR, M.D., B.Sc., F.R.C.P., D.P.H., and Capt. R. G. ARCHIBALD, N.B, R.A.M.C. 448 pages; cloth. Bailliere, Tindall & Cox, Publishers, London.

MANUAL OF PRACTICAL PHYSIOLOGY. By JOHN C. HEMMETER, M.D., Ph.D., LL.D. 223 pages; with 55 illustrations; cloth; price $2.50 net. P. BLAKISTON'S SON & COMPANY, Publishers, Philadelphia.

SIGHT TESTING FOR THE GENERAL PRACTITIONER. 5th Edition. By F. DAVIDSON. 84 pages; illustrated; cloth; price 2/6 net. F. Davidson, Publisher, London.

TRANSACTIONS OF THE AMERICAN HOSPITAL ASSOCIATION. 13th Annual Conference. Held at New York City, September 19, 20, 21 and 22, 1911. Vol. XIII. 512 pages; illustrated; paper. Published by the Association.

THE CRIMINAL AND THE COMMUNITY. By Dr. JAMES DEVON. 348 pages; cloth; $1.75 net. JOHN LANE COMPANY, Publishers, New York.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION FOR THE YEAR 1911. Vol. XXVII. 410 pages; illustrated; cloth. Published by the Association.

THE ACCESSORY SINUSES OF THE NOSE IN CHILDREN. By Prof. Dr. A. ONODI. 102 specimens reproduced in natural size from photographs. Price, cloth, $7.00. William Wood & Company, Publishers, New York.

MATERNITY PRIMER. By A. H. F. BARBOUR, M.D., LL.D. 165 pages; illustrated; price, cloth 75c. net. William Wood & Company, Publishers, New York.

DENTAL ANESTHETICS. By WILFRED E. ALDERSON, M.D. 100 pages; price, cloth, $1.25 net. William Wood & Company, Publishers, New York.

PLEURISY. By ALEX. JAMES, M.D., F.R.C.P.E. 243 pages; illustrated; price, cloth, $2.25 net. William Wood & Company, Publishers, New York.

SURGERY AND SOCIETY. By C. W. SALEEBY, M.D., F.R.S.E. 305 pages; price, cloth, $2.50 net. Moffat, Yard & Company, Publishers, New York.

THE ORIENTATION OF BUILDINGS OR PLANNING FOR SUNLIGHT. By WILLIAM ATKINSON. 139 pages; illustrated; cloth. John Wiley & Sons, Publishers, New York.

PRINCIPLES OF HUMAN NUTRITION. By WHITMAN H. JORDAN. 450 pages; illustrated; price, cloth, $1.75 net. The Macmillan Company, Publishers, New York.

KLINIK FÜR PSYCHISCHE UND NERVOSE KRANKHEITEN. Vol. VI, No. 4. By Dr. R. SOMMER. 384 pages; paper; price 12 M. Carl Marhold, Publisher, Halle.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ending March 2, 1912.

	Cases	Deaths
Tuberculosis Pulmonalis	598	203
Diphtheria and Croup	322	32
Measles	1269	24
Scarlet Fever	419	17
Smallpox	2	—
Varicella	299	—
Typhoid Fever	34	5
Whooping Cough	52	1
Cerebrospinal Meningitis	9	6
Malarial Fever	—	—
Totals	3,004	288

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 1, 1912.

CHOLERA

Places	Date	Cases	Deaths
India: Madras	Jan. 14–20	18	14
Indo-China: Saigon	Jan. 2–8	197	145
Turkey in Asia: Aleppo	Jan. 28–Feb. 3	11	5

YELLOW FEVER

Mexico: Puerto Mexico (Coatzocoalcos)	Feb. 28	..	1
7 cases in the lazaretto from S. S. *Ikalis* from Guayaquil.			
Salina Cruz	Feb. 4-7	..	..
Venezuela: Caracas	Jan. 1–15	8	8
La Guaira	Feb. 27	..	..
Present.			

PLAGUE

China: Hongkong	Jan. 7–13	3	2
Hawaii: Honakaa	Feb. 25	2	2
India: Bombay	Jan. 14–20	6	4
Karachi	Jan. 14–20	1	1
Mauritius	Dec. 1–7	7	6
Peru:			
Departments—			
Callao	Oct. 1–21	1	..
In November 1 case, in January 3 cases with 2 deaths.			
Chiclayo	Oct. 1–21	12	4
Chosika	Oct. 1–21	1	1
Lambayeque	Oct. 1–21	3	..
Libertad	Oct. 1–21	8	..
Lima	Oct. 1–21	13	6
Straits Settlements: Singapore	Jan. 1–6	2	2

SMALLPOX

Austria-Hungary: Bohemia	Jan. 14–20	1	..
Krain	Jan. 14–20	7	..
Tyrol	Jan. 14–20	1	..
Brazil: Pernambuco	Dec. 15–31	..	77
Canada: Montreal	Feb. 11–17	7	..
Ottawa	Feb. 4–17	15	..
Quebec	Feb. 10–17	16	..
Toronto	Feb. 4–10	1	..
Victoria	Feb. 4–10	1	..
Chile: Santiago	Nov. 1–30	*685	343
Valparaiso	Jan. 14–20	..	..
Present.			
China: Hongkong	Jan. 6–13	27	19
Shanghai	Jan. 15–21	..	1
France: Paris	Jan. 21–27	5	2
Germany	Jan. 28–Feb. 3	1	..
Great Britain: London	Jan. 28–Feb. 3	2	..
India: Bombay	Jan. 14–20	16	12
Madras	Jan. 14–20	8	6
Italy: Leghorn	Feb. 4–10	4	..
Messina	Jan. 1–31	..	1
Turin	Jan. 29–Feb. 4	1	..
Japan: Kobe	Jan. 22–28	1	1
Jan. 20, one case from S. S. *Suveric* from Hongkong.			
Java: Batavia	Jan. 7–13	3	1
Mexico: Aguascalientes	Feb. 5–11	1	..
Chihuahua	Jan. 22–Feb. 11	30	15
Magdalena	Feb. 7	..	..
62 cases present.			
Mazatlan	Feb. 13	..	..
33 cases in the lazaretto.			
Mexico	Jan. 1–13	12	7
Tampico	Jan. 10–Feb. 10	..	4
Portugal: Lisbon	Jan. 28–Feb. 3	2	..
Siberia: Omsk	Jan. 1–31	7	..
Spain: Madrid	Jan. 1–31	..	2
Valencia	Jan. 1–31	24	..
Straits Settlements: Singapore	Jan. 1–6	2	..
Switzerland: Canton—			
Oberwalden	Jan. 14–20	1	..
Teneriffe: Santa Cruz	Jan. 28–Feb. 3	..	4
Turkey in Europe: Constantinople	Jan. 29–Feb. 4	..	8
Venezuela: Caracas	Jan. 1–15	..	2

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Original Articles.

IMPORTANCE OF DISEASE IN PLANT AND ANIMAL EVOLUTION.

By R. G. ECCLES, M. D.,

BROOKLYN, N. Y.

IN *Amœba proteus* we have one of the simplest animal forms known to man. It is a single independent cell possessing the power of reproducing its kind generation after generation, for countless ages, in an unbroken series. In *Gonium sociale* we have another protozoan a trifle higher in the scale of being. It is composed of a group of four cells linked together as a unit organism. The four united cells live, move, and act as a single healthy individual. It is one of the very simplest of polycellular organisms, of which man is one of the most complex. This persistent social union of four cells, and no more, repeating itself generation after generation, probably resembles the original organism which in the very distant past took this first step on its way toward man from the ameba. It gives us early evidence of the existence in cells of some sort of regulatory mechanism by which, while under identical conditions of temperature and nutrition, they can divide and redivide at definite intervals, and with clock-like precision, into groups having certain fixed ratios of units like themselves. This regulating mechanism we call heredity. No such number-regulating mechanism exists in the amebæ for they only produce single, ununited cells. From Gonium upward this mechanism shows an ever-increasing complexity that becomes perfectly bewildering long before reaching man. To what are we indebted for this first step in the construction of a cell machine having time regulating qualities? Geddes and Thompson suggest that such colonies "originated pathologically in all probability," because, as they say, "the protozoa cannot be accused of any prevision of future advantage in remaining clubbed together in cooperation, nor, indeed, credited with much primitive altruism in so doing."[1] These lowly organisms could have had no more voluntary control of their variations than we have had of ours, as for instance, in the producing of the furrows on the tips of our fingers. These furrows, without our volition, have varied so much that we can each be told by them from every other being on the earth. Change—variation—is seen everywhere and the molecules out of which amebæ are built can be no exception to the general rule. Indeed we have the strongest kind of chemical evidence that they are very variable so that the wonder really is as to how the ameba's mechanical structure is able to keep them from varying immensely more than they do. For them to vary in ways that would lead to the cohering of groups of two or more amebæ into single colonies might or might not prove fit. A grouping that would provide a means of hindering parasitic pilfering would often save their lives. It would have the selective value necessary to cause survival. In such a union there would be strength. The too rapid multiplication of such fit forms, however, would in time necessitate a spreading out into new regions in search of new food supplies. This must bring them into contact with new foes able to attack in new ways. The old fitness might now prove inadequate and death have a harvest among them. A new variation that would lead to a larger colony would supply additional strength and resisting power. If, instead of dividing into groups of four, clinging together till ready to form new colonies and then separating to form other groups of four, some stray *Gonium sociale* had failed to separate its cells at maturity and clung together in groups of four times four we would have had another step in favorable variation that would bring more strength, *i.e.* fitness. In *Gonium pectorale* we have just such a sixteen-cell group.[2] Another step still higher up in this process of colony formation is seen in *Magosphæra planula*. It, however, belongs to a different genus and could not be connected by direct descent with Gonium. Haeckel tells us that "The fully-formed body is a gelatinous sphere, with its wall composed of thirty-two to sixty-four ciliated homogeneous cells; it swims about freely in the sea. After reaching maturity the community is dissolved. Each cell then lives independently for some time, grows, and changes into a creeping ameba. This afterward contracts and clothes itself with the structural membrane. The cell then looks just like an ordinary animal ovum. When it has been in this condition for some time the cell divides into two, four, eight, sixteen, thirty-two, and sixty-four cells. These arrange themselves in a round vesicle, thrust out vibratory lashes, burst the capsule, and swim about in the same magosphæra-form with which they started."[3] In Prof. Kofoid's *Pleodorina illinoisensis* we have an American protozoon which likewise exists as a thirty-two-celled colony. In it we discover what may be an example of the most primitive form of another type of variation that is of great theoretical importance. Should future investigation show it to be, as we suspect it is, a variation toward sterility, *i.e.* inability to produce in kind, then it is an illustration of the beginning of a series of variations that have been the marking milestones along the entire pathway of advancing organic evolution. Four of the thirty-two cells are very much smaller than are any of the other twenty-eight. They are grouped together in the front of the moving colony, *i.e.* the part facing forward during locomotion. The twenty-eight are fertile, but no one has reported seeing any of the four front cells multiplying. They are supposed to be non-fertile, *i.e.* sterile. If we

compare them with the much higher form of cell-colony, *Volvox globator*, we will find a similar kind of grouping in which the fertile cells can be distinguished from the non-fertile ones, and see that the relations that are important to our argument are the same in each. In *Volvox globator* colonies the number of cells per colony varies from a minimum of 1500 to a maximum of 22,000 according to the variety. In these, says Prof. Calkin, "differentiation has gone so far that the cells if separated, with the exception of the reproductive elements, cannot live. The individuals forming the peripheral layer form the sterile vegetative or somatic cells of the aggregate. A few of these cells, which reproduce asexually, are found upon the inside of the peripheral layer, which protects them like a mantle."[5] Of the same organism (Volvox) Lankester's Zoology tells us that the cells are arranged in the form of a sphere and that "the sphere comprises two differently constituted hemispheres. The trophic (food providing) hemisphere is that which is directed forward during locomotion. . . . The other hemisphere is the generative hemisphere, in which the oogonidia (female germ cells), antherogonidia (male germ cells), and parthenogonidia (self-fertile germ cells), are chiefly formed."[6] The fact that the front half of the sphere is sterile, with only a few self-fertile cells hidden below the peripheral cells, shows that we have probably here a condition similar to but greater in extent than that seen in Pleodorina. In the latter it is four front cells as against twenty-eight rear ones, while in the former it is equal numbers of rear and front ones, or nearly so. In Pleodorina it is as 1 to 7 while in Volvox it is as 1 to 1. In both the rear cells are fertile. In both the front cells are food seekers. To the believer in natural selection these two organisms present a number of interesting problems. How came they to have two kinds of cells? What could have caused the dwarfing seen prominently in Pleodorina front cells. Evolutionists must believe that these two types of cells were once alike. Selectionists must hold that the variation was due to some sort of life and death struggle in which the variation proved to be of life and death value. How could such dwarfage save the colony from extinction? Why was there less danger in the rear than in the front? Why did the front cells of Volvox, and most likely of Pleodorina as well, change the sterile cells while the rear ones retained their fertility? If subjected solely to the laws of chance the fertile and sterile cells should have been mixed together in all sorts of ways, in all parts of the colonies. The fact of their not being mixed shows that the front cells had to vary in order to survive and to permit of the survival of the colonies. No consistent selectionist can draw any other conclusion. The front cells would be the cells most, and first, exposed to danger from adhering parasites. Flying from the danger would not rid the cells of their acquired infection. The parasites would stick and multiply to the injury or destruction of the host. As all parasites have a selective affinity for certain kinds of foods to the exclusion of others—each to its own particular kind—some sort of quantitative or qualitative change would become imperative in the front cells if the menace became great. The tempting (attracting) molecules within the cells must become fewer, disappear entirely, or change their attractiveness into repulsion in order to save such threatened colonies from extinction. In the evolution of Pleodorina, whatever other variations may have occurred, there was evidently a reduction in the numbers of molecules. The selectionist must hold that inasmuch as the disappearance of these molecules was of selective value, and inasmuch as parasitism had perhaps something to do with it, the attractive molecules most likely disappeared in bringing about the change. This supplies us with a probable explanation of the dwarfage of the front cells. As the mechanism governing cell multiplication resides within the cell this loss of substance from the front cells would be expected in some way to affect it. If the eliminated attractive molecules happened to be the ones taking part in cell multiplication this would account for the induced sterility. Let us then see if this hypothesis is borne out by other facts. The diminished number of certainly fertile cells in Volvox over Pleodorina—fifty per cent. as compared with ten per cent.—would seem to make it at least theoretically clear that the danger to the former must have been materially greater than to the latter. The hidden position of the self-fertile cells of the anterior hemisphere confirms this conclusion. As we ascend the scale of living things the germ cells gradually disappear, in the way here indicated, until the front and periphery are wholly divested of them and until they have become located in positions of maximum safety from parasites. The germ cells (fertile cells) finally disappear from every place of great exposure as if seeking to hide themselves behind and beneath the soma cells (sterile cells). In the vertebrates the evidences of their proportional reduction and of their hiding proclivities are particularly pronounced. In the lower Protozoa we found the germ cells to be 100 per cent. of the total. In the vertebrates they are an exceedingly small fraction of one per cent. of the total. In the Coelenterates we have an intermediate condition much like that of the vegetable kingdom. A study of the latter gives us a clear understanding of the way in which the division of soma plasm from germ plasm has been gradually brought about.

"The somatic tracks," says De Vries, "have obviously developed phylogenetically from the secondary germ tracks. Not suddenly, however, and at a leap, but quite gradually. The loss of the power of reproduction makes them such. By this means, however, only an adaptation, and no intrinsic difference is conferred."[7] Again he says that "germ cells and somatic cells do not present any qualitative contrast in the plant kingdom. They are the extremes of a long line of qualitative differences. This law I regard as one of the most important results of the consideration of vegetable cell pedigrees. Sachs, Strasburger, and others have pointed out the importance of this law."[7] Bowen, in agreement with these others, has shown that the sex organs of flowering plants, instead of being metamorphosed leaves, have more likely evolved from the flowerless plants by a process which he says "may, perhaps, be called with more propriety 'sterilization,' a term which indicates clearly what has probably been a prevalent phenomenon in the course of descent of vascular plants."[8] De Vries shows the orderly way in which sterilization has occurred when he tells us that "In the celled pedigree of one-celled organisms and of homoplastids all the twigs are primary germ tracks. In the next higher plants primary and secondary germ tracks are to be distinguished and, the more highly the organism is differentiated, the more are the latter pushed into the background. . . . In the case

of the vascular plants, most of the tissue cells, at least when fully developed, can without doubt no longer produce the species."[9] The fact that the greater the differentiation the more of the structure of an organism is sterile is of great significance. Animals being much more highly differentiated than plants the bodies of animals contain a vastly larger ratio of soma plasm to germ plasm than do plants however highly differentiated. Why this incessant recession of germ plasm with the progress of evolution? Why are there no cases of an increased ratio of germ over soma plasm *pari passu* with high development? Why such solicitude for the safety of germ plasm at the risk of endangering soma plasm? It all looks as if the struggle for existence, as related to tissue cells, has always been a struggle against parasites.

That parasites are still at work endangering and destroying germ cells has been proven by Giard and many others.[10] Cases of what are called parasitic castration are of common occurrence and have been reported from numerous genera and orders of both plants and animals. Prof. H. B. Ward says that "When a parasite develops in an organism it causes sterility in its host. Such parasitic castration may be direct or indirect. The first case is met when the parasite destroys directly by mechanical means, or for its nutrition, the genital glands of its host. Parasitic castration is indirect when the producing parasite is not directly in relation with the genital glands, but in some other part of the body of the host. Parasitic castration may also be temporary and then disappear when the parasite is suppressed. The modifications caused by parasitic castration affect the genital organs, the secondary sexual characters and the sexual instincts of the infested animals; it may be partial to any degree and may exert the same influences on the secondary sexual characters as age, or as artificial castration. Each one of the sexes loses more or less its characteristic attributes and tends to acquire in the same degree those of the opposite sex."[11] Indirect parasitic castration is a fact having immense importance for the future of evolutionary philosophy. That parasites in lungs, liver, kidneys, or intestines can, by aid of something they introduce into the circulation, damage or destroy the germ cells of their hosts, even to the extent of rendering them permanently sterile, is a fact the importance of which it would be hard to overestimate. That various degrees of sterilization can thus occur is also important. According to Prof. Ward indirect castration can be produced by intestinal worms as well as by bacteria, protozoa, and the like. Prof. Wheeler, in an article in the *Journal of Experimental Zoology*, cites a large number of cases of parasitic castration of bees, wasps, ants, beetles, and crustaceans. He tells of a nematode (worm) which infests bees rendering the queens sterile so that sometimes they "have not a single mature egg in their ovaries." All queens that these worms infest are found on microscopic examination to have normal organs, although they may be quite sterile. The sterility is due to indirect causes. Such bees cannot found colonies. Among the cases he cites is one of earwig beetles (Forficula) that when infected by gregarines have a shortening of their forceps. The trained eye can tell the sick beetles from the well ones by noting the lengths of their forceps.[12] Prof. Geoffrey Smith relates a case of bacterial castration in a "thoroughbred" rooster which he bought for breeding. In two weeks it sickened, stopped crowing, comb and wattles shriveled and lost color, and the tail drooped. On killing, dissecting, and examining microscopically and otherwise, he found that it had been suffering from avian tuberculosis. The testes were reduced in size but uninfected, their appearance being that of an immature bird a few weeks old. There were no spermatozoa. He pronounced the case "an instance of the parasitic castration caused by a bacterial infection of a vertebrate host."[13] Prof. Ewart, at a meeting of the Zoological Section of the British Association, told of some blue-rock pigeons which he had received from India that were infected with bird-malaria (Halteridium). Those with numerous parasites were infertile on mating, those with very few mated successfully, one with few mated with another with many produced offspring, but they all died before leaving the nest. One bird that was at first sterile, because of the many parasites that it carried, "mated successfully as soon as the number became greatly reduced."[14] In Bulletin 30 of the Committee of One Hundred on Public Health, of the American Association for the Advancement of Science, we are told that "one of the most constant effects of gonorrhea in women is permanent and irremediable sterility. . . . Noeggerth found in 81 gonorrheal women 49 entirely sterile. In 80 sterile marriages Kehrer found 45 caused by inflammatory changes of gonorrheal origin."[15] Many cases are due to obstructions, such as obliteration of the ducts of the epididymus, and occlusion or constriction of the lumen of the Fallopian tubes in salpingitis. In mild attacks, however, particularly in males, indirect castration plays an important part. A study of the semen in victims of this disease reveals, under the microscope, that only part of the spermatozoa show vitality. This is called relative oligospermia. In more severe cases the number of living spermatozoa is pronouncedly reduced. This is known as serious oligospermia. In still more severe cases there are no motile spermatozoa. This is denominated azoospermia. In very severe cases life-long sterility results through total inability to produce semen. Such cases are probably due to direct inflammation of the testes and the condition is known as aspermia.[16] The graded degrees in the reduction of viable spermatozoa indicate the presence within the circulation of a cytotoxin—a cell poison. It evidently acts in proportion to its concentration. An artificial cytotoxin of this kind—a spermatoxin—has been produced, that kills spermatozoa when sufficiently concentrated. We are told by Ehrlich that "Landsteiner, Metchnikoff, and Moxter succeeded in producing an immune serum (spermatoxin) against spermatozoa."[17] As evidence of the kinship between the molecules of spermatozoa and of soma cells "Metchnikoff found that by the proper method of immunization he could produce spermatoxin in animals devoid of testicles."[18]

What a flood of new light the facts here presented cast upon the *process* of natural selection. One serious objection long urged against Darwin's theory is that the age of the earth would have to be well-nigh eternal, so far as our pigmy intellects are able to compass immense millions of years, to meet its requirements. "Remember what natural selection is," says Prof. Kellogg, when endeavoring to fairly represent the contention of the anti-Darwinian, "the saving of one or ten thousand because in the struggle for existence the variations of the one or ten are of sufficient advantage to

have a life-or-death-determining value."[19] "Geologic time," he urges, "seems too short to give selection time to do its work." He qualifies this with the supposition that the newer argument for the earth's probable age as deduced from the possible action of radium, might easily extend the time limit. De Vries says that "Many thousands of millions of years were considered to be the smallest amount that would account for the development of life on earth."[20] His doctrine of leaps (mutations) he seems to think does away with the long time requirement. Until mutationists are able to solve the riddle of these leaps, by the discovery of an adequate cause therefor, no one can seriously maintain that the time requirement of biological evolution has been shortened a particle. With Prof. Poulton the writer is inclined to hold that "mutation without selection may be left to those who desire to revive Special Creation under another name."[21] Vast as are the millions of years allotted to the earth's age by geologists, it seems a beggarly pittance compared with the real time requirements, if the saving of chance variations and the premature destruction of adult forms that are unable to survive the "tooth and claw" struggle with the environment, constitutes the whole of natural selection. Let the reader, at this late date, re-read Herbert Spencer's paper on "The Inadequacy of Natural Selection"; let the time problem dominate his mind as he reads and he will be pretty sure to conclude that either there is something wrong with this limited notion of natural selection or that Spencer has certainly proven its inadequacy. It is, most assuredly, inadequate in the cases he has cited. So staggering became the problem to Spencer's broad grasp that he seemed confident that no amount of time could surmount the difficulties. "Either there has been inheritance of acquired characters or there has been no evolution" was the triumphant climax which he defiantly hurled at Prof. Weismann and which the latter gentleman was powerless to refute.[22] Either there has been inheritance of acquired characters or the miracle of Special Creation must be evoked to solve the riddle, is what this means. And this confession came from Herbert Spencer when the tide had begun to turn in the minds of our best naturalists against any belief in the inheritance of acquired characters. The facts needed to solve the problems which he raised were not then all known and no such meaning had been suspected as residing within those that were known. Parasitic selection of proteins and parasitic castration of hosts, together with our present knowledge of immunology, had raised no suspicion of a broader Darwinism that looks to cells and molecules as the principal struggling and surviving units.

The long ages during which germ plasm has been gradually receding from danger into positions of protection behind soma plasm points to the possibility that much, perhaps most, of the destruction of unfitness and survival of fitness has been the destruction of unfit germ cells and survival of fit germ cells, as such, rather than the destruction, always, of adult forms. If spermatozoa, ova, and parthenogonidia are and have been affected by disease in all sorts of degrees, through the countless years of the past, their fit must have been subject to continuous survival and their unfit to incessant extinction before leaving their producing organisms. If this is true then it follows that natural selection must have gone on within the body at a speed far in excess of anything that could possibly be brought about by the destruction of adult forms. In the case of motile spermatozoa if they were greatly injured, even though not killed, their motility would be impaired and they thereby handicapped in the race for the ovum with their more favored fellows. Only such as sufficiently resisted blood-borne poisons could have a fair chance of becoming a directing agent in the development of a fetus. Their great waste in vertebrate conjugation cannot be accounted for on the basis of natural selection unless it is of selective value. It is of selective value if the apparent profligacy is a distinct utility in the direction here indicated. The wastefulness of wind-borne pollen is evidently a necessity in the requirements of wind fertilized plants. It is of selective value inasmuch as an economy of production of such pollen would mean the extinction of many or most of these plants. In highly specialized, insect-fertilized plants no such waste occurs. This evidence of parsimony, where germ-plasm bears a much higher ratio to soma-plasm than in vertebrates, is evidence of the conserving influence of natural selection. Waste, as such, is extinguished. Why, then, such apparent waste among vertebrates unless natural selection picks out the variants among the spermatozoa? If the discharged spermatozoa are of varying degrees of fitness, or varying degrees of vitality, owing to their having been exposed to cytotoxins, *i.e.* cell poisons, then the apparent excess is understandable. That artificially produced cytotoxins will kill and injure them has already been pointed out. That they are damaged by bacterial and protozoal cytotoxins has also been shown. That they show different degrees of susceptibility is also known. Why then should we doubt that they may be the agents of natural selection in bringing about evolutionary changes? The American Text-Book of Physiology tells us regarding spermatozoa that "upon the basis of observation on several individuals Lode computes the average production per week as 226,257,000 and in the period of thirty years, from twenty-five to fifty-five years of age, the total production is 339,385,500,000."[23] Here, then, are over 339 billions of possibilities for chance variations to occur within each male individual during a single lifetime. Among all these there should be some that would change toward fitness. Disease can maim and ruthlessly destroy this number of billions of unfit and still leave, per individual, 385 millions of favorable—resisting—variants. Their vigor would enable them to more rapidly reach the ova after injection. The fittest of these fit would be the final survivors—the progenitors of the future. If variations occur among them in all directions possible for spermatozoa to vary in accordance with the doctrine of chance, some of these 339 billions of chances should show variations in the progressive direction. If 339 billions of generations of human beings had to perish in order to supply the same chances for survival of the fit variants what a tremendous draft would have to be made upon time in order to secure as much change as might thus occur within the limits of a single lifetime. If every generation has supplied a similar number of chances how vast a total the myriads of years between us and ameba has given. To crowd the selections of 339 billions of generations into each single generation and to multiply these with as many generations as lie between us and our ameba ancestor will give the difference in selective power between the two conceptions of the way natural selection may be doing its work. Quite likely

Lode's estimate is in excess of the numbers found in many individuals, and we do not know just how the numbers may recede backward toward the ameba with its single chance, but, with the most liberal allowance for these, the total will remain overwhelmingly vast. In the ova the chances for variations are pronouncedly smaller. Meltzer tells us that "the ovary of the new-born female child possesses between 100,000 and 400,000 eggs, and at the time of puberty there are still about 30,000 ova ready to enter upon their possible mission."[24] Disease toxins can reach and damage these just as they reach and damage spermatozoa, but the numbers to be acted upon are here materially less. Where too many are destroyed the woman becomes sterile. The so-called nursing cells appear to be unfit ova and their bodies supply the surviving ova with part of their pabulum. The best resisting ova thus appear to survive and the least resisting to perish.

The injury to soma cells as well as to germ cells, from cytotoxins, is well known. The discomfort, fever, and other symptoms due to the poisonous products of pathogenic microbes in most diseases are familiar even to laymen. That the cells of different kinds are damaged and killed without coming into immediate contact with the attacking parasites is not so well known. "In the majority of diseased conditions," says Dr. Dickson, "various degenerate phenomena, due to the action of the bacterial and other toxic substances producing or accompanying the disease, are of practically constant occurrence in the cells of the bone-marrow, and similar changes may also be found in many of the cells of the circulating blood. These degenerative conditions may be more marked in the nuclei of the cells, or again they may chiefly affect the parts of the cell are almost invariably affected."[25] Miss Reed asserts that following active phagocytosis "neutrophiles first react to the presence of bacilli or a toxin by some metabolic change, which is shown by increase in the number of lobes in the nucleus," and that "these reacted cells break down or are used up in the blood."[26] That the red cells of the blood are subject to destruction in a number of diseases in which anemia occurs has long been believed by physicians. Prof. Wells declares that "the hemolysis (destruction of red cells) of the acute febrile diseases is readily explained by the demonstrable hemolytic property of the products of the organisms that cause them, such as streptocolysin, staphylolysin, etc. (various bacterial cytolysins). . . . In malaria, although the parasites enter and destroy the capsules in which they live, yet this alone does not account for all the blood destruction of the disease, for the amount of anemia is quite without relation to the number of parasites to be found. There is good reason to believe that the plasmodia produce hemolytic substances that are discharged into the serum."[27] The various cell toxins having often, perhaps always, a so-called lytic or dissolving power upon cells and tissues, puts meaning into the "unusually high rate of self digestion" which Flexner says occurs "in organs removed from individuals who succumb to typhoid fever and other infectious diseases" and explains why "the softening and the wasting of tissues is most striking when these are under the influence of protoplasmic poisons."[28] The same explanation will apply to the fact mentioned by Calkins that "a widespread effect of protozoa is the lysis set up by their presence in cells and tissues." He says "this was clearly worked out by Councilman and Lafleur in the case of amebic dysentery where the parasites penetrate the submucosa where they cause the cells to jellify and degenerate. Similar destructive changes are brought about by the organisms of trachoma, of rabies, and of smallpox."[29] That this dissolving or lytic effect injures blood cells in varying degrees and produces its chief visible effects within the nucleus has been shown by Dr. Dickson, of the Pathological Department of the University of Edinburgh. He tells us that the changes produced "may in general be divided and classified—according to the manner in which they affect the nucleus—into the two great divisions karyorrhexis or fragmentation of the nucleus, a change frequently preceded or accompanied by swelling of the nucleus and solution of its chromatin and followed by its disappearance by solution in the cytoplasm; and karyolysis characterized by swelling of the nucleus and solution of its chromatin."[30]

This attacking of the nuclei of cells by the cytotoxins is very significant in view of the fact that the nucleus is now generally conceded to be the seat of the cell's hereditary qualities. De Vries tells us that "the hereditary characters are contained in the nuclei, as was first declared by Haeckel, and later demonstrated by O. Hertwig, and for plants by Strasburger. This important law forms, for the present, the basis of the whole anatomical theory of heredity, and is recognized as such by all investigators."[31] Prof. Wilson says that the chromatin, which has been mentioned above, "is the nuclear substance *par excellence*, for in many cases it appears to be the only element of the nucleus that is directly handed on by division from cell to cell, and it seems to have the power to produce all the other elements."[32] Preparatory to cell division the chromatin gives rise to separate rod-shaped bodies known as chromosomes. Prof. Conn asserts that "It is evident that the chromosomes form the part of the cell which contains the hereditary traits handed down from parent to child. This follows from the fact that the chromosomes are the only part of the cell which in the fertilized egg is derived from both parents. Now the offspring can certainly inherit from each parent, and hence the hereditary traits must be associated with some part of the cell that is derived from both."[33] Microscopic research appears to sustain this reasoning inasmuch as "Boveri found in the development of Ascaris (a thread worm) that the germ-cells, which preserve all the characteristics of this species, also preserve all the chromatin of their chromosomes, but that in the body cells, which undergo differentiation, the chromosomes undergo diminution."[34] Prof. E. B. Wilson, commenting upon this, says that "from the outset the progenitor of the germ-cells differs from the somatic cells not only in the greater size and richness of the chromatin of its nuclei, but also in its mode of mitosis (indirect nuclear division); for in all those blastomeres (first division cells of a fecundated egg) destined to produce somatic cells a portion of the chromatin is cast out and into the cytoplasm, where it degenerates, and *only in the germ cells* is the sum total of the chromatin retained."[35] G. S. Dodds' study of Lophius (angler fish) has shown that in this genus "the nucleus of germ-cells is noticeably larger than that of other cells" and that with progressive differentiation "the nucleus of the somatic cells is becoming continually smaller while that of the germ

cells remains of constant size. Prof. Conklin tells us that during the cleavage of the egg of *Crepidula plana* (a bonnet-shell mollusk) the average nuclear growth "is not more than 5 per cent. to 9 per cent. for each division up to the 32-cell stage and it may fall as low as 0.3 per cent. to 1 per cent. for each division after that stage; and in every case it falls far short of a doubling, or increase of 100 per cent. for each division." He tells us that "the average growth in volume of chromatin from the 2-cell to the 32-cell stage is about 8 per cent. for each division period, being about the same as the growth of the nucleus as a whole." He further adds that "the chromosomes become individually smaller as cleavage progresses, and in general small nuclei give rise to smaller chromosomes than do large nuclei."[37] If we next consider the evidence from plant and animal experiments we find it also confirmatory of Prof. Conn's reasoning. Professors McDougal, Gager, and others have shown that the introduction of dilute solutions of poisonous substances into the interiors of the ovaries of plants, when the solutions do not destroy the ovaries or abort the developing seeds, as they do in most cases, has been followed by the production of living seeds that produce plants unlike the parents. The introduction of such solutions into the ovaries of "Rainannia was followed by the production of seeds bearing qualities not exhibited by the parent, wholly irreversible, and fully transmissible in successive generations. Encouraged by this success, a number of reagents were used in the following year, with *Oenethera biennis* (evening primrose), a plant which had been under observation for some time, and with which I (McDougal) was so familiar as to be able to recognize alterations readily. Of the various tests with this plant, one, which had been treated with a solution of zinc sulphate, gave seeds one of which reproduced a plant known to my associates and myself as 'F 206,' which differed so remarkably from the parental form as to be recognizable by a novice."[38] Animal experiments of this kind have not been very successful. Prof. A. P. Matthews has tried some with amino acids, on echinoderms, molluscs, and porifera. He found that impure leucine prepared from horn when in dilute solution, if applied to the eggs of arbacia (sea-urchins) arrests development without killing them. When they are removed to fresh water they develop into all sorts of fantastic embryos.[39]

How much of the effect secured in experiments of these kinds should be attributed to nuclear changes and how much to injured cytoplasm cannot at present be determined. It is most likely that both receive injury and that if both carry hereditary qualities, as some claim, it would be impossible to distinguish between their effects. The evidence in our possession all points toward chromatin as the chief, probably the sole, center of heredity-control. The protein molecules, however, all take part as building stones of the structure and are the substances that the chromatin must, somehow, direct heredity through. Says Prof. J. Loeb: "One would naturally think first of definite chemical compounds as the bearers of hereditary qualities."[40] Prof. Guyer puts the same idea into these words: "That there is a physicochemical basis of heredity and that it is, if not exclusively, at least fundamentally, bound up in the proteins of the germ-cells, we know for certain."[41] Prof. von Noorden states the case thus: "The protein molecule, just as the cell and protoplasm can transmit and hand down its form and specific energy to a newly formed molecule. Its form is constant, while its contents, the C,H,N, and O atoms, may alter. One part of the problem dealing with the transmission of vital properties—in fact, a most important because a fundamental one—is the transmission of the protein molecule."[42] Conklin tells us that "The substance which forms the nuclear sap is absorbed by the nucleus from the cell body throughout the whole of the resting period, only to be thrown out into the cell body again at the end of that period. Consequently the nuclear sap is no more a nuclear constituent than a protoplasmic one, belonging to both nucleus and protoplasm (cytoplasm). . . . There is good reason for believing that the nuclear sap contributes to the nourishment and growth of the chromatin and linin, and that it in turn receives substances from these."[43] Does it not seem from this that there is constant reciprocity between nucleus and cytoplasm in which each gives and takes from the other? The proteins must be made somewhere, either in the cytoplasm or the nucleoplasm. If chromatin is the director of heredity and the proteins the carriers of the same, may it not be that protein molecules are products built up by chromatin? One chemical authority has asserted that "we cannot arrive at any other conclusion than that the nucleoproteids (old name) are the agencies by which amino-acids are built up into cell-plasm."[44]

Chemical analysis of the nucleus shows it to be composed of what chemists now call nucleoprotein and out of this the chromatin of the microscopist is probably constructed. This identification of nucleoprotein and chromatin supplies still another argument in behalf of the theory that loss of chromatin causes differentiation in tissues. Prof. Hill tells us that "Neucleoprotein is most abundant in plain muscle and least abundant in voluntary or striated muscle; cardiac muscle occupies an intermediate position in this respect. . . . Plain muscle is the least and voluntary muscle the most differentiated."[45] This simply means that in the differentiation of voluntary muscle from plain muscle there occurred a lessening in the amount of chromatin. In the passing on of the inheritance-producing stuff certain kinds of nucleoprotein molecules were left out and their absence created the difference between plain and striated muscle. There is still another chemical fact that adds materially to the evidence. "Whenever," says Mann, "the other amino-acids increase in number and complexity arginin diminishes in amount."[46] As arginin is the one distinctive amino-acid that is more abundant in chromatin protein than in any other protein and as increase in number and complexity of other amino-acids is a sign of differentiation in proteins, then it follows that with increased differentiation there must be, according to this chemical evidence, decrease in nuclear material—decrease in chromatin. Thus chemistry and microscopy join each other in supplying evidence toward proving that all great tissue changes which have occurred in plants and animals during the ages of the past have been due to successive losses of chromatin (nucleoprotein) from the tissues as they have differentiated from each other. Deductive logic, based upon the principle of natural selection, appears to show that the only reasonable explanation for these successive losses of chromatin is that the protein molecules in its structure, and in the structure of the cytoplasm, have been under incessant selective destruction by para-

sites of many kinds ever since the dawn of polycellular life.

This explanation casts a flood of light upon many obscure histological problems. It shows us why it is that "differentiation in any direction terminates the possibility of differentiation in any other direction," as has been asserted by Prof. Minot. It shows us why it is, as he also asserts, that "in accordance with this law we encounter no instances, either in normal or pathological development of the transformation of a cell of one kind of tissue into a cell of another kind of tissue, and (why) further we encounter no instances of a differentiated cell being transformed back into an undifferentiated cell of the embryonic type with varied potentialities." It supplies the basic chemical explanation of why, as Minot again declares, "we must look upon each step in the process of differentiation as establishing narrower limits for future changes."[47] This same explanation puts an added meaning into the facts that "Epithelial tissues (epiblastic and hypoblastic) can only be converted into other forms of epithelial tissues, one form of mesoblastic into another form of mesoblastic. Epithelium and gland cells, for example, never become converted into bone or cartilage, or *vice versa*, while, again, it may be laid down that among epiblastic and hypoblastic tissues, on the one hand, and mesoblastic tissues on the other, there is no new development or metaplasia of the most highly specialized tissues from less specialized tissues; a simple epithelium cannot in the vertebrate give rise to the more complex glandular tissue, or to nerve cells; in regeneration of epithelium there is no new formation of hair roots or cutaneous glands. The cells of white fibrous connective tissue have not been seen to form striated or even non-striated muscle."[48] Why should we expect to see any such transformations of tissues if the conditions under which they have evolved were such as our array of facts indicate? If germ cells contain a fixed, assorted store of, say, one hundred different kinds of protein-producing chromatin granules, and if, when dividing to form soma cells, only seventy-five kinds are transmitted to the new cells, why should such cells, by multiplication of their seventy-five kinds, and dividing, produce germ cells having one hundred kinds? If the newly formed soma cells divide and produce more highly differentiated soma cells containing only fifty kinds of chromatin granules, why should we expect these last produced cells to be able to reappear identically the same as their seventy-five protein progenitors? A part can never equal a whole, nor can fifty kinds of specific chomatin reappear as seventy-five kinds. If many different kinds of protozoa and bacteria, having as many preferences (chemotactic affinities) as there are kinds of chromatin, should for countless ages seek to feed upon these or on the molecules they produce, what ought we to expect would happen under conditions as we know them? In places where one kind of these foes was dangerously numerous, or in times in which it became so, would we not expect great destruction of the tissue containing the particular protein it was attracted to, if that tissue was greatly exposed? Would not natural selection preserve the organism that left out the tempting chromatin from that exposed tissue? Let another parasite with a different choice then become dangerously plenty in the same region as that organism and would not natural selection kill off all that failed to drop out of its exposed tissue the tempting morsel? Let this continue to be the order of events for numberless generations and would we not get a large variety of tissues with different powers of resisting parasitic foes? We have seen that attacking parasites possess the ability of not only injuring and killing cells that are near or in contact with them, but cells at the most remote parts of the body. This indirect injury we have learned is due to specific cell poisons—cytotoxins—produced by the parasites. These toxic substances can damage some kinds of cells more than others.

The cells, however, are able to retaliate, not only by neutralizing the parasite's poisons, but also by themselves producing counter poisons. Every such poison is more or less specific for the particular kind of invader. Indeed, so perfect has become the mechanism of production that no kind of alien protein can be introduced into the circulation of any of the higher vertebrates, in unusual amounts, without the appearance in the blood of poisons that can kill the animal or microorganism or damage the organ from which the protein came. Ehrlich tells us that "the investigation of numerous authors have shown that by injecting animals with any kind of foreign cell-material cytotoxic substances can be produced directed exactly against the material used for immunization. Thus if a dog is immunized with an emulsion of goose brain it will be found that the dog's serum will be highly toxic only for geese, killing these animals with cerebral symptoms. In the same way we can produce other poisons, hepatotoxins (for the liver), nephrotoxins (for the kidneys), etc."[49] Wells has recounted, in his "Chemical Pathology," the various kinds of experiments pursued in producing leucocytotoxins, endotheliotoxins, lymphatotoxins, nephrotoxins, neurotoxins, and thyrotoxins. He also refers to reports upon epitheliotoxins, spermatotoxins, cardiotoxins, splenotoxins, and syncytiotoxins.[50] Dr. S. P. Beebe has done some of this kind of work in our own country. He has reported, in the *Journal of Experimental Medicine*, that by injecting five successive safe doses of nucleoproteins from dogs into the peritoneal cavities of rabbits, at intervals of six days, and bleeding them eight days later, a cytotoxic serum was secured that when injected into the circulation of dogs was specific for the same organs as those from which the nucleoproteins were taken. He states that he succeeded in this way in producing definite, specific toxins for the liver, when liver nucleoprotein was used, for the kidney when kidney nucleoprotein was used, and for the pancreas when pancreatic nucleoprotein was used. After recounting his experimental results with kidney-cell toxin, he says: "There seems to be no doubt from these findings that this nephrotoxin sets up an acute degeneration of the kidney tissue." Regarding his liver cytotoxin he says: "With the serum made by injecting liver nucleoproteids I have produced very serious lesions of the liver, apparently without causing serious injury to other organs."[51] Prior to his experiments Charrin and other French investigators startled pathologists by results obtained through injecting proteins into pregnant females. "Among the experiments related," says an editorial writer in the *Journal of the American Medical Association*, "is the subcutaneous injection of an emulsion of liver substance in a gravid goat. A total of 84 gm. was injected at various times, equal to two per thousand of the animal's weight. Sixteen days after the last in-

jection she was delivered of a kid that died at once. All its organs were macroscopically sound, with the exception of the liver, which was reduced to a pulp. There were no traces of microbes."[52] In this case the hepatotoxin appears to have been produced in the dam's blood, in response to the injections of liver emulsion. It had to pass into the fetal circulation, reach the fetal liver, exert its specific poisonous effects upon the nucleoproteins thereof, thus killing the cells and, through autodigestion, completing the destruction. Delamere, after wounding the kidneys of pregnant dams is reported as having found that such injury was "followed by hemorrhagic and degenerative lesions in the corresponding organs of the fetus."[53] In such cases as these there would almost certainly be infection of the dam's wounded organs. Following such infection bacteria produced cytotoxins would be certain to appear inasmuch as it is in the digestion battle between cells and parasites that they are produced.

Long before any explanation of such a case as this was possible, Darwin had observed that when mutilations "are followed by gangrene they are apt to be inherited."[54] Here we have an unintentional acknowledgment that without infection injuries do not impress themselves on spermatozoa or ova. He seems to have looked upon such cases as indirect evidence of the inheritance of bodily acquired characters when the fact is that, from a pathological view, they are strong evidence of natural selection. He tells us that "the evidence that accidental mutilations can be inherited is at present not quite decisive; but the remarkable case observed by Brown-Séquard of inherited epilepsy in guinea pigs, caused by an operation performed on the spinal cord, should make us cautious in denying such power."[55] In the case here referred to, and in all subsequent cases in the now celebrated Brown-Séquard experiments, bacterial invasion of the injured parts was practically unavoidable. Prof. Romaines very properly denies the probability of a specific kind of pathogenic microorganism having been responsible for such results. It did not occur to him nor to others that ordinary pyogenic bacteria might be the agencies aiding inheritance through the effects of their cytotoxins upon germ plasm. They are, of course, ubiquitous. The following is Brown-Séquard's summary of his results:

1. Appearance of epilepsy in animals born of parents which had been rendered epileptic by an injury to the spinal cord.

2. Appearance of epilepsy also in animals born of parents which had been rendered epileptic by section of the sciatic nerve.

3. A change in the shape of the ear in animals born of parents in which such a change was the effect of a division of the cervical sympathetic nerve.

4. Partial closure of the eyelids in animals born of parents in which that state of the eyelids had been caused either by section of the cervical sympathetic nerve, or the removal of the superior cervical ganglion.

5. Exophthalmia in animals born of parents in which an injury to the restiform body had produced that protrusion of the eye-ball. This interesting fact I have witnessed a good many times, and seen the transmission of the morbid state of the eye continue through four generations. In these animals, modified by heredity, the two eyes generally protruded, although in the parents usually only one showed exophthalmia, the lesion having been made in most cases only on one of the corpora restiformia.

6. Hematoma and dry gangrene of the ears in animals born of parents in which these ear alterations had been caused by an injury to the restiform body near the nib of the calamus.

7. Absence of two toes out of the three of the hind leg, and sometimes of the three, in animals whose parents had eaten up their hind-leg toes which had become anesthetic from a section of the sciatic nerve alone, or of that nerve and also of the crural. Sometimes, instead of complete absence of the toes, only a part of one or two or three was missing in the young, although in the parent not only the toes but the whole foot were absent (partly eaten off, partly destroyed by inflammation, ulceration, or gangrene).

8. Appearance of various morbid states of the skin and hair of the neck and face in animals born of parents having had similar alterations in the same parts, as effects of an injury to the sciatic nerve.[56]

Thirty years were occupied in performing these experiments. They were independently vouched for by Dr. Dupuy and Prof. Westphal, who had assisted in their production. The epilepsy cases were independently verified by Obersteiner. Prof. Romaines spent some time in France with Brown-Séquard, endeavoring to verify all of them. He was successful with most of them but, in spite of the guidance of Brown-Séquard he was not able to secure all of the results. If the item of infection is of paramount importance this is just what might be expected. To secure the same degree of cytotoxic concentration at every trial could hardly be expected. By repeating and rerepeating the experiments some approach to this would be apt to be secured in a number of cases but not in all.

That the matter of quantitative intoxication is of great importance can be readily inferred, but the seriousness of its importance few realize. "It has been established," says Prof. H. M. Richards, "that many, if not all, classes of substances which exert a toxic action on protoplasm will become stimulating if presented to the cells in sufficiently small doses. Somewhere between an infinitesimally weak solution which produces no reaction, to the toxic dose which kills, there is a stimulative optimum which gives the maximum of reaction. The question is not the possible ultimate lethal effect of these poisons, but how far they may excite the protoplasm to extraordinary activity."[57] Prof. Wells tells us that "Mallory's observations on the phenomena of proliferation and phagocytosis show that the same bacterial products which destroy the cells when concentrated, when sufficiently dilute cause proliferation of similar cells."[58] Prof. Theobald Smith informs us that "it was shown many years ago by Prudden and Hodenpyle, by Straus, and many others that dead, even boiled and washed, bacilli stimulate cell proliferation of a more or less specific type."[59] It is, therefore, evident that while a relatively large dose of a cell poison may injure or destroy the cells, a smaller dose may be distinctly beneficial, stimulating to activity and multiplication. These toxins seem to act much as heat does. An excess kills, while a reasonable amount is beneficial. When acting upon a germ cell the toxin from a local

lesion or disease would, other things being equal, produce effects proportional to the volume of infection. As the toxins are specific, having affinities for special protein molecules of the germ-cell, and not for other molecules of the same cell, different toxins must have different effects upon them. As parasites have preferences for certain kinds of protein molecules, they will attack some somaplasm molecules and not others. As their toxins are adjusted to the kinds of molecules that they attack, acting as amboceptors to the same, these toxins are attracted to such molecules wherever found within the body. Thus it happens that there is softening of many tissues after infections. The same cytotoxins reaching the germ cells by way of the circulation show this affinity there. They stimulate, damage, or destroy the same sorts of nucleoproteins and other proteins in the germ cells as the producing parasites are stimulating, damaging, and destroying in the cells of the body. As all tissues have, through natural selection, gained a considerable degree of resistance toward the great mass of would-be parasites—to some more, to others less—every organism, through youth to maturity, maintains a fair balance of health. At all times, however, they are liable to infection from being exposed to pathogenic microorganisms over which they have acquired little or no resistance, and, what is, perhaps, of more importance, to parasites over which they have, under ordinary circumstances, considerable resistance. We are told that "military surgeons note again and again that though soldiers while in garrison may be free from typhoid fever, they are liable to develop it as soon as they have undergone the strain of maneuvers, although they are stationed in villages where there is no typhoid. * * * Charrin and Rogers" * * * "experimented on white rats, using the bacillus of anthrax and of symptomatic anthrax. The experimental animals were first made to run in a squirrel's cage for several hours till thoroughly tired, and were then injected, control rats being injected with an equal dose. Charrin and Rogers found that the fatigued rats succumbed to the infection earlier than the non-fatigued and that in some cases the latter survived a dose which killed the former in less than twenty-four hours. In one experiment five control rats, inoculated with the virus of symptomatic anthrax, survived, while all of the six fatigued rats inoculated with the same amounts died, three of them in less than twenty-four hours."[60] De Sandro confirmed these results on dogs, rabbits, and guinea pigs. What has been proven true of fatigue is believed to be true of exposure to hunger, to cold, or to any other condition that carries out of the normal. Our resisting powers are at their best only under favorable conditions and deviations from these bring upon us infection from parasites, some of which are now known to be our constant companions through life.

We are told by Prof. T. H. Morgan that "The speed of the hare bears no causal relation to that of the fox. We cannot think of the fox in the sense of a physical environment acting on the germ-cells of hares; yet without the fox the hare would, we feel confident, never have developed the long hind legs."[61] It occurs to the writer that without the fear of foxes, or their likes, the progenitors of hares would not have had to run so hard as to seriously fatigue and cripple themselves. Without the fatigue and crippling they would not have developed inflammations and diseases of the legs such as follow injuries and great fatigue. Without such inflammations and diseases there would not have arisen, within the circulation of these pro-hares, cytotoxins specific toward damaged bone, muscle, tendon, or other leg tissues. Without the cytotoxins there would have been neither stimulation nor damage to spermatozoa or ova or to their specific chromatin, and, consequently, no natural selection among the specific protein molecules eliminating the unfit and preserving and strengthening the fit so that they should be sure to take part in the reconstruction of future legs. The parts of the legs in the pro-hares that hindered effort toward great speed, would be the parts damaged most in every spurt of speed needed to save life. Nerves, muscles, tendons, bones, cartilages would all suffer betimes under excessive strain and fatigue, and would all be subject to injury and inflammation. In exact proportion to the degree of damage to each tissue would be the degree of effect upon the cytotoxin-invaded germ-cells. All tissues, or parts thereof, that favored speed in locomotion would suffer little from the strain and would, therefore, only transmit stimulation. All that by virtue of size, shape, or other form of handicap, hindered speed in locomotion would, on the average, be damaged exactly in the ratio of their hindrances. They would produce great amounts of cytotoxins, because of greater infection, and they would damage the chromatin of the germ cells in a degree corresponding to the extent of their own injury. Qualitatively, too, the damage in both would have a correspondence. The destruction of pro-hares by quick-running, hungry foxes, or animals akin thereto, would, of course, aid in eliminating the unfit, but only to a meagre extent as compared with the destruction of germ-cells. The destruction of adult animals could supply no mechanism for the establishment of the coordination among organs, tissues, cells, and molecules. Dr. F. B. Sumner not long ago said: "If a mechanism exists whereby the germ-cells may be so influenced as to bring about the parallel modification of parent and offspring, such a mechanism would be of exactly the same value for evolution as 'the inheritance of acquired characters' in the old sense."[62] To the writer it appears as if we have in disease just such a mechanism as that to which Dr. Sumner refers. The indications are that it is so accurately adjusted as to be able to respond to every change in the environment that is not wholly overwhelming. It is so minutely adjusted that chemical molecules are its units of fitness. In selecting the fit among these it secures fit cells, in selecting the fit among cells it secures fit tissues, in selecting the fit among tissues it secures fit organs, and in selecting the fit among organs it secures fit organisms. Natural selection when only seen as working solely upon organisms *en bloc*, mystifies the understanding and necessitates some supplementary belief, like that of acquired characters, to help it out. The study of natural selection as it occurs among protein molecules attacked by parasites brings us down to the bedrock of naturalism, banishes metaphysical teleology, shows us that the world and all it contains is a harmonic whole, and extinguishes forever the thought that any part of nature is vile or accursed.

REFERENCES.

1. Geddes and Thompson's "Evolution of Sex," pp. 310, 311.
2. Calkins' "The Protozoa," p. 120.
3. Haeckel's "Evolution of Man," Vol. 2, p. 514.

4. Lankester's "Treatise on Zoology," Pt. 1, Fasc. 1, pp. 182, 183.
5. Calkins' "The Protozoa," p. 134.
6. Lankester's "Treatise on Zoology," Pt. 1, Fasc. 1, p. 181.
7. De Vries' "Intracellular Pangenesis," pp. 104, 112.
8. Bower's "Plant Life on Land," p. 63.
9. De Vries' "Intracellular Pangenesis," p. 104.
10. *Journal of Experimental Zoology*, July, 1910, p. 418.
11. *Proceedings Amer. Assoc. for Advan. of Science*, 1907, pp. 508, 500.
12. *Journal of Experimental Zoology*, July, 1910, pp. 418 to 422.
13. *Journal of Microscopical Science*, June, 1910, pp. 233, 234.
14. Reid's "Principles of Heredity," p. 100.
15. Fisher's Report on National Vitality, p. 94.
16. MEDICAL RECORD, Feb. 18, 1911, pp. 293, 294.
17. Ehrlich's "Studies on Immunity," p. 24.
18. *Philadelphia Medical Journal*, Oct. 5, 1901, p. 542.
19. Kellogg's "Darwinism To-Day," pp. 35, 54.
20. De Vries' "Plant Breeding," p. 4.
21. Poulton's "Essays on Evolution," p. xviii.
22. *Popular Science Monthly*, Vol. 43, p. 28.
23. Howell's "Amer. Textbook of Physiol.," p. 883.
24. *Science*, March 29, 1907, p. 489.
25. Dickson's "The Bone Marrow," p. 54.
26. *Science*, April 22, 1910, p. 629.
27. Wells' "Chemical Pathology," p. 200.
28. Harvey Lectures, 1905-06, pp. 85, 86.
29. Calkins' "Protozoology," pp. 201, 202.
30. Dickson's "The Bone Marrow," p. 55.
31. *The Monist*, Oct., 1900, p. 520.
32. Wilson's "The Cell," p. 33.
33. Conn's "Story of the Living Machine," p. 112.
34. *Science*, Jan. 17, 1908, p. 95.
35. Wilson's "The Cell," p. 147.
36. *Journal of Morphology*, Dec., 1910, p. 580.
37. *Journal of Morphology*, Jan. 5, 1912, p. 85.
38. *Science*, Jan. 24, 1908, pp. 123, 124.
39. *Chemical Abstracts*, April 10, 1909, p. 709.
40. Loeb's "Dynamics of Living Matter," p. 180.
41. *American Naturalist*, May, 1911, p. 284.
42. Von Noorden's "Metabolism and Pract. Medicine," Vol. 1, p. 286.
43. *Journal of Morphology*, Jan. 5, 1912, p. 45.
44. Mann's "Chemistry of the Proteids," p. 454.
45. Hill's "Further Advances in Science," p. 211
46. Mann's "Chemistry of the Proteids," p. 154.
47. *Science*, March 29, 1901, p. 490.
48. Adami's "Principles of Pathology," Vol. 1, p. 587.
49. Ehrlich's "Studies on Immunity," p. 388.
50. Wells' "Chemical Pathology," pp. 203 to 206.
51. *Journal of Experimental Medicine*, Nov. 25, 1905, pp. 745, 747.
52. *Journal of American Medical Association*, Feb. 7, 1903, p. 383.
53. *American Medicine*, Nov. 10, 1904, p. 991.
54. Romaine's "Darwin and After Darwin," Vol. 2, p. 54.
55. Darwin's "Origin of Species," 1871, p. 140.
56. Romaine's "Darwin and After Darwin," Vol. 2, pp. 104, 105.
57. *Nature*, March 24, 1910, p. 115.
58. Wells' "Chemical Pathology," p. 236.
59. Harvey Lectures, 1905-06, p. 283.
60. *Journal of the American Medical Association*, Jan. 7, 1911, p. 46.
61. *Science*, Feb. 11, 1910, p. 206.
62. *American Naturalist*, Jan., 1910, p. 18.

681 TENTH STREET.

THE RELATION OF PELVIC DISEASE IN WOMEN TO OSTEOARTHRITIC JOINTS.*

By W. A. NEWMAN DORLAND, A.M., M.D.,

CHICAGO

PROFESSOR OF OBSTETRICS IN THE MEDICAL DEPARTMENT OF LOYOLA UNIVERSITY, CHICAGO; VISITING OBSTETRICIAN AND GYNECOLOGIST TO JEFFERSON PARK HOSPITAL, ETC., ETC.

The Pelvic Articulations as True Joints.—In order to comprehend more thoroughly the relationship existing between pelvic disease in women and pelvic osteoarthritis the following axioms should be borne in mind:—(1) It is now clearly recognized that the pelvic articulations are true joints, comprising in their formation all the structures peculiar to a joint. (2) The articulations between the sacrum and ilia are by far the most important joints of the pelvis. (3) When in a state of health motion to a limited extent is a definite part of the normal function of the pelvic joints, and this motion exists irrespective of age or sex unless it be restricted or obliterated as a result of some congenital or pathological condition. (4) There is normally a greater mobility of the pelvic joints in women, although motion is present to a limited extent in men. (5) The normal motion of the pelvic articulations consists of an up-and-down play at the symphysis, and in a tilting or forward and back movement of the sacrum upon the ilia—or the ilia upon the sacrum—the center of motion being a transverse axis situated at about the middle of the sacrum. (6) Symphyseal movement, while frequently more apparent, can occur only in conjunction with motion at the sacroiliac synchondroses. (7) The pubic bones, together with their symphysis, are of comparatively little importance in maintaining the stability of the pelvis, and serve chiefly to afford attachment for muscles and support for the pelvic viscera. This portion of the pelvic girdle may be entirely absent without causing serious inconvenience to the patient, even during pregnancy and labor. (8) Obstetrically considered, motion at the sacroiliac synchondroses is of interest as causing an increase or decrease in the size of the pelvic inlet. (9) If the pelvic articulations are true joints they are susceptible to the same diseases as other joints. (10) Not only are these articulations susceptible to disease, but because of their anatomic peculiarities they are more liable to injury than are most of the other joints of the body. This is true, because the bones are simply apposed, with the axis of the joint perpendicular (as at the symphysis) or very slightly oblique (as at the synchondroses), the articular surfaces being smooth or but slightly irregular. Therefore, the stability of the joints depends almost entirely upon the ligaments and muscles.

Classification of Non-Tuberculous Affections of the Pelvic Joints.—The non-tuberculous affections of the pelvic articulations may be conveniently grouped as follows: (1) Strain and distortion of the symphysis pubis and sacroiliac synchondroses, including that occurring in the course of osteomalacia. (2) Relaxation of the symphysis pubis and other synchondroses. (3) Bacterial invasion of the pelvic articulations other than by the tubercle bacillus. (4) Traumatism of the sacroiliac joints during and after symphyseotomy. (5) Malignant disease of the pelvic joints.

Strain of the Pelvic Joints.—From the brief anatomical description of the pelvic joints already given it becomes evident that strain of these joints is the simplest pathological condition that may be encountered in them. It is, moreover, the commonest of these conditions, and especially so in the sacroiliac synchondroses. Strain of the pelvic articulations will almost inevitably follow depreciation in the muscular or ligamentous tone of the parts, since, as has been noted, the integrity of the joints depends almost entirely upon the soft tissues surrounding them. It is also self-evident that because of this fact "disturbances in the normal approximation of the bones must be more common and result from much less violence than in other

*Read on January 24, 1912, before the Chicago Medical Society, in a symposium on "Surgery for the Relief of Nontuberculous Chronic Joint Diseases."

joints" (Goldthwait, Painter, and Osgood). A prolonged maintenance of one position, as stooping, standing, lying, or sitting, will often result in a strain of the sacroiliac joints. It can hardly be doubted that many of the lumbosacral backaches that distress womankind may be explained in this way. Thus, prolonged dorsal decubitus after childbirth, in protracted illness, or after abdominal section, produces a strain of the sacroiliac ligaments with resultant chronic aches and pains. When it is recalled that the sacral plexuses of nerves rest just anterior to these synchondroses, it is easy to understand how readily these nerves may be impinged upon and irritated by the yielding joints. Referred pains are thereby produced—sensations that are referred to the areas of distribution of the irritated nerves instead of to the actual seat of injury. In this line, Genty has called attention to a form of pelvic strain resulting from sacroiliac relaxation due to the gradual effacement of the lumbar curvature during profound anesthesia. This gives rise to sharp pains in the back which persist for variable periods of time.

Pelvic Disease and Osteoarthritic Joints.—Grave changes in the pelvic bones themselves, as the softening due to rachitis and osteomalacia—the latter generally developing subsequent to a gestation—are responsible for strains and distortions of their synchondroses with consequent backaches and referred pains that become almost intolerable. As interesting in emphasizing the intimate, though imperfectly understood, bond that exists between pelvic disease in women and osteoarthritic joints, the following facts are worthy of note: According to Tyson, the late J. M. Da Costa claimed that rheumatoid arthritis is the form assumed by hereditary gout in the female. It is well known that females are much more liable to this disease than males—especially sterile women and those suffering from uterine or ovarian disease. Garrod collected 500 cases of arthritis deformans, 411 of which were females and but 89 males. The beginning of the menstrual period is a favorite time for the incipiency of the disease—a striking fact in support of this occult interrelationship between pelvic congestion, physiological or pathological, and osteoarthritis.

Tweedy and Wrench, when speaking of osteomalacia and its usual origination during pregnancy, call attention to the fact that the best treatment to insure arrest of the development of the disease is double oöphorectomy, especially in young women—another proof of this same relationship. Save on the ground of an analogy in the functions of the various so-called internal secretions this relationship is not so patent in the remarkable cures of osteomalacia which have been recorded following the daily hypodermatic injection of the extract of the hypophysis (H. Rab) or of from 5 to 15 grams of adrenalin (L. Bernard).

Relaxation of the Pelvic Joints.—The close association which exists between the pelvic articulations and the female pelvic viscera probably cannot be better demonstrated than by the peculiar softening and relaxation of these joints that is so universally noted as occurring physiologically during the latter weeks of gestation, and pathologically in the course of certain grave infections and congestive disorders of the pelvis. Generally, the physiological relaxation of pregnancy is so slight as to escape observation, although it may be definitely measurable. Rarely, the symphyseal relaxation will be so marked that walking becomes difficult or impossible. This relaxation may also be present in the sacroiliac synchondroses, and in both instances the loosening may persist after confinement, resulting in a marked disability in locomotion.

Goldthwait, moreover, emphasizes the fact that to a lesser degree, but appreciable, nevertheless, the same condition of relaxation takes place at each menstrual period, "which," he says, "from a physiological point of view represents a miniature pregnancy." Of course, this relaxation is slight as compared with that of pregnancy, but it is at times definite enough to cause considerable suffering and real disability. Both the menstrual and the gestational relaxation are clearly due to the increased vascularity of the pelvis in all its anatomic parts at these periods of physiological congestion. The relaxation must naturally be more pronounced in the presence of menorrhagia as indicative of excessive pelvic congestion. The symptoms of joint-congestion at these periods are intermittent, appearing with the flow, the pain being slight in most instances and located in the abdomen and small of the back, but at other times amounting to a severe sciatica. This pain is always associated with muscular spasms in the lumbar region, and inability to bend the trunk forward. In some of these cases, Meisenbach states, motion may be felt in the sacroiliac joints without the aid of leverage of the limbs, merely by placing the thumbs upon the sacrum and the fingers upon the ilia.

There is, in addition, a decided pathological side to this question of pelvic articular relaxation. It is probable that in any disease of the pelvic organs in which there is present marked circulatory disturbance the joints become relaxed. The converse of this proposition is, undoubtedly, true, as Goldthwait and others have incontrovertibly shown—namely, "that if the pelvic joints become relaxed as the result of accident or disease, the lack of stability of the pelvic girdle, with the resulting weakening of the support of the pelvic organs, leads to congestive disturbances in these organs, this in turn probably reacting upon the joints, so that until the proper treatment can be instituted there exists a vicious circle of cause and effect." Meisenbach, in his recent able paper, suggestively remarks that "the frequency with which the broad ligaments and round ligaments have to be shortened by gynecological interference is the best example of the yielding of ligaments caused by congestion." A similar change, though to a much less degree, undoubtedly takes place in the pelvic articular ligaments, and the relaxation so produced must of necessity result in a strain of the unsupported joints. The greater the pelvic congestion the greater the vascularity of the joints. Therefore, pelvic tumors, uterine myomata and fibromata and ovarian cysts are very prone to be complicated, to a greater or lesser degree, by this articular change. Some of the severer cases of pelvic relaxation originate at the time of the delivery of a child, especially if the labor has been a difficult forceps extraction. In these patients not infrequently an actual displacement of a sacroiliac joint may occur, and these more chronic cases are accompanied by the same symptoms as occur after the acute sprains. In the cases developing because of pelvic disease the symptoms are precisely the same as those which follow menstrual congestion, save that they do not occur periodically but are more or less constant. A mechanical cause for the joint-

trouble may exist in certain cases in which improper dressing, as tight lacing or pressure from the straight-front corset, has been long persisted in. The same trouble, Meisenbach claims, may follow the improper application of the abdominal binder after labor or abdominal section. Pressure so exerted upon the iliac crests may actually separate the sacroiliac joints instead of coaptating these structures.

The symptoms produced by relaxation of the pelvic joints include restriction in locomotion as well as in the various movements of the spine, and the development of persistent pains in the small of the back, lumbago, sciatica, and pain in the course of the genitocrural nerve. If the cause of these symptoms be recognized early and the proper treatment be instituted, many of the so-called "chronic invalids" will be cured before that deplorable state is reached. These cases are best treated by the application of a leather or plaster jacket which fits tightly over the sacrum and ilia. At the same time walking or other movement of the limbs should be limited as far as is possible until the joints resume their normal condition.

Infection of the Pelvic Joints.—Of the special diseases which may be encountered in the pelvic articulations undoubtedly the most common are the infectious processes. Torbett has concisely expressed the etiology of infection of joints, whether in the pelvis or elsewhere, when he states that "infectious arthritis is caused by the imperfect drainage of some mucous membrane of the body, by means of which bacteria and their toxins are retained and absorbed into the circulation and deposited in the joints." The gonococcus, pneumococcus, streptococcus, and staphylococcus are mainly responsible for these infected joints, and the spread of the poison in most of the pyemic cases takes place through the lymphatics. There must also be mentioned the traumatic origin—the possibility of a pyogenic infection of the pelvic joints from wounds, such as uncleanly tears of the cervix and perineum. Strange as it may seem at first sight, the tuberculous infections of the pelvic articulations are less frequently encountered than the non-tuberculous The infection may be a polyarticular process, or it may be confined entirely to but one of the joints. It may be acute or chronic, and serous, seropurulent, or purulent. It is now well known that puerperal sepsis and chronic inflammation of the uterus and its adnexa, whether demonstrably gonorrheal or not, may originate a secondary pelvic joint inflammation, and this infection is often due to the presence of the toxins produced by the bacteria and not to the bacteria themselves. In support of this statement reference may be made to McClure, who states that painful swellings of joints occur after injections of sterile sera, as part of the clinical syndrome known as "serum disease," these swellings being due to toxic influences working at a distance rather than to bacterial invasion of the articular structures. It is interesting to note that the arthritis which develops in the course of the infectious diseases varies from that of acute rheumatism by its non-tendency to shift from joint to joint.

The pathology of these pelvic joint infections is noteworthy. Generally it is the synovial membrane which is chiefly affected, and though bony involvement by extension may occur, it is not the rule. In the purulent cases there occurs a suppuration of the synovial membrane, which loses its epithelium; and in severe cases granulation tissue is formed, followed by fibrous degeneration or even necrosis of the cartilage, when damage to the edges of the bones ensues with destruction or grave injury of the ligaments. The relaxation which results may eventuate in partial luxation and ultimately in ankylosis of the affected joint.

The symptoms vary according to the grade of inflammation and character of the infection. They may be those of a simple synovitis or those of a severe suppurative process. The pain is usually intense, constant, worse at night, and either localized in the affected joint or referred to the legs and feet because of irritation of the adjacent nerve-trunks. If it be the sacroiliac joints that are affected these may become so swollen and enlarged as to be readily palpated or even visible. With non-tuberculous infections there is always present an infiltration of tissues, and there can occasionally be elicited a sense of fluctuation over the swollen area. Almost invariably there will be some limitation of the active spinal motions. The patient cannot bend forward the trunk when the knees are straight. Kernig's test for sciatica—inability to raise the extended leg of the affected side, passively or actively—may also very appropriately be called the sacroiliac-joint test. Moreover, there will be noted a restriction of the lateral bending of the body, and if the condition is very acute a long step in walking becomes impossible because of a spasm of the hamstring muscles, which is a very common symptom of sacroiliac joint disease of any origin. The skin over the affected joint is red and hot; the body temperature is high; the pulse is rapid; there is a marked leucocytosis in the early stage of the disease, and an increase in the percentage of hemoglobin. Finally, aspiration of the joint-contents will generally reveal the presence of the causative germ.

Treatment of pelvic joint infection: In milder cases of simple infectious synovitis fixaton and compression, with hot or cold applications, or the use of dry heat, will be all that is necessary. Suppuration requires early incision with free opening of the joint, which should be washed out and drained. It is well, in addition, to neutralize the bacteria and their toxins by the judicious use of the *x*-rays; while active or passive hyperemia in the milder cases will insure the aid of the leucocytes and antibodies of the blood.

Injuries of the Joints During and After Symphyscotomy.—In a certain small percentage of women who have undergone the operation of symphyscotomy, more or less permanent disability at the symphysis pubes has been noted. The design of the symphysis, according to Walcher, is to form with the sacroiliac joint an elastic, spongy connection between the thighs and vertebral columns. Ths is so constructed that the haunch-bones and sacrum do not move in one axis, but the pelvic planes, converging from behind forward, form two cooperating axes, which for the execution of a movement require a sliding of the haunch-bones at the symphysis. If the symphysis be ankylosed the movement of the sacroiliac joint is lost, and the jar in walking is directly transferred to the spine; while an unduly loosened symphysis permits too free movement at the sacroiliac synchondroses and destroys the stability of the pelvic girdle. Occasionally, during the instrumental delivery of the child subsequent to the symphyscotomy too great separation at the symphysis has occurred with resultant strain or even partial luxation at the posterior syn-

chondroses. These conditions are to be treated as ordinary strains and relaxation in the manner already laid down.

Malignant Disease of the Pelvic Joints. In order to complete this brief study of non-tuberculous affections of the pelvic joints mention should be made of the fact that malignant disease may invade these articulations. Inasmuch as the pelvic organs are frequently the seat of neoplasmata, the possibility of the extension of such processes to the bones and joints of the pelvis must be borne in mind.

BIBLIOGRAPHY.

1. Bernard, L.: Ginecol. mod., Genoa, 1910, iii, 40-50.
2. Bowden, D. L.: "Infectious Arthritis," *Pediatrics*, 1910, xxii, 695-703.
3. Bradford, E. H., and Lovett, R. W.: "Orthopedic Surgery," 1911.
4. Garrod, A. E.: "On the Nature of the Connection Between Erythemata and Lesions of Joints," *Lancet*, 1911, i, 1411.
5. Genty, Maurice: *Clinique*, Paris, 1910, v, 709.
6. Goldthwait, J. E., Painter, C. F., and Osgood, R. B.: "Diseases of the Bones and Joints," 1909.
7. McClure, Campbell: *Quarterly Journal of Medicine*, vol. iii, p. 61, 1909.
8. Meisenbach: *Surgery, Gynecology, and Obstetrics*, 1911, xii, 411-434.
9. Rab, H.: *Wiener klinische Wochenschrift*, 1911, xxiv, 997-999.
10. Rolleston: *British Medical Journal*, 1910, ii, 1109-1111.
11. Torbett, J. W.: *Therapeutic Gazette*, 1910, 3s, xxvi, 852-854.
12. Tweedy, E. H., and Wrench, G. T.: "Practical Obstetrics," 2d ed., 1910.
13. Tyson, J.: "Practice of Medicine," 5th ed., p. 853.
14. Walcher: *Zentralblatt für Gynäkologie*, 1893, No. 25.

1422 West Jackson Boulevard.

A PRELIMINARY REPORT ON A NEW ANTISERUM FOR CANCER.*

(From The Huntington Cancer Research Institute, Cornell University, New York City.)

By WILLIAM N. BERKELEY, M.D., and S. P. BEEBE, M.D., NEW YORK.

It has long been the opinion of thoughtful students of the subject that local treatments for cancer, however necessary as makeshifts, have been based on a misconception. It is quite possible, for example, that *x*-rays or the fulguration treatment may benefit a superficial cancer at its point of origin, but the danger of such growths lies largely in their spread to distant and inaccessible vital organs, where local treatment is impossible.

We believe it therefore axiomatic that a scientific remedy for cancer shall be one soluble in the blood, transmissible by the blood and lymph currents to all parts of the body, and possessed of a selective affinity for the cells of the tumor to be destroyed.

Such a remedy may quite conceivably be a chemical substance existing in the outside world, and by happy accident discovered to have the desired properties. It is along this line that Wassermann[1] appears to have made his remarkable discovery of the effects of an eosin-selenium compound upon the cancers of mice.

Again, the remedy may be a physiological antibody, developed in an alien species by successive injections of a cancer extract. This is the line of research along which the work at the Huntington Cancer Research Institute has been conducted.

The proposition of an antibody is not a new one. The success of diphtheria antitoxin foreshadowed it. The credit for first actual suggestion of it belongs to von Dungern,[2] though many experiments by him and his pupils, and a host of other workers in all parts of the world in the next few years appear to have been quite fruitless.

The success of S. P. Beebe's thyroid cytotoxin in 1906[3] brought the cancer proposition still nearer solution, and the labors of Eugene Hodenpyl[4] for the two years prior to his death in 1909 strongly suggested the existence in a cancerous subject of a body having many of the properties in question. The problem has remained to produce the antibody in clinical quantities.

The range of the experiments at the institute has been wide. We have used various animals, many different tumors, a large variety of biochemical products (singly and in combination) as injections, and have also experimented upon dosage within wide limits. To give the work a more authoritative character, human neoplasms exclusively have been employed—a procedure which has added interest to the investigation, but has greatly increased its difficulty.

The present method of preparing the cancer extract is extremely circumstantial, requiring large special experience and a great deal of time. Many important details remain to be worked out. This part of the subject will be written up exhaustively at a later date. What has so far been accomplished may be stated briefly, as follows:

1. By successive injections of a specific human cancer extract (the cancer being partially removed by operation) into an alien mammalian species it appears that a serum may be developed which, when injected intramuscularly, or better, intravenously, in increasing doses into the original host, is followed by rapid regression and disappearance of the remains of the tumor. This cannot be done with a normal alien serum. It is hard to explain the phenomenon except as a cytolysis of the tumor cells.

2. There is a strictly quantitative relation between the amount of serum used and the amount of tumor which may be made to disappear.

3. No ill effects have been so far observed from the injections of the serum (16 cases), except local swelling and the anaphylactic fever and vasomotor disturbances noted after giving an equal amount of normal foreign serum.

4. The relation of one antiserum ("stock serum") to histologically different cancers is variable and full of surprises. It will take years of labor to determine all the curious chemical affinities that may be involved.

5. Present clinical results are briefly as follows: Sixteen cases of malignant disease in all stages of advancement have been treated in the last nine months by surgical friends interested in the research. A microscopical diagnosis was made in all but three cases. Fifteen were cancer and one was sarcoma. Nine received stock serum, one received autogenous serum after a secondary operation, six received autogenous serum after a primary operation. Of the nine patients receiving stock serum two were moribund when first seen, and died quite uninfluenced by the injections; another, having cancer of the esophagus, was remarkably benefited for several weeks; one, with an immense cancer of the tonsil, was somewhat benefited temporarily. One very extensive primary cancer of the bladder has not been recently heard from, but was probably not benefited. Of two im-

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mense cancers of the stomach, one was entirely unaffected, one slightly improved. One patient (breast case), after two months of injections, is nearly well and in excellent general condition. Another case (uterine cancer recurrent in the bladder) recovered promptly and has remained entirely well for four months. One far advanced breast case receiving a small amount of autogenous serum after a secondary operation, was greatly improved, but subsequently died of intercurrent acute disease. Of the patients receiving autogenous serum after a primary operation one is still under treatment, greatly improved; the others have had no recurrence within a period ranging from three to six months.

To the above conclusions some practical comments must be added.

The present impression of the writers is that autogenous serum is much more effective than stock serum. It is believed that the great field of usefulness of the new serum will be to prevent the recurrence of malignant tumors removable in the early stages by operation.

There is no indication from present experience that large inoperable cancers and sarcomas will be amenable to the serum treatment. Treatment, to be effective, must be early if there is to be any reasonable quantitative relation between tumor and antibody.

It is fully recognized that the cases so far successfully treated are too few in number to justify sweeping claims for the future. The object of this first report is to state the facts that have been proved, to answer numerous questions, and to clear up many misapprehensions in regard to the serum treatment.

For helpful assistance in the work heartfelt thanks must be expressed to many professional friends and acquaintances, particularly to Dr. Geo. W. Roberts, Dr. Frank R. Oastler, Dr. Francis Foerster, Dr. Norbert Stadtmüller, Dr. F. L. Taylor, Dr. Martin Rehling, Dr. Franz Torek, Dr. Henry M. Silver, Dr. H. Fischer, Dr. George H. Semken, Dr. Geo. D. Stewart, Dr. John Aspell, Dr. Dougal Bissell, Dr. Edward W. Pinkham, Dr. R. M. Rawls, Dr. B. McGeorge Dear (resident interne, German Hospital), and Dr. Wm. M. Ford. Special thanks are due to Dr. Ford, whose interest has been untiring, and whose suggestions have repeatedly proved to be of great value.

REFERENCES.

1. Wassermann, A.: *Deutsche medizinische Wochenschrift*, 21 Dez., 1911.
2. Lewin, K.: *Die Bösartigen Geschwülste*, Leipzig, 1909.
3. Beebe, S. P.: *Journal A. M. A.*, 1906.
4. Hodenpyl, Eugene: MEDICAL RECORD, 1909.

CLINICAL ACCOUNTS OF THIRTEEN CASES TREATED WITH A NEW ANTISERUM FOR MALIGNANT DISEASE.*

BY WM. M. FORD, M. D.,

NEW YORK.

IN presenting these cases it is my purpose to offer for your consideration some clinical observations that have been made while using an antiserum for cancer prepared by Dr. Berkeley.

In all, I have administered this remedy in thirteen cases, which for convenience of description are spoken of by their numbers. Of these, Cases I and II (cancer of the breast and stomach respectively) were *in extremis* before the remedy was administered and died within a few days after the initial injection. Three patients took the serum irregularly, and of these two expressed themselves as having been benefited, Cases III and IV (cancer of the stomach and throat, respectively), the third Case V (a cancer of the bladder) seemed to be of the contrary opinion. Nothing definite, however, could be determined, and for that reason the entire group will be dismissed from further consideration.

CASE VI, a patient upon whom a large amount of serum was expended without benefit, after a clinical diagnosis of cancer of the bladder had been made by a most capable genitourinary surgeon, proved after operation to be non-malignant.

CASE VII, in which only a clinical diagnosis of carcinoma of the esophagus was made, after apparent improvement for a short time ultimately succumbed.

CASES VIII, IX, and X each had autogenous injections after primary operation. As yet none has shown evidence of recurrence, but the operations are of such recent date (three to six months) that this fact indicates nothing.

There remain to be reported upon Cases XI, XII, and XIII, and the histories of these are presented somewhat in detail.

CASE XI.—Miss E. S., age 42 years, single, native of the United States. A diagnosis of pulmonary tuberculosis had been made several years previously, but never substantiated. The woman was operated upon on November 5, 1908, for carcinoma of the left breast, as verified by Dr. Harlow Brooks. On September 13, 1910, patient presented herself on account of pain and thickening of the tissue surrounding the scar resulting from the operation. Tissue removed from this area proved to be recurrent carcinoma. From February, 1911, until May 2, 1911, the patient was given minute doses (0.5 to 1 c.c.) of stock serum subcutaneously, at relatively long intervals, by Dr. Berkeley, who at this time discovered a mass in the right breast and referred the patient to me again for consultation. I found that the right breast, which was quite small, consisted almost entirely of what subsequently proved to be carcinoma. The axillary glands on this side were markedly enlarged. One mass was distinctly palpable; about the size of a walnut. On the left side the disease had extended in the lymphatics of the skin, as low as the umbilicus and as high as the clavicle. The intervening triangle was studded with a vast number of pea-like masses, distributed along the course of the lymphatics. In addition there were numerous areas of wart-like growths on the site formerly occupied by the breast, having a combined area approximately the size of a silver dollar. The patient was greatly emaciated, had a persistent cough, and suffered continually from pain at the site of the old scar to such an extent that about a grain of morphine was administered daily. In spite of the patient's condition a rapid amputation of the remaining breast was done on May 2, and an autogenous serum was prepared. I felt the patient was fortunate to survive the 15-minute operation, and having at that time no particular confidence in the action of the serum, I made a prognosis of about two months upon the life of the patient. The autogenous serum was injected subcutaneously and intravenously, between

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June 16 and July 31, 1911. The wart-like carcinomas shrank materially during this period and the purple pea-like areas of induration diminished distinctly, many of them entirely disappearing. The axillary glands on the right side resolved to such a degree that they were little more than palpable. The morphia was completely withdrawn and to the time of the patient's death was never resumed. The patient's weight remained stationary during this period, and she was sent away to the country to recuperate. On September 8 she returned suffering from a severe bronchitis, and it was not until September 29 that it was thought advisable to begin the administration of stock serum. From this time on the patient slowly but persistently lost weight. Her left pleural cavity filled with serum from time to time and required aspiration about every two weeks. The fluid removed, however, was almost perfectly clear amber, and free from any suggestion of blood. As our supply of serum at this time was scarcely adequate the injections were given only about once in ten days. The last week in January, 1912, the patient suddenly ran a temperature of 103°, her respirations rose to 48, and within forty-eight hours she died. No autopsy was obtainable. An inspection of the breast at this time disclosed an utter absence of the cauliflower growths, and by passing the hand over the skin of the left chest, but a few small shot-like masses could be palpated. Not more than two or three were discernible to the eye.

Case XII.—Miss M. S., age 53, single, U. S., was admitted to the Woman's Hospital on November 22, 1911. Had always enjoyed good health until about thirteen years ago, when she detected a lump in her left breast. Was operated upon in the Mount Vernon Hospital, March 10, 1899. Although apparently a radical operation was done, the patient states that the pathological report rendered at that time was to the effect that the growth was non-malignant. In September, 1910, eleven years after, she noticed a "red spot" the size of a quarter, near the old scar. In September, 1911, ulceration began and in November the patient applied for relief to Dr. Pierson, under whose care she remained until referred to me.

Examination.—The ulcer on the site of the old scar measured 2⅝ by 2 inches, with irregular, indurated, and precipitous borders and was covered with necrotic tissue. Over the cartilage of the third rib, near the sternum, and just without the margin of the ulcer, was a tumor the size of a walnut, intimately adherent to the underlying hard structures and of a consistency suggesting calcareous changes. At the lower margin of the ulcer was a similar tumor about the size of a hazel nut, and to the outer side a third of nearly the same size. The first two were of a deep purple color, and seemed about to necrose on the surface. The cervical glands were slightly enlarged but soft. The upper outer quadrant of the right breast appeared somewhat hypertrophied, and the axillary glands, while slightly enlarged, were not tender. Between November 23 and December 12 she received two injections weekly of the stock serum, and on the latter date the greatest dimensions of the ulcer were 1½ by 1⅞ inches. Treatment was continued semiweekly until on January 22, 1912, the ulcer had entirely healed. On January 30 a slight ulceration appeared on the surface of the larger of the two tumors. Since that time it has scabbed over and all the tumors have materially diminished in size. The patient has slowly gained in weight. She is still under treatment in the hope that the two remaining evidences of malignancy may be eradicated. It is important to note that on January 8 a specimen was removed from the intermediate of the two tumors, which proved to be unquestionably carcinoma.

Case XIII.—Mrs. C. was admitted to the Woman's Hospital on August 10, 1911. Age, 52 years. Menstruation ceased seven years previously. Married at eighteen years of age. Contracted a disease from her husband which resulted in cord sclerosis; this has remained stationary for the past thirty years. For the past year and a half patient has had severe uterine hemorrhages, usually lasting twenty-four hours and followed by a continual bloody discharge which obtained until the occurrence of the next hemorrhage. During the past year she has lost twenty pounds. Lately has had incontinence and painful micturition.

The urine was pale, straw-colored acid; specific gravity, 1012; sugar, negative; albumin, faint trace; sediment of blood and epithelial cells. Local and constitutional measures for the relief of vesical irritation had been without avail, and the patient was suffering almost continually from bladder tenesmus. The Wassermann reaction was negative. A clinical diagnosis of cancer of the uterus having been made, on August 30, panhysterectomy was done in the hope of perhaps improving her general condition. On September 7, while she had made a good recovery from the operation, the condition of her bladder was not improved, and the desire for frequent micturition seemed, if anything, increased. The patient was referred to the cystoscopist of the hospital, Dr. A. T. Osgood, who reported: "Base of bladder shows extensive bullous edema with one edematous, bluish mass, evidently in the grip of the internal vesical sphincter. Base of bladder, per vaginam, feels thick. Diagnosis, carcinoma of floor of bladder." Upon the strength of this opinion, 5 c.c. of stock serum prepared from a breast cancer was injected subcutaneously September 20, rather with the idea of observing its effect than in the hope of effecting much relief. To our surprise the relief was almost immediate. Thus encouraged, on September 23 the dose was repeated, and on September 25, 10 c.c. was injected intravenously. Following each injection the patient complained of slight faintness and severe headache. On October 3, the patient having been relieved from all symptoms from about the time of her first injection, she was referred to the cystoscopist for a second examination. All information as to the administration of the serum was purposely withheld until his observations had been recorded. I quote his second report, in part: "Bullous edema has disappeared. Internal vesical sphincter is nearly of normal appearance. Base of bladder, per vaginam, no longer feels thickened. Bladder shows moderate subacute cystitis and vesical outlet shows a slight degree of edema and redness. The case is, therefore, to be looked upon as not carcinoma of the bladder, as stated previously." The pathological report from Dr. Ira Van Gieson verified the clinical diagnosis of carcinoma of the uterus. The patient left the hospital on October 12, 1911, feeling quite restored to good health. I saw her at the end of February, 1912, when she reported a gain in weight of ten pounds, and voluntarily stated that her general health was better than it had been in years.

It gives me pleasure at this time to express my thanks to the gentlemen who have assisted me in this work and in particular to Dr. Austin Flint, Jr., for placing at my disposal certain cases in the Woman's Hospital.

68 West Fifty-fifth Street.

BERIBERI;*

WITH A SUGGESTION FOR GOVERNMENTAL AID IN ITS ERADICATION.

By VICTOR G. HEISER, M.D.,

MANILA, P. I.

SURGEON, U. S. PUBLIC HEALTH AND MARINE HOSPITAL SERVICE

The various phases of the beriberi question have been so extensively reported upon during the past few years that it is with considerable hesitation that I present any remarks on this subject to an audience that is so well versed in the recent developments in connection with this disease. Taking it for granted that there is now sufficient proof available that beriberi in the Orient occurs most frequently among those whose staple article of diet is polished rice, it was thought that perhaps it might be of interest to present some of the steps we have taken and the experiences we have had in the Philippines in attempting to bring about the general use of unpolished, or undermilled rice.

In the first place, in order that there might be a standard as to what constituted polished or unpolished, or overmilled or undermilled rice, Dr. Aron of the College of Medicine and Surgery of the University of the Philippines undertook a series of experiments on chickens, as a result of which he came to the conclusion that any rice which contained .4 of 1 per cent. of phosphorus pentoxide or more might be regarded as undermilled rice, and therefore safe as a staple article of diet, and any rice that contained less than this percentage of phosphorus pentoxide should be regarded as overmilled rice, and therefore unsafe as a staple article of diet. From recent experiments it appears that potassium or other substances found on the outer portion of the rice grain might be used equally well as an index of the degree of polishing.

In spite of the remarkable success in reducing the number of beriberi cases that occurred in the military and civil establishments in the Philippines soon after the use of undermilled rice was made compulsory, it early became apparent that only by the most urgent insistence could its continuous use in even such circles be brought about. Many of the more ignorant believed that on account of the darker color of the unpolished rice the government was trying to force a cheap and inferior article upon them. Commissary officers, prison wardens, captains of vessels, and others directly charged with carrying out the orders to use undermilled rice were constantly besieged with complaints. It was but natural that they should take the course of least resistance and recommend that its use be discontinued. During the early period of the introduction of unpolished rice there was undoubtedly some cause for complaint owing to the fact that the rice mills were slow in adjusting their process of manufacture so as to produce rice that was well cleaned and only sufficiently polished so that the P_2O_5 did not fall below .4 of 1 per cent. These difficulties were gradually overcome, but in spite of that much prejudice still remains. Considerable effort has been made in the way of education. Public lectures have been given, instruction in the schools has been undertaken, and the daily and weekly newspapers frequently contain articles upon the cause of the disease and how to prevent it. Since it has been so difficult to bring about the use of unpolished rice among persons for whom the Government furnishes the rations and whom it is possible to reach so directly by education, and even enforce its use if need be, it must be apparent that at best the adoption of unpolished rice by the masses would necessarily be slow.

Legal opinion is quite favorable to the idea that, under the provisions of the food laws in force in the Philippines, the sale of polished rice might be prohibited. Whether it would be advisable to attack the problem from that standpoint is, however, very questionable. The enforcement of such a law would be almost sure to incur the passive opposition of even those persons who use the European diet. To prevent such persons from purchasing polished rice would not be of any assistance whatever in reducing beriberi, and at the same time the sanitarian would deprive himself of the very aid of those members of the community upon whom he must necessarily depend to assist him in disseminating the information among the masses that polished rice causes beriberi among those who use it as a staple article of diet.

At first it was thought that the most effective way of insuring the use of unpolished rice would be to prohibit the manufacture of polished rice, but that procedure is also open to the objection that it would prevent the use of polished rice among those whom it does not harm. In addition, such great opposition would no doubt be made by the owners of rice mills that legislation might be impossible to secure.

Another plan suggested was the imposition of a license fee upon both retail and wholesale dealers who sell polished rice and to make this fee sufficiently large so that the cost of polished rice would be beyond the reach of the masses; but this method would probably require an enormous amount of supervision for its successful enforcement. Controlling such sales in remote regions would be exceptionally difficult. A number of other expedients were suggested, but all of them had such serious objections that they had to be abandoned.

The conclusion ultimately reached was that the object sought could probably be most successfully attained by placing a tax of say five centavos (approximately five cents Mexican) per kilo upon every kilo of rice that is polished and no tax upon unpolished rice. The standard by which a rice is to be judged should be definitely fixed by law and can be well based upon the amount of phosphorus pentoxide which it contains; in other words, a rice that contained .4 of 1 per cent. of phosphorus pentoxide or more would be regarded as an unpolished rice, and rice that contained less would be regarded as polished rice. Such a standard would be very simple of application, and would not be likely to cause serious misunderstandings. It would also have the additional advantage of providing definite testimony with which to go before the courts in the event that judicial action became necessary. In view of the fact that the quantity of rice consumed by those who use the European diet is merely nominal, such a tax placed upon polished rice would scarcely be felt by them, and would

*Read at the second Biennial Congress of the Far Eastern Association of Tropical Medicine at Hongkong, Jan. 22, 1912.

not be likely to result in any opposition, whereas the masses would almost be compelled to purchase the untaxed rice. Such a law would cause no hardship, and at the same time would provide a final and conclusive test of the correctness or the incorrectness of the predominating view with regard to the etiology of beriberi. It is also capable of being effectively and economically enforced.

It was the intention to place such a law in force in the Philippine Islands during the present year, but owing to the shortage of the rice crop and the general disturbance of the market which resulted therefrom it has not been deemed expedient to attempt it yet.

This plan seems so feasible, however, that the writer desires to recommend to the association that a suitable resolution be drafted for the purpose of bringing it to the attention of the governments in the Orient. It is believed that such a measure would be entirely practicable and would be almost sure to result in an enormous reduction in the beriberi mortality and morbidity in a few years' time, and it is not too much to hope that the disease may be entirely eradicated in the near future. The association would be complying with its highest ideals in pointing the way to health and happiness instead of permitting the unwary to tread the path of disease and death. If such a result as this could be brought about it would add another great triumph to modern prophylactic medicine.

SCHOOLS FOR MIDWIVES.*

By IRA S. WILE, M.S., M.D.,

NEW YORK.

It is desirable to strengthen the position of those who do not regard the elimination of the midwives as the only solution of the problem. We must recognize that the midwife does present a problem that has received too little attention in this country. The New York Academy of Medicine in 1906, the New York State Medical Society, the Committee on Midwives of the Chicago Medical Society in 1908, the Erie County Medical Society, and a Conference on the Prevention of Blindness held in New York, 1911, are a few of the organizations that have gone on record as favoring "state legislation which shall provide for the training, registration, regulation, and control of women engaged in the practice of midwifery." From a questionaire sent to the State Boards of Health State provision for the training of midwives is favored by nineteen States, including Arizona, Connecticut, Florida, Idaho, Delaware, Illinois, Indiana, Louisiana, Minnesota, Mississippi, Montana, Pennsylvania, North Carolina, North Dakota, Rhode Island, South Dakota, Utah, Virginia, West Virginia, and Wisconsin, Maine, Nebraska, and Ohio oppose this, while eighteen states sent no answer. Massachusetts favors regulation or elimination. The balance of opinion apparently is gravitating toward education and regulation.

Much is said about the ignorance and incompetence of the midwife and the existence of this condition may not be denied. But it is manifestly unfair to criticise the lack of an educational standard which has never been established. When nurses were of the Sairy Gamp type elimination was not the cure. When apprenticeship was the open sesame to the practice of medicine and the average of competence was not high elimination was not the cure. Education training, regulation, and control solved these problems just as they will solve the midwife problem. Establish an educational standard, provide sufficient facilities for giving the adequate training, secure the legislation essential to provide supervision and control and then raise the standard of the midwife so that no further fault may be found. Let us be fair to the midwives and to their patients. Let there be an evolution of this class of public servants and not a hasty attempt to check their possible development.

When so much stress is placed upon the ignorance of the midwives it behooves us to remember that eleven States still have no provision in laws for the preliminary education of physicians. Twenty-eight States demand an educational equivalent of four years of the high school or higher. Obstetric training in the medical colleges is recognized as inadequate, but there is no voice raised to eliminate the doctor from the practice of midwifery. Dr. Hirst is at present circularizing the State Boards of Health to establish a standard of obstetrical experience for candidates for licensure and the standard he suggests is the personal delivery of at least six women. In New York City the midwife is required to have had the personal care of twenty women before a permit is granted to her. The irregular practitioner of medicine is still permitted to be an obstetrician with an experience that is inferior to that possessed by more than half of the midwives. Let us be fair to the midwife and if she is below the ideal we have for her, though we have never crystallized that ideal into law, let us give her the opportunity to rise and educate herself under proper supervision. Then as a further protection to society let us arrange for the necessary supervision and control.

Dr. Van Peyma, professor of obstetrics at the University of Buffalo, who was active in securing the midwife law for Erie County, states: "The diagnostic ability of midwives is generally good and in the case of many remarkably excellent. In this respect the average midwife is fully the equal of the average physician. If we look at the matter fairly and broadly, considering the facts of asepsis, diagnosis, and general management on the one hand and the question of time involved, artificial deliveries, lacerations, compensation, etc., on the other, the writer is not inclined to believe that the average woman on the East Side, now employing a midwife, would on the whole receive better attention and results if she were to employ physicians obtainable for double the fees paid to midwives—to say nothing of the duties of nurse to mother and child, now furnished by the midwife." These remarks were based upon conditions in Buffalo, where one-half of the births are reported by midwives and where the average fee paid to the midwife is $5.

Midwives will be a part of our social system as long as immigration exists and until the newcomers of to-day are thoroughly Americanized. The Mexicans in Arizona, the Americans in North Carolina; the Italians, Swedes, and Syrians in Massachusetts; the Hungarians, Bohemians, Germans, Italians, Slavs, Poles, Swedes, and Finns in Ohio, and the negroes in Missouri make use of midwives, and along with the Russians and Austrians give some idea as to the national basis of the problem and the degree of distribution that must be re-

*Read before the American Association for the Study and Prevention of Infant Mortality, Chicago, Ill., November 18, 1911.

quired of any educational reforms. That the difficulties arising from the midwife problem are not centered entirely in the city is evident from the fact that in Nebraska, Oregon, Utah, and West Virginia, for example, the bulk of the midwives are busy in rural communities.

As Dr. Baker has said, nobody knows how many midwives there are in this country. The total number registered does not serve as an index of the total number at work. Connecticut has registered 127; Illinois, 1,396; Indiana, 175; Iowa, 40; Massachusetts, 150; Mississippi, 203; Ohio, 643; Pennsylvania, 433; Rhode Island, 15; Utah, 326, and Virginia, 200. The figures presented, representing official State information, show only 3,708 midwives and the 28 cities reported by Dr. Baker estimate the number of midwives as 3,360. In 21 cities 72,966 births were reported by midwives annually. The percentage of the total number of births reported by midwives varied from 5 to 53 in different cities.

Massachusetts presents the anomalous situation of not recognizing the midwives as legal practitioners, but accepting their signatures on notifications of birth. This is a false position. Educate the midwife and give her recognition. Increase her self-respect and arouse her pride in her work and its results. Give caste and dignity to midwifery and a more intelligent type of woman will enter the profession. Place the full measure of responsibility upon the midwives and treat them as human beings endeavoring to fill a need expressed by the communities in which they live. Remove from them the cloud of suspicion that now exists. Establish their legal status upon an educational standard that may be attained in institutions under supervision and control by the proper authorities. If midwives are ignorant it is because we have permitted them to develop thus. We are to blame and they are not. The criminal aspects of the midwife problem will be helped in so far as a more enlightened and trained set of midwives may be held to stricter account in the matter of licensure and will have more reason for adhering to the highest moral and legal standards. From this point of view the skirts of the medical profession are not entirely clean nor can we hope to eliminate the abortionist by education or law.

That the training and education of midwives will lessen the mortality of mothers has already been demonstrated. For the fifteen years previous to the passage of the Midwives Act in England in 1902, the death rate from puerperal sepsis varied from 109 to 202 per million females living; in 1903 the rate dropped to 97 per million, and in 1907 was down to 87 per million. In Italy during 1887, when the government assumed control and gave governmental education, the death rate from puerperal fever was 87 per million females living; in 1890 it fell to 56 and in 1902 fell to 32 per million. In New York City the reported cases of death from puerperal sepsis occur more frequently in the practice of physicians than in that of the midwives. Restricting the practice of the midwives to the delivery of normal cases requires a knowledge of diagnosis. The fact that 80 per cent. of the midwives of New York City present a diploma from some sort of school of midwifery indicates a desire on the part of the majority to acquire an adequate training before entering upon this field of endeavor. A midwife should be able to read and write the language of her native land at least, preferably, of course, English, that she may be able to make proper returns to the authorities and to read the official regulations. She should then have a course of training covering at least six months and involving practical study of the subject as the basis of the theoretical training. At least twenty cases should be under her personal care, although with effective supervision that the rules of asepsis may be thoroughly ingrained. The graduates of schools of midwifery should be under the control of local or municipal authorities and should receive training in connection with hospitals and out-patient departments. The educational standards might better be established by the State departments so that uniform standards might exist throughout the State. The enforcement of these standards could be left to the various local departments of health. By this means the numerous schools of midwifery that are at present existent, without recognition, would come under adequate control and their work would be supervised and be placed upon a higher plane of efficiency.

Let us train, supervise, and control the midwives and give them an opportunity to take a reputable position in their work, guaranteeing them protection in proportion to the protection that they give to their patients, the mothers who need and demand them.

230 West Ninty-seventh Street.

THE TREATMENT OF ECZEMA RUBRUM OF THE LOWER EXTREMITIES.

By PAUL E. BECHET, M.D.,

NEW YORK.

CLINICAL ASSISTANT IN DERMATOLOGY, NEW YORK SKIN AND CANCER HOSPITAL, ASSISTANT DERMATOLOGIST, DEMILT DISPENSARY

My excuse for the presentation of this very trite subject lies in the obstinacy of the condition and its severe subjective symptoms. The itching and burning is always severe, and at times patients suffer almost untold agony, which even continues in their sleep. Relief is sought by scratching and rubbing, which causes bleeding and increased inflammation and at times severe secondary infection. There is also in certain cases with varices considerable pain due to venous stasis, which in these particular cases is a strong contributing factor in the production of the eczema. Aside from the subjective symptoms, the raw, red, weeping surface, occasionally more or less covered with large yellowish scales, the exuding sticky serum adhering to the dressings, the blood stained bedclothes, etc., are anything but agreeable to the unfortunate patient. The question of relief is therefore far more important than any abstruse discussion as to etiology of the condition. Given such a case, what can best be done?

First, we should inquire minutely into the patient's physical status, keeping a carefully written clinical record. We will find a majority of these patients show an increase in body weight, that the intake of food is greater than the output, that they may indulge in alcohol more or less excessively, that they either live very sedentary lives, or have positions which require continuous standing, that their intestinal tract is clogged, and their urine shows an excessive amount of solids and indoxyl, and that there are frequently varices of the superficial veins. The internal treatment of eczema rubrum is therefore of great importance. Of the large number of cases I have seen, I do not know of a single patient who

showed no indication for medication or whose health had not improved to a great extent after taking the medicaments prescribed, whether these were tonic, laxative, diuretic, stomachic, alkaline, etc. In other words, one should not have a few favorite formulas, but be guided entirely by the clinical findings of the particular case. The intake of meats and sweets should be greatly limited, the amount of limitation to be guided by the urinary findings and the condition of the patient. Alcohol in any form is absolutely to be interdicted. The bowels must move daily. The patient must have a certain amount of fresh air. He should have at least eight hours sleep. Locally, the first indication would be the surgical removal of any varices if present. This could be done at almost any stage of the eruption, as the enlarged veins are most frequently to be found above the eczematous area. Should this not happen to be the case, it would be best to relieve the eczema and then treat the enlarged veins surgically, thereby reducing greatly any chance of recurrence of the eruption.

The most important single factor in the local treatment of eczema rubrum of the legs is undoubtedly the solid rubber bandage, as introduced and advocated by Dr. L. Duncan Bulkley. I have seen the truly splendid results achieved by its use, both in his and my practice, and in my clinics. The bandage is made of very thin rubber, capable of a great degree of stretching. It is about three inches wide and about five yards long; should it be necessary to carry it to the thigh, a longer bandage is required. The method of applying the bandage is simple. No matter how small the area of eruption, it is best to apply it from the toes to the knee, overlapping it about one-third of its width. The bandage should never be reversed, the heel must be left free. With only a slight amount of care, an even amount of pressure can be maintained and the comfort of the bandage elicited by having the patient stand and walk about. If at any time it proves uncomfortable it should be removed and readjusted. The bandage is not to be applied directly to the diseased parts. I use pieces of ordinary surgical lint, cut so that the borders just meet together, surrounding the leg with one thickness of cloth without overlapping. The woolly side of the lint is then covered thickly with the salve to be used and applied snugly to the diseased area. The rubber bandage is then applied. At night the bandage and dressings are removed preferably after the patient is entirely ready for bed. The rubber bandage is washed in a diluted solution of phenol (one dram to a pint) drawn through a dry towel, draped over the back of a chair, and left to dry overnight. The leg, with the accumulated secretions of the day should be washed off with some weak antiseptic solution, preferably phenol, because of its marked antipruritic properties. A large piece of cotton should be used as a sponge. The leg is then gently dried with absorbent cotton, causing as little irritation as possible. An astringent cooling lotion is then applied, twice, at a fifteen-minute interval, in order to allow the first application time to dry, before the second is put on. If during the night there should be any itching, a piece of cloth wet with the lotion should be applied. In the morning, before arising, the leg is dressed and the rubber bandage applied as previously described. Should any dressings be used during the night, and these are adherent, they should not be forcibly torn off, but should first be moistened with a little olive oil. If this is done they can be removed without force.

The advisability of using the rubber bandage in the very acute stages is questioned by some, yet I have used it time and again in my clinic with nothing but good results. The exudation of serum is controlled in a remarkably short time. There is no difficulty in training patients to use the bandage rightly; with a little patience and several demonstrations, they will carry out all details minutely. The benefit derived from the use of the bandage is a further incentive to obey instructions.

40 East Forty-first Street.

MALARIA IN AN INFANT FIVE MONTHS OLD, SIMULATING VON JAKSCH ANEMIA.

By ALFRED C. HENDERSON, M.D.,

NEW YORK,

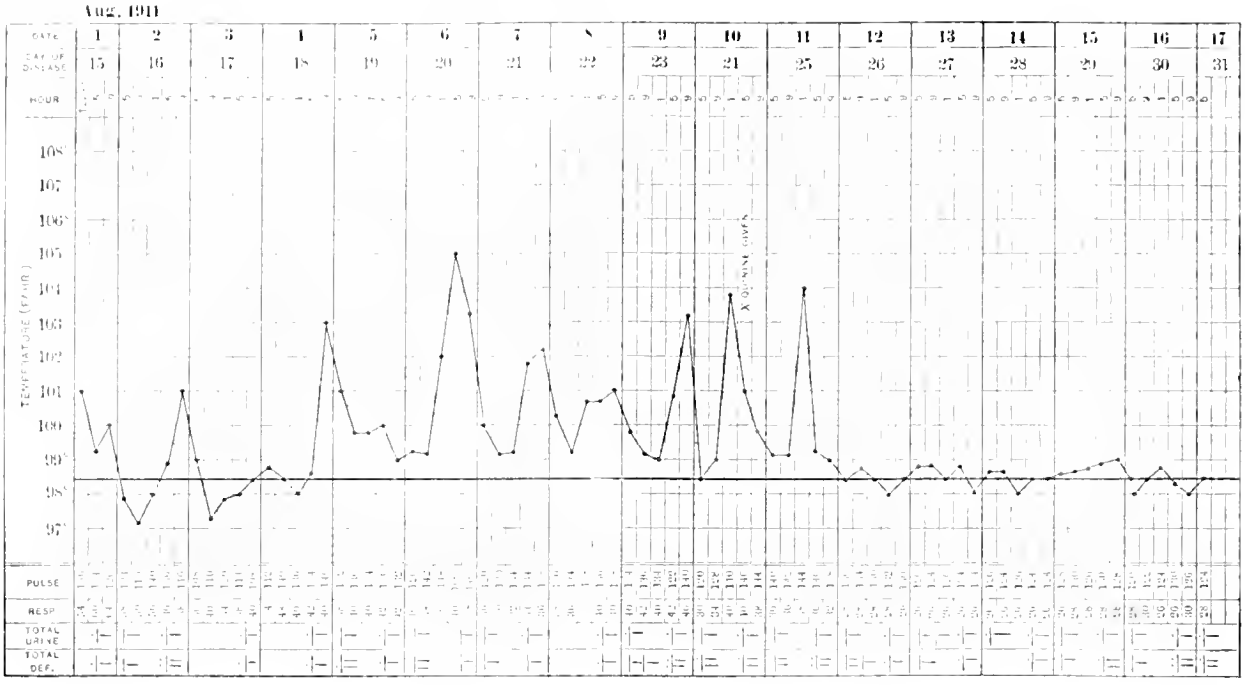
ASSISTANT VISITING PHYSICIAN, GOUVERNEUR HOSPITAL.

Malaria in infants is probably not rare; undoubtedly there are many infantile cases that are not recognized. The blood findings simulating von Jaksch anemia (pseudoleucemia of infancy) and the age of the patient are the reasons for reporting this case.

History: No history of syphilis or tuberculosis in the family. Parents and three other children living and well. The patient, a male infant, five months old, was admitted to the hospital on August 1. The mother said the child was normal at birth and labor was normal; birth weight unknown. Was breast fed, but during the three or four weeks previous to admission child was given two bottles daily containing flour and water. Child has never been out of New York City. No illness until the present, which began about three weeks ago. Mother gives the ordinary indefinite history of gastrointestinal disturbance, with slight cough. Constipation was more often noticed than diarrhea. Laxatives seemed to help at first, but during the week before admission he became weaker and the mother noticed that his color was yellowish. As he seemed to be "failing" he was brought to the hospital.

Physical examination: Male infant, fairly well nourished, but very anemic in appearance. Lies rather listlessly in bed. Head: Nothing abnormal found. Pupils normal in reaction. No jaundice. Ears negative. Mucous membranes of mouth and pharynx appear almost bloodless. Thorax: Lungs, normal resonance throughout. Heart, rapid; not enlarged; no murmurs. Abdomen: Liver not palpable. Spleen markedly enlarged; firm, not tender; extends downward to level of umbilicus and inward to within 2 inches of median line. Extremities normal. Lymph nodes: One small node palpable under right side of jaw. Skin, waxy-yellowish. Weight: 11 pounds 8 ounces, on admission. Blood: August 1, red cells, 1,036,000; white cells, 30,000; hemoglobin, 20 per cent. Differential: lymphocytes, 68 per cent.; polynuclear neutrophiles, 30 per cent.; mononuclears and transitionals, 2 per cent.; five normoblasts found while counting 500 leucocytes; no eosinophiles were found in any of the counts; no malarial organisms found.

August 5, red cells, 1,800,000; white cells, 18,600; hemoglobin, 25 per cent. Differential: lymphocytes, 72 per cent.; polynuclear neutrophiles, 24 per cent.; mononuclears and transitionals, 4 per cent.; no malarial organisms found. August 10, red cells, 1,500,000; white cells, 18,000; hemoglobin, 20 per



cent. Differential: lymphocytes, 64 per cent.; polynuclears, 33 per cent.; mononuclears and transitionals, 3 per cent.; malarial organisms numerous.

On account of the severe anemia it was thought necessary to get the child under the influence of quinine as rapidly as possible; so the bimuriate was given hypodermically, four grains daily in divided doses. As may be seen by the temperature chart, there was 104° fever the day after the quinine was begun, and then a practically normal temperature. The child made an uneventful recovery. The decrease in size of the spleen was especially noticeable; ten days after quinine was first given the spleen could hardly be palpated. The case was first diagnosed as pseudoleucemia of infancy, but the finding of malarial organisms of course indicated the correct diagnosis and treatment.

Several authorities maintain the pseudo leucemia of infancy is not a clinical entity. They hold that such cases are cases of anemia of various origins (syphilitic, rachitic, or after wasting diseases) and are mere examples of the manner of response of infants to severe anemias. In support of this it must be remembered that (1) the normal blood count of infants resembles the leucemic count of adults in the excess of the lymphocytes over the polynuclears; (2) the normal hemoglobin percentage of infants is lower than that of adults, and (3) the spleen in infants readily becomes enlarged during any severe anemia. The foregoing case is of interest in showing that the malarial organism may be the etiological factor in an anemia of this kind.

155 East Sixty-second Street.

HEREDITY, ENVIRONMENT, OR ACCIDENT?

By Walter Sands Mills, A.B., M.D.,
New York.

There is a belief that many constitutional diseases are hereditary; that is, if a number of cases of the same disease occur among a number of members of the same family the disease is either handed down directly from parents to children, or the predisposition to it is handed down. This may not be stated in ultrascientific language, but I think my meaning is sufficiently clear. Thus we know that in tracing the family history of a patient with cancer, with epilepsy, with insanity, or with one of many other conditions, we will find often that other members of the same family are or have been afflicted with the same disease. A vast number of such observations has led to the belief, therefore, that certain unknown family characteristics must be at work.

The belief was once almost universal that tuberculosis was hereditary; that is, that it was handed down directly from parent to offspring. Since the discovery of the tubercle bacillus the old belief has given way, and now the prevalent idea is that the intimate relations existing between members of the same family cause the disease to be passed from one to another by infection. Even so, some members escape, and to explain this it is said that those affected must have a predisposition to it, which seems to me to be heredity again. Within a very short time Landouzy, of Paris, has announced that he has been able to demonstrate that tuberculosis is directly transmissible from parent to offspring, through several generations of rabbits. Syphilis is surely transmitted from parent to offspring through at least two generations sometimes. This is true heredity.

With such knowledge as the above, and similar facts regarding many other diseases, it seems almost impossible to eliminate heredity altogether. Nevertheless, environment plays some part, and a very great part, in disease as in other things. For this reason the physician should not lay too great stress on heredity, but should search among all the other factors that may enter into the possibilities in looking for the cause of a given condition. I well remember when in 1896 I was taken ill with tuberculosis, and sent West; how the fact that I had lost a brother with that disease in 1894 made me think that my case must necessarily prove hopeless. Some of my distant relatives also had died of tuberculosis; it was in the family, and the outlook was gloomy. One day, while in Albuquerque, there was a celebration of some sort, with a torchlight parade and fireworks. In some way the wagon containing the fireworks in that procession caught fire. The man who drove the wagon was

a hero, for he stuck to his post and kept the frightened horses from dashing into the crowd of sightseers, where many might have been killed. But the driver himself died of his burns a few hours later. On looking up that man's family history it was found that he had had three brothers, all of whom had been burned to death. Surely no one could call burning to death an hereditary disease, or one that a family could have a predisposition to on account of heredity! This made me think. Curious as it may seem, my tuberculosis began to improve, or my mental attitude toward it, until I entirely recovered. From time to time I have collected other instances of family fatalities, or whatever they may be called, and will reproduce some here.

I. A boy twelve years old was accidentally shot and killed in Brooklyn by a playmate. The boy lived with his grandmother. Seven years before another grandson, aged twelve, living in Alabama, was killed while shooting off a toy cannon. Still a third grandson was killed in New Jersey at the age of twelve. He was hunting muskrats with some other boys, when one of his companions mistook his cap for a muskrat and shot and killed him.

II. A man, twenty-three years old, was killed by an iron bar projecting from a passing train. His father was killed by a train at the same place, eighteen years before. These accidents occurred in New Jersey.

III. A gas stove upset and burned a man in Brooklyn so badly that he died a few days later. A few years before his daughter-in-law was set on fire by the kitchen range, and died as a result. Six months later the wife of the Brooklyn man was burned to death by an oil stove.

IV. Two trainmen, brothers, were killed in the same head-on collision. This occurred in West Virginia. One brother was in the crew of one train, the other was in the crew of the other. Two other brothers had previously been killed in train accidents.

V. A little girl of ten was accidentally killed on the street in New York. A year before a brother had been killed by a fall from a window.

VI. One brother was drowned while swimming in June. The following February another brother was drowned while fishing. These accidents occurred in Long Island.

VII. A father and son were murdered at an interval of four years. The crimes were otherwise unrelated in any way.

VIII. Two young men that I knew were killed several years apart by trains. They were railroad employees. A third brother fell out of an apple tree and was killed. A fourth brother was hit by a baseball and killed.

And so on, the gruesome list might be extended indefinitely. Of course, railroad men run special risks, and there may be a family predilection for the railroad business. The three boys of twelve who were shot may have had a family liking for firearms.

How to explain the other cases except as coincidences I do not know. Yet the fact remains if the deaths had been caused by the same disease, heredity, or family predisposition, would have been put forward as the cause. Two brothers of my acquaintance broke their arms and legs thirteen times between them. Each break was a separate accident, and the accidents extended over several years. Some peculiarity of the bony structure in both individuals probably accounted for the numerous fractures. Cases of suicide occurring in the same family, or cases of unaccountable disappearance, may be put down to similar mental conditions.

There is a cause for everything. What is the underlying cause that makes similar accidents happen to different members of the same family? *Quien sabe?*

324 West Eighty-ninth Street.

PECULIAR FOREIGN BODIES IN THE VAGINA.

By WILLIAM J. ROBINSON, M. D.,

NEW YORK.

The following case seems to me worthy of record on account of several rather unique features.

Mrs. X brought her little daughter for examination. The latter is fifteen years old, very well developed, plump, her breasts being rather those of a young woman than those of a young girl. For several weeks she has been suffering from a yellow, ill-smelling vaginal discharge. The mother had noticed it about a month previously; how much before that she had it, she could not tell. But it is about a month since she noticed yellow stains on her underwear and bed sheets. She washed her genitals with borax, and then potassium permanganate, but with no benefit. When the daughter was asked if she had any pain, she answered no. When asked if she knew how the thing started, or if she knew of any cause of her trouble, she answered in a decided negative. She objected to being examined. I saw that I would achieve nothing and gain no information in the presence of the mother, so I asked the latter to step into the parlor for a few minutes.

I spoke to the little girl sympathetically, promised her absolute secrecy, pointed out the possible danger to her health of concealment and of refusing to be examined. She finally broke down and confessed that for the last two years she has been having regular sexual intercourse with a cousin, and that last summer she also had intercourse a number of times with a young fellow, one of her cousin's friends, who stopped at the same place in the country where they did. But she did not like that fellow, as he was a "tough"; and it was practically under force that she continued to have relations with him. Having yielded to him once, she was afraid that he would tell everybody, as he threatened he would, if she did not submit to him again. One time when she was alone in the house, her mother having gone to the city—she was to come back by a late train in the evening—he came in, made her drink some wine, had relations with her, but she remembered no particulars, for she soon fell asleep and woke up only late next morning. Soon after that she noticed the discharge, and she had quite a good deal of pain too, but she was afraid to tell her mother; she feared that her reprehensible behavior might be found out. I then asked her to let me examine her, and promised her that no matter what condition I found, her mother would never find out through me the cause of her trouble.

She agreed. The vulva and introitus vaginæ were swollen and eroded and very painful to the touch, and bathed in a greenish, very offensive discharge. Only after anesthetizing the introitus was I able to pass a speculum, which showed the cervix

to be highly inflamed and eroded. In introducing a cotton swab on the forceps a hard body was encountered in the posterior fornix. On removing the speculum and introducing two fingers I succeeded, not without difficulty, in removing a large walnut. But there could be felt another foreign substance. One after another I removed another walnut, three hazel nuts and a piece of sponge. The piece of sponge was extremely offensive in odor, so offensive that I feared I would faint. Only immediate opening of the windows and spraying with cologne relieved conditions a little. She remembered about the sponge, which she herself had inserted some months ago at the suggestion of a girl friend, but she denied absolutely any knowledge of the nuts. She was sure, however, that they must have been put in by that "tough" on the last night, after she fell asleep. An examination of the discharge showed it to be free from gonococci. The girl's humiliation when the foreign bodies were removed was deep, and her indignation was terrible. She promised that "he" would pay for it. I again spoke to her, I told her that she was running the risk of venereal disease, which would endanger her health and her life; also the risk of pregnancy, which would be terrible for her and the disgrace might kill her mother. She promised to behave herself and to leave boys alone, especially as "she did not care for them now." She only did it because a girl friend told her that all girls did it, and because the boys bothered so. I called in the mother, told her that her daughter had a little inflammation, due probably to a cold or some other unascertainable causes, but that it was nothing serious and she would soon be well.

I touched all the ulcerated spots with a 10 per cent solution of silver nitrate, then painted the cervix, vagina, and vulva with an aqueous solution of iodine, and ordered antiseptic injections twice daily. At the next visit the condition was greatly improved; there was still, however, considerable discharge, but not of an offensive character. I again painted the parts with iodine, and insufflated the vagina with a large amount of finely powdered kaolin—a procedure which I have found of great utility in inflammatory conditions of the vagina and cervix, of specific and non-specific origin. The antiseptic irrigations were to be continued. Two weeks later the little patient was entirely well.

This case is an illustration, one out of many, of the rapidly spreading looseness among the young of both sexes, in our large cities especially. It is not at all a rarity now to treat boys and girls of eleven to sixteen for various sexual diseases and disorders; teachers, of the East Side especially, tell us that sexual immorality is spreading at a terrible rate, that very many of the pupils, girls of twelve and fourteen years of age, practice intercourse frequently, and for pay, too. And they are shameless and brazen, and treat with indifference or contempt any rebuke that may be administered them. That the effect of such children on the good, normal pupils of the school cannot be otherwise than pernicious and ruinous goes without saying. Some method ought to be found of quickly suspending or segregating such pupils. But to bring charges against a pupil which it may be difficult to substantiate by documentary legal evidence might prove of serious consequence to the teacher, and, therefore, they—the teachers—prefer to take the path of least resistance, let matters stand as they are, and say nothing.

This case is also an illustration of the contemptible, vicious depravity of some men. It is not at all an uncommon practice for some vicious male brutes to insert foreign bodies into the vaginæ of women with whom they have relations. This is generally done without the knowledge of the victims, when they are asleep or under the influence of intoxicants of which they are induced to partake; and, unaware of any cause of trouble, those women often go about with those foreign bodies until dangerous inflammations and ulcerations have set in. And it is only on a vaginal examination that the *corpus delicti* is discovered, to the patient's intense chagrin and humiliation.

Another point that this case demonstrates is that by tactful sympathy one can accomplish a good deal more than by a high-horse, moralizing, threatening attitude; one can often save much lifelong unhappiness, much domestic infelicity, by a judicious act. How many heartaches, tragedies, and possible scandals are averted daily, only the physician, especially the physician specializing in certain lines of practice, knows. And he is silent, as it is his sacred duty to be.

12 Mt. Morris Park West

THE AUTOPSY:*

A LETTER TO THE PUBLIC

By RICHARD STEIN, M.D.,

NEW YORK,

VISITING PHYSICIAN TO THE GERMAN HOSPITAL

It seems but natural that the painstaking scientific physician, after having diagnosed and treated his patient's ailment with all the means at his command, after having followed up all the details of the case and committed himself to a favorable or unfavorable outcome (prognosis) should, when death ensues, be placed in a position to verify his diagnosis, or to be able to explain the reason of a mistaken prognosis by a post-mortem examination; or, if a diagnosis could not be made, to be able to clear up the nature of the fatal illness by means of an autopsy. Furthermore, if an operation had been performed and death ensues, the post-mortem examination will go far to demonstrate the reason of its failure to cure or to save the life of the patient. By this means the physician or surgeon is able to verify the accuracy of his judgment and to clarify his knowledge and experience. From this point of view, too, every case of fatal illness is an "interesting case," and may well be carefully investigated; and thus not only the rare or exceptional case calls for close study.

So it follows that post-mortem examinations should be looked upon as a duty by the medical attendant, the performance of which ought to be encouraged by the laity. If this standpoint be correct then the further duty devolves upon the profession to point out, from time to time, the obstacles which are constantly thrown in its path in the attempt to fulfill this duty toward the patient, the community and itself, so that the public may become conversant with the facts and be enabled to realize the difficult position of the medical adviser in this contingency.

It is the common experience of the physician, especially in private practice, that permission to perform autopsies is extended—if at all—in a be-

*Read at the clinical meeting of the German Hospital and Dispensary, Jan. 12, 1912.

grudging spirit, and only after long and disheartening parliamentation and contention with the relatives and friends of the deceased. In his efforts to shed light upon a case the doctor is often looked upon with suspicion, and, although it may be conceded that the results of the examination might have some general scientific value, these are not deemed of sufficient importance to justify a seemingly repulsive manipulation, and the much desired permission is consequently denied. In exceptional instances, it is true, permission is finally granted after an earnest plea has been made that the autopsy may reveal certain conditions which might prove of great value in the prevention or treatment of the immediate family of the deceased. Purely altruistic reasons, however, appeal only to the very few and strange to say more often to the poor and illiterate.

Aside from the lack of appreciation of the value of the autopsy for medical progress however, there are other and more general reasons why post-mortem examinations are not more generally encouraged. Everyone can readily understand the aversion to this procedure: the distress, the shock, frequently the overwhelming suddenness of death; the mystery of death in itself, the sanctity of religious custom and ceremonial, and above all, the abhorrence which is aroused by the thought of desecrating the remains—all these factors tend to raise an insuperable barrier to the performance of an unpleasant duty. At a time of mortal bereavement, too, the emotional side of human nature tends to predominate. It requires great exercise of tact on the part of the doctor to be able to broach the subject to the responsible members of the family. The attempt to uncover the truth of an obscure case is often met, if not with reproach, with distrust and disapproval.

The difficulties of the situation outlined above have been aggravated of late years by the fact that it has become customary to embalm very shortly after death has ensued. Thus the time available for obtaining permission to make the examination has in consequence been materially shortened. It is, furthermore, not to the interest of the embalmer to encourage the practice, as it interferes with his business, while formerly he would gladly lend a helping hand and would reassure the family that with the proper care disfigurement could easily be avoided. Under the present conditions autopsies must frequently be made after embalming had previously been done. This is a very disturbing complication for the pathologist.

It is not necessary to enlarge upon the importance of this subject. Pathological knowledge is the foundation of medical science. Most valuable opportunities, both of a purely practical, as well as general scientific interest, are sacrificed to indifference, ignorance and prejudice. The community is itself the loser. Let us hope that the new science of eugenics will help to point out and elucidate the true meaning of a subject which hitherto could only be reluctantly handled with the greatest delicacy and reticence by the medical profession. Withal, the conscientious physician with the proper scientific spirit is willing to learn even at a sacrifice. As to those members of the profession who neglect this matter, or show themselves indifferent, to them may be applied the remark of one of our most celebrated diagnosticians (Carl Gerhardt): "Only those physicians invariably make the right diagnosis who never make an autopsy." The doctor will not detract from his standing or his dignity, though he frankly admits that there is something to be learned at every autopsy.

In European countries most patients who enter the public hospitals do so with the understanding that examinations will be made in case of death. In our own institutions no such understanding exists, and great care must be exercised by the doctor in providing himself with adequate proofs of the agreement for such examinations in order to protect himself from public scandal and legal complications. Physicians and surgeons of many of our hospitals will testify to the difficulties encountered in the effort to obtain permission for such examinations.

It has been customary for hundreds of years to perform autopsies, but we are far distant from the time when the post-mortem examination will become a universal procedure, in line with the rapid progress of scientific effort. It is interesting to read the account of Jacques Cartier, for instance, one of the early explorers of North America. He performed a number of autopsies on members of his crew who had succumbed to a mysterious disease after landing in Newfoundland. Emperors and kings have been dissected for hundreds of years. The results of the autopsies were published in official reports. This was probably done in accordance with the law covering the demise of rulers.

No doubt the general enlightenment of the last centuries, the recognition, in part at least, of the importance of the necropsy for medical study and practice have been successful, to a certain extent, to overcome prejudice and false emotion, and even to set aside tender and sacred feelings in the interest of science. Still the universal introduction of this procedure, essential though it may seem to the progressive doctor, seems for the present impracticable or even visionary. In the state of the future, when matters pertaining to public health and hygiene will be strictly controlled the autopsy is destined to be a part of the measures instituted by the authorities. The law will then read about as follows: (1) It is the duty of the state medical examiner to certify to the death of every individual after making a personal examination of the deceased. (2) The body of the deceased, after the expiration of a reasonable time, shall be removed to a mortuary. (3) The state pathologist shall perform an autopsy in the presence of the attending and consulting physicians and surgeons, *in order to determine the cause of death.* (4) The body shall then be cremated.

70 East Seventy-ninth Street.

Glioma and Cerebral Traumatism.—M. L. Babonneix notes three theories as to the causation of glioma of the brain. The first is that of an unexplained congenital predisposition. The second is that an early leptomeningitis causes an irritation of the subjacent neuroglia. The third is that cranial traumatism causes a similar irritation of the cerebral substance. The author presents illustrative cases which suggest that glioma may appear after cerebral traumatism. Some authors attribute the production of glioma to the hyperemia or capillary hemorrhages which irritate the neuroglia. Others believe that traumatism alters the relations between the various tissue elements and separates from its normal connections an island of neuroglia, which becomes the tumor. Glioma so frequently follows cerebral concussion that this cannot be a mere coincidence.—*Gazette des Hôpitaux.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE BACTERIOLOGICAL PROBLEMS OF LEPROSY.

IT is now over forty years since Hansen demonstrated the presence of a bacillus in the affected tissues of the leper. Since that time the bacteriology of leprosy has constantly engaged the attention of all investigators of the disease, but it is only within comparatively recent years that any substantial additions have been made to our knowledge of this phase of the subject.

In the *U. S. Naval Bulletin* for January, 1912, Passed Assistant Surgeon Crow, of the Navy, gives an account of his work on the search for the microorganism in the general circulation of lepers. Out of a total of twenty-four inmates of the leper colony in Guam, he demonstrated the presence of the bacillus in the blood of all but three. His technique was carefully perfected, and it seems that all necessary precautions were taken to exclude contamination by substances which might contain other acid-fast bacilli. He concludes that if sufficient care and diligence be used, the lepra bacilli may be found circulating in the blood in at least 80 per cent. of cases. The constant presence of the bacillus in the leprous lesions has heretofore been regarded as the chief argument in favor of its being the cause of the disease. The work of Crow adds another link to the chain of evidence, and although, in this particular affection Koch's four postulates still remain uncompleted, there is, nevertheless, no reasonable doubt of the etiological connection between the bacillus and the lesions in which it is found.

The inability to propagate the bacillus artificially, either in laboratory animals or in culture media, has in the past presented the greatest obstacle to the final proof of this connection. Likewise, without this knowledge, intelligent studies in specific therapy have been impossible, and investigation of the manner of transmission necessarily limited to the keeping of clinical records. The work of Currie, Clegg, and Hollman of the leprosy investigation station in Hawaii seems now to be far enough advanced to warrant the conclusion that it will not be long before some truly specific treatment may be forthcoming. In an effort either to confirm or to disprove the statement of Clegg, who, as a result of independent work in the Philippines in 1909, claimed that he had succeeded in isolating in pure culture the lepra bacillus, the investigators at the Hawaiian station commenced, in 1910, a series of experiments which have not only tended to corroborate the independent work of Clegg, but also to contribute substantially to our knowledge of immunity in this disease. By adding leprous material to agar on which the cholera spirillum and amebas were growing in symbiosis, they found that they were able to cultivate an acid-fast bacillus which was morphologically similar to that of leprosy (*Public Health Bulletin, No.* 47). Furthermore, they have been able to isolate this bacillus in pure culture and by serum tests have proven that it is not identical with other members of the same group, represented by the smegma bacillus and the grass bacillus of Moeller.

From the fact that the organism which they have isolated can be grown from leprous tissue, together with its morphological similarity to *B. lepræ* as originally found in such tissue, it seems fair to assume that the two are, in reality, identical. This opinion is still further confirmed by the Hawaiian investigators' studies in immunity (*Public Health Bulletin, No.* 50). It had already been shown that the blood serum of lepers contains antibodies which, when combined with antigenic substances closely allied to those producing the Wassermann reaction, were capable of fixing the complement. Thus, Wechselmann and Meier were able to fix the complement by using syphilitic antigen and serum from leprous patients (*Deutsche medizinische Wochenschrift*, Vol. 34, p. 1347). The same result has been obtained by many other competent observers, and working along these lines the Hawaiian station investigators have been able to produce specific agglutinins for *B. lepræ*, by using the blood serum of a horse which had been injected with the cultivated lepra bacilli.

Therefore the identification of the organism may be regarded as absolutely proved, and from the premises in the case one would seem safe in predicting that the near future will see the successful issue of the effort to find an efficient serum or vaccine against the ravages of the one disease which has always, heretofore, been regarded as heading the list of incurable chronic affections.

TUMORAFFIN SUBSTANCES.

THE more recent studies by Ehrlich and von Wassermann in the chemotherapy of cancer serve to corroborate and are otherwise in harmony with work which has been done in past years and which passed largely unobserved by others. Neuberg, for example, has been at work upon the chemistry of tumors at the Agricultural High School, Berlin, since 1903, and early made the discovery that radium rays activate the autolytic enzymes of tumor cells. Along with workers in the Imperial Cancer Institute and elsewhere he also learned that other intracellular enzymes, notably lipases and oxidases, were similarly activated. The heightened production of coloring matters was evidently due to a similar mechanism. This quickening of intracellular activities taken in consideration with the cytolytic tendency of ferment action appears well calculated to antagonize the tendency of tumors toward unlimited growth and to be essentially curative. It was fur-

ther discovered in Salkowski's laboratory that the heavy metals possess properties similar to those of radium as far as effects are concerned, although naturally an entirely different mechanism may be involved. This property of the metals is brought in necessary association with the fact that they all tend to precipitate albumin in solution. As radium is in itself one of the heaviest metals it is assumed provisionally that its behavior may not be so dissimilar radically to that of its congeners as at first sight appears. The metals in question which have been tested include gold, platinum, lead, copper, silver, etc., certain preparations being able to stimulate or favor autolysis.

In the *Deutsche medizinische Wochenschrift* for February 22 Neuberg and Caspari review their own work along these lines. They appear to be the only investigators aside from Salkowski's students who have studied these properties of metals in connection with cancer cells with the exception of a Paris scientist, Gaube de Gers, who has very recently announced that colloid preparations of metals, especially of copper, will favorably influence cancer in man. No doubt this publication was responsible for the article by the Berlin investigators which apparently is partly in the interest of priority. They do not appear to have been prepared for a complete report and beyond stating that the preparations used are colloidal combinations of metals no information along this line is vouchsafed. The authors intimate that their preparations are decidedly milder in action than the eosin-selenium combination of Wassermann and are therefore much less likely to produce untoward effects. The changes set up in the tumor cells seem to be quite parallel for both kinds of reagent. As a general name for all substances of this character the authors use the adjective "tumoraffin."

EPIDEMIC CEREBROSPINAL MENINGITIS.

Epidemic cerebrospinal meningitis and acute poliomyelitis have been so prevalent in this country and in Canada during the past few years that the diseases are a matter of national concern. Effective measures for their control are lacking, while methods of treatment are eminently unsatisfactory. Consequently, investigations tending to increase knowledge as to these madadies is greatly to the interest of the general public. There has been recently published a reprint from Public Health Reports, January 26, 1912, dealing exhaustively with epidemic cerebrospinal meningitis, by Dr. W. H. Frost, Past-Assistant Surgeon, Public Health and Marine Hospital Service. The pamphlet is practically a compendium of all that is at present known of the disease and the methods of control and treatment, and as such is particularly valuable to the general practitioner.

With regard to the occurrence of the micrococcus of the disease, the results of investigations indicate the following conclusions: (1) Apparently healthy persons in the immediate vicinity of cases of cerebrospinal meningitis very frequently harbor the meningococci in the nasopharynx; (2) apparently healthy persons themselves not in contact with any cases of meningitis but residing in communities where an epidemic prevails are not infrequently found to be meningococcus carriers; (3) apparently healthy persons in communities where there have been only scattered cases of meningitis or none at all for several months are less frequently found to be meningococcus carriers; (4) the meningococcus is very rarely found in the throats of persons living in localities quite free from cases of cerebrospinal meningitis.

As to the use of serum in the treatment of the disease the observations of those best qualified to judge are thus summarized: (1) The serum when promptly and properly used effects a very substantial reduction in mortality, shortens the course of the disease, and reduces the proportion of disastrous sequelæ; (2) it must be used freely, repeated daily for at least three days in most cases, and as much longer as may be found necessary from observation of clinical signs and examinations of cerebrospinal fluid; (3) the best results can be obtained only by persons expert in the technique and principles of the treatment and conversant with the clinical aspects of the disease.

The most important part of the report is that which discusses public measures for the control of cerebrospinal meningitis. Two lines of procedure with this end in view may be considered. Preventive measures and treatment. Of course, from the public health standpoint, prevention is preferable, but even the most rigid preventive measures offer at best a very doubtful hope of materially decreasing the prevalence of the disease. Serum therapy, on the other hand, does justify the expectation of reducing the damage done by one-half, or even one-fourth. Frost, moreover, points out that there are special reasons why public health authorities should take an active interest in the serum therapy of cerebrospinal meningitis. The cost of the serum is sufficient to render it unavailable to the very poor. Likewise the proper scientific use of it, essential to good results, requires the services of experienced physicians and skilled attendants. Finally, the diagnosis and efficient control of treatment require expert bacteriological services which are not available in many communities, and when available are expensive. It is therefore believed that the most effective work which can be done by state and municipal health authorities toward controlling epidemics of this disease is along the lines of rendering assistance in its therapy. An outline of preventive measures is presented, although, as said before, such measures appear to be of little avail. The gist of the argument contained in the report is that reliance must be placed mainly on serum therapy in order to avoid damage from the disease as much as possible. And to obtain the best results from such treatment public health authorities should lend their aid.

THE DECREASE OF FERTILITY.

Herbert Spencer said that as a necessity of evolution fertility diminishes with that intellectual and moral development of the race which is comprised within the meaning of the word civilization. Darwin concluded that changed conditions of life have a remarkable specific power of acting repressively on the reproductive system. Doubleday published in England in 1841 a book in which he stated that

overfeeding decreases fertility, while on the other hand, a limited or deficient nutriment stimulates it. In all these dicta there is a half-truth, but they are only partly true.

In every civilized nation there exists a tendency to restrict reproduction of the species. There are causes which obviously work in the direction of reducing the birth rate. For example, postponement of marriage or avoidance of marriage, when these occur on a large scale are serious indications of the sociological trend, but do not explain the steady decrease of the birth rate which has taken place in France, and which is now taking place in Great Britain and among some classes of this country. Dr. A. Newsholme has written recently a small book on the subject, in which he states his view that the main cause of the modern very small family is that the parents, and especially one of the parents, does not wish for many children, and accordingly the limitation of the family is largely volitional. Undoubtedly the fact that a large proportion of the population live in cities is responsible to a considerable extent for small families. In New York and in other American cities there is a distinct relationship between small families and apartments. Apartments and large families for many patent reasons are not compatible. But it is not in this country and in France and England alone that the prevention of large or even fair-sized families is common; it prevails in all civilized lands.

Newsholme, referring to the suggestion that eugenics judiciously applied might prove the salvation of the civilized races, states that a precondition of any attempt to apply practically the important principles of eugenics with respect of any particular disease or defect, must be the collection of evidence on a sufficiently large scale which will fully justify intervention. The subject is large and should be regarded from every conceivable standpoint before opinions are openly expressed. One thing is certain, that in every country there is need for encouraging the propagation of the fit and discouraging the multiplication of the unfit, or in the course of time the best part of the population will be swamped. Unfortunately, it seems to be the unfit who are sedulously pampered to the detriment of the race as a whole.

PSYCHIC DISTURBANCES OF ANEMIC ORIGIN.

The conviction that many psychoses must be due to autointoxication has gained ground steadily as a result of the propaganda of Kraepelin and others. On the other hand, certain psychiatrists, while recognizing a somatic factor for the genesis of psychoses, are inclined to seek it in a vascular change, believing that variations in the blood supply must profoundly influence the metabolism of the nerve cells. At a recent meeting of the Breslauer Psychiatrisch-neurologische Vereinigung (*Berliner klinische Wochenschrift*, December 25) both Bonhoeffer and Schroeder read papers on the relationship between severe anemias and psychic disturbances. The former dealt with the clinical aspect of this sequence, while the latter described peculiar focal cerebral lesions which he had discovered in subjects dead of pernicious anemia. The doctrine that anemia if sufficiently severe is able to cause psychic disturbances is of course by no means new; and some psychiatrists have made the so-called exhaustion psychoses dependent on defective blood supply, just as the psychic disorders accompanying or succeeding acute infectious diseases are believed to be due to the action of exogenous circulating toxins. In both of these types it is assumed that the casual principle operates chiefly by altering the normal metabolism.

One of Bonhoeffer's patients had suffered long from intestinal hemorrhages and his hemoglobin was down to 30 per cent. The psychosis developed suddenly with anxiety, excitement, disorientation, hallucinations of sight and hearing, etc. The symptoms subsided spontaneously in a few days with partial amnesia. In four cases of pernicious anemia the symptoms showed notable individualization. One subject exhibited a twilight state, another anxious excitation of epileptiform character with rhythmic motor activity, a third had delirium followed by Korsakoff symptoms, and a fourth presented the picture of incoherent amentia. The disturbances were not of long duration. The cerebral lesions found by Schroeder could be conceived either as the results of minute hemorrhages due to the profound anemia or as miliary, necrotic foci with secondary extravasation of blood.

Bonhoeffer does not in this connection refer to the amentia which quickly supervenes when unusually large doses of bromides are ingested continuously. If this is regarded as largely the result of anemia of the brain, the suspension of the activity of the purely intellectual processes, without a corresponding effect on the emotional sphere and personality, should possess some significance in this connection, especially when contrasted with the opposite syndrome associated with cerebral hyperemia, in which mental activity is quickened but often dominated by the affect element.

SNUFF AND LEAD-POISONING.

Every once in a while there appears in the medical literature a report of a case of lead-poisoning, the lead being derived from some obscure and little thought of source in the environment of the patient. Now it is a housemaid who takes the first drink in the morning that falls ill while no other member of the household is affected; now an artisan who is engaged in some one part of a manufacturing process and who is stricken while all other workers are spared; now a painter's apprentice who sleeps in the back of the shop in company with pails and cans of mixed paint, etc. One such unusual case is reported by Eugen Stadler in the *Correspondenzblatt für Schweizer Aerzte* (Vol. XLII, No. 5). He observed in his hospital service a woman patient who has for several years suffered from headaches, dizziness, nausea, and vomiting, occasionally accompanied by severe abdominal pain, these attacks being usually interpreted as gallstone colic. She finally developed paralysis of some peripheral nerves and this with the typical blood picture, showing basophile degeneration of the erythrocytes pointed to lead-poisoning as the diagnosis. She soon recovered and returned to her

household, no other member of which was similarly ill. The source of the lead was not then discovered. A few months later the patient was brought back to the hospital, now suffering from a severe form of lead encephalopathy, from which she died. The clinical and blood pictures were again characteristic. This time the doctors were told that the patient was a passionate snuff taker, and an analysis of the snuff used by her showed remarkable contamination with lead derived from the lead foil wrapper. This, of course, explained why no other member of the household was affected, as none but the patient was addicted to this habit.

News of the Week.

Death Rate Remains Low in New York.—The records for the week ending March 2 show that the death rate for that week was 15.49 per 1,000 population, compared to a rate of 17.41 for the corresponding week of last year. There was an increase of 24 in the number of deaths from measles, but there seems to be no epidemic of that disease. Heart disease caused 191 deaths, or about the same as in 1911; pneumonia, 258 against 293 for 1911; tuberculosis 203, or three more than last year. There was but one death from whooping cough this year, as against 10 for the corresponding week of last year, and 19 fewer deaths from influenza. There were 408 deaths of children under five years of age, and 280 of persons over sixty-five years of age. There was a decrease of 104 in the number of deaths in the tenements and an increase of 46 in institutions.

New Jersey Health Officers Fight Rabies.—The Health Officers' Association of New Jersey has appointed a committee to continue the agitation aroused by the increase of rabies in the State. This committee met in Newark on March 5 for the purpose of drafting a bill that will be introduced in the Legislature urging strict quarantine of all dogs, and instructing the people concerning the nature of rabies, particularly in regard to methods of spreading it which are operative to the same extent in winter as in summer.

A Collective Investigation on Ozena.—At the meeting of the Third International Laryngological Congress, held in September, 1911, in Berlin, Germany, it was unanimously resolved that a universal investigation on the subject of ozena should be made, and the full report, statistical and otherwise, be presented at their next Congress, to be held in Copenhagen. An executive committee was appointed to assume charge of the investigation, consisting of Prof. Rosenberg, Prof. Grabower, and Prof. Alexander, all of Berlin. These have in turn appointed laryngologists to assume charge of these investigations in their various countries. Among these so appointed are Professors Chiari, for Austria; Onodi, for Hungary; Mahu, for France; Brown-Kelly, for England and Colonies; Hellat, for Russia; Pieniaczek, for Poland; Gerber, for East Russia, etc., and Dr. Emil Mayer for the United States of America. The latter, after conferring with the presiding officers of our three large National Laryngological Associations, secured their prompt and hearty cooperation, and their endorsement of the following executive committee: Drs. Joseph Gleitsmann, Robert C. Myles, and Harmon Smith, representing the American Laryngological Association; Wolff Freudenthal, Thomas J. Harris, and H. Holbrook Curtis, the American Laryngological, Rhinological and Otological Society; Sidney Yankauer, the Academy of Opthalmology and Oto-Laryngology. Representative laryngologists will be appointed from the various states of the Union, who will investigate as to the relative frequency, etc., of this disease in the United States, and to this end examinations will be requested of school children, inmates of asylums, almshouses, prisons, reformatories, etc. These reports when completed will be sent to the chairman of the committee.

A New Italian Hospital.—The Italian Benevolent Society of this city has purchased five houses in East Eighty-third street and will remodel them for use as a hospital. A morgue and autopsy room will be in the cellar, and the board room, offices, and dispensary on the first floor. The second floor will contain the doctors' quarters, the children's ward and obstetrical ward; the third floor will be given over for the use of women and will contain surgical, private and medical wards for women. The fourth floor will be for men and will have a surgical and private wards, and operating room and an anesthesia room for men exclusively. On the fifth floor will be ten private rooms and a private operating room.

The Robert Dawson Evans memorial building for clinical research and preventive medicine, a part of the Massachusetts Homeopathic Hospital, was dedicated and opened Wednesday of last week. Addresses were made by Governor Foss, Lieutenant-Governor Luse, Mayor Fitzgerald of Boston, President Maclaurin of the Massachusetts Institute of Technology, President Murlin of the Boston University, and Dean Sutherland of the Boston Medical School. Dr. Frank C. Richardson is the director of the memorial. There are five laboratories in the building—neurological, physiological, pathological and bacteriological, chemical, and pharmacodynamic—all in close connection with the wards of the hospital. A prominent feature of the work of the institution will be the department of public education in hygiene and health matters, under the auspices of which popular lectures on tuberculosis, sex hygiene, dangerous diet, paternity, maternity, etc., will be given. The building is a memorial given by Mrs. Maria A. Evans, widow of Robert Dawson Evans, who died July 6, 1909, from injuries received when he was thrown from his horse. In his address Dr. Maclaurin of the Massachusetts Institute of Technology defended this country from the popular imputation of its being a "land of dollars," "for it is true," he said, "that nowhere in the world is wealth so nobly given for great causes—the spread of education, the advancement of science, the encouragement of art, and the alleviation of suffering. An institution, we have been taught, is the lengthened shadow of a man. This one will indicate to generations yet to come the real bigness of the man it commemorates. It will show his breadth of vision, his keen look into the future, his sympathy with humanity, his faith in research and in scientific education. It is an institution that can never die and it is one that will keep the name of Robert Dawson Evans in grateful memory forever."

New Dispensary Building Opened.—The Medico-Chirurgical Hospital of Philadelphia opened its new dispensary building for inspection on March 7. The structure has a frontage of 59 feet and a depth of 140 feet, with a total floor space of 10,000

square feet. It is intended for the treatment of children's diseases, affections of the eye, diseases of the nervous system, deformities of bones and joints, diseases of women, medical, surgical and cutaneous diseases, and diseases of the ear, nose, and throat.

The William Pepper Medical Society of the University of Pennsylvania held its 25th annual reunion on March 7. Dr. George W. Norris presided and acted as toastmaster. Responses were made by Dr. Alfred Stengel, Dr. Richard C. Norris, Dr. B. Franklin Stahl and Dr. Joseph Bloodgood of Baltimore.

Professor Selskar M. Gunn, Assistant Professor of Biology at the Massachusetts Institute of Technology, has been appointed editor of the *Journal of the American Public Health Association.* Mr. Gunn is a graduate of the Institute in 1905, and after completing his course under Professor Sedgwick spent a year in the Boston Biochemical Laboratory, where he had much experience in industrial biology. In 1906 he became first assistant bacteriologist to the State Board of Health of Iowa and lecturer in hygiene and sanitation at the Iowa State University. Early in 1908 he was called to the place of health officer at Orange, N. J. Last summer he was commissioned by the mayor of Milwaukee to make an efficiency investigation of various of the city's public departments.

Pay for Reporting Births.—The Board of Commissioners of Cook County, Ill., has made an appropriation to pay physicians for reporting births, the amount to be paid being 25 cents for each report.

Health Inspectors to Be Physicians.—The San Francisco Health Board decided that all or most of the sanitary inspectors of the city shall be physicians who will give all their time to the work. The pay of the inspectors has been raised from $125 to $200 a month.

Enlarging the Registration District.—The Mississippi Legislature on February 29 passed a bill creating a Bureau of Vital Statistics to be under the jurisdiction of the State Board of Health.

Health Officers Alleged Violators of Health Laws.—An indictment for violation of the State sanitary laws has been brought against a physician and health officer of Shreveport, La. A health commissioner of Passaic, N. J., has been arrested on a technical charge of disorderly conduct brought by the Board of Education on account of his refusal to permit his little daughter to be vaccinated. The president of an anti-tobacco society of this city has lodged complaint against Dr. O'Connel, the newly appointed quarantine officer of this port, alleging that he broke the rules of the Board of Health office in this city by smoking inside the building. The Oklahoma City quarantine officer has been complained of by the Oklahoma County Medical Association because he warned the mothers of children exposed to diphtheria against the use of antitoxin, alleging that the results of its prophylactic administration was frequently disastrous.

A Clean-Up for Texas.—Dr. Ralph Steiner, State Health Officer of Texas, issued an appeal recently urging the observance of Saturday, March 9, as a "clean-up" day throughout the State. The clean-up day for 1911, he says, proved a great success. Many of the cities and towns of the State not only observed the day named, but devoted two weeks to the work of removing and destroying the accumulation of the winter months, preparatory to the coming of warmer weather.

The German Medical Educational Trip will be taken this year in America. The members will leave Hamburg on September 7 on the *Cincinnati* and returning will leave New York on October 10 in the *Victoria Luise.* The places to be visited are New York, Philadelphia, Atlantic City, Baltimore, Washington, where the travelers will take part in the International Congress of Hygiene and Demography; Chicago, Niagara Falls, Montreal, Boston, and Albany. The cost of the entire trip will be only 1,950 to 2,250 marks ($485 to $560).

A Correspondence Course in Medicine.—At the meeting of the Association of Medical Colleges in Chicago on February 28, Dr. W. P. Harlow of the University of Colorado, in his presidential address, advocated the establishment of a post-graduate correspondence course for physicians intending to take a clinical or laboratory course later. Much of the valve of a post-graduate course was lost, he said, because the physician came to it without sufficient knowledge and without the preliminary training which could be given by correspondence at a saving of much time.

"Adenoids in School Children and Their Effect Upon the General System."—Dr. G. B. Taylor of Cameron, Texas, writes that in his article with the above title, published in the MEDICAL RECORD of February 17, 1912, he neglected to give credit for several quotations from an article by Dr. E. B. McCready of Pittsburgh, published in the issue of September 2, 1911.

Osteopaths Must Be Licensed in New York State.—The New York State Osteopathic Society at its semi-annual meeting in Albany on March 9, passed resolutions to prosecute any one undertaking to practice osteopathy without having complied with the educational standing established by the State Board of Regents. This will be the first time that prosecutions under the law of 1907 have been undertaken by the osteopathic society.

The Passing of the Common Drinking Cup.—On March 1 the Missouri law went into effect forbidding the use of common drinking cups, roller towels, and common brushes and combs in public places and on railroad trains. Missouri is the twenty-third State to abolish the common drinking cup in the stations and cars of all railroads operating within its borders.

National War Against Mosquitos.—At the coming meeting of the National Drainage Congress in New Orleans in April, a movement will be inaugurated to restrict the breeding of mosquitos by drainage of the 80,000,000 acres of swamp land and 100,000,000 acres subject to annual overflow in the United States. An effort will be made to place Col. Gorges in charge of the sanitary division of this reclamation movement.

Dr. Ernst J. Lederle, Health Commissioner of New York, and Dr. G. A. Soper, president of the Metropolitan Sewerage Commission, are among the heads of city departments who will speak in a series of lectures to be given at Columbia University on Monday afternoons this month and next.

The Distinction Between Christian Science and Quackery is not sharply drawn in Switzerland. A dispatch to the *New York Times* says that "Doctor" Joseph Unterberger, a Christian Scientist, advertising himself as a "natural healer of all diseases," has been tried at the court of the Canton of Appenzell for causing the death of a woman "by lack of medical knowledge and neglect" and sentenced to a year's hard labor and costs. He is

expelled from the canton and is prohibited from exercising his "profession" in Switzerland. This sentence is under the new Swiss civil and penal code, which is severe toward persons of the charlatan class, who formerly escaped with light sentences and fines.

Delegates to the Rome Tuberculosis Congress.—Acting Secretary of State Wilson has appointed six delegates to represent the United States at the seventh International Congress on Tuberculosis, to be held in Rome, April 14 to 26. The delegates appointed are Dr. Henry Barton Jacobs of Baltimore, secretary of the association; Dr. Livingston Farrand of New York, executive secretary; Dr. Charles L. Greene of St. Paul, Dr. G. Walter Holden of Denver, Dr. Gerald B. Webb of Colorado Springs, and William H. Baldwin of Washington, all directors of the association.

Manhattan Medical Society.—At the meeting of this Society, to be held at Reisenweber's, Fifty-eighth street and Eighth avenue, on the evening of Friday, March 22, at 8:30 P.M., Professor White of the George Washington University Medical School, Washington, D. C., will read a paper entitled: "Mental Medicine in General Practice." The discussion will be by Drs. Jelliffe, Gregory, Bailey, and Casamajor. The medical public are invited to be present.

Confederate Army Surgeons to Meet.—The Association of Army and Navy Surgeons of the Southern Confederacy will hold their annual meeting in Macon, Ga., in May. Dr. E. D. Newton of Atlanta is president of the association.

The Henry County (Ia.) Medical Society, at its annual meeting held in Mount Pleasant on February 29, elected the following officers: *President,* Dr. F. R. Wilson of New London; *Vice-President,* Dr. G. M. Van Ausdall of New London; *Secretary and Treasurer,* Dr. O. A. Geeseka of Mount Pleasant; *Censors,* Drs. J. N. Day, L. B. Allen, and W. A. Sternberg of Burlington; *Delegate to the State Society,* Dr. F. C. Mehler of New London; *Alternate,* Dr. C. F. Applegate of Mount Pleasant.

The Miller County (Ark.) Medical Society, at its annual meeting in Taxarkana on February 29, elected the following officers: *President,* Dr. J. A. Lightfoot; *Vice-President,* Dr. R. H. T. Mann; *Secretary and Treasurer,* Dr. L. J. Kosminsky.

Charitable Bequests.—Mount Sinai Hospital and the German Hospital are named as beneficiaries to the amount of $5,000 each under the will of the late Ernest Thalmann.—Under the will of Bernard Rothenberg, Mount Sinai Hospital is to receive $400, the Lebanon Hospital, Beth-Israel Hospital, the Home for Aged and Infirm Hebrews, and the Montefiore Home for Chronic Invalids receive $200 each, and the United Hebrew Charities $100.—The Tuberculosis Preventorium for Children announces the completion of its building fund of $150,000. The final subscriptions were $1,000 from Mrs. Henry Phipps, $500 from Emerson McMillan, and $1,000 in small amounts from other contributors.—By the will of the late Louise M. Spear of Philadelphia bequests are made as follows: White Haven Sanitarium for Poor Consumptives, $5,000; Children's Seaside Home for Invalid Children at Atlantic City, $2,000; Mercer Memorial Home for Invalid Women at Atlantic City, $2,000; Presbyterian Seaside Home at Cape May, $2,000; Home for Incurables, West Philadelphia, $2,000; Home of the Merciful Saviour for Crippled Children, $1,000. The income from a sum of $2,000 is bequeathed to a sister, the principal to revert to the German Hospital on the death of the legatee.—By the will of the late Josephine Drexel of Philadelphia the sum of $20,000 is bequeathed to the Archeological Museum of the University of Pennsylvania, $50,000 to the trustees of the University to be used for such purposes as they deem best, $10,000 to the Hospital of the University, $10,000 to the Catholic University of Washington, D. C., $10,000 to the Gynecean Hospital of Philadelphia, $5,000 to the St. Joseph's Day Nursery, New York.—By the will of the late Julius M. Seidenbach, of Philadelphia, the sum of $1,000 is bequeathed to the Jewish Foster home and Orphan Asylum and to the Jewish Hospital Association and the sum of $500 to the Jewish Maternity Association.

The Late Dr. Weber.—At a meeting of the Board of Directors of the New York Post-Graduate Medical School held March 7 the following resolutions were adopted: "*Whereas,* We have learned with deep regret and sorrow of the death of our esteemed associate and colleague, Dr. Leonard Weber, who for many years gave his best efforts to this institution, and *Whereas,* Dr. Weber was a man of high honors, exceptional ability and integrity, beloved and respected by all who knew him for his many scholarly attainments, his geniality and his sincerity; therefore, be it *Resolved,* that we record this sad tribute to his memory, and join in expressing to his bereaved family our sincere sympathy; and be it further *Resolved,* that these resolutions be spread upon the minutes of this faculty, and a copy transmitted to the members of his family as a token of our respect and a reverence to his memory." Signed, H. J. Boldt, M. D., George G. Ward, Jr., M. D., Committee.

Obituary Notes.—Dr. George Stanton Hamilton of Lakota, Va., died on March 4, at the age of eighty-two years. He was a graduate of the Jefferson Medical College of Philadelphia in 1851.

Dr. A. C. McDowall of Lyndonville, Vt., died on March 2, at the age of forty-seven years. He was graduated from the medical department of the University of Vermont in the class of 1890, and after practising for a few years in Barnet, settled in Lyndonville.

Dr. William J. Hughes of Leicester, N. C., died March 4, at the age of fifty years. He was a graduate of the Kentucky School of Medicine, Louisville, in 1885.

Dr. William J. King of Golden, Colo., died February 28, at the age of thirty-nine years. He was a graduate of the Denver College of Physicians and Surgeons in the class of 1897, and was professor of pediatrics in the same institution at the time of his death.

Dr. Henry B. Dwelle of St. Louis died March 2, at the age of eighty-five years. He was a graduate of the Medical College of the New York University in 1856, and had practised in St. Louis for over half a century.

Dr. Edwin Green of Arcadia, Fla., died February 24, at the age of sixty-six years. He was a graduate of the Kentucky School of Medicine, Louisville, in the class of 1882.

Dr. Arthur Lee Macken of this city died of apoplexy on March 7, at the age of forty years. He was a graduate of the College of Physicians and Surgeons, New York, in the class of 1904.

Dr. Howard C. Spencer of Gainesville, Fla., was found shot on a lonely road about five miles from town on February 26. He was fifty years old, and

was a graduate of the Eclectic Medical Institute, Cincinnati, in 1893.

Dr. GEORGE B. MAXWELL of Attleboro, Mass., died February 29, at Fort Worth, Texas, at the age of fifty-two years. He was graduated from the Chicago Homeopathic Medical College in 1894, and practiced in San Francisco for several years before removing to Attleboro.

Dr. THOMAS G. MCCONKEY of San Francisco died on February 28, at the age of fifty-three years. He was a graduate of the medical department of the University of Pennsylvania in 1890.

Dr. SAMUEL A. JONES, formerly dean of the Homeopathic Medical Department of the University of Michigan, died at his home in Ann Arbor on March 9, at the age of seventy-eight years. He was a graduate of the Pennsylvania Homeopathic Medical College, of Philadelphia, in 1860.

Dr. R. W. WALMSLEY of New Orleans died February 27, at the age of fifty-five years. He was born in Dubuque, Iowa, and was graduated in medicine from the University of Louisiana, now Tulane University, in 1881. For several years after graduation he practiced in New York, but returned to New Orleans in 1894.

Dr. FRANK G. BURNETT of Pawtucket, R. I., died on March 3, his death being hastened by grief over the death of his twin brother, Dr. Fred. N. Burnett of Attleboro, Mass., a few days previously. He was born in 1860 and was graduated from the Medical College of the New York University in 1885. He began practice in Windsor, Conn., but removed in 1882 to Pawtucket.

Correspondence.

OUR LONDON LETTER

(From Our Regular Correspondent.)

INSURANCE TROUBLES—THE REPRESENTATIVES OF B. M. A. MEETING—DECISION TO ENFORCE CLAIMS—THYROIDECTOMY—VACCINE TREATMENT.

LONDON, Feb. 23, 1912

I FEAR you are getting tired of hearing about our insurance troubles. We are "sick of them all" according to every doctor you meet. Yet they all persist in dragging them into every conversation and not a few pour their solutions into letters to the journals and even newspapers, for since the *Times* opened its columns to medical correspondents, it seems respectable to do so. The end of the fight is not exactly in sight. The representatives' meeting of the B. M. A. opened on Tuesday. Formal business was transacted and then the chairman (Dr. Maclean) vacated the chair while the representatives discussed a motion censuring his direction at the November meeting and the course he took as to the late secretary's appointment as deputy chairman of the Insurance Commissioners. Dr. Maclean admitted that perhaps he had erred in November, but the rapid progress of the bill permitted no time to consult the representatives, and he thought it necessary they should act in consonance with what they believed their constituents would desire. He repudiated any desire to conceal the exact position as to the appointment of Mr. Smith Whitaker. The vote was rejected and Dr. Maclean resumed the chair. The meeting went to work in earnest, and with over 350 items on the agenda you will not wonder that it had to sit (with brief intervals) all day—indeed until late at night. It was expected to occupy Wednesday also, but so many points had to be discussed that it continued over the whole of Thursday morning. Obviously a three-days' debate cannot be comprised in a few sentences and the conclusions only can be given to-day as they seriously affect the profession. A state sickness insurance committee has been set up.

By far the most important action of the meeting was the resolution which accepted practically the demand for an amended act—thus endorsing the views of the Reform Committee and other outside bodies against those of the council. This resolution, carried by 159 votes to 3, is significant. It directs the council to inform the commissioners in unmistakable language that unless the minimum demands of the association be embodied in the regulations in such a manner as shall be effectual and permanent, *with a view to having them embodied in an amending act*, it is the intention to call upon practitioners to decline to work the act. This is what over 26,000 practitioners have agreed to.

It was further decided that complaints against medical men must be considered by a medical committee; that the right of dispensing should remain with those who desired to retain it; that the administration of medical benefits shall not be under the control of Friendly Societies.

With regard to remuneration, the policy was agreed on to claim a minimum capitation fee of 8/6, not including medicines, appliances and other extras, with an income limit of £2 a week.

The Royal Colleges here and the Scottish colleges and corporations are uniting in a committee respecting the act. The Apothecaries Society has joined and universities have been invited and will probably fall in. Mr. Lloyd George's attack on these bodies has perhaps hastened their movements. His attack on "the doctors" as a set of Tories who ought not to interfere in politics, has helped to bring about the greatest degree of union that has ever been obtained in the profession.

The position of hospitals under the act continues to excite alarm for their funds. Yesterday at the annual meeting of the Charing Cross Hospital the chairman urged upon the governors that extension of their work could not be undertaken in view of the danger ahead.

On the 13th inst. there was a joint meeting of three sections of the Royal Society of Medicine, viz., the surgical, medical, and that devoted to anaesthetics. They met to consider a paper sent by Dr. T. P. Dunhill, of Melbourne, on partial thyroidectomy under local anesthesia with special reference to exophthalmic goiter. Dr. Dunhill has done 380 such operations, and of these 230 were for exophthalmic goiter. There were 4 deaths out of the 380 operations and for each death an accountable cause. The first from removing too much tissue and crushing when he was not expert; his second, from bronchitis; a third was moribund; the other cannot be published at present. When he began the operation was considered rather dangerous and was not often performed. He had been feeding patients on the milk of goats from which he had removed the thyroid and had a number of cases among his out-patients, when one day a woman exceedingly ill, with no living relatives, begged him to do anything to relieve her. The whole position being placed before her, she begged for operation. Some who had seen her got permission to visit her afterwards in the ward and one after another asked to be operated on, and eventually all

the other cases who knew her in the out-patient room were surgically treated.

He divides the cases into four classes: First, the classical type, but without organic degeneration, and in which recovery is not impossible; second, cases in which thyroid degeneration has taken place; third, when the thyroid is quite small or scarcely detectable and there is an extreme degree of one or more characteristic signs; fourth, cases with thyrotoxic symptoms associated with a goiter, which is not truly exophthalmic. In class one Dr. Dunhill refuses to operate until medical treatment has been fairly tried —say three months, if effectually carried out; one man he kept under it for 12 months. In class two, every stage of wreck may be met with, and most men decline to operate, as they think it dangerous and organic disease has gone too far for improvement to follow. He has done 19 operations on such cases and great improvement has followed. The third class offer more difficulty to decide. In the fourth the response is immediate and complete.

He urged that to regard operation as *only* a last resort is erroneous, and such an opinion takes away many a patient's chance. So long as it prevails cases will be continually progressing from class one to two, and he has had cases sent to him when they were really dying and some did die as soon as they were in the hospital. How much gland tissue should be removed? Enough to cure the disease, says Dr. Dunhill. In young persons, not very bad, one lobe, with any mid-lobe or isthmus. In older patients, very bad, that will do no good. One lobe and half of the other must be taken away, and if the gland has been big and active the half left may be too much. At the same time this operator says one must not be hustled into removing too much just to "make a complete job at once." Remember more can always be removed, but it cannot be put back again. In three early cases he removed a third portion and thinks it was wiser thus to feel his way. He thinks, too, that if the removal is rapid and gentle, one and a half may be less dangerous than one only, for the loss of one causes reflex dilatation of the vessels of the other with increased glandular activity and the remaining lobe being encapsulated tightly, must pour the results of excessive activity into the lymph and blood streams with consequent poisoning. If all of one lobe and one-half of the other are taken "*without crushing*," the cut surface of the second leaves a way of escape to the exterior through an efficient drainage tube. This, he says, would not hold good with slow operating or rough handling. One lobe removed may do no good because too much thyroid tissue remains, and that is why many operations are called unsuccessful. The fear of myxedema following is spoken of, but we hear of no cases of it. Patients are soon able to resume and enjoy their usual life; they play tennis, ride, dance; one man is building coaches; another is blacksmithing. With few exceptions local anesthesia was used. With nervous patients he sometimes put the general anesthesia apparatus on a shelf and told them they could have it when they liked. They never asked for it, so he gave up preparing for it. Local anesthesia means using seven ounces of 2 per 1,000 novocaine and well infiltrating all the front of the neck.

Captain R. McCarrison, M.D., I.M.S., contributed a paper to the medical section (R.S.M.) on the 23d inst. on the "Vaccine Treatment of Simple Goiter." In previous researches he had traced the disease to an infecting agent in the intestinal canal and shown that amebic infection abounded in most cases of goiter in Gilgit. In his early work the vaccine used was a composite one obtained from the feces of goitrous persons. It had the characters of the coli group, but differed from *B. coli* by not producing indol. An Australian pony imported into Gilgit was found to have goiter and Capt. McCarrison isolated from its feces a spore bearing organism which was commonly met with in human cultures. He has treated 33 selected cases by vaccines—the composite one giving the best results. The local reaction is not marked if the initial dose be small—150,000,000- in 5 minims of salt solution. Injected into the upper arm the patient can usually follow his employment. From four to seven inoculations may be needed, but some cases were cured by two or three. All the cases remarked on the feeling of *bien être* they experienced. Usually an autogenous vaccine was employed, but excellent results had also been obtained by vaccine from another patient. Metchnikoff showed that some microbes in our normal intestinal flora produce toxins. Capt. McCarrison holds that the thyroid secretion neutralizes these. When to them is added the specific virus of goiter, an extra strain is thrown on the gland. The several vaccines relieve the thyroid of part of its normal work and so enable it without continuing in a state of hypertrophy to destroy the specific virus of goiter. The nervous and other degenerative changes which follow thyroid incompetency are due to toxic substances absorbed from the alimentary canal and are not neutralized by the imperfect functioning of the thyroid.

Dr. P. Weber suggested that thyroid feeding would have the same effect if the explanation proposed were correct.

Dr. Langmead made some remarks on the connection of thyroid hypertrophy with toxemia.

Mr. J. Berry admitted that some cases might have to be submitted to the surgeon, but he ought never to operate until after prolonged medical treatment had proved absolutely useless. He thought a few cases were not hypertrophic, but rather allied to atrophy, the vesicles being filled with stagnant secretion and the distention rendering the cells inactive.

Dr. Taylor (president) said it might be expected that there was some underlying factor common to the different methods of treatment.

Dr. Robt. Hutchinson was doubtful of intestinal toxemia. Thyroid secretion stimulated oxidation in the body and conditions which increased metabolism might just as likely lead to thyroid enlargement.

Dr. Crookshank asked if spontaneous cure occurred in Gilgit?

Capt. McCarrison said goiter in Gilgit Valley was the same as elsewhere. Cretinism was common and goiter appeared in 40 per cent. of cretins. He had never seen goiter disappear spontaneously. Twenty per cent. of recruits imported to Gilgit got goiter and a few of them got well when the enlargement was very slight.

A Peculiar Manifestation of the Pasteur Treatment for Rabies.—C. Frugoni and C. Gargano observed in about 5 per cent. of the patients treated by means of prophylactic antirabic injections that ten to twelve days after the injection there appeared at its site a painful swelling, which disappeared at the end of three or four days. With every succeeding inoculation the swelling reappeared. Abscess formation and fever were never noted. The authors believe that this phenomenon is one of anaphylaxis.—*Rivista Critica di Clinica Medica*

Progress of Medical Science.

Boston Medical and Surgical Journal.

February 29, 1912.

The Clinician, the Hospital, and the Medical School. D. L. Edsall.
Contributions to the Neurology of the Child. I. Convulsive Tendencies During and After Encephalitis in Children. W. P. Lucas and E. E. Southard.
A Self-Retaining Air-Tight Face-Piece for Nitrous Oxide-Oxygen Anesthesia. W. M. Boothby.
A Case of Thrombosis of the Left Posterior Inferior Cerebellar Artery. J. W. Courtney.
A Case of a Butler Who Killed His Three Children. G. L. Walton.

The Clinician, the Hospital, and the Medical School.—D. L. Edsall notes that great usefulness as a teacher may go together with great skill as a practitioner, but one does not imply the other, and when either of these activities is made more exacting, the other must be restricted both in order to give proper thought to one's work and especially in order to keep trained for the work, for if training stops, progress halts also. While the life of the teacher and investigator usually increases his value as an adviser to difficult and unsolved problems, it often decreases his skill in carrying out the home details of family practice, because it takes his time and thoughts away from these; and devotion to practice makes a man similarly unfit for exacting teaching and investigative work. Clinicians who are in practice necessarily make their practice their first interest if they secure it, or hold it when they have secured it, and their teaching and research must suffer since they take a secondary place in their lives and thoughts; and when great success in practice comes they are pushed more or less completely aside by the pressure of the more absorbing activity. This is the usual history of clinical teachers in this country. The two important things that any co-operating hospitals are asked to do are (1) to give their chiefs of staff liberty to carry out their work in the way that their professional training indicates is best, and to impose upon them rather than upon the administration the responsibility for the medical details. (2) They are asked to appoint to their staffs only men who will be acceptable to the medical schools. As to provision for the material needs of the chief and his assistants; they will require salaries sufficient to permit them to restrict their practice absolutely to consulting work, and to make this secondary, in both time and thought required for it, to their academic work. With a suitable combination of the German academic system and something approaching the English ward clerk system, the best results now possible for both students and medicine would be obtained in this country as well as elsewhere.

Convulsive Tendencies During and After Encephalitis.—W. P. Lucas and E. E. Southard have searched the records of the Children's Hospital of Boston from 1905 to the present date for possible instances of encephalitis. Cases of "encephalitis", "toxic encephalitis", "meningitis?", and "encephalitis?" have been considered. Twelve cases have been chosen. These show onset always sudden; paralysis or paresis in all cases (oculomotor paralysis in 7); deep reflexes altered in 10; mental symptoms in 10; rigidity of the neck in 9; general convulsions in 7 (absent in 4); nausea or vomiting in 5 (not noted in 7). The results fall into three groups: (*a*) Death during acute attack in 2 cases. (*b*) Recovery from acute attack, with subsequent epilepsy and mental deficiency, and death after twenty-one months in 1 case. (*c*) Recovery from acute attack, with residual symptoms in 5 cases; 2, normal, except for strabismus and possible slight mental change; 2, epileptic and mentally defective. With respect to epilepsy, the total incidence of convulsions during the acute attack was 7 in 12. Of 9 cases still living, 5 showed convulsions during the acute attacks, and 2 of the 5 are epileptic. In both epileptic cases there was a brief interval between recovery from the acute attack and the onset of epilepsy.

Face-Piece for Nitrous Oxide.-Oxygen Anesthesia.—W. W. Boothby states that the requirements of a nitrous oxide-oxygen apparatus that would produce a surgical anesthesia with the patient relaxed in all cases are as follows: The apparatus must be capable of delivering constantly the desired amount of nitrous oxide and oxygen by merely setting one valve for each gas; that it must continue to deliver this same amount as long as desired without further attention; and that it be possible, instantly and independently, to change the rate of flow of each gas. In order to be able at a glance to estimate the relative rate of flow of each gas, the mixing chamber must be of glass containing water and the pipes so arranged that each gas bubbles into the chamber separately. It is well recognized that to produce relaxation in all cases ether vapor must be given in addition to the gas-oxygen in a certain number of cases; it is also recognized that different cases may require amounts of either vapor varying within wide limits, and further, that it is necessary to be able gradually and yet rapidly to vary the ether percentage. The apparatus must be light and portable. And finally, the face-piece must be air-tight and at least partly self-retaining. The author describes a face-piece or rubber collar that he has designed to meet the last requirement, namely, that of preventing air from leaking into the gaseous mixture between the face and the mask, while at the same time retaining the latter in place. It is a modification of the Gatch cuff.

New York Medical Journal.

March 2, 1912.

Functional Disorders and Neurosis of the Stomach. J. Kaufmann.
The Diagnosis of Intraabdominal Conditions Presenting Acute Manifestations. N. Jacobson.
The Relation of the Specialist to the General Practitioner. W. S. Gottheil.
Sodium Cacodylate in Syphilis. L. J. Spivak.
A Seventeenth Century Surgeon and His Fee. W. R. Riddell.
The Vaccine Treatment of Colds. G. H. Sehrman.
Postoperative Gastric Dilatation. T. C. Witherspoon.
Chronic Excessive Intestinal Putrefaction as a Factor in the Production of Disturbances of the Nasal Mucous Membrane. S. Floersheim.
Sarcoma of the Testicle, with Report of a Case. A. C. Stokes.
Iodine Fumigation. C. J. Kœnig.

Functional Disorders and Neurosis of the Stomach.—J. Kaufmann warns one against making a diagnosis of gastric neurosis because the patient happens to be a neurasthenic. A patient may present the appearance and characteristic symptoms of neurasthenia and at the same time harbor a gastric ulcer or carcinoma. A further factor which frequently proves misleading in these cases is the negative result of examination. Even when the results of all examinations are negative one should accept the diagnosis of gastric neurosis only with a good deal of mental reservation. The author states that the vast majority of ulcer and cancer cases which have come to his knowledge were previously diagnosed as gastric neurosis. In many of the conditions erroneously described as secondary or symptomatic gastric neurosis, the disturbance of the gastric function must be attributed much more to disorders in the chemistry of the body than to a derangement of the nervous apparatus of the stomach. There are disorders of the gastric function caused by the different forms of anemia; by acute as well as by chronic infections, particularly tuberculosis; by chronic intoxications and autointoxications, as illustrated in chronic nephritis, diabetes, etc.; by metabolic disorders, gout, etc., and by changes in internal secretions (Graves', Addison's disease, etc.).

Intraabdominal Conditions Presenting Acute Manifestations.—N. Jacobson states that no part of the body is subject to such a variety of acute emergencies as the abdomen. The urinary bladder, as well as the gall-bladder, are occasionally ruptured by force, while blows upon the abdomen, or even severe jars, are capable of causing a rent in the stomach or intestines, even though the surface may remain intact. Evidence of injury to the diaphragm may be so obscure as to leave the medical attendant in doubt

as to its nature. Rupture of the intestines may occur without injury to the abdominal wall. The two most significant signs of acute intraabdominal mischief are intense, agonizing pain and muscular rigidity. Perforating gastric or duodenal ulcer is more frequently overlooked than is any other acute abdominal catastrophe. While one may be satisfied that one is dealing with some form of perforation, the site of the latter may be obscured by the developing signs of peritonitis. Of the inflammatory conditions in the upper abdomen the one most frequently recognized is acute cholecystitis. As a rule, in this condition one is able to obtain a history of previous gallstone colic, with evidence of obstruction and consequent distention and swelling of the gall-bladder with local tenderness.

The Specialist and the General Practitioner.—W. S. Gottheil concludes that a large proportion of the specialist consultation cases are instances in which a single examination and advice based thereon, or an isolated treatment, are insufficient, unfair to the patient, and necessarily unsatisfactory to both attendant and consultant. The rights of the practitioner to his practice should be conserved, so that he should not be put in the position of a mere directory of what specialist or what operator to apply to. The way to effect this legitimately and openly is by means of joint treatment, the routine measures being carried out by the attendant, while direction and supervision are exercised by the consultant. A joint fee bill is suggested as the logical concomitant.

The Vaccine Treatment of "Colds."—G. H. Sherman distinguishes two classes of cases suffering from colds; those having acute attacks that clear up during the intervals, and those in which the condition has a tendency to linger on between the attacks. The former are more particularly due to the pneumococcus and streptococcus, while the latter, in addition, are usually complicated with the *Micrococcus catarrhalis* or the mucous group of organisms. In the treatment of these cases the author uses a mixed stock vaccine composed of various strains of each organism in the vaccine; in the former class of cases pneumococcus 40,000,000, streptococcus 30,000,000, and staphylococcus 150,000,000; and in the latter, pneumococcus 40,000,000, streptococcus 30,000,000 and *Micrococcus catarrhalis*, 100,000,000. Usually there is marked improvement from twelve to twenty-four hours after the first inoculation, and often all the acute symptoms subside and the patient goes on to recovery. On the second day another dose should be given, or the case is liable to relapse, and after that inoculations should be made at from three to six day intervals until all symptoms of the disease have subsided. Those that are complicated with the *Micrococcus catarrhalis* usually require treatment for a longer time than the other class of cases. In some cases it is necessary to double the dose. If prompt improvement should not take place with this routine method of treatment, careful bacterial examinations should be made of the sputum by slides and by culture methods to determine what additional organism may be the cause of the trouble.

Sarcoma of the Testicle.—A. C. Stokes states that typical sarcoma of the testicle occurs more rarely than atypical. Tumors of the sarcoma type, but atypical, occur more frequently than those of the carcinoma type. Typical carcinoma of the testicle occurs occasionally, but always arises in the epididymis or tubules and never in the rete testis. All tumors taking on a carcinomatous appearance are teratomata in origin with the epiblast predominating. The mixed tumors of the testicle originate in the rete testis in tissue which, according to Grawitz, has its beginnings in primitive kidney embryonal tissue of mesoblastic origin carried down in the descent of the testicle. According to Waldeyer, they originate in the sexual cell, which has been subjected to some form of irritation. This last theory agrees more clearly with the clinical picture than does the theory of Grawitz. All organs in which the peculiar tumors develop have the same embryological origin and are derived from the nephros.

Journal of the American Medical Association.

March 2, 1912.

The Colon Bacillus.—By R. T. Morris. (See MEDICAL RECORD, January 13, 1912, page 88.)

Salvarsan in Syphilis.—H. J. Nichols points out the difference between salvarsan and mercury as to their action on the spirochetes. With mercury the spirochetes are not killed *en masse*, but a great number are simply repressed and the natural defenses of the body are gradually brought to bear against the infection, and the patient goes more or less definitely through the various stages of the disease as if untreated. Even if he relapses he has the defensive asset in the mercury he has taken already. With salvarsan the case is different—the great bulk of the spirochetes are killed at once and those that remain are too few to stimulate the resistance of the body and they begin again to multiply. Salvarsan has entirely upset the ordinary course of syphilis and has introduced entirely new factors in the possibilities of serious relapse. Hence the advantages of the combination method. While the immediate effects of the salvarsan can be taken advantage of, one can use the other drug, which is able to kill the few remaining spirochetes by its superior penetrating power, and have a powerful combination against relapse. In the primary stage, after diagnosis by the dark-field microscope, the author would excise the lesion if possible, give an intravenous injection of from 0.4 to 0.6 gram of salvarsan and follow this by one month's treatment with mercury by inunction or injection. He would then complete the treatment by a second intravenous injection of salvarsan. If the serum reaction is present at the start a second month's treatment with mercury should follow the second injection. In the secondary and tertiary stages one or more intravenous injections, with a week's interval, should be given until the symptoms are under control, and at the same time an intensive treatment with mercury should be given for one month to six weeks. Then the entire procedure should be repeated, the amount of salvarsan to be given being gauged by the serum reaction. The author has had no bad effects from the use of salvarsan and sees no reason why it may not be employed, using proper precautions, as freely as thymol or any other powerful remedy. While it has not fulfilled all expectations, the day of modern achievements is still young, and the whole history of the practical use of the drug covers only two years, the intravenous method is only about a year old and the various combination methods even less.

Hepatoptosis and Hepatopexy.—A Werelius states that hepatoptosis may be congenital or acquired, the former being attributed to the absence of suspensory ligaments and other defects of the natural supports. Heavy lifting, a pendulous abdomen, gall-bladder disease, and pregnancy are mentioned as factors of the acquired condition. The disease is much more frequent in the female and very few cases occur in nulliparæ. The author has found

only sixty-six cases reported as operated on, and only four of these in this country, including his own. These are tabulated and analyzed as follows: Two were males. The average age of the patients was 38 years. There were twenty-eight cases of total and thirty-eight of partial hepatoptosis. In the partial hepatoptosis the diagnosis was made correctly in twenty-three cases. The condition was once diagnosed as tumor of the gall-bladder, six times as right nephroptosis, and an uncertain diagnosis was made in eight cases. In the total prolapses a correct diagnosis was made in thirteen cases. Incorrect diagnosis of echinococcus cyst was made in four cases, of tuberculous typhlitis in one case, of omental tumor in one case, of right nephroptosis in three cases, and kidney tumor in one case, and an uncertain diagnosis was made in five cases.

Rheumatic Carditis.—W. Lintz reaches the following conclusions: Rheumatism is a specific infectious disease caused by the *Diplococcus rheumaticus*, and has a characteristic pathology. The valvular lesions are caused by the dissemination of the microorganisms by means of the coronary vessels. The murmur heard at the apex, even early in the disease, is never functional, but is due to a loss of tonicity in the mitral sphincter. General cardiac dilatation is to be attributed to the loss of tonicity of the heart muscle. A derangement of the pulse and temperature ratio is of diagnostic importance. A rise of temperature is accompanied by an improvement in the feeling of well-being. Simple and malignant endocarditis represent different degrees of the same process.

Phenolsulphonephthalein Test.—M. L. Boyd reviews the various functional tests for the kidneys and gives his experience with them and with the use of phenosulphonephthalein. Up to the time of the introduction of the latter drug there was no single test by the use of which one could gain any accurate idea of the functional capacity of the kidneys. By the use of various tests one could reach valuable conclusions, which, however, were not always accurate, and failed entirely in certain pathological conditions. The length of time required for some of the tests and the extent of the observations with others made their general use impracticable. Phenolsulphonephthalein is a nontoxic substance rapidly appearing in the urine and harmlessly eliminated through the kidneys, while the amount passed is accurately, rapidly, and easily determined by the colorimeter. The patient is less inconvenienced and the amount of dye eliminated shows accurately the extent of kidney impairment. There is, moreover, no pathological condition of the kidney in which there is increased permeability to the drug and the amount passed does not depend on the quantity of urine. By ureteral catheterization the condition of separate kidneys can be ascertained.

Acetonuria and Acid Intoxication.—B. W. Rhamy states that subcutaneously injected, acetone has a slow cumulative toxic power which may, during periods of individual susceptibility, effect serious or even fatal damage. Subcutaneously injected, the toxic power of acetone is much greater than that of methyl alcohol. Guinea-pigs not only have an individual susceptibility, but have daily variations in their individual susceptibility. Acetone dehydrates and hardens tissue, is a local irritant, and causes hemorrhagic extravasations. If acetone is formed in the intestine or liver it must be in a pure strong state at the site of formation and would there exert its destructive action on the neighboring cells. Following a toxic dose of pure acetone, guinea-pigs develop coma, rapid respiration and nervous phenomena, including itching, dizziness, muscular twitching, and temporary mental disturbance, and may develop convulsions in the form of rapid clonic spasms. The acetone is excreted almost entirely by the lungs. Post-mortem examinations of guinea-pigs killed by acetone poisoning show fatty degeneration of the liver and kidney, with hardened and ruptured blood vessels and hemorrhagic extravasations. Acetone is to be considered a far more important diagnostic sign of toxemia in pregnancy than urea or albumin and should always be looked for as a premonitory danger signal of toxemia.

The Lancet.

February 24, 1912

Glycosuria.—A. E. Garrod classifies the causes of glycosuria as follows: Toxic: administration of morphine, atropine, strychnine, curare, amyl nitrite, copaiba, phosphorus, bichloride of mercury, uranium salts, phloridzin, acetone, chloroform, ether, nitrous ether; poisoning by coal gas, carbon monoxide; alcohol, especially in champagne, and beer; thyroid extract, adrenaline. Asphyxia: accumulation of carbon dioxide in respired air. Cold immersion (e.g., attempted suicide by drowning). Inanition (vagabond glycosuria). Psychic strain or shock. Diseases of the nervous system: Apoplexy, convulsions, traumatism, cerebral tumors, meningitis (meningococcal and tuberculous), syphilitic affections of the brain, general paralysis of the insane, paralysis agitans, tabes. Acute fevers: pneumonia, scarlet fever, measles, mumps, variola, malarial fevers, phlegmonous diseases. Diseases of the liver: cirrhosis, cholelithiasis. Diseases of the pancreas: hemorrhagic pancreatitis, necrosis, carcinoma, fibrosis, pancreatitis of mumps, catarrhal pancreatitis. Intestinal disorders: corrosive poisoning, enteritis, colitis. Diseases of the thyroid gland: exophthalmic goiter, myxedema. Diseases of the pituitary body: Acromegaly, gigantism. Pregnancy, tumors of the uterus, and ovaries. Renal affections: functional and organic. Chyluria.

Treatment of Exophthalmic Goiter.—G. R. Murray advocates operation in all cases where there is distinct stridor from compression of the trachea or persistent pain in the goiter. In cases of a mild type he does not consider an operation necessary. In very severe cases with marked cardiac failure the risk is too great. In a certain number of cases of moderate severity in which no adequate improvement has resulted from medical treatment fully tried for twelve months, a partial thyroidectomy or ligature of the superior thyroid arteries may be advised. The remarkably small mortality from operation clearly indicates that the grave dangers which formerly made physicians unwilling to advise operation have now been considerably reduced, so that operation can be recommended in a larger number of cases than previously appeared to be advisable.

Cystitis.—D. Newman states that in this condition there are three modes of infection: (1) Ascending infection by the path of the urethra, which for obvious reasons is more common in women than in men; for example, in gonorrheal and colon bacillus infection. (2) Descending infection or hematogenous infection, in which the organisms are conveyed from a primary focus to the urinary tract by the blood and are excreted by the kidney. This happens in tuberculous, in typhoid, and in colon bacillus infections. (3) Transparietal infection through the lymphatics from the intestine to the bladder, as observed in appendicitis, dysentery, and internal hemorrhoids. The colon bacillus is the most common cause of cystitis. It is seldom that the bladder is the first part of the urinary tract attacked by the tubercle bacillus, but primary vesical tuberculosis is occasionally met with. Other organisms causative of cystitis are the streptococcus, the pneumococcus, the *Staphylococcus pyogenes aureus*, the *Staphylococcus pyogenes albus*, and the gonococcus. Cystitis may be mild,

severe, or chronic. Juvenile incontinence or involuntary nocturnal micturition in children and adolescents is frequently due to a mild infection of the bladder by colon bacilli. The cystitis of pregnancy, usually met with about the sixth month, is moderately acute as a rule, but is sometimes severe. In the severe type of cystitis the symptoms are constitutional and local. The most important symptom is vesical tenesmus. Chronic catarrh of the bladder is often the result of some blockage to the escape of the urine.

The Intestinal Flora.—A. Distaso believes that constipation and the resulting intoxication are frequently caused by the intestinal flora; and that the large intestine is the seat of these processes. The products of the intestinal bacteria, by increasing secretions inhibiting the submucous plexuses, give rise to stasis. The accumulation of feces in the colon causes the viscera to fall downward, dragging on the organs which are attached to them. The ileum especially is affected, so that it may be almost occluded, or the ileocecal valve may become inflamed, and thus the passage of feces may be further impeded.

British Medical Journal.

February 24, 1912.

Immunity and Organic Evolution.—C. J. Bond states that the assumption of new characters on the part of any individual cell or group of cells is in every case the outcome of variation and selection among units of a certain order, size, and complexity. There are two ways in which the organism adapts itself to environmental changes: by intercellular or by intracellular variation and selection. As an example of the former is cited the phenomenon of muscle hypertrophy resulting from increased use of a muscle, in which case there is the formation of new cells in response to extra effort. An example of intracellular variation is seen in the case of the nerve cell which responds to quantitative and qualitative alterations in the stimuli, thus manifesting what is designated as a typical "use acquirement," the result of adaptation on the part of individual cells to altered environmental conditions. The immunity reaction which may be compared with this type of neural reaction falls as a whole into two great divisions: the natural immunity, which comes about through the selection of more resistant individuals during racial experience of disease, and the acquired immunity, which results from the exercise of an innate capacity of recovery after individual experience of disease; just as the response of the central nervous system is made up of two primary divisions—the racially-acquired innate method of reflex and instinctive action and the individually acquired ideovolitional mode of response.

Operations for Acute Appendicitis.—A. H. Burgess presents an analysis of 500 consecutive operations for acute appendicitis, that is, operations undertaken in the *acute* stage of the disease. There were 285 males and 215 females. The average age was 26.3 years. A history of previous attacks was given by 28.4 per cent. There were 40 deaths, a mortality of 8 per cent. There was a progressive increase of mortality with each successive day of the disease up to the sixth day. Fecal concretions were found in 21 per cent. of the cases. Further improvement in the mortality statistics of operation in the acute stage of appendicitis is to be looked for chiefly upon the lines of earlier diagnosis and of a more general recognition of the advantages of early operation. The early symptoms in their characteristic order of onset are abdominal pain, usually referred at first to the umbilical area and later to the right iliac fossa; nausea and in many cases vomiting; localized tenderness; localized muscular rigidity; and rise of temperature and rise of the pulse-rate. This order of symptoms was first pointed out by Murphy. The fourth symptom muscular rigidity need not be waited for to complete the diagnosis since it indicates that the infection has already spread from the appendix. Vomiting is relatively more frequent in children than in adults. Local tenderness should be searched for not only through the abdominal wall, but also by rectal examination.

Atropine and Open Ether Administration.—H. B. Gardner notes the advantages of this combination as follows: A smooth induction period of six to eight minutes; very early clouding of the mental faculties; tranquil regular respiration with abdominal relaxation; absence of mucus in the air passages; no unusual oozing of blood from the wound; extraordinary safety, alterations in the patient's position or disturbances of vital structures producing barely any depression; maintenance of normal blood pressure and absence of shock owing to the obtundent effects of both atropine and ether; suitability for goiter operations and adenoid and tonsil extirpation; the patient may be safely propped upright on pillows on return to bed; no after-effects, vomiting being quite rare; acidosis improbable; and an unusual value in septic conditions and those with flagging circulation.

Transmission of Leprosy.—H. Bayon concludes from his experiments that leprosy can under certain circumstances be transmitted to animals, the main difficulties being the high percentage of failures and the long incubation. The most suitable animals appear to be the rabbit, rat, or mouse. In the rabbit the intraocular method is preferable. The resulting lesions are often not visible to the naked eye, and are similar to those caused by certain strains of human tubercle. In the rat the incubation is also very long, the resulting lesions being comparable to those occurring in spontaneous leprosy of the rat. Not all leprous patients' nodules are equally infective for animals. In some cases the lepra bacilli appear to be absolutely incapable of multiplication for reasons at present unknown. According to Stanziale's experiments, the Wassermann reaction is positive in rabbits which have been successfully inoculated.

Berliner klinische Wochenschrift.

February 19, 1912.

Priority as to Peroral Auscultation.—Remouchamps of Belgium, in discussing Takata's recent description of peroral auscultation as devised by him in 1907 and since then notably developed, states that he introduced this resource independently in 1903, and that he in turn was preceded many years by Prof. Galvagni of Modena. In 1875 the latter reported the method in an Italian journal and to insure its accessibility to the scientific world he also caused it to be published in a German periodical. After the publication of the present author's article in the *Semaine Médicale*, in 1903 Genairon made buccal auscultation the subject of a graduation thesis (Lyon, 1904). Prof. Galvagni gave the subject a systematic consideration, while Remouchamps was interested chiefly in a laryngeal sound heard through the mouth, which he termed laryngeal crepitation and brought in relation with incipient consumption.

The E. T. Urine Reaction.—Under this designation von Balazsy gives a brief bibliographic résumé of the so-called Engel-Turner reaction, employed by the author in

determining qualitatively the chlorides in nurslings' urine. At present he has studied the urine of over 300 nurslings from this viewpoint. If the dietetic chlorides are diminished an increased elimination of chlorides occurs for some days; while if the amount ingested is increased, chloride retention results. As a rule breast-fed children give a positive, bottle-fed children a negative reaction. In making the test the urine is titrated with a solution of nitrate of silver, to which is added a little potassium monochromate. As soon as the urinary chlorides have combined with the silver an orange yellow color appears (silver monochromate).

The Psychic Component in the Asthma Cause Nexus.—Sänger calls attention to the great diversity of conditions under which asthmatic attacks occur and enumerates body overexertion, sneezing, coughing, laughing, gastroenteric disturbance, menstrual disorders, residence in a particular locality, whether town, residence quarter, or even room, certain odors, certain combinations of weather conditions, etc. The factors which precipitate asthmatic paroxysms may be equally potent in arresting and preventing them, a fact which must be well borne in mind by the practitioner. Dancing is with some individuals a favorite prescription for themselves or others. The psychic component is very apparent in an affection of this character—its suggestible causation and suggestible cure. In other words, the predominant notion in therapy is that of diverting the asthmatic's attention.

Exclusion of the Bladder in Vesical Tuberculosis.—Casper states that as far as he is aware this intervention has been practiced but twice before. He increases the material by two additional cases. This small number of cases comes about because there is seldom an indication, not because it is so formidable. The bladder often heals spontaneously after a tuberculous kidney is extirpated. The true indication is present only in cases of extreme contraction of the organ, with extreme painfulness, so that not only has it become worthless for its purpose, but is a source of great suffering. Of two patients thus treated, one died from the operation. He had been nephrectomized, and the operation was followed by anuria. The other patient recovered and the case may be given in some detail. The patient had been nephrectomized and the remaining kidney had since become tuberculous. An incision was made upon the kidney, which was normal to sight, and a lumbar urinary fistula was established. The ureter was not being employed in the latter, for its central end was split and sutured directly to the skin. The vesical pains at once ceased. There was no tendency to anuria. The patient made a relative recovery, gained twelve pounds, and will doubtless improve further. He wears a urinal, but owing to mechanical difficulties its action leaves something to be desired.

Münchener medizinische Wochenschrift.

February 20, 1912.

New Symptom of Acute Salpingitis.—Kuhl claims to have noticed frequently that a beginning salpingitis differs from a parametritic abscess, an acute appendicitis, etc., in having the febrile acme associated with bradycardia. This being admitted, the only possible explanation is found he believes in the absorption from the inflamed focus of some substance capable of acting upon the vagus. The same phenomenon has long been known in cases of biliary infection, but there is not much likelihood of confusing the latter with salpingitis. The author hopes that his supposed discovery will be verified as the result of an investigation of the subject at one or more of the large gynecological clinics.

Heredity and Heart Disease.—Herz quotes the prevalent belief in the noninheritance of cardiac disease, which he feels justified in opposing. He knows of no available statistical material, but in his capacity as a specialist in cardiac complaints has seen a sort of familial association of rheumatism (endocarditis, etc.), cardiac neuroses, and arteriosclerosis. All three of these elements are in themselves hereditary and familial when separately considered, and might conceivably exist side by side. Each is capable of giving use to cardiac lesions or symptoms. Phrenocardia, or psychogenous disturbance of the heart which may be transmitted to one's descendants, is also at times an occasion of so-called psychic infection or unconscious imitation. The association of rheumatism, heart disease, and chorea in the same family is well known. Hence there is readily conceivable an indirect inheritance of cardiac troubles, that is, an inheritance of troubles which are from their very nature associated in some way with cardiac symptoms.

Postanginal Polyarthritis.—Roethlisberger discusses this somewhat uncommon sequence which is believed to be only a chance episode in the absorption by the tonsils of some weakly septic organism. He describes two cases and concludes that in all rheumatism, acute or chronic, the tonsils must invariably be investigated. We may see an acute tonsillitis followed by a chronic rheumatism and vice versa. The anterior and posterior tonsillar recesses, as well as the crypts, should be examined with great care and the contents of the latter expressed. Diseased tonsils should be removed if medical management is inefficacious. So-called massage of those structures is often sufficient to reduce them to normal size, consistency, etc.

Deutsche medizinische Wochenschrift.

February 15 *and* 22, 1912.

Treatment of Trigeminal Neuralgia with Schlösser's Deep Alcohol Injections.—Dollinger concludes that in this resource we possess a means of arresting a facial neuralgia and of producing a relative cure which may persist for a long time. In most cases the condition returns in from one to five months, but not in as severe a degree. The treatment is able to affect favorably the recurrence, some times in a much higher degree than at first. From this point of view the treatment may be regarded as furnishing eventually a radical cure. The results from Schlösser's method are considerably better than those which follow section and resection of the nerves; so that in a severe case of facial neuralgia we must choose between Schlösser's method and gasserectomy or extraction of nerve roots respectively. The latter are certain cures, but the intervention is formidable. The author has not done a ganglion extirpation since he began to use the injections, which shows incidentally that patients naturally choose the less severe method. Too much weight, however, cannot be ascribed to this experience, for cases will always occur in which the radical method must obtain. For example, a military officer on active duty, if tormented and rendered inefficient by a facial nueralgia could not afford the time required for an injection cure, which would amount to at least three months.

Natural Immunity and Specific Antisera.—Seiffert mentions the natural property of normal blood serum to inhibit bacterial growth and believes that natural and individual immunity are based on this property. Experiment shows that it is effective against numerous disease germs. But serum does not behave always alike under these circumstances, and, in fact, two distinct groups of microorganisms may be differentiated from this viewpoint. Thus if the serum destroys a bacillus which liberates endotoxins after death this is the very reverse of a protective asset. The really immune subject here is the one whose serum does not antagonize the proliferation of such germs provided the latter do not cause septicemic

phenomena. On the other hand, the great group of septic infectious diseases is antagonized when the serum destroys bacteria *in situ*. There is possibly a third group which comprises the pure toxicoses in which bacteria do not tend to enter the blood at all. The author does not as yet make a familiar application of these teachings to clinical medicine.

Traumatic Appendicitis.—Brüning defends his conception of this affection against the scepticism of Sprengel. The latter, he believes, stands pretty much alone in the narrowness of his views, since men not less than himself in authority recognize a distinct traumatic type of this affection. There is naturally room for differences of opinion as to whether or not a perfectly healthy appendix ever becomes inflamed as the result of direct violence, but the whole subject of appendicitis is involved in this question. The problem cannot be settled by citing one or more cases of supposed traumatic appendicitis which were found on operation to represent ordinary cases with no superadded evidence of traumatism.

Toxicity of Methyl Alcohol.—Harnack believes that the Berlin poisonings were a sort of blessing in disguise since they served to attract universal attention to the subject of pure and falsified drinking spirits. The toxicity of alcohols in general increases with the number of carbon atoms in the molecule, so that merely considered as an alcohol, ordinary grain spirits should be considerably more toxic than wood spirits. But ethyl alcohol is combustible in the organism, while methyl alcohol is incombustible, so that the latter actually has the higher toxicity. Methyl alcohol is indeed slowly oxidized to formic acid, and if alcohol behaved in the same manner it would be slowly burned to acetic aldehyde and acetic acid. As a matter of fact, however, it is quickly oxidized to CO_2 and water, so that it is comparable with sugar in this respect. When in the chronic consumer of ordinary alcohol the ability of the organism to oxidize it becomes forfeited toxic phenomena promptly appear. The ability of the individual to oxidize methyl alcohol to formic acid undoubtedly varies. Harnack appears to believe that methylism is really formic acid poisoning, and it follows that when methyl alcohol is taken with relative impunity, which often occurs, there is deficient oxidation. Formic acid is the only one of its series which is at once an acid and an aldehyde, and on this property its high toxicity appears to depend. If the formic acid action can be eliminated, methyl alcohol is toxic only as an alcohol, and hence less toxic than ethyl alcohol. All the alcohols appear to be neurotropic and neurotoxic, due, perhaps, to the fact that they are lipoid dissolving agents, and this property increases with the number of carbon atoms as already stated. But the special toxicity of wood alcohol to the optic nerve act must rest on some peculiarity of oxidation in these tissues.

The Combined Operation in Cancer of the Rectum.—Riese writes at length on this subject. Six years ago Kraske abandoned his original radical sacral procedure for the combined method, and for the past few years we have not been hearing very much about results in this field. The very high operative mortality from this sort of intervention is not improving and a death rate of nearly 50 per cent. in some series in an operation apparently incapable of further technical development is not likely to be made the occasion for publication of material. The author, despite an operative mortality of 45 per cent., lost only one of his last seven patients, which encourages him to report his cases. Naturally, if this ratio or anything like it could be maintained, the results would compare very favorably with the latest results in Wertheim's radical operation for cancer of the uterus. Moskovicz has a recent series of sixteen cases with four deaths. It is too soon to compute any results for the combined operation in Germany. Rotter, the oldest operator by this method, has one patient living and well seven years after operation and two who have passed the three-year limit. Hochenegg and half a dozen other operators are still doing the old Kraske operation, and the first named has accumulated a great material, but aside from some ten men who do either the old or more recent operation the German surgeons do not care to use radical methods for rectal cancer. In other countries the radical operators are the Mayos in America, and a few French, Swiss, and Japanese surgeons. The problem becomes quite different, however, if we look upon it not so much as a systematic attempt at radical cure, but as suited to prolong life for a certain time and make life endurable. Hence whenever a cancer by reason of its seat cannot be removed from below, whenever it is practically a cancer of the colon, and in other conceivable conditions it may be justifiable in particular cases to operate from above and behind the growth by the combined method. The author has operated only eleven times by this resource, which is, of course, a very different procedure from the routine sacral operation as done so extensively by Kraske and Hochenegg.

The Large Flaccid Abdomen in Infants.—A. B. Marfan distinguishes two types of large abdomen that are found in nursing infants; the tympanitic, which is hard, distended, and sonorous on percussion, and the relaxed, which is soft, depressible and dull on percussion. The tympanitic abdomen is preceded or accompanied by diarrhea or severe constipation. The flaccid abdomen is accompanied by anorexia and dyspeptic symptoms that are not marked. The walls are thinned and atonic, and eventrations are seen between the recti and the lateral abdominal muscles. Measurements of the intestines have shown that they are much elongated and the walls thinned and atonic. It is this elongation and increase in size of the bowels that causes stretching of the atonic abdominal muscles. The condition occurs generally with the symptoms and deformities of rickets, and the author believes that the same causes that bring about rickets are responsible for this type of enlarged abdomen.—*Archives de Médecine des Enfants.*

Little's Disease.—V. Hutinel and L. Babonneix state that Little's disease is a congenital condition the causation of which is not well understood. Inasmuch as the disease appears immediately after birth and is essentially chronic there have been few autopsies, and these have been performed when the patient reached a late stage of childhood or even adult life. Hence the pathology and physiology are not well understood. The disease manifests itself in a condition of stiffness of the muscles, contracture, slight mental changes, convulsions, etc. It is especially frequent among premature children. It seems generally to be caused by the operation of several factors. These are mainly of a toxic, infectious or mechanical nature, in the last case arising from injuries at birth. The toxic and infectious causes may be operative before conception, as in syphilis; in the mother during pregnancy, as in alcoholism, and in the fetus before or after birth. Emotional causes have probably no real agency in the production of the disease. Infectious diseases and digestive disturbances in early life increase the already present failure of nutrition. All of these causes operate through the nervous tissues, the lesions being those of blood-vessel change, hemorrhage, and sclerosis. Complicated labor, premature labor, and asphyxia are given as causative factors. As to pathology there are always cerebral alterations about the upper Rolandic area and in the pyramidal tracts which differ in no way from those present in other varieties of cerebral paralysis. —*Annales de Médecine et Chirurgie Infantiles.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

FIGURE.—An applicant may be erect, vigorous, muscular, and compact, or, on the other hand, he may be so stooped, frail, thin, emaciated, fat, or deformed that he is not entitled to life insurance. If, however, the applicant is thin, but still healthy and wiry, or if he is an overweight but muscular and with fat evenly distributed, or if he is stooped from the habit of carrying himself in that way or as a result of his occupation, these modifying facts should be clearly described in the medical report.

GENERAL APPEARANCE.—The general appearance of a man is an important matter and a close, keen inspection may enable the examiner to recognize slight signs of existing physical weakness, previously unsuspected. Examiners of considerable experience and observation place due confidence in the conclusions deduced from a careful survey of the general aspect of the applicant, and though they may be at a loss at times to give an adequate reason, their impressions, nevertheless, are entitled to respect. In other words, a case is occasionally encountered in which the appearance indicates more or less ill health and yet it is difficult or impossible to locate the focus of the disturbance, no matter how carefully and rigidly the examination is made. Under such circumstances the examiner is justified in recommending rejection or postponement on the ground that the unfavorable appearance is the result of some obscure or latent disease.

The condition known as a "healthy appearance" cannot be defined clearly, for while it is evident to all that a strong vitality and a robust constitution is usually indicated by the complexion and tone of the tissues, there are several grades of appearance between that of the clean-cut, robust individual with an abundance of muscle and one who is uninsurable on account of the presence of any earmarks of disease. A company which limited its business to athletes and risks first class in every respect would find its field very limited and needlessly so, as applicants of this kind have no better longevity as a class, other things being equal, than those of average health and who, perhaps, are sedentary in their habits to a moderate degree and consequently without much muscular development or signs of unusual vigor.

The salient points to be observed in estimating the quality of the risk from the general appearance are described in the following paragraphs:

The Term "Fair."—The use of the term "fair" is strongly condemned: it should never be employed in reference to the general appearance or in any other part of the medical report. It is too elastic and ambiguous and has no decided significance except to the one who uses it, and he will therefore always be requested to explain his understanding of the word as it applies to the individual case through further correspondence. The examiner has the advantage of inspecting the applicant personally, and he is expected to determine whether the risk is acceptable or not and, further, to express his opinion in a way that will leave no doubt at the home office. If the examiner cannot form a definite conclusion, the medical directors who must judge the case entirely on paper will be in a poor position to do so.

Pallor.—When the applicant is noticeably pale, ascertain whether it is due merely to indoor occupation or an inherited complexion, or to anemia or some other disease, and be sure to report the findings explicitly.

Whenever the word "pale" is used in the report, the cause should be given at the same time, as the pallor may or may not be significant.

A pale face with dark rings under the eyes may simply be an indication for a needed rest and change of air. If, however, the pallor is accompanied by a tired look, a dull skin, a gray drawn countenance, and gray hair, it may denote that continued hard work and worry have brought on premature old age and should prompt the examiner to make a search for thickening or hardening of the arteries. In either event, the pallor should be reported and the cause clearly described.

Plethoric Appearance.—Do not make the mistake of judging that the fresh complexion or even a full, flushed face is always due to plethora. Exposure to air will cause this even to the extent of dilated capillaries. On the other hand, it is true that the dilated capillaries may arise from high living with too much food and wine. In the latter class the examiner should consider the matter carefully before referring to the condition as one of "apoplectic tendency" unless it is sufficiently well marked.

It should always be remembered that some of those addicted to the excessive use of alcohol have very little color as a result—in fact, they may have a full, flabby, pale face, but they are also apt to have puffiness under the eyelids, a glassy, watery eye, and a dull, nervous expression. Acne rosacea, though frequently associated with excessive alcoholic habits, is also common in digestive disorders and during the menopause in women.

Jaundice or Sallowness.—Either of these conditions should lead the examiner to inquire as to whether there is any history, past or present, of gastrointestinal disorders or gall-bladder troubles, and the result should be clearly stated in the report.

General Build.—Observe whether the applicant is muscular, thin, corpulent, or flabby. If he is an overweight, state if there is any excessive accumulation of fat on the abdomen.

APPARENT AGE.—A man's prospects of life are not gauged by his age in years, but rather by the actual age of his tissues which is usually shown by the general appearance and by the condition of his arteries. Some people are relatively older at 45 than others at 55 or 60, the decline of life beginning at periods which vary with the amount of inherited or acquired vigor of the individual. Premature senility is a distinctly unfavorable feature and a condition which will probably be encountered more often in the future than in past years on account of increasing business and social stress with the attendant degenerative changes. When there is a marked discrepancy between the given and apparent ages, it should be reported. A difference of a comparatively few years, however, may be due to an unkempt appearance, the same individual looking considerably younger after a visit to the barber and the wash basin. Furthermore, in doubtful cases, where the discrepancy is a slight one, there would be quite a difference in opinion among several observers as to whether or not the applicant looks older than the given age.

Another question arising when the applicant looks older than the given age is whether or not

he has given a younger age than the true one in order to obtain a policy with a lower premium rate than he is entitled to.

RACE.—Do not confuse race with nationality in answering this question. It is a common error to state that the applicant is "American," the examiner seeming to forget that this answer does not convey the information to the company as to whether the proposer is a white, negro, mulatto, or Indian.

The Texas Association of Medical Directors.—At a meeting of this association held in San Antonio, February 20, 1912, the following officers were elected: *President*, Dr. John S. Turner, Dallas; *Vice-President*, Dr. Whitfield Harral, Dallas; *Secretary* and *Treasurer*, Dr. M. M. Smith, Dallas. It was decided that all of the officers should be residents of the same town, in order to facilitate frequent conferences. The association discussed many insurance topics of great interest and adjourned to hold its next meeting during the session of the Texas State Medical Association at Waco, in May, 1912.

Injury, Paresis, and Life Insurance.—Sir George H. Savage states that recently a very practical point has arisen in relationship to the part that injury may play in the production of general paralysis. In questions of compensation for injuries leading to death and also in cases of life insurance it may be contended that injury alone would not have caused the disease. The great majority of authorities look upon general paralysis and locomotor ataxia as almost certainly associated with, if not fully resulting from, syphilis. Yet the author finds that even such an authority as F. W. Mott hesitates when asked if it is impossible for general paralysis to arise from accident alone. Both observers agree that in a very large majority of cases of general paralysis syphilis of long standing can be established, but that this disease alone is not the only factor.

The question of heredity comes in, just as with alcoholic poisoning certain persons suffer in their brains while others do so in their general viscera, so with syphilis; in some the stress of the disease falls upon the nerve centers, while in others it selects other parts such as the skin or the bones. Though syphilis is most commonly associated with general paralysis, yet it requires other elements to start the disease. The author believes that a meat diet and alcohol are factors in many cases. Syphilis seems to ripen the brain for decay, and any accident from within or from without may lead to decay. The following illustrative case is mentioned: A man, who many years before had syphilis, was properly treated, and has been a healthy man, receives a blow on his head, which renders him insensible. He may recover from this, but within a few months some alteration is noticed in his conduct. If in the army or navy he gets into trouble by faults of irregularity or unpunctuality. He is irritable and forgetful; slowly the other signs of general paralysis appear and he is invalided. A claim is now made for disability depending on accident. Without the previous syphilis he would not have developed general paralysis, but without the accident he might never have developed it, or, at any rate, not for years.

In the author's opinion the man ought to be treated as if the accident were the efficient cause of disablement. In the same way in cases in which it is a question of life insurance, it is presumed that a man who has had syphilis would have some addition made to his premium, but if he is following a life which is more than usually associated with risk of even slight accidents, such as being in the army or navy, the author believes a good deal ought to be added. He knows of no cases which have actually arisen in relationship to these points, but there have arisen cases in which pension questions had to be considered.—*Lancet*, February 3, 1912.

Injuries of the Spleen and Their Consequences.—Knepper says that the spleen, because of its smaller size and well protected situation, is not as exposed to injury as the liver. Lately, however, injuries of the spleen have assumed an important position in accident insurance because of the possible relation between leucemia and trauma of the spleen. Usually because of its relations to the diaphragm, left kidney, lung, intestines, and stomach, the spleen is seldom injured alone. Being completely covered with peritoneum, injuries of the spleen mean serious peritoneal complications; moreover, because of its small size, there is always a possibility of a prolapse of the spleen through an external abdominal wound.

Penetrating wounds of the spleen are no longer looked upon as necessarily fatal, surgeons having learned to stop the considerable resulting hemorrhage by packing, ligating, etc. Moreover, it has been shown that parts of the organ may be removed without compromising the vitality of the remainder. It is still undecided whether a healthy spleen may be injured by indirect force resulting from a fall, blow, etc. If the organ has been changed by disease, such as typhoid fever, malaria, hepatic cirrhosis, etc., very light violence is sufficient to injure it. Rupture of the organ has in such cases followed coughing, sneezing, quick turning of the body, etc. Spontaneous rupture may occur in malaria.

A diagnosis of subcutaneous injury of the spleen must be made on the signs and symptoms of internal hemorrhage and on pain and tenderness in the splenic region. This pain radiates occasionally to the left shoulder and left arm; this, however, is not such a frequent symptom as the right shoulder pain in injuries of the liver. Occasionally the left hip is likewise painful. Increase of splenic dullness because of injury can but rarely be demonstrated. All these considerations show that the diagnosis of splenic injury is a very difficult one.

The question whether total removal of the spleen is indicated in case conservative treatment of an injury is impossible must nowadays be answered in the affirmative. Krabbel in 1899 collected fourteen cases of extirpation of the spleen, seven patients having recovered. Since then numerous other cases have been published and it is the consensus of surgical opinion that operation is indicated in most cases of splenic injury, and extirpation of the spleen should be performed in every case in which the injury has been so severe as to make it probable that necrosis of the organ will result. Knepper names various references to support this opinion.

Among the consequences of splenic injury, peritonitis from infection or from necrosis of the organ is first to be considered. Localized infection may occur and thus compel a valuation of the amount of injury and the adjudgment of a corresponding indemnity. A wandering spleen may but rarely be accounted for by injury alone; any existing predisposition in this respect, however, may be easily exaggerated by an accident.

The question of the development of leucemia after splenic injury is a most important one and various views are entertained in regard to it. Ebstein says that the possibility of such development has been admitted long before the appearance of accident insurance by such men as Virchow, Mosler, etc. Ponfick has reported a case of leucemia following an injury in which scars following the trauma were discovered at the autopsy. Stern correctly says that we do not yet understand the possible causal relation between trauma and leucemia, but we must not allow an injured person to suffer, because of our ignorance, the loss of an indemnity possibly due him.—*Zeitschrift für Versicherungs Medizin*, December, 1911.

Book Reviews.

A Handbook of Health. By Woods Hutchinson, A.M., M.D. Sometime Professor of Anatomy, University of Iowa; Professor of Comparative Pathology and Methods of Science Teaching, University of Buffalo; Lecturer, London Medical Graduates' College and University of London. Author of "Preventable Diseases," "The Conquest of Consumption," etc. Price $1.25 net. Boston and New York: Houghton Mifflin Company, The Riverside Press, Cambridge, 1911.

The handbook is written in the same trenchant and happy style that has characterized the previous books of this author. The subjects of food and drink, air, skin, muscles, nerves, exercise and growth, the special senses, the speech organs, and the teeth are all lifted out of the ordinary rut of dullness by the writer's fresh and original manner of handling them. Chapters are also devoted to the subject of infections and how to avoid them, and to accidents and emergencies. In his foreword the author summarizes his aim when he speaks of his purpose "to write a little handbook of practical instruction for the running of the human automobile, with just enough description of its machinery to enable a beginner to fuel it, run it, and make roadside repairs." As far as possible the text embodies positive rather than negative suggestions and advice. The volume is copiously illustrated, and its value is enhanced by a full index.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series, Vol. XVI. Skinko-Styrants Washington, 1911.

In the report of Lt. Col. Walter D. McCaw, librarian, it is stated that this volume contains 9,890 author titles representing 4,670 volumes and 10,786 pamphlets. It also contains 3,892 subject-titles of separate books and pamphlets and 24,135 titles of articles in periodicals. The Surgeon-General's library now contains 170,690 bound volumes and 315,494 pamphlets.

Consumption, Its Prevention and Treatment. By E. W. Diver, M.D. Second Edition. Price 2/6 net. London: John Bale, Sons & Danielsson, Ltd., 1911.

This little volume, dedicated to the author's colleagues who, in the early days of the fight against tuberculosis, faced with him the peculiar difficulties associated with the introduction of sanatorium treatment into England, is primarily intended for patients who desire to enter the sanatorium and to prepare them for the discipline essential to the successful treatment of tuberculosis. The book describes the various phases of prophylaxis, rest, exercises, food, and recreation in vogue in all well equipped and well conducted sanatoria. It is embellished with a few illustrations, the most interesting of them being of a revolving sleeping chalet. The volume would answer its purpose admirably were it not for the unfortunate tendency of the author to quote and describe cases. Particularly out of place seems to be the citation of a case which ended fatally because the patient did not enter the sanatorium in time. The author insists on having the temperature taken by rectum and by the patient himself. While the taking of the rectal temperature by physicians for diagnostic purposes is of course more accurate and hence more commendable, in this instance the reviewer questions the advisability and the necessity of this procedure as a routine method to be carried out by the patient several times daily. Aside from these little blemishes and the unscientific term of "tubercular" instead of "tuberculous" when referring to a disease due to the bacillus of tuberculosis (an error which the author may remove from future editions), the book is excellent and may safely be handed to the prospective sanatorium patient.

Die Gicht und ihre Therapie. Mit besonderer Berücksichtigung der Diatetik. Von Prof. Dr. A. Schittenhelm, Erlangen, und Privatdozent Dr. J. Schmid, Breslau. Zweite, erweiterte Auflage. Price 1.8 marks. Halle a. S.: Carl Marhold Verlagsbuchhandlung, 1911.

This admirable little monograph gives a complete résumé of purin metabolism and its disturbances in gout. Discussion of treatment follows the presentation of the pathology of this disease, dietetic, medicinal and physical therapeutic methods being fully described. Among the latter the use of radium emanation in gout therapy is given much space. The booklet should prove of great interest to American internists, as the medical literature in the English language has not kept up with the progress made in Germany in the study of the etiology, diagnosis, and especially the treatment of gout.

Scientific Features of Modern Medicine. By Frederic S. Lee, Ph. D. Dalton Professor of Physiology, Columbia University. Price $1.50. New York: The Columbia University Press, 1911.

This volume consists of a series of lectures delivered during the past year. These lectures are intended to show how the medical practice of the present day differs from that of the past. The lectures deal with: The normal human body; The nature of disease, and the methods of diagnosing disease; Methods of treating disease; Bacteria and protozoa, and their relation to disease; Treatment and prevention of infectious diseases; The problem of cancer, and other problems; Features of modern surgery; The rôle of experiment in medicine, and the public and the medical profession. It is to be hoped that the educated layman, for whom the lectures were specially designed, will "read, mark, learn, and inwardly digest" the wholesome mental pabulum here supplied by the author. The book is well written, and the language is not too technical.

Thérapeutique Chirurgicale et Chirurgie Journalière. By G. Phocas, Professeur de Clinique Chirurgicale à la Faculté de Médecine d'Athènes; Ancien Professeur Agrégé de la Faculté de Médecine de Lille; et J. Barrozzi, Ancien Interne des Hôpitaux de Paris. Lauréat de la Faculté de Médecine de Paris. Second edition with 630 figures in the text. Price 16 fr. Paris: Vigot Frères, 1912.

The first edition of this work was written by Phocas and appeared in the collection of the "Manuels de Thérapeutique Clinique," edited by Prof. Lemoine of Lille. In the second edition Phocas has had the aid of Barrozzi, the author of the well-known French "Manuel de Gynécologie pratique." The Thérapeutique Chirurgicale forms a companion to the fifth edition of Lemoine's Thérapeutique Médicale et Médecine Journalière.

The second edition is a much more ambitious work, yet the main points which made the first edition so successful have been kept in mind. The authors have set themselves the very difficult task of producing a work on surgical treatment which is within the scope of the ordinary practitioner, and yet is a sound guide to the best modern surgery. Although the book is didactic in nature it appears to mirror the best practice of the day. Its strength is its advocacy and application of sound surgical principles to every day surgery.

The physician wishing to review a surgical point arising in his daily practice can turn to this work and quickly obtain precise information for forming an intelligent opinion. The descriptions of the common operations are clear, concise and accurate; the advice sound and the combination of brevity and accuracy leaves a forcible impression.

The work is divided into three parts; the first part takes up the subjects of sterilization, asepsis, antisepsis, hemostasis, anesthesia, radium, radiotherapy, fulguration, and general surgical technique, including amputations and resections; the second treats of the diseases of the tissues; the third, which forms the greater part of the work, deals with regional surgery. There are 630 illustrations in the text, the majority are diagrammatic in nature and call attention to some principle of treatment. In addition to the usual subject and author indexes there is a helpful alphabetical index.

Clinical Diagnosis. A Manual of Laboratory Methods. By James Campbell Todd, M.D., Professor of Pathology, University of Colorado. Illustrated. Second edition, revised and enlarged. Price $2.25 net. Philadelphia and London: W. B. Saunders Company, 1912.

In this volume will be found a concise statement of the more important laboratory methods, together with an aid to the interpretation of the results. The student and practitioner, as distinguished from the laboratory worker, will find the book of distinct value. Not the least of its services is the indication of the chief methods out of the enormous number provided in the larger books dealing with the subject. Among the additions in the present revision are sections on: The use of artificial light and the importance of numerical aperture in microscopic work; photomicrography with simple apparatus; the antiformin method for tubercle bacilli; detection and significance of albumin in the sputum; Tsuchiya's modification of Esbach's test; the formalin test for ammonia; Benedikt's test for sugar in the urine; volume index of red blood corpuscles; Wright and Kinnicutt's method of counting blood platelets; Harlow's blood stain; a simple technic for diagnosis of typhoid fever by blood cultures; the Wassermann reaction; and Frothingham's method of demonstrating Negri bodies in rabies.

Biological Aspects of Human Problems. By Christian A. Herter. New York: The Macmillan Company, 1911.

A pathetic interest is attached to this work, which was the last one from the pen of the late Dr. Herter, which, indeed, was left in an unfinished state by his untimely death. We are indebted to Susan Dows Herter for her skill in editing the manuscript and in thus preserving for us the seasoned conceptions of life which the profound study of biology had given the author. The scope of this volume is amply indicated by the chapter headings. The subject matter is dealt with in four books. Book I. treats of the animal body as a mechanism, and includes chapters on the mechanistic conception, growth and reproduction, and consciousness and the will. Book II. deals with the self-preservative instinct, under the following chapter headings: the instinct of survival, defences of the body, self-preservation and the mental life, and death and immortality. Book III. treats of the sex instinct, discussing sex and the individual, sex and social relations, and the male and the female mind. Book IV. takes up the fundamental instincts in their relation to human development, and has chapters on the arts and religion, education and the future of the race, and the fruits of education. The philosophy of the author may be discerned in the aim to seek a biological basis for human conduct, but other guides such as those furnished by religion and metaphysics are not pushed aside. This volume is one which may be read with profit by everyone interested in human welfare.

The Control and Eradication of Tuberculosis. A Series of International Studies; by Many Authors. Edited by Halliday G. Sutherland, M.D. Edinburgh and London: William Green & Sons, 1911.

The somewhat pretentious title of this book is apt to prejudice one against it and this prejudice becomes somewhat justified when one realizes the large social aspect of tuberculosis which, in spite of the multiplicity of subjects treated by 32 different contributors, has received but very scant recognition.

The book is primarily intended as a tribute to Dr. R. W. Philip of Edinburgh, the founder of the tuberculosis dispensary system. The Edinburgh system, its principles and methods, are described in chapter 3 by Dr. Sutherland, a pupil of Philip. This system of controlling tuberculosis does not differ from the one in vogue in this country, *i. e.*, the tuberculosis dispensaries known in the City of New York as clinics for pulmonary diseases, sanatoria, the reporting of the disease, hospitals for advanced cases, and farm colonies. To an American reader the description of the construction of a sanatorium without outdoor sleeping devices is somewhat disappointing. Of course, it is possible that the Edinburgh climate does not permit this practice, almost universal in the sanatoria of the United States.

Professor Beranack devotes an interesting chapter to the theoretical and practical basis of tuberculin treatment. Very striking on this subject is his introductory sentence: "In spite of much research during the years that have elapsed since Koch's discovery of tuberculin, we know very little of its chemical composition, of its mode of action, or of the degree of immunity which it confers upon man or upon animal." In his conclusion on tuberculin treatment he is more positive as to its therapeutic value but urges physicians to familiarize themselves most carefully with the method of tuberculin treatment before resorting to it. He limits the use of tuberculin to cases of the first and second stages and uses a product of his own which he claims is less rich in albuminous substances.

Malcolm and Galbraith contribute an interesting article on the physiology of digestion in its application to dieting in tuberculosis. The final paragraph of Mackenzie's contribution on the English method of the administrative control of tuberculosis deserves particular mention, for it deals with the insurance against tuberculosis, and he very pertinently says: "With the National Insurance Bill there enters a new factor in the administrative control of tuberculosis. If this bill becomes law, the acceleration of the growth of administrative control will be enormous, for the bill itself provides new funds, and, incidentally, large grants outside the bill have been promised." According to this bill "there is, first, the sum (estimated at about £1,000,000) formed by the contributions of insured persons. This will be available each year for the appropriate treatment of insured persons alone. Second, there is a building grant of £1,500,000. This is to be distributed by the local government boards of the respective counties in "making grants" for the "provision of sanatoria and other institutions for the treatment of tuberculosis or such other diseases as the Local Government Board with the approval of the Treasury may appoint." The administrative measures for the control of tuberculosis in New York City are described by Dr. Hermann M. Biggs, the originator of them.

In the chapter under Tuberculosis Laboratories, there is found the last contribution of the late Professor Arloing of France, under the title of "Antituberculosis Vaccination of Bovines." The remainder of the book describes the antituberculosis movements in Canada, South Australia, South Africa, India, Germany, Austria, Russia, Italy, Switzerland, the Netherlands, and the Scandinavian countries by representative specialists of those countries. The United States has the distinction of having three other contributors besides Dr. Biggs. Dr. Lawrason Brown describes the antituberculosis movement in the United States in general; Dr. Vincent Y. Bowditch the work in Massachusetts, and Dr. W. Chas. White the work in Pittsburgh.

The last chapters are devoted to the enumeration of Dr. Philip's writings and to reproductions of some of his principal addresses. The reviewer cannot refrain from quoting here what this veteran phthisiotherapeutist has to say in one of them on the value of laboratory tests (opsonic index) as compared with clinical phenomena: "Speaking as a clinician, with prolonged experience in the use of tuberculin, may I say that I am unable to acquiesce in the proposal to replace thorough clinical observation by reference to one set of phenomena, namely, those of the blood." In another address Dr. Philip emphasizes as the key to success in the antituberculosis campaign "the harmonious coordination of all well directed measures."

It is a pity that so valuable a book, comprising 450 pages, should be so lightly and carelessly bound.

Die Ursachen des chronischen Magengeschwürs. Von Dr. J. W. Th. Lichtenbelt. Preis, mark 3. Jena: Gustav Fischer, 1912.

Lichtenbelt first repeated the experiments of Dr. W. van Yzeren. The latter was able to produce chronic gastric ulcers in rabbits by destroying the vagi below the diaphragm. These ulcers were usually found near the pylorus. These experiments were confirmed by Lichtenbelt. In the second part of his monograph the author investigates the interesting question whether narrowing of the pylorus causes the formation of gastric ulcers. It is well known that in cases of ulcer there occurs frequently pylorospasm, causing retention and hyperacidity. This is often followed by hemorrhage. Through his experiments Lichtenbelt was firmly convinced that contractions of the muscular wall of the stomach cause ulceration. The hypertonic condition of the sphincter pylori is, as experience teaches, an important remote cause of ulceration. Thus in rabbits the application of a simple ligature to the pylorus will often cause the development of ulceration. The present monograph on the causes of the chronic gastric ulcer can be warmly recommended.

Clinical Immunity and Serodiagnosis. By A. Wolff-Eisner, M.D., Berlin. Translated by Ray W. Matson, M.D., Professor of Histology, North Pacific College of Dentistry and Pharmacy, Pathologist to Multnomah County Hospital, Physician to Portland Free Tuberculosis Dispensary. Revised and Edited, with a special introduction by the author. Price $2.50 net. New York: William Wood & Company, 1911.

The effort of the clinician to familiarize himself with recent advances in immunity is apt to be hindered by the fact that a large literature is in foreign languages and most of the publications are lengthy and detailed, dealing largely with the biological aspects of the questions. Wolff-Eisner's work aims to make "the whole science of immunity so simplified in technique and terms as to enable the practitioner to apply modern diagnostics and therapeutics in his work," and this translation is therefore a timely addition to the literature.

The author has attempted simply to point out in a general way the clinical and diagnostic significance of modern immunity research. Phagocytosis, agglutinins, lysins, complement fixation, and vaccine therapy are briefly but clearly discussed. Hypersensitiveness, the so-called anaphylaxis, is dealt with at some length. He presents good evidence to show that this peculiar reaction of the body to heterogeneous albumins may be at the basis of eclampsia, the problems of infant feeding, and the mystery of some idiosyncrasies for foods. A supplemental chapter on salvarsan has been added.

The practitioner will find the volume a source of absorbing interest and great enlightenment, and though he may not himself perform the tests outlined in the text he will be able better to interpret the results and to use them for the solution of the problems that come to him in clinic and practice.

The New Physiology in Surgical and General Practice. By A. Rendle Short, M.D., B.S., B.Sc. (Lond.), F.R.C.S. (Eng.), Hon. Surgical Registrar, Bristol Royal Infirmary; Senior Demonstrator of Physiology, University of Bristol. Price $2.00 net. New York: William Wood & Company, 1911.

This is a useful little volume, containing an account of some of the recent work in physiology, and explaining in simple language its relation to the problems of medicine and surgery. Theories and guesses are omitted, and the author has sifted out from a large mass of details that which seemed likely to be of value in diagnosis and treatment. The subjects discussed are: The thyroid and parathyroid glands; the pituitary gland; studies in digestion and absorption; the applied physiology of blood-pressure; the hemorrhagic diathesis; the physiology of uric acid and other urinary deposits; acidosis, acetonemia, and diabetes; immediate and remote poisoning by chloroform; nerve injuries; the surgical physiology of the spinal cord; cerebral localization; and the action of cutaneous anesthetics. Besides its practical value the book will prove an acceptable supplement to any of the modern works on physiology.

Des Fractures du Rachis Cervical Sans Symptômes Médullaires. By Jules Bœckel, Chirurgien de l'Hôpital civil de Strasbourg; Correspondant de l'Académie de Médecine et de la Société de Chirurgie de Paris; Lauréat de l'Institut; and André Bœckel, Ancien interne des hôpitaux de Nancy; Aide de clinique à la Faculté de Médecine de Nancy; Lauréat de la Société de Chirurgie de Paris. 14 Observations and 20 Original Radiographic Plates. Price 8 fr. Paris: Felix Alcan, 1911.

The monograph is based on 89 observations, including 15 original cases. It opens with a short summary on the gravity of cervical fractures in general and passes to an anatomical description of a specimen of an old fracture of the third cervical, which fracture had given no cord symptoms during life. According to the authors Sonnenburg was the first to call attention to this condition in the living. The most important portion of the work is given to the study of fractures of the bodies of the cervical vertebræ in which there are no cord symptoms. The cause, mechanism, site, symptoms, diagnosis, course, and late complications are fully and ably discussed. Separate chapters are devoted to fractures of the axis and atlas; to fractures of the posterior arc and spinous processes, and to the prognosis, therapeutic indications, and treatment. The seventh chapter takes up the medicolegal aspect; the eighth, cervical fractures caused by firearms. The conclusions are terse and forcible; following these is a chronological list of observations cited in the text, a bibliography, and a series of twenty original radiographic plates. The authors conclusively prove that fractures of the cervical spine can occur without producing the slightest symptom referable to the cord. Such fractures until quite recently have been overlooked or only discovered after the onset of later complications. The importance of the prompt recognition and the urgency of the treatment are insisted upon. In a group of thirty-six cases treated before the radiographic era twenty-two cases died; 61.5 per cent. mortality. In thirty-one cases since this era there were no deaths. The work is a valuable contribution to the traumatic surgery of the spine. A study of its contents will be found most helpful to the surgeon in dealing with a condition which is always fraught with difficulty and danger.

A Handbook of Practical Treatment. By many writers. Edited by John H. Musser, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and A. O. J. Kelly, A.M., M.D., late assistant Professor of Medicine in the University of Pennsylvania, Philadelphia. Volume III. Price $6.00. Philadelphia and London: W. B. Saunders Company, 1912.

The representative character of this work, which has been so amply demonstrated in the two volumes already published, is again manifested in the concluding volume. This deals with the constitutional diseases, the diseases of the respiratory, digestive, urinary, and nervous systems, and of the muscles and mind. A review of this volume would be inadequate without mentioning the names of its numerous authors. T. C. Janeway contributes the article on diabetes mellitus, and T. B. Futcher that on diabetes insipidus, together with the articles on arthritis deformans, gout, lithemia, uric-acid diathesis, and chronic articular rheumatism. A. W. Hewlett writes on obesity, inanition, scurvy, Barlow's disease, rickets, and osteomalacia. The surgical treatment of arthritis deformans is dealt with by J. E. Goldthwaite. C. W. Richardson contributes the article on the diseases of the nose and throat, and G. Hudson-Makuen that on speech defects. H. Jackson discusses bronchopneumonia, chronic interstitial pneumonia, pneumonokoniosis, abscess of the lung, gangrene of the lung, and tumors of the lung. The articles on the diseases of the bronchial tubes, asthma and hay fever, and pulmonary emphysema are written by J. H. Musser. J. E. Talley is the author of those on hemaptysis, pulmonary edema, embolism, thrombosis, and infarction of the lung, congestion of the lungs, and atelectasis, or pulmonary collapse. The treatment of tracheal and bronchial obstructions is presented by Chevalier Jackson. S. Robinson deals with the surgery of infectious diseases of the lung and pleura. The article on diseases of the pleura is written by J. H. Musser and E. H. Goodman. The diseases of the respiratory system in children are discussed by I. A. Abt. M. H. Cryer writes on the general hygiene of the mouth and disorders of the teeth and gums (including cancrum oris and Ludwig's angina). The article on diseases of the mouth, tongue, and salivary glands is contributed by J. D. Steele and G. M. Piersol. B. W. Sippy discusses the diseases of the esophagus and of the stomach, and the surgery of the esophagus is dealt with by C. H. Mayo. W. J. Mayo contributes the article on the surgery of the stomach and duodenum. The diseases of the intestine are discussed by W. A. Edwards, constipation is discussed by J. H. Musser and G. M. Piersol, and intestinal obstruction and the surgical treatment of constipation by J. G. Clark. Maynard Ladd writes on the gastroenteric diseases of infants and children, C. G. Stockton on diseases of the liver, Roswell Park on the surgery of the liver and gall-bladder, J. M. Anders on the diseases of the pancreas, B. G. A. Moynihan on the special circumstances in operations upon the pancreas, J. Sailer on visceroptosis, J. H. Gibbon on the surgical treatment of visceroptosis, and J. H. Jopson on peritonitis. The article on diseases of the genitourinary system is presented by E. Le Fevre, and that on surgical indications in urinary tract disease by G. L. Hunner. W. G. Spiller writes on diseases of the nervous system, C. H. Frazier on surgical aspects of certain lesions of the central nervous system, E. W. Taylor on diseases of the spinal meninges, spinal cord, and spinal nerves, J. Homans on the surgical treatment of diseases of the spinal cord, F. X. Decum on the treatment of the so-called functional nervous diseases, and H. C. Moffit on vasomotor and trophic diseases, and diseases of the muscles. The article on mental diseases is contributed by J. H. Lloyd. It would be difficult to single out any one of the above articles for special commendation, so admirably do they all serve to make this work one of definitely practical value to the general practitioner, one that he may turn to for guidance in a wide range of activities. The art of the publisher has vied with the skill of the authors in producing a work which will undoubtedly earn a wide popularity.

The Diagnosis of Nervous Diseases. By Purves Stewart, M.A., M.D. (Edin.), F.R.C.P., Physician to Out-Patients at the Westminster Hospital, Joint Lecturer on Medicine in the Medical School, Physician to the West End Hospital for Nervous Diseases and the Royal National Orthopedic Hospital, Consulting Physician to the Central London Throat Hospital. Third Edition, Revised and Enlarged. Price $4.50. New York: E. B. Treat & Co.; London: Edward Arnold, 1911.

There are few books in any language that deal exclusively with the diagnosis of nervous diseases. The fact that French and German translations of the last edition of this work have appeared indicates that it has supplied a distinct want. The author has in the present revised and enlarged edition succeeded in writing an eminently practical volume in which the subject matter is approached from the clinical standpoint. This subject matter is included under the following headings: anatomy and physiology, method of case-taking, coma, fits and other convulsive phenomena, involuntary movements, aphasia, disorders of articulation, cranial nerves, pain and other abnormal subjective sensations, abnormalities of sensation—hyperesthesia, paresthesia, anesthesia, organic motor paralysis of upper neurone type, organic motor paralysis of lower neurone type, recurrent and transient palsies, incoordination postures and gaits, trophoneuroses, reflexes, affections of the sympathetic and angioneuroses, the neuroses, electrodiagnosis and electroprognosis, the cerebrospinal fluid, disorders of sleep, and intracranial tumors. The author shows an exceptional mastery of his subject and of the power of expressing his meaning clearly and succinctly. The numerous illustrations are helpful, and the paper, typography, and binding leave nothing to be desired.

Society Reports.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held February 10, 1912.

THE PRESIDENT, DR. REYNOLD WEBB WILCOX, IN THE CHAIR.

Address of the President.—Dr. WILCOX, on entering upon a second term as president, made a brief address in which he reviewed the work accomplished by the Association in the past two years.

Sources of Error in the Diagnosis of Diseases of the Spine.—Dr. REGINALD H. SAYRE, in this paper, said that one could not observe cases of spinal disease for any considerable time without discovering that there were many conditions which presented very similar appearances. Personally, he had seen several cases of inflammation of the upper cervical spine showing many of the symptoms of torticollis, and in one of these (the fact not having been recognized that the muscular contraction present was due simply to nerve irritation resulting from an inflamed vertebral joint) preparation had been made to divide the sternocleidomastoid muscle for the relief of the deformity. In several other instances a deformity simulating torticollis had appeared after an inflammation of the middle ear, in two following an operation on the mastoid, in consequence of the second cervical vertebra having become involved; and the same might take place after tonsillitis. The pain present on motion carried beyond a certain point, the muscular spasm restricting motion of the neck, and the slight elevation of temperature should show that such cases were not torticollis, and in all those cases of disease in the first two cervical vertebræ he had observed a symptom which seemed to be typical. These patients would not lie on the back voluntarily except while holding the head in the hands with great caution, as this position caused much pain, which was due to pressure on the inflamed surface. Torticollis might be regarded as a scoliosis affecting the neck, and just as the diagnosis between torticollis and spondylitis was in some cases confusing, so scoliosis and spondylitis might be at times confounded. While in spondylitis, or Pott's disease, the anterior portion of the vertebral bodies was usually affected, not infrequently the spot of inflammation was on one side; so that a lateral, and not an anteroposterior, curve was produced. It was most important not to mistake these lateral deviations for rotary lateral curvature and institute a course of gymnastics in a condition requiring the most absolute restriction of motion. Here, again, the presence of muscular spasm and slight elevation of temperature, as well as the use of the *x*-ray, would serve to clear up the diagnosis.

Having referred to the angular deformity sometimes caused by aneurysms, in consequence of erosion of vertebræ, and the fatal results liable to ensue, from efforts at forcible reduction under the impression that the angularity was due to tuberculous ostitis, the speaker said that relaxation of the pelvic ligaments at times gave rise to pain and disability which might easily be mistaken for those due to a lumbar spondylitis. In these cases, however, it was most uncommon to have any elevation of temperature, and the history should clear up the diagnosis. Many patients suffering from neurasthenia had painful spines, but the sensitiveness of these spines to light touch was quite marked in contrast to the slighter tenderness, as a rule, in the tuberculous spine. In the latter, acute pain was occasioned when motion was given to the inflamed joint, while, in contrast to its rigidity, the neurasthenic spine could be bent in almost any direction. Again, in the neurasthenic spine the temperature was frequently subnormal, while in the tuberculous it was almost always slightly elevated. More difficult of diagnosis were certain cases in women with intrapelvic disorders. Here there were the careful tread, a position suggesting a constant colic, a general uneasy look about the whole figure, and a stoop resembling rather closely that of commencing Pott's disease in the mid-dorsal region; and when all this was accompanied, as was sometimes the case, by a spasm of some fibers of the abdominal muscles giving the appearance of a girdle about the waist, and also spasm of the erector spinæ muscles, the similarity to spondylitis became marked enough to deceive even those of experience. In this connection Dr. Sayre related cases in his own experience. One was that of a patient who five years before she consulted him had been ordered a leather jacket by a prominent physician in Philadelphia, who made the diagnosis of Pott's disease. Later she visited New York, where a college professor made the same diagnosis, which was concurred in by a physician he called in consultation. He first applied a brace of his own, and, finding that this gave no relief, used a Taylor brace. The latter also failing to give comfort, he tried a plaster jacket, which she was able to endure for some three years. After careful examination of the case Dr. Sayre came to the conclusion that her symptoms were more attributable to a uterine disturbance than to ostitis of the vertebræ, and requested a vaginal examination. He found the uterus markedly retroflexed and firmly bound down in the pelvis, and consequently referred her to a gynecologist. The latter performed an Alexander operation, and this resulted in a complete cure.

Forcible Correction of the Spine in Lateral Curvature, with Demonstration of Twenty-five Cases.—Dr HENRY W. FRAUENTHAL, assisted by Drs. H. FINKELSTEIN and ARTHUR S. UNGER, made this demonstration. In addition to the twenty-five patients themselves, numerous photographs and *x*-ray pictures illustrating their cases were shown. Dr. Frauenthal, having referred to the very great frequency of the occurrence of lateral curvature, said the subject was presented with two objects in view: (1) So that in our work along the lines of preventive medicine cases may be detected early and by proper treatment be arrested and cured. (2) To offer this over-correction method of treating badly deformed cases as a means of obtaining the quickest and best results. Incipient curvature was too often overlooked by the general practitioner, or, if recognized, considered of little importance; the parents being assured that the child would outgrow the trouble. The cases presented were patients suffering from lateral curvature which had been corrected by means of plaster jackets (not removable) applied with the patient in a recumbent position, the deformity being over-corrected after the manner of restoring club feet. This fixation in an over-corrected position was based on Wolff's law of function adaptation, according to which if any part of the anatomy is changed from the normal to an abnormal posture, and habitually used, the structures involved undergo a change, extending throughout their entire texture, in order to adapt themselves to the new position. The converse of this law was also true: If a deformity of any part is brought back to the normal and retained in this position, the parts adapt themselves to the new position.

For some weeks, Dr. Frauenthal said, he and his colleagues had been selecting those cases of lateral curvature which were quite pronounced, with rotation of the bodies of the vertebræ and with bony deformity and angulation of the ribs. As preparatory to the treatment, with a view to enhancing the flexibility of the body, there was given a preliminary course of exercies aiming at increasing the flexibility of the spine in flexion (forward bending) and hyperextension (backward bending), and also including bending to either side, rotation of the spine, and stretching the spine by means of the Sayre apparatus. The

frame employed in the over-correction treatment was similar to that of a metal bedstead, with the headpiece about 20 inches higher than the foot piece. A strip of muslin was stretched from the head to the foot of the frame, and the patient having been placed upon this, the spine was over-corrected; after which the body was held in this position by means of gauze bandages. Over the parts exposed to pressure heavy felt, about quarter of an inch thick, was placed, to prevent excoriation of the skin. Then a plaster jacket, made with bandages of various widths, was applied, and the patient was kept in position until the plaster had set and hardened; then the jacket was trimmed out at the top to prevent chafing of the axillæ, and at the bottom to prevent pressure on the thighs in the sitting posture. On the following day the jacket was cut out on the side where the convexity was situated, and the patient was directed to continue the exercises, with daily forced breathing to fill out the hollow side. When first taking up this work, the speaker continued, one was surprised at the marked improvement, and even cures, obtained in a comparatively short time—by jackets applied for only two or three weeks. In no case had skin excoriations or sloughing occurred, and the improvement was so marked after the first jackets were applied that the patients of their own accord begged for their renewal. Although the over-correcting produced a most evident and conspicuous deformity on the opposite side, the improvement so impressed the patients and their friends that the hospital's resources had proved insufficient to meet the demands upon them from this class of cases. The cases of lateral curvature requiring corrective jackets were not the mild ones, resulting from faulty posture, but those due to congenital deformities, empyema, and, more commonly, rickets and infantile paralysis. There was no doubt in his mind that the more rapidly deforming cases were most often attributable to the latter disease, and it was therefore advisable, when cases presented themselves with the extremities affected from this, that a careful examination should be made of the erector spinæ muscles, and repeated every few months. The radiographs and photographs presented, he said in conclusion, would show the improvement in the first twenty-five cases in a series of one hundred now being published.

The Operative Treatment of Pott's Disease.—Dr. Benjamin P. Farrell read this paper. While, he said, the routine had been to apply, in the case of ambulatory patients, either a Taylor brace or a plaster jacket, and a Bradford frame when the recumbent posture was indicated, with the result of a large percentage of cures, yet these forms of treatment had confessedly left much to be desired. Among the well-to-do, tuberculous lesions in the cervical and lumbar regions could be dealt with in a moderately satisfactory manner, but because of the impossibility of immobilization, the repair of similar lesions in the dorsal region, although functionally good, was usually a failure anatomically. Hence, a number of men had been led to attempt operative treatment. After referring to Lange's method of implanting tin-plated wire splints, among the objections to which were the introduction of a foreign body where none was necessary, he said it had long been known from studies on the healed kyphos that a fusion of the posterior aspect of the vertebræ through the laminæ and spinous processes was a method by which nature effected repair. Now, if the surgeon might in a few weeks accomplish the fusion which it took nature months or years to bring about, he could not well fail to stay the course of the disease and limit deformity. Thus considered, the question became simply one of determining the best technique for bridging the intervertebral spaces. Early in 1910 Dr. Farrell assisted Dr. R. A. Hibbs in the studies on the cadaver which led him to a technique which appeared to be satisfactory, both from an anatomical and a surgical point of view. While in these studies, which were carried out, with the co-operation of Professor Huntington, in the anatomical laboratory of the College of Physicians and Surgeons, it was easily demonstrable that in adult and adolescent life, there was always adequate bone in the spinous processes to make the bridge, it was necessary to await a verdict in the case of very young children, which would be based upon actual findings at the operating table. It was gratifying to be able to report now that adequate bone existed at least as early as the third year; therefore the use of autoplastic bone transplants, or any other form of foreign body, was not only unnecessary, but essentially prejudicial. At first the use of such bone transplants had been deemed requisite in the case of younger children, but since then operative experience had shown their uselessness.

Whatever might be the opinion of some regarding the reproduction of bone in this region, it was evidently that of well-qualified histologists that bone reproduction was based fundamentally upon the activity of the periosteum. It was, therefore, necessary to point out concisely the exact treatment accorded this membrane in the Hibbs operation. The main points were: the preservation of the periosteum and of the blood-supply and the prevention of hemorrhage. The first was accomplished by a median section of the membrane through to the bone on both the superior and inferior aspects of the spinous processes; the second, by a scrupulous avoidance of any separation between the muscles and the periosteum. It was a very simple matter to push back the periosteum without any tearing whatever. This produced an almost continuous periosteal layer on either side, constituting, when closed, a periosteal tube which would undoubtedly develop adequate bone tissue whether the denuded fragments were included in the tube or not. It was desirable to strip the periosteum out over the laminæ to the base of the transverse processes, because the laminæ lay very close together, and in consequence of the observance of this detail of technique a fusion took place between them which, with the bridge made by the spinous processes transposed, secured a fusion of the vertebræ from the transverse processes on one side to those of the other. It had been customary to break the spinous processes at their base, placing them in regular sequence, the apex of one leaning against the base of the next. Included in this bridge were one or two healthy vertebræ above and below, as well as the spinous processes of the diseased vertebræ. The fragments were held in place by chromic gut sutures, and the periosteal tube was closed about them. The results of 31 cases operated on to date were satisfactory, and the degree and rate of repair were indicated in a series of radiographs shown. This operation, which seemed to carry with it great advantages over the old form of treatment, had been done without mortality up to the present time. Deformity was lessened, the period of convalescence was shortened, the support was perfectly symmetrical, and the patients were relieved of all apparatus at the end of three or four months.

In addition to the radiographs mentioned, Dr. Farrell presented four patients, one of whom was a young married woman, who had been operated upon and who strikingly illustrated the excellent effect of the treatment.

Dr. Henry W. Berg said he had been particularly interested in the two cases mentioned by Dr. Sayre in which uterine trouble simulated Pott's disease and which were cured by gynecologists. In such cases the question always arose, Was the result due to the operation or were the cases instances of hysteria? In the latter class of cases any kind of operation was likely to have a curative effect. He who was capable of always excluding organic disease must be a very competent diagnostician, and Dr. Sayre had certainly shown a clear knowledge of orthopedic pathology. Many cases of torticollis were met with in general pedi-

atric practice. The torticollis of Pott's disease was very similar in its pathology to that seen in connection with meningitis; both being due to irritation resulting from pressure on the spinal nerves as they passed out through the foramina. There was one diagnostic point which he had found of great importance and one which could nearly always be depended upon. In congenital torticollis the head was drawn by the contraction of the sternocleidomastoid muscle toward the opposite side, while in that due to Pott's disease or meningitis the reverse of this was true. As to Dr. Hibb's operation, the logic of making out of the bone itself a supporting splint was apparent, and the simplicity and effectiveness of the procedure certainly appealed to one. Whether it cured the Pott's disease, however, was another question. In this affection the angular curvature was simply a result, and not the disease itself. The operation in question, it seemed to him, was applicable only to the early cases. In the bad cases he did not see how it was possible to secure the necessary support. He recalled with what horror he had first read of Collet's forcible straightening of the spine in Pott's disease. After the spinal cord had gradually accommodated itself to the V-shaped cavity, such a procedure was liable to cause a rupture of the cord; an accident attended with the most calamitous results. While successful cases were reported, he believed there had been a number of fatal cases which were not reported.

Dr. Dexter D. Ashley said that Dr. Frauenthal and his confrères had certainly presented a fine collection of cases illustrating the different degrees of deformity and the various deformities coming under this head. As to the frequency of lateral curvature, the large hospitals of this country reported it to be the most commonly met with of all deformities except bow-legs, occurring in about 3 per cent. of all cases presented for treatment. In Europe the percentage was 24 to 29, while medical examiners in the schools of St. Louis reported that 80 per cent. of the children had scoliosis, and 75 per cent. was reported from the Philadelphia schools. With this wide range of findings, it was apparent that there had been a lack of understanding and a faulty classification; functional and postural curves, slight physical blemishes, and asymmetrical development being recorded as spinal curvature. As to relative frequency in sex, after the thirteenth year the male suffered from this deformity in the proportion of one to from four to seven females. Many of Dr. Frauenthal's cases had shown improvement. As to the treatment, however, the speaker would consider Dr. Frauenthal's method, rather than Abbott's. Abbott's jackets were roomy in front, permitting the body to fall forward in flexion. The fenestra over the concavity was large, allowing free movement to the rear. Abbott's jacket was a shell in which the body was forced from side to side, and forward and backward, by means of felt pads. We should not only show improvement—any jacket would do that—but must over-correct: and, as Truslow had well said, in an article on this subject, the *x*-ray must be our last court of appeal. In his own cases he had been surprised to find a considerable remaining curve, as revealed by the *x*-ray, when, apparently, the spine was well corrected. Dr. Frauenthal set his patients up in flexion, while Abbott stood his on the head, as it were. Still, the position of flexion was the Abbott position. The device for holding this position might be selected or arranged to suit oneself. Abbott was now working on a device to give greater facility for holding the patient in this flexed position. Dr. Ashley's first conception of the technique of Abbott, as gathered at his first visit to that surgeon, had been erroneous. He noted the felt pads over the convexity, and considered it necessary to force this forward; but he found that, in consequence, his patients suffered unendurable pain. These pads were simply placed as "follow-up" pressure. Abbott had informed him that, when developing his technique, he had several times found and lost again his ability to effect an over-correction. He had had a spine go near to correction, and then drop back again to nearly the former curve, while in the jacket. He himself had also had the same experience. This was due, of course, to overlooking some point in the technique which was essential, but not appreciated. We would have to expect such experiences until our technique became more perfected. This explained why a severe curve was sometimes found to be comparatively easy, and a slight curve particularly trying to both operator and patient. He agreed with Dr. Sayre that the pendulum was now swinging in the right direction. As for himself, he was pleased to be an humble copyist or imitator of the Abbott method at present, and would not therefore attempt to introduce new features until he had convinced himself that he could do better than Abbott. It was to be remembered always that the *x*-ray was our last court of appeal; and no apparent correction in the jacket should suffice. Abbott's advice to the beginner in this work was to select a few cases with slight deformity and work with these until he had succeeded in having them over-corrected. Because of the confusion of detail in a large number of cases and the arduous labor necessary in carrying out the technique and meeting the various conditions as they arose, the handling of a few cases at a time would be much more satisfactory to physician and patient. Dr. Ashley had experienced this himself, feeling that he undertook too many cases at once to bring out his best work.

Dr. S. Kleinberg said that in a careful study of a dozen or more cases treated by the Abbott method his experience had been that the best treatment consisted of infrequent changes of the plaster jacket and progressive packing. He cut out two fenestræ, one at the back, over the hollow, and one in front, over the hollow, and packed with cotton over the dorsal convexity and the prominent ribs in front. On the theory that if a little flexion was good, more was better, he elevated both head and feet. In order to get greater corrective influence, he in some six cases inserted rubber bags over the dorsal convexity, beneath the plaster; but these he had to discard because of severe irritation of the skin. In the cases shown tonight there were no cures, and, indeed, in the short time in which these patients had been treated one could not expect to have even a completely corrected case. During a period of a little over three months he had managed to correct the deformity in one case, but even here this was not yet over-corrected.

Dr. Siegmund Epstein said that, as evidenced by the advances which had been the subject of the evening's proceedings, a new era in the treatment of spinal disease had dawned since 1910. It was true, however, that while the plaster jacket treatment of lateral curvature had been popularized by Abbott, his plan was really an evolution which was the result of previous methods. His method was not original, with the exception that he was the first to put on a plaster jacket with the patient in the position which he advocated. The various cases illustrating the over-correction treatment of lateral curvature which had been shown this evening were certainly most impressive, and when, as was the case in at least one instance, the spine was rendered pliable in four weeks, the result seemed indeed marvelous.

Dr. Sayre said he could not but express his gratification at seeing the results obtained in the four cases of Pott's disease shown which had been operated upon. Personally, however, he had not as yet made up his mind as to the advisability of operating in these cases. The question to be considered was whether a bone splint was better than an external artificial one. In regard to the treatment of rotary lateral curvature there had been in the last few years a great deal of swinging back and forth of the pendulum of

opinion between the advantages of fixation and of free exercises. Now we were getting back to the pressure treatment, such as was found so advantageous in clubfoot. It was a fact, however, that in clubfoot we were able to get a much better leverage than was possible in spinal curvature. Still, he believed that Abbott's idea of over correction and afterward repeating the pressure was a step in the right direction.

Dr. Farrell, in closing, said that the Hibbs operation was not attempted to cure the tuberculosis. It was designed simply to afford an efficient splint. By the breaking off of the spinous processes it also had the advantage of at once reducing the deformity present.

NEW YORK ACADEMY OF MEDICINE

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held February 23, 1912.

Dr. Franklin A. Dorman in the Chair.

Post-Abortive Septic Fibroid Tumor of the Uterus; Hysterectomy; Recovery.—Dr. Hiram N. Vineberg reported this case. The woman had been married two years and became pregnant for the first time. Dr. Vineberg was called into consultation on November 11, 1911, when she gave the following history. Two weeks previous to consulting him she had had pain in the lower abdomen and her family physician had diagnosed pregnancy complicated by fibroid. On November 1 she miscarried, the fetus being about three and one-half months and the placenta being retained. Immediately following this the patient went into collapse. Under vigorous hypodermic stimulation the patient rallied after about three hours. About fourteen hours after the expulsion of the fetus a well-known gynecologist removed the placenta under narcosis. On November 3 she had chilly sensations and a temperature ranging from 102° to 103° F. By November 11 the pulse reached 130 and the temperature 106.4° F. When Dr. Vineberg saw her she looked deeply septicized and her pulse was 150 and respiration 60. The uterus was found to reach to the umbilicus, the cervix was open and there was a soft mass in the uterus. Although it scarcely seemed probable that the patient would survive the operation, Dr. Vineberg took the chance and performed a hysterectomy. The operation took about forty minutes and offered no technical difficulties. The next day the change was striking; she had a temperature of 101° F., pulse 110, and a perfectly clear mind. Her convalescence was complicated by a breaking down of the wound and phlebitis in the left leg. The interesting points in this case were that so youthful a woman should have such a large fibroid, that there was absence of hemorrhage, although the growth was submucous and the occurrence of pregnancy in the presence of a fibroid growth in that location. This case emphasized in a striking manner that deeply septicized patients would withstand hysterectomy provided it was expeditiously done and without undue loss of blood with even less shock than would occur in a non-septic woman. Dr. Vineberg also referred to two cases, one in a woman 34 years of age and the other in a woman 28 years of age where large fibroids were found after abortion. Both of these tumors were of the submucous variety and neither patient had had any menstrual disturbance to indicate the presence of the growth.

Cesarean Section: Ileus, Enterectomy, Recovery.—Dr. L. J. Ladinski reported this case. The woman was 28 years of age and had had one miscarriage at the fourth month. She was poorly nourished and had a markedly kyphoscoliotic pelvis. She had been having ineffectual labor pains for some time before admission to the hospital on December 24. During the night of December 27 the pains became severe and finally cesarean section was done under ether, a living child extracted, and the patient returned to bed in good condition. On the third day her pulse became rapid and nausea and vomiting started in. The abdomen became markedly distended and the patient had cramps. In spite of medication, lavage and enemata, these symptoms continued and no effectual bowel movement could be obtained. On January 3, it was decided to explore the abdominal cavity. At laparotomy the intestines were found markedly distended, but slightly injected and a small amount of bloody serum was present in the abdominal cavity. A small portion of ileum was found covered with lymph and slightly constricted. The portion above the constriction was withdrawn and incised and a glass tube with a rubber connecting tube tied in, through which gas and feces could be expelled. A rubber tissue drain was inserted in the pelvis and the wound partly closed. Shortly afterwards the bowels moved satisfactorily and gave no further trouble. The glass tube and drains were removed forty-eight hours after the operation and the recovery was from that time uneventful. He could assign no cause for the ileus except the low vitality of the patient and the peculiar contour of the abdomen, or possibly the morphine administred several days previous to the section.

Rupture of the Uterus During Parturition.—Dr. L. J. Ladinski reported this case. The woman was 32 years of age and had had four normal pregnancies, the last child having been born four years ago. The fifth pregnancy was normal, but the presentation was transverse. Podalic version had been performed and the aftercoming head extracted with great difficulty. The third day after her delivery the writer had seen the patient at her home when her pulse was 130, temperature from 103° to 105° F., abdomen greatly distended and tympanitic and the uterus occupied by a large hard tumor extending above the umbilicus, especially on the right side. Vaginal examination revealed the presence of a large fibroid uterus. A large rent was felt in the left border of the uterine wall just above the cervix which communicated with a large cavity caused by the separation of the layers of the broad ligament on that side. The rupture was apparently subperitoneal. The patient refused to go to the hospital and to submit to a hysterectomy. The following day her condition became worse and she consented. The uterus was enlarged to the size of a four-month pregnancy and studded with small fibromata. The lower uterine segment on the left side, including the entire broad ligament extending to beyond the infundibulum was discolored, edematous, swollen, and necrotic in parts. Foul smelling pus exuded from the left broad ligament into the peritoneal cavity. A subperitoneal rupture had occurred separating the cervix from the body of the uterus posteriorly and on the left side, the rupture involving a great portion of the left border of the body of the uterus and separating completely the two layers of the left broad ligament. In the anterior wall of the cervix just above the rupture was a fibroid the size of an egg. The stump of the cervix was removed separately and the two drains were inserted into the vagina from above: one in the left pelvis and one in the right. The patient rallied for a time after an infusion, but died that evening. This case was interesting because of the impediment offered to labor by the small fibroid situated in the anterior wall of the cervix. The rupture was unavoidable and might have occurred in the most skilled hands. The only measure that could possibly have saved the patient's life was a cesarean section, which was out of the question under the circumstances.

Eclampsia Complicating Delivery of a Monstrosity: Hemipagus Symprosopus.—Dr. L. J. Ladinski reported the case of a patient, 27 years of age, who had been married two years, but who had never been pregnant. She was operated upon for bilateral diseased adnexa, ante-

fexion, and stenosis. Two years after this operation the patient returned about three months pregnant; her expected delivery was to have occurred about November 11, 1911. On September 10, the membranes ruptured without premonitory symptoms and a large quantity of amniotic fluid escaped. Examination revealed the os dilated to the size of a dollar and the head presenting. Palpation of the abdomen strongly suggested twin pregnancy. After being in labor about an hour the patient complained of dimness of vision. A specimen of urine examined at this time was negative as to albumin, sugar, and acetone, and contained only a very few cylindroids. Rapid delivery was effected by high forceps. Shortly afterward, about 2 P.M., the patient had several convulsive attacks which under stimulation with strychnine and nitroglycerine ceased, and the pulse, respiration and sight improved. About 8 P.M. she was again seized with convulsions and in spite of nitroglycerine, venesection, etc., she died about 12 P.M. The question arose as to whether the gestation with the monster had anything to do with the production of the eclampsia as the patient showed no affection of the kidney or other organ previously. The specimen was that of a seven months' fetus. The head was ovoid, broader posteriorly and latterly. In addition to one ear on each side of the head there was one just below the occipital protuberance formed by the fusion of two in its anterior surface and having one single auditory canal. As the brain was not removed in its fresh state it could not be studied. At the base of the skull posteriorly at each side a cord was found entering a foramen magnum separated by a ridge of bone into which the external auditory canal beneath the occipital protuberance seemed to enter. The neck was short and thick, and the cervical vertebræ could be felt going to each half of the fetus. The chest was single and on opening it two lungs and one heart were found; the heart was larger than normal. The right lung had four lobes and the left three. Posteriorly the spinal column of each fetus could be seen. From each aorta a branch was given off to the right fetus, anterior to the spinal column and a little beyond it became the descending aorta of the left fetus. The superior and inferior vena cava joined and entered the right auricle; coming from the left side along the posterior wall of the heart was the inferior vena cava of the other side and it joined apparently to the azygos veins. The abdomen was fused together as far as the umbilicus and then became two and continued on each side as a single fetus with its own lower extremities and external genitals showing both females. The umbilicus was fused showing two arteries and two veins. On opening the abdomen an urachus was found going downward in each pelvis to the bladder. Each pelvis had its own tube and ovaries attached. The ductus venosus continued upward and entered about the center of the liver, anterior and to the right. The gall-bladder on the posterior surface extended beyond the free surface. The ductus venosus continued backward and to the left between a loop of intestine to a smaller liver posteriorly, which had its rough surface anteriorly and only a small rudimentary gall-bladder. Posteriorly it had a smooth surface. To the left of the upper abdomen was a spleen about three-quarters of an inch long and which was connected to a pancreas which was between the spleen and posterior liver on each side. On pushing the intestines aside they found another spleen posteriorly and to the right which had the pancreas between it and the right anterior liver. There was only one stomach with a pouch on each side, leading upward into the esophagus and downward into the pylorus and thence into the jejunum; it then divided into two as ileum and continued on each side. There were two kidneys.

Carcinoma of the Clitoris, with Metastases in the Glands of both Inguinal Regions.—Dr. L. J. Ladinski reported this case which occurred in a multipara 58 years of age. The patient's menstrual history was negative, the menopause having occurred twelve years ago. About six months before consulting a physician she had noticed a small tumor about the size of a pea in the region of the prepuce which gradually increased in size and caused her both pain and annoyance. She showed no signs of cachexia and had no other ailment except a bleeding and painful tumor in the introitus vaginæ. Both inguinal regions were the seat of large, hard, and slightly tender glands. A cauliflower-like growth was occupying the site of the clitoris and was connected by a broad pedicle to the upper third of the right labium magnus. A secondary metastatic nodule was seen in the inner surface of the right labium about one and one-half inches below the original tumor. At operation a large carcinomatous mass involving the entire vulva was removed. The inguinal glands were large and adherent. An incision was made on the right side parallel to Poupart's ligament, extending from the anterior inferior spine to the labium major and the glands and fat were dissected free but not removed. A circular incision was then made an inch from the base of the pedicle, the incision embracing the mons veneris above, the labia on either side, and the vestibule to within a quarter of an inch of the upper border of the meatus and the tumor, clitoris, skin, and fat were dissected free. The inguinal glands and tumor were then removed *en masse*. A perforated rubber drainage tube was inserted in the lower angle of the wound and the entire wound closed with Pagenstecher. The left inguinal glands were next removed by making small incisions over these glands. Several small glands were incised. Numerous small lipomata were found, but were left intact. The tumor of the labium was a melanotic carcinoma, corresponding pathologically to the type of new growth previously termed melanotic sarcoma, which was now regarded as epithelial in origin. In all probability the tumor had its origin in a pigmented mole.

Dr. Brooks H. Wells, referring to these pigmented moles, looked upon them as carcinomatous; when they occurred at the mococutaneous junction in particular they were of bad import, and he felt that they should always be removed.

Specimen of Fetus Papyraceus.—Dr. Franklin A. Dorman presented this specimen. The patient from whom it was taken was a primipara. The child weighed about five and a half pounds at term, which was rather unusual in these cases. The patient was watched from month to month, the uterus assumed its proper size, and she was now practically well.

A Preliminary Report on a New Antiserum for Cancer.—Dr. S. P. Beebe and Dr. Berkeley presented this communication, which was read by Dr. Berkeley. (See page 513.)

Clinical Account of Thirteen Cases of Malignant Disease Treated with a New Antiserum.—Dr. Wm. M. Ford read this paper and presented cases. (See page 514.)

A Study of the Integrity of the Uterine Scar After Cesarean Section.—Dr. J. A. Harrar read this paper. Although this operation was now performed very frequently and had lost its septic and hemorrhagic terrors, nevertheless they could not afford to disregard other surgical problems involved. A heavy muscle not supported by facial coverings was cut through, a muscle that might be called upon later to functionate vigorously. In addition to the risk attending the section of any intraperitoneal organ lined with mucous membrane there was the added danger of rupture through or adjacent to the cicatrix in future pregnancies. In 1908 Dr. Broadhead had reported a case of rupture at the site of an old scar and he had collected 10 cases from the literature. Subse-

quently Mauclaire and Burnier summarized 22 cases, 15 of them being repetitions of Dr. Broadhead's cases and seven being new ones. Two cases had been reported in which rupture occurred after two cesarean sections and Cameron had reported a case similar to the one about to be reported. In the majority of these cases there was no detailed description of the ruptured muscles microscopically, and it was not clearly defined whether the scar gave away or the adjacent muscle tissue. In an experimental study by Mason and Williams of Boston on the strength of scars in the uteri of pregnant guinea pigs they proved to their satisfaction that the tissues gave way not at the scars, but through adjacent muscle fibers. The writer had attempted a study of the uterine scars of former cesarean sections in human females by a review of the histories of cases in the Lying-In Hospital and from his personal experience. In his investigation he had selected instances of abdominal cesarean section followed by vaginal delivery, of which there were three cases; descriptions of the gross appearances of the intact scar in 42 cases of repeated cesarean section, instances of marked attenuation of the scar, of which there were four cases; and instances of rupture of the uterus after one or more cesarean sections, of which there were four cases. The writer related the history of three cases in which delivery per vagina after a former cesarean section was practically normal, and said that in 42 cases at a subsequent cesarean section the old scar was described as solid and with no apparent thinning or stretching. In four instances in which the writer had had occasion to perform repeated cesarean sections, the scar in the uterus had been represented merely by a slightly depressed linear whitening of the visceral peritoneum. In 16 of the 42 cases of multiple operation there were adhesions of the omentum either to the uterus or to the anterior abdominal wall. These adhesions did not seem in any way to affect the strength of the uterine cicatrix. It was noteworthy that adhesions when once formed, even if cut off and tied, always recurred and in denser fashion at a later cesarean section. Six times the placenta was found attached over the region of the old incision without impairing its solidity. Seven times the incision in the original operation had opened into the placental attachment. Suture of the placental site in all these resulted in a sound scar as proved at a second operation. In two instances of marked attenuation of the scar the placenta was found directly under the old wound; in one of these the scar was described as soft, irregular, and translucent. In two other cases of attenuation of the scar the placenta was not in relation to the old scar; the thinning had depended entirely upon improper healing of the uterine wound. In these instances convalescence had been febrile and intrauterine douches had been used. One of these thin scars produced by sloughing of the uterine wound was excised at a later cesarean section and was shown to consist at its weakened portion of the peritoneal coat and subperitoneal cellular tissue. The muscle tissue of the wound did not heal primarily. There was a history of stormy convalescence in this case with retention of lochia, for which intrauterine douches were given. The writer related the histories of four cases of actual rupture of the uterus in or adjacent to the old scar that occurred in subsequent pregnancies, one of which had been reported by Dr. Broadhead; the others had occurred in his own experience. In the first case it could not be said from the microscopical appearances whether the rupture occurred directly in the old scar or closely adjacent to it, as the rent went apparently through normal muscle tissue. In the second case the abdominal scar was found to be of the keloid type, the lower end of the old uterine wound looked as though the sutures had given away during the first repair and the uterine peritoneal surface healed over. In the third case the uterine tear was limited to the old uterine wound. In the fourth case the rupture occurred between the lines of two scars made on two former occasions. It was to be supposed that two parallel scars less than a centimeter apart would isolate between them an intermediate danger zone of tissue that had had both its trophic nerve supply and its blood supply intersected and was therefore intrinsically weaker than the muscle tissue distal to these incisions. Examination of sections made at five different points gave no indication of scar tissue in the muscle and it seemed evident that the rupture had occurred through normal uterine tissue. As far as could be observed under the microscope an entire regeneration of the severed muscle fibers had taken place. These four cases illustrated the following teachings, which might be useful in future operations: (1) In undertaking a cesarean section on a woman who had been long in labor, with ruptured membranes and who might be infected, in addition to the immediate danger of septic mortality, they must recognize the probability of obtaining a poorly healed scar that would be a bad risk in a future pregnancy. (2) When performing repeated cesarean sections the old uterine scar should be excised rather than a new incision made parallel to it to avoid the isolation of a weakened strip of uterine wall between the two scars. (3) Intrauterine douches should be avoided in the treatment of retained lochia after cesarean section, not only for the immediate dangers, but especially on account of the risk of mechanical injury to the uterine wound. They must rely upon elevation of the head of the bed and the application of an icebag to the fundus. (4) In the management of a parturient woman who had previously been subjected to a cesarean section for the relative indications, such as moderate pelvic contraction or excessive size of the fetus, or certain types of eclampsia and placenta previa, one must be guided by the history of the previous convalescence as well as by the method of suturing employed; thus only could one be assured of the integrity of the old scar and to what extent it would stand the stress of labor and of vaginal delivery.

College of Physicians of Philadelphia.

At a stated meeting held March 6, Dr. Charles K. Mills presented a communication entitled "The Mechanism of Emotional Expression and Its Organic Basis, Cerebral, Cerebellar and Bulbospinal," illustrated by lantern slides and by moving pictures under the direction of Dr. T. N. Weisenburg. Dr. Mills propounded the view that centers for emotional expression existed in the cerebral cortex in a position in advance of the motor area and were susceptible of stimulation into activity in various ways, the impulses pursuing a somewhat devious course. Interruption of the pathways through which such impulses pass will result in inhibition of emotional expression in whole or in part in accordance with the extent of the disturbing factor. He illustrated the points contended for by him by pictures portraying various emotional expressions induced in the usual way in healthy persons, in other persons, for example, actors, voluntarily, and in patients exhibiting symmetry of action of the face in ordinary motor activity but with a symmetry in emotional expression. Dr. Weisenburg gave a demonstration of moving pictures showing the facial expression in cases of bulbar paralysis, multiple sclerosis, chorea, paralysis agitans, as well as the incoordinate movements of cerebellar tumor, tabes dorsalis and astasia abasia. The discussion was participated in by Dr. George McClellan, Dr. James Hendrie Lloyd, Dr. Smith Ely Jelliffe of New York by invitation, Dr. W. G. Spiller and others.

Drs. Jay F. Schamberg and John A. Kolmer made "A Preliminary Report of Experimental Studies on the Administration of Salvarsan by Mouth in Animals and in Man." It was first shown that the drug could be administered to

lower animals in appropriate dosage without injury, and that arsenic could subsequently be demonstrated in the hair and in the urine. Also the number of bacteria in the wall of the intestine was smaller than in control animals. Finally, the drug was administered by the mouth to human beings suffering from syphilis in various stages, and while vomiting and transitory diarrhea resulted in some instances, improvement in the disease symptoms took place, but this was no greater than could be observed under intelligent treatment with mercury and iodin.

Dr. H. A. Hare made "A Further Report on the Operative Treatment of Aortic Aneurysm by Wiring and Electrolysis," illustrated by lantern slides. He stated that he had performed this operation 26 times in 23 cases and fortunately without accident or complication. Almost invariably the procedure was followed by relief of pain and mitigation of other symptoms. In some cases repetition of the operation was required. By reason of the underlying state of the blood vessels death was the eventual outcome, although in some instances life was prolonged sufficiently for the performance of important duties. In a recent case in which the proper quality of gold wire could not be obtained the material passed down the aorta to a point below the level of the diaphragm, where it could be demonstrated by means of the *x*-ray picture, but without causing any related symptoms. So far as the distinction could be made clinically the operation was applicable to cases of sacculated and not of fusiform aneurysm.

Dr. James E. Talley presented a communication entitled "The Effect of Atropine on the Pulse Rate in Various Conditions of the Myocardium." When the drug was administered to persons without recognizable lesion of the heart the pulse rate was increased between 20 and 30 beats in the minute, probably through a paralyzant action on the terminal filaments of the cardiac branches of the vagus, inhibiting the normal restraining action of this nerve. An analogous effect was brought about in cases in which the action of the heart was previously slowed as a result of the administration of digitalis, both when the heart appeared to be healthy and also when valvular disease and even myocardial disease without disturbance of conductivity existed. In the arteriosclerotic and myocardial cases, on the other hand, in which conducting fibers were affected, the response to atropine was inconsiderable. The observation is thought to possess both diagnostic and prognostic as well as therapeutic value.

Chronic Mediastinitis Superior.—Hutinel states that the mediastinum is accessible to bacterial infection from many organs, being situated between the pleura and pericardium and extending from the upper part of the sternum to the diaphragm. The tonsils, nasopharyngeal vault, trachea, bronchi, heart, and pericardium and the liver and other abdominal organs, may infect the mediastinum and cause connective tissue adhesions. The chief forms of infection are tuberculosis and syphilis. Mediastinitis occurs in children and in adults, presenting the same symptoms in both; in adults it generally results from syphilis and in children from tuberculosis. In children the symptoms are dyspnea, stridor, and dilatation of the tributaries of the superior vena cava. There is dullness over the sternum, but no modification of the respiratory sounds. Radiography shows an obscure shadow around the heart and in the mediastinum. There are frequently enlargement of the bronchial and other thoracic glands. In adults all these symptoms are accompanied by a spasmodic cough, congestion of the face and upper extremities, and attacks of suffocation. There is a diminution of arterial tension in one of the radial arteries when the patient is lying down. By firmly holding and drawing up the thyroid gland one may perceive the rhythmical pulsations of the transverse aorta transmitted to the neck.—*Le Bulletin Médical.*

Medicolegal Notes.

Admissibility of Evidence as to Result of Assault.—In a prosecution for assault with a deadly weapon with intent to kill after the accused had shot the complainant, a shot striking her on the hip, shattering the bone, he dragged her into an adjoining room, where he threw her to the floor, and then with his knees upon her chest choked her until she lost consciousness. A physician who attended her immediately after the assault was held properly permitted to testify that at the time of the assault the complainant was three months with child and as the result of the assault suffered a miscarriage. The second assault and its attendant circumstances were essentially a part of the *res gestæ* of the first assault and therefore the result and consequences of the second assault were equally as admissible as a part of the *res gestæ* as the result and consequences of the first assault.—People *v.* Kafoury (Cal.), 117 Pac. 936.

Insurance—What Constitutes a "Medical Examination."—In an action on a policy of life insurance the case turned largely on whether or not the deceased had submitted to a medical examination within the meaning of the first premium receipt, which provided that the insurance would be in force from the date of the medical examination. The insured was examined on the day the receipt was granted, but died before either the application or the medical report had been forwarded to the company. The company declined to pay the insurance, upon the ground, among other things, that no medical examination had been made. It was held that the medical examination contemplated by the receipt was evidently a final examination, or an examination that the applicant desired to submit to the company as a part of his application. When a report of a medical examination is retained by the medical examiner under an arrangement or agreement with the applicant that it shall not be forwarded to the company until another examination is made it is not an examination within the meaning of the receipt. The medical examination intended by the language of the receipt means a medical examination made by an agent of the company to be forwarded to it, not a medical examination to be retained by the examiner at the request of or under an agreement with the applicant. It appeared from the evidence that the medical examination of the applicant disclosed that he was not an acceptable risk, and that at the end of the examination, when that condition was known the medical examiner suggested that the applicant submit to another examination, and if it appeared that the symptoms he then found, and which induced him to believe and report that the applicant was not a proper subject for insurance, had disappeared, he would make another and more favorable report and forward it to the company. The applicant agreed to that arrangement and the physician took the report of the examination to his office and retained it until after the death of the applicant. The insurance company's agent, who was present when the examination took place, also retained the application, intending to forward it to the company with the medical report thereafter to be made. There was, however, some conversation between the medical examiner and the applicant's wife over the telephone as to which she testified that the examiner requested the applicant to come to the office for another examination and she asked him to turn in the report already made to the company. If that evidence were accepted, the company would be liable for the medical examiner's failure to promptly forward his report. After he was directed to do so he held it as the agent of the company. If the company was under a duty to promptly act on the application and notify the applicant of his rejection, it could not shield itself from responsibility by the fact that the application and medical report had not been received by it, and therefore it could not act.—Northwestern Mutual Life Insurance Company *v.* Neafus, Kentucky Court of Appeals, 140 N. W. 1026.

Admissibility of Expert Evidence.—In an action against a railroad company for personal injuries it was held to be inadmissible to ask a medical witness for the plaintiff if it was not a fact that people having damage suits against railroads and other causes for simulating injury could and did fool physicians to a great extent about what was the matter with them when it was an internal injury. It was permissible to show that the plaintiff's alleged injuries were of such a nature that a physician could not determine with certainty their existence or non-existence; but that other persons had been able to deceive other physicians as to other alleged injuries was irrelevant and immaterial as to any legitimate inquiry in the case.—Ft. Worth & Rio Grande Railway Company *v.* Neal, Texas Court of Civil Appeals, 140 S. W. 398.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

HONAN'S HANDBOOK TO MEDICAL EUROPE. By JAMES HENRY HONAN, M.D. 201 pages, with maps of Berlin, Edinburgh, London and Paris; cloth; price $1.50 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

ELEMENTS OF HYDROTHERAPY FOR NURSES. By GEORGE KNAPP ABBOTT, M.D. 273 pages; illustrated; cloth. Review & Herald Publishing Association, Publishers, Washington.

FOURTH REPORT OF THE WELLCOME TROPICAL RESEARCH LABORATORIES AT THE GORDON MEMORIAL COLLEGE, KHARTOUM. Vol. B.—GENERAL SCIENCE. By ANDREW BALFOUR, M.D., B.Sc., F.R.C.P., D.P.H., Director. 333 pages; illustrated; cloth; price $4.50. Toga Publishing Company, Publishers, New York and Montreal.

THE FRIENDS OF THE INSANE, THE SOUL OF MEDICAL EDUCATION AND OTHER ESSAYS. By BAYARD HOLMES, M.D. 270 pages; cloth; price $1.00. The Lancet-Clinic Publishing Company, Cincinnati, Publishers.

PROCEEDINGS OF THE FIFTH ANNUAL MEETING OF THE ASSOCIATION OF LIFE INSURANCE PRESIDENTS. Held in the Hotel Astor, New York, N. Y., December 13 and 14, 1911. 131 pages; paper.

HEALTH AND MEDICAL INSPECTION OF SCHOOL CHILDREN. By WALTER C. CORNELL, M.D. 614 pages; illustrated with 200 half-tone and line engravings, many of them original; cloth; price $3.00. F. A. Davis Company, Publishers, Philadelphia.

CONTRIBUTIONS À L'ETUDE DU TRAITEMENT DES TUBERCULOSES EXTERNES PAR LES INJECTIONS MODIFICATRICES. By Dr. JACQUES TRIBES. 82 pages; illustrated; paper; price $2.00. A. Maloine, Publisher, Paris.

PHARMACEUTICAL BACTERIOLOGY. By ALBERT SCHNEIDER, M.D., Ph.D. 237 pages; with 80 illustrations; cloth; price $2.00 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

UROLOGY. By RAMON GUITERAS, M.D. Volume I. 667 pages, with 643 illustrations in text and 7 plates; cloth. D. Appleton & Company, Publishers, New York and London.

UROLOGY. By RAMON GUITERAS, M.D. Volume II. 757 pages; with 643 illustrations in text and 7 plates; cloth. D. Appleton & Company, Publishers, New York and London.

DISEASES OF THE NOSE AND THROAT. By ST. CLAIR THOMSON, M.D., F.R.C.P., F.R.C.S. 791 pages; with 18 plates and 204 figures in the text; cloth. D. Appleton & Company, Publishers, New York.

DISEASES OF THE GENITO-URINARY ORGANS. By EDWARD L. KEYES, JR., M.D., Ph.D. 975 pages, with 195 illustrations in the text and 7 plates, four of which are colored; cloth. D. Appleton & Company, Publishers, New York and London.

THE SURGERY OF ORAL DISEASES AND MALFORMATIONS. By GEORGE VAN INGEN BROWN, D.D.S., M.D., C.M. 740 pages; with 350 engravings and 21 plates; cloth. Lea & Febiger, Publishers, Philadelphia and New York.

TUMORS OF THE JAWS. By Charles L. Scudder, M.D. 301 pages, with 353 illustrations, 6 in colors. Cloth, price $6.00 net; half morocco, $7.50 net. W. B. Saunders Company, Publishers, Philadelphia and London.

WHO'S WHO IN SCIENCE. 1912. By H. H. STEPHENSON. 323 pages; cloth. The MacMillan Company, Publishers, New York.

DIE CHRONISCHE ENTZUNDUNG DES BLINDDARMANHANGES. By Dr. FRITZ COLLEY. 244 pages; paper; price 6 M. August Hirschwald, Publisher, Berlin.

THE TOBACCO HABIT. ITS HISTORY AND PATHOLOGY. By HERBERT H. THISWELL. 246 pages; price $1.40; cloth. P. Blakiston's Son & Company, Publishers, Philadelphia.

ESSENTIALS OF SURFACE ANATOMY. By CHAS. R. WHITTAKER, F.R.C.S., F.R.S.E. 50 pages; illustrated; cloth; price $1.40 net. P. Blakiston's Son & Company, Publishers.

MODERN MICROSCOPY. By M. I. Cross and MARTIN J. COLE. Fourth edition. 325 pages; illustrated; cloth; price $2.00. Chicago Medical Book Company, Chicago, Publishers.

BULLETIN DE LA SOCIÉTÉ DES SCIENCES MÉDICALES DE BUCAREST. 1900-1910. 231 pages; paper.

BULLETIN DE LA SOCIÉTÉ DES SCIENCES MÉDICALES DE BUCAREST. 1910-1911. 246 pages; illustrated; paper.

Medical Items.

Virulence of the Feces of Pneumonia.—Gioacchino Breccia states that the virulence of the feces of the pneumonic patient depends on the presence in them of the *Diplococcus capsulatus* of Frenkel. In a case examined by the author he found that the intestinal lesions were such as to cause only slight anatomical changes, limited to diffuse hyperemia of the intestinal mucosa without any croupous alterations. The author has shown that this germ may traverse the organs of the body without causing any exudative reaction or any characteristic inflammation. He examined the feces of pneumonia patients who presented no intestinal symptoms at various periods of the disease, and injected portions of the feces into animals. He showed that there was definite toxicity of these feces for white mice. He injected feces also into rabbits. He concludes that the feces of pneumonia have a definite toxicity for animals, causing death in a period varying from 12 to 36 hours after subcutaneous injection. The blood of such animals showed the diplococci of pneumonia. The same result was obtained from subcutaneous and intravenous inoculation.—*La Riforma Medica.*

Proteolytic Ferments in the Feces of Nursing Infants.—A. Filia has tested the feces of normal and atrophic babies fed on breast milk and on the bottle. The results vary but little in these various types of children, the quantity of ferments found in the feces being about the same. The causes of variation in the amounts of tryptic ferments are many and various; not depending entirely on the integrity of the pancreas. Variation depends on the quantity of food absorbed by the intestines, on the greater or less activating power of enterokinase on pancreatic trypsin, etc. The meconium was examined immediately after and twenty-four hours after birth, with the result that the ferments were found present and active in it. The author considers that at birth the pancreas is tryptically active, and activity of the enterokinase is shown. This activity is not modified by feeding nor by the condition of development or atrophy and the ferments are present even in meconium.—*Il Policlinico.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 8, 1912.

Places	Date	Cases.	Deaths
CHOLERA			
China: Hongkong	Jan. 14-20.	1	1
Dutch East Indies	Nov. 26-Dec. 2	1761	638
India: Calcutta	Jan. 14-20		50
Madras	Jan. 21-27	15	13
Madras Presidency, Dec. 1-31	Cases, 6,557; deaths, 4,130.		
Indo-China: Saigon	Oct. 13-Jan. 24.	63	49
Tripoli: Tripoli	Oct. 13-Jan. 24		
Cases, 2,000; deaths, from 1,000 to 1,200[2]			
Turkey in Asia			
Provinces in Asia and Europe, Apr. 16-Dec. 30, 1911 excluding Constantinople		Deaths, 6,111.	
Manila: among troops			
Acre	Jan. 21	7	6
In vicinity			
Turkey in Europe: Constantinople	Feb. 2-3	2	
YELLOW FEVER			
Brazil: Manaos	Jan. 21-Feb. 3.		5
Pernambuco	Jan. 1-15		2
PLAGUE.			
Brazil: Para	Jan. 29-Feb. 10		2
China: Hongkong	Jan. 14-20	1	
India: Bombay	Jan. 21-27	17	16
Calcutta	Jan. 14-20		13
Karachi	Jan. 21-27	7	7
Indo-China: Saigon	Feb. 9-15	2	
Java: Pasoeroean Residency	Jan. 14-20	6	4
Mauritius	Dec. 8-14	2	1
Straits Settlements: Singapore	Jan. 7-13	2	2

[1] Bulletin Quarantenaire d'Egypte, Feb. 8, 1912.

[2] From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, Feb. 14, 1912.

Places	Date	Cases.	Deaths
SMALLPOX			
Algeria: Oran	Jan. 1-31	2	1
Brazil: Pernambuco	Jan. 1-15		65
Rio de Janeiro	Jan. 14-20	1	
Santos	Dec. 12-23		1
Canada: Quebec	Feb. 18-24	11	
China: Hongkong	Jan. 14-20	42	29
France: Marseilles	Jan. 1-31		3
Paris	Jan. 29-Feb. 3.	7	
Germany	Feb. 4-17.	13	
Great Britain: London	Feb. 4-10	2	
India: Bombay	Jan. 21-27	50	15
Calcutta	Jan. 14-20		1
Madras	Jan. 21-27	8	4
Italy: Leghorn	Feb. 11-17	8	4
Naples	Jan. 29-Feb. 10	12	1
Palermo	Jan. 29-Feb. 10	236	80
Japan: Yokohama	Jan. 22	1	
From S.S. *Hyda* from New York via Suez.			
Mexico: Guadalajara	Feb. 11-17	2	
Manzanillo	Feb. 18-24	1	
Porfirio Diaz	Feb. 11-24	2	2
Tampico	Feb. 10-20		2
Russia: Moscow	Jan. 21-27	4	
St. Petersburg	Jan. 14-27	17	
Turkey in Asia: Beirut	Jan. 29-Feb. 10	370	

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Original Articles.

THE PATHOGENY OF MENTAL DISEASE;

WITH SPECIAL REFERENCE TO THE MINOR PSYCHOSES.*

BY ALLAN McLANE HAMILTON, M.D.,

NEW YORK.

THERE is no term in medicine that is more often improperly used than "insanity," and none so indefinite, so susceptible of many interpretations, and in a way so valueless. Much of this is due to the fact that in reality insanity is not a disease but an expression of a derangement, or, as White[1] puts it, "Insanity cannot be spoken of as a disease any more than hyperchlorhydria; it is but a symptom—a type of reaction, an effort upon the part of the individual to meet conditions."

Being a relic of other times, the term is generally used to characterize all kinds of mental disturbance, that may vary from a simple physiological change to a conspicuous, easily diagnosed, and advanced organic deméntia. Its very etymological construction is an apology for ignorance, yet it is an improvement on "madness" and "lunacy," as well as others which were in vogue less than half a century ago. For the want of a better and more exact substitute it retains its place and is often the despair of psychiatrists.

However, after all, *insanity* has been applied so far as possible by experienced alienists to conditions evinced by a *protracted* departure from the usual mental health, or involving more or less disease of the brain. With this significance it after all possesses greater value than any other available definition. Much quibbling, nevertheless, is indulged in as to its use, and it is no wonder that some physicians, judges and juries, and others having insufficient knowledge, time, or inclination, are often befogged. The public, especially, entertains many erroneous ideas regarding mental disease in general, and Stedman[2] has laid much stress upon these misconceptions, familiar to, and explainable by, most of us, either in private practice or asylum work.

These include many popular fallacies regarding the apparent increase of insanity, which after all is not always real, the prevalence being really due to inexact statistics, to the failure to discriminate between first and recideval admissions to institutions, as well as the neglect in taking into account the increase of population of the particular district, or the world at large.

This want of knowledge also leads to error regarding the etiology of mental disease, undue weight being attached to fright, shock, and other exciting causes, as well as to the importance of the climacteric in women; even the influence of heredity is unduly magnified. Ill-informed people likewise entertain many wrong and extreme ideas regarding consanguinity.

Finally there is great diversity of opinion as to what really constitutes insanity, and how the mentally afflicted should be cared for and treated.

The making of a clear and definite demarcation between states of mental disorder in the apparently normal individual and those of graver content, is sometimes a troublesome matter, and our advanced knowledge of psychiatry must lead to the conviction that after all it is the study of the psychological, biological, and biochemical factors that should engage our attention, and if a satisfactory conclusion is desired, each case is to be studied on its merits, and each individual is to be considered with regard to his past history and home life, the latter especially for the purpose of recognizing fresh departures from the norm.

The general physician, as well as the psychiatrist, is sometimes misled by slighting these things, and in seeking to classify the symptoms presented by the aid of hard and fast rules, and the schematic tables laid down in dogmatic, and possibly obsolete, textbooks, few of which stand the test of everyday experience.

The attempt to condense the terminology of the psychoses into narrow limits is therefore by no means always practicable, and there is no more striking example of this arbitrary method than the classification of Kraepelin and his followers, who virtually group most disorders not due to coarse cerebral disease or toxemic influences into two great classes, which chiefly include manic-depressive insanity and dementia precox.

While not denying the convenience of this system, I think it cannot be accepted unreservedly by those of us who have spent a great many years engaged in this field of work; other writers, on the other hand, err in diffuseness of arrangement and division, and this, too, may lead to error and confusion. The modern tendency to study mental disease with reference to normal psychology has within a few years received fresh stimulus from Störring[3] and the etiological investigations of Hoch, Meyer, and others. It has always been my belief that these disorders were, after all, really the *disruption* or *involution of normal habits*, of feeling, thinking, and acting, as the result of other disease, or appearing coincidentally at the point of breaking strain in defective individuals, or with futile attempts at readjustment.*

Within the past few years, according to the advanced deductions of Freud, Jung, and their school, not only hysteria, but some other psychoses are said to owe their origin to the receipt of an early sexual shock or trauma which at the time made a per-

*Elaboration of two lectures delivered at Cornell University Medical College, 1901-1902.

*This view was expressed by me at a meeting of the N. Y. Psychiatrical Society, Nov. 4, 1903.

manent impression, but which subsequently is not recognized exactly by the individual in all its proportions, but asserts itself throughout life in many disquieting ways.

Freud's theory of the effect of this forgotten or larvated psychic insult is that "like a buried memory it lurks along with the corresponding affect in the subconscious, and like a foreign body in the soul causes permanent or recurrent states of excitement in the neuropsychic apparatus."

Both Breuer and Freud believe that the mischief arises from the fact that upon receipt of the psychic trauma there is no adequate reaction, especially of a psychomotor nature, and that finding no vent there is repressed and concealed energy which is the basis of subsequent widespread disorder. In such a case the early exciting cause (*i.e.* psychic trauma) was not followed by "motor discharge, speech, gesture, play of features, tears, laughter, movement of anger or hate, etc."[4]

While we cannot unreservedly accept Freud's theory of early sexual shock and a submerged morbid impression, there is little doubt that unrecalled and maladjusted insults to the mind of many kinds, during its evolution, may result in very decided thought and emotional disarrangement, some resulting psychoses being of an obstinate and almost intractable nature.

More recently there has been a tendency to ascribe the early trauma not only to a sexual shock, as Freud originally held, but very properly to repressed emotional injury of other kinds incident to accident, fright, and sudden grief.

In obsessional disorders especially we find Freud's doctrines of avail, although his line of reasoning leaves something to be desired, for he often unsuccessfully couples with an early sexual incident an easily explainable obsession with no such history.

Macfie Campbell[5] has done much to apply psychoanalysis to the formal differentiation in diagnosis, which is the method that concerns itself with the more objective analysis of the disorders of mood, of the stream of thought, and of the volitional discharge as well as the disturbance of the healthy harmony between mood ideation and general reaction, but he does not think that this should be considered alone without the analysis of the meaning of the patients' reaction to the contents of his inner life.

The latter may be called the *method of subjective analysis,* and it is inconceivable how the two forms of investigation can be divorced, and so far as recent histories of a large number of cases are concerned it would appear as if most of them presented Freud's requirement—that is to say, a larvated trauma.

Until recently the disposition of psychiatrists has been to disregard largely the temperamental or environmental influences which under stress also favor the development of certain insanities. Hoch has, time and again, called attention to the habitual moods and variations of feeling of those individuals who present the picture of dementia precox, and by this method there should be no difficulty in determining the kind of soil in which paranoia and other psychoses grow. Störring gives due weight not only to physiological variation but to the mechanism and shadowy genesis of mental disorders which without question have been at once regarded as pathological. While his conclusions are not always those that have been accepted unreservedly by psychiatrists, they show that many variations heretofore regarded as indicative of extreme mental disorganization are simply reasonable variations from the norm, and are not to be explained in the conventional way. This is particularly true with regard to some delusional psychoses where fixed ideas are simply the outgrowth of normal emotional beginnings, and he disagrees with Hitzig, Kraepelin, and others on many points of accepted psychopathology.

In the interpretation of certain types of symptoms which betray altered personality or deterioration, it does not do to draw hasty conclusions. In fact much of the hair-splitting of modern and fanciful diagnoses would indicate that the psychiatrist has accepted a normal basis of too high a character. While of course the real test is the persistent and gradual mental degeneration so that evidence of weakening and change are apparent, it does not do to forget that ignorant or emotionally religious people may under slight excitement say and do things that are but exaggerations of their normal life. This disposition to accept as evidence of deterioration the emotional or other manifestation of an undisciplined mind is a feature of some of the recently and minutely reported cases of alleged dementia precox.

So, too, if we are to accept the theories of extremists, it will be difficult to refrain from the conclusion that almost every individual is psychopathic. The varying changes that have been called cyclothymic are apt to be exaggerated, for many of them may be simply moods or alternation of feeling in ordinarily sane people.

It is nevertheless true that there may be at times an exaggeration of natural habits and traits through the influence of disease or even physiological variations. Coombes Knapp[6] says, very properly, that "mental depression, explanatory delusions, certain actions of the insane are but normal manifestations brought about by diseased mental states. Other conditions, slowness of thought, resistance to commands, attempts at would-be wit, even Ganser's syndrome itself, may be merely the mental characteristics of a stupid, pert young person who ordinarily has no restraint or good manners. Much of the affectation, posing, mannerisms, and romantic dreaminess of the precocious dement, if an adolescent, is but an exaggeration of the normal characteristics of adolescence so well described by Marro."

He points out that "we lack, furthermore, sufficient information as to the modifications in these various psychical phenomena brought about by disease in different forms, or by *physiological changes in the economy.* We have certain studies, it is true, of the psychical symptoms of a few diseases which affect the mind predominantly, but we still lack psychical studies in cases of ordinary disease, or psychical studies made under varying *physiological conditions.*"*

A broad survey of the field then must convince us, as has been said, that insanity is, after all, a derangement and not an entity; it expresses a rather extensive disorder or dissociation of the operating faculties through disease—a disharmony, so to speak—due generally, it may be said, to a disruption of the mental habits.

It would be a work of supererogation to detail these or the well-recognized psychic operations of the normal individual; suffice it to say that each per-

*The italics are my own.

sonality represents a growth and final development and is the result of education, environment, and efforts at adjustment in those who more or less differ. No two sane persons therefore are entirely alike, nor do they cerebrate in the same manner. Even though brought up under the same circumstances and surroundings, there is a distinct variation in evolution and ultimate individual personality.

The perceptional activity, richness of concept-formation, capacity for subsequent symbol-grouping, facility of association, energy of conclusive judgment, emotional sensibility, and exercise of will are balanced differently, and the mental equilibrium of a number of subjects differs materially, but there is a *mean* which ordinarily constitutes average normal integrity, and an adjustable personality—that is to say, a personality which enables the individual to live in harmony with his fellows and to betray no evidences of conduct that are out of the ordinary; moreover, his own *métier* is not changed except in a natural manner incident and due to senescence. When through the influence of a variety of causes his stability of mental habit is interfered with, a tendency to involution exists, and a variety of eccentric disturbances follow this upsetting. Sometimes these determining interruptions are psychic, again they are due to physical causes. Only too often are they the result of defective heredity which handicaps the subject, and although he goes on adapting himself to the ways of the rest of his kind, and his surroundings, an undue strain may prevent him from exercising the developed habits as he has up to this time—insynchronism and thought incoordination results, while an immediate departure from the habitual standard of feeling, thinking, and acting occurs and we say he is insane.* The conventional operations of thought manifested in conduct, as a rule, permit him to go through life without any other reputation than that of sanity. If these are interfered with we recognize among other things an undue preponderance perhaps of emotional susceptibility, of feeble judgment and delusional tendencies; of defects of perception, ideation, and memory, and the various irregularities in the exercise of volition.

The true way to study mental derangement, then, is so far as possible to depend upon the aid furnished by the study of normal psychology, psychiatry being its antithesis. In this connection too much importance cannot be attached to the investigation wherever possible of the antecedents of the individual, especially those which no one thought worthy of recognition before the first open evidences of the psychosis were shown. The study of ordinary human nature therefore is indispensable to the psychiatrist. Bearing these things in view, it may be seen how easy it is for an evanescent or even a more or less prolonged exhibition of mental derangement sometimes to disappear entirely, or occur at intervals in persons who are apt to succumb to a lowering of tone, due to a variety of physical causes, or an interruption in the personal accommodation of their ordinary mental integrity as the result of habit formation. So important is this whole matter that modern psychiatrists are studying the actual departure, in well-developed psychoses, from the standpoint of ordinary mental health for a prolonged time previous to the actual appearance of the insanity. In this way the special color of a collection of symptoms may be detected when attention is directed to the ordinary peculiarities of the deranged person. All the minor history of habitual moods, suspicions, irritability, reactions following stimuli and central impulses, and the increased susceptibility of the patient to act upon local impressions and insufficient suggestions, furnish indices which are exceedingly valuable and important. Heretofore, and by some today, the tendency has been to analyze syndromes, if it can be called analysis at all. We should not always take morbid expressions as things of new birth, or draw hard and fast lines, or lose sight of disorders which are after all natural forms of departure consisting in the accentuation of mental habits already formed and of long standing.

For the purpose of assistance certain mental and physical abnormalities may be tabulated, and these will direct the attention of the clinician to familiar mental defects that indicate constitutional dominance, they being reflected in the psychosis that eventually develops. Some of the so-called *mental-stigmata* may be enumerated as:

Extreme shyness, secretiveness, morbid timidity, introspection and self-catechism, over-conscientiousness, hyperanalytic tendencies, suspiciousness, seclusiveness, constant pessimism, indecision, vacillation and other indications of the "*shut in*" personality, eroticism, homosexuality, masochitistic and sadistic inclinations, morbid susceptibility, fetichism, jealousy, hypersusceptibility to inadequate impressions, or to affront; cruelty to animals; moral weakness, such as lying and romancing (pseudologia fantastica), purposeless or obsessional theft, "pyromania"; abulia, dullnes of comprehension, distractability, so-called "genius," one-sided aptitude at the expense of other things, especially musical or mathematical talent, slowness in acquiring ordinary knowledge, weak retention of things perceptive, etc., etc.

Among the *physical stigmata* which may or may not be present in persons predisposed to mental disorder, are exaggerated psychomotor activity, speech defects, tics of various kinds, convulsions; cranial asymmetry, defects of palate and teeth, unilateral atrophy of face or tongue, evidences of infantile or prenatal disease or defects, weakness of ocular muscles, pigmentation of irides, peculiarities in development and shape of ears, including Darwinian tubercle and defective lobule, malformation of genital organs, inversion of toes, peculiarities of gait, and possibly the residual objective symptoms of organic disease of the cerebrospinal system.

This collection is simply presented as a reminder that in predisposed psychopathic persons some or many of them may be found in varying degrees. It has been the custom to speak of these subjects and to dismiss them with the statement that "the psychopath does not see things in their proper light" (De Fursac). There is no standard of psychopathy, but there is the general want of mental balance which is indicated in the foregoing paragraph.

The constitutional psychopath is always a degenerate, and his defective make-up invariably favors the growth not only of certain classic insanities, but of mental peculiarities as well, which in their way are quite as important. As his defects come with him into the world and subsequently

*White calls attention to the three things needed by the individual who adjusts himself to his environment. The first implies a knowledge of the same, the sensorium being normal; the second, the association and relation of such knowledge with previous experiences, the intellect assisting him; third, the transformation of knowledge into volitional reactions.—*Psychiatry*, p. 2.

hamper his adjustment, we find that even in childhood he is regarded as "queer," dull, or different from other children, and at a later period is unable to adapt himself to the ways of his fellows and therefore gets into trouble.

He is apt to be one-sided, impulsive, and unstable, full of visionary impulses, and plans in a fussy way for his own benefit and for that of society at large, but his efforts and projects usually come to naught, and his lofty endeavors cause him to be looked upon as a "crank" or worse. Full of hyperquantivalent ideas, he magnifies trifles, or forms an exaggerated estimate of his own importance. It is he who floods the courts with ridiculous law suits, which he invariably loses; or, again, he bores the public with ill-judged projects for reform that are not needed. He identifies himself with absurd movements for the supposed betterment of man or animal, becoming a perpetual nuisance. His euphoria leads him in his enthusiasm to lie or libel, and his mental infirmities do not improve with time. Such people are often restless, and this unrest finds relief in letter writing or persistent telephoning for no apparent purpose. They may be superficially brilliant in a limited direction, but in the main are dull and commonplace. One example writes learnedly upon "thought transference" and illogical occultism, but he has delusions about those who oppose him, and attacks the unsympathetic listeners whenever the opportunity offers, threatening them by disorderly letters or telegrams. Another stirs up the newspapers and the public by dangerous and disquieting attacks upon capital, while he accepts the last suggestion of every unstable and equally crazy reformer who finds his ear. Another is a wanderer and vagabond, eking out a precarious existence from a world which is "down upon him" or "owes him a living."

These people are often dull so far as the capacity for association and the acuteness of anterograde memory is concerned. They have little creative imagination and when at school rarely see the application or purpose of what they try to learn. They are conceited, intolerant, and often pessimistic, and inclined to take violent and utterly unwarranted prejudices.

Their conduct is such that the authorities or anxious friends invoke the interference of the law. At such a time their psychopathic condition may have advanced to an incapacitating degree, but they often appear much better than they really are when aroused by a knowledge that they may lose their liberty. They are thus often able to face the ordinary jury, and for a time present a comparatively rational appearance.

II.—THE MINOR PSYCHOSES.

It has been the custom to classify neurasthenia, hysteria, sexual psychasthenia, epilepsy, and the obsessional disorders as apart from insanity proper. This, after all, is an arbitrary exclusion, for the importance of these conditions is relative: they often bear a close relation to each other, and are sometimes coexistent, forming a syndrome of greater or less importance.

Neurasthenia.—This disease of "fatigability and irritability" (Meyer) is not regarded as it once was, and cannot be clearly isolated, for it is especially associated with obsessional states, hysteria, and sexual perversion, and these may be features of many definite and important insanities. Freud recognizes a form of neurasthenia which he calls the anxiety-neurosis (Angst-Neurose) which usually has a sexual explanation, being due to masturbation, and it is usually a mild psychosis. As a rule, however, there is difficulty in making a clear demarcation between any of the familiar forms of the neurasthenic disorders which we commonly meet, and many others developed by physical or mental shock such as that received in railway or other accidents. There is apt to be a close association between neurasthenia and hysteria in a hybrid psychoneurosis, as it were. The familiar neurotic expressions—subjective or objective—of both diseases are commonly associated and the mental syndrome is sometimes very complicated, but always distinctive. An anxiety-neurosis, therefore, does not of necessity spring from a sexual root.

No greater mistake can be made than to say that the minor psychoses are apt to be evanescent disorders or of little moment, as has sometimes been done, for ordinarily an underlying psychopathic organization exists. It is the experience, I think, of most physicians that in all of them recurrences or aggravations are not unusual, and that they are not always effectually suppressed or cured by the resurrection or demonstration to the patient of the original latent sexual idea, or by subsequent psychotherapy, but they may disappear with the establishment and exercise of conscious inhibition.

While mild psychasthenic symptoms are sometimes likely to be found in apparently normal persons as the result of shock, it is not the opinion of the writer that any prolonged manifestation of any of the psychoneuroses occurs unless there is some constitutional susceptibility. In opposition to this idea Steierlin[7] has observed psychogenetic affections, consisting chiefly of exhaustion, in individuals who, he says, are free from neuropathy. These consist of acute fright-psychoses and hystero-epileptic disturbances of short duration consecutive to railroad accidents, earthquakes, and other great calamities. He even claims to have seen chronic psychoneuroses due to such causation in non-predisposed individuals.

It would appear, however, from Steierlin's investigations and conclusions that it is almost impossible to exclude the subjects in which there is really a predisposition.

My own experience with railroad cases, which is very extensive, convinces me that a case without some psychopathic history is the rare exception.

Hysteria.—No definition of hysteria can be regarded as altogether satisfactory, and to-day its pathogeny remains largely obscure; to speak of it merely as a dissociation of personality is often to beg the question, and is but a theoretical means of elucidation. Though it usually consists of a combination of certain somatic and mental symptoms the former may be ill-defined or entirely absent, but the latter under some guise are always prominent.

It is, indeed, a subtle arrangement, consisting of two striking essentials—a perversion of the will and an emotional instability, and "a dissociation between the emotional tone and the ideational content." (Linenthal and Taylor.) There is always some impairment of memory, and at times more or less confusion. Unexpected reactional response, perhaps to the latent memory of a dream, accounts for the unexpected in the subject's conduct. Inhibition is not so thoroughly or in the same way interfered with as it is in such a psychosis for instance, as acute mania or other disorders connected

with elation; but it would appear as if the normal mental operations were thrust for the time into the background, and as if a riotous series of reactions due to subconscious activity denoted the absence of coordination or inhibition. Then, again, the sudden return of control is usual in hysteria, but not in mania. De Fursac has referred to hysteria as dependent upon "a predominance of the automatism over the voluntary and conscious psychic operations."[8]

The tendency to automatism is seen in the reproduction of subconscious states quite independent of the higher mental life of the individual and outside of his cognizance—and such reproduction is facilitated by excessive emotional stimulation. It is often a quasi-conscious happening, and is akin to a dream state. Ideational activity and association are interfered with—being acts in the dark, as it were; the resultant emotion, the knowledge of the causes of which is denied the patient, often creates only fear, anxiety, or demoralization. The expression of such disorder may be an alteration of conduct which expresses the original disagreeable exciting concept. The initial experience may have been fully accepted and realized, but the subsequent operation of the higher mental apparatus is suspended and the subject is not aware of its importance or full meaning.

In predisposed hysterical subjects it is not uncommon to find certain physical evidences which must needs be mentioned, and when present possess diagnostic value, although their characteristics are inconstancy and irregularity. There may be associated sensory stigmata consisting usually of an irregularly distributed anesthesia in which analgesia predominates; these fields of diminished sensation have abrupt limitations and may bear no regular correspondence with nerve distribution. At times they affect one-half of the body; again they may involve one or both hands or the tips of the fingers to the wrist, and to this the name of gauntlet anesthesia has been applied, or it may be found in spots.

Again, the field of vision is constricted. Not only anesthesia but hyperesthesia is found in this way, or both forms of disturbed sensation may be associated in symmetrical regions in the same individual.

Again, there are a vague dysesthesiæ, globus, and motor disorders of varying kinds, profound abulic paralysis, contractures, tremor, and even convulsions.

In erotic cases such extreme acts as urolagnia or other evidences of sexual fetichism are occasionally indulged in by the victim of the hysterical psychosis, and if episodic and not connected with a delusional complex these need not be of grave import. These disgusting symptoms, however, must be differentiated from the defilement that accompanies ordinary acute mania or dementia.

Besides the delirium of major hysteria we are to recognize the bizarre condition of double consciousness, dream states, and occasionally the stuporous phases which cannot be mistaken for those of melancholia or dementia precox. Besides these there are hysteroepileptic and hysterocataleptic syndromes.

Obsessions are not uncommon features of the hysterical psychoses, and I have seen this conjunction in traumatic cases when there has been a syndrome of convulsion, sensory stigmata, globus, aphonia, vomiting, and amenorrhea. In a case reported elsewhere[9] the patient, who had had a fall in an elevator from a short distance without any physical injury, developed an hysterical psychosis. This was expressed in exteriorized hallucinations of vision and smell. She saw the "figure of a man in black who laughed at her" but recognized this as a phantasm. She had an obsession that she was to kill her husband and her child, which she resisted with difficulty. Her sleep was disturbed and she had torturing dreams. For a time she was melancholic. This was accompanied by prolonged ill health. Though her action against the accident insurance company was settled, she did not improve for a long time after.

Conceding the irregularity of hysteria, both as to its development and indefiniteness, it cannot be gainsaid that it figures extensively in many of the well understood insanities—dementia precox especially. The subject of a classic psychosis does not continuously or at all times present the strictly conventional picture of the particular insanity. During the course of her derangement she may for a variable time be apparently confused, and again quite rational, performing some habitual and normal act in a conventional manner. For hours or days she may be apparently herself, or there may be a stranger mixture of orderly and disorderly conduct, variations of the affective element and the existence of intensified moods, conditions of negativism, opposition, caprice, confusion, and violent excitement. In cases where there is a larvated sexual element it may find expression in appropriate reference. In such examples we may detect an admixture of hysteria; some of the irregular degenerative cases are doubtless instances of Kraepelin's disease.

Clouston[10] was evidently the first person to recognize that hysteria might often be closely related to dementia precox, or adolescent insanity, as it was then called. In 1891 in referring to their developmental nature and late appearance he said "in this respect the two diseases show their kinship," and later he added, "the psychological relations of hysteria have not at all received the attention they merit. There are some cases of hysteria that are neither more nor less than mental cases in nine-tenths of their symptoms. The relationship of hysteria to the other neuroses of development is very constant hereditarily and in the same person at different times of life."

Students of modern psychiatry must deplore the differences of opinion that have led to the confusion regarding not only the dementing psychoses, but their relation to the several psychoneuroses with which they are often associated. It is refreshing to turn to Clouston after struggling with the theories of Meynert, Westphall, Delasiauve, Kraepelin, and others in our attempt to harmonize them. Amentia, primary dementia, adolescent insanity, confusional insanity, and dementia precox are all terms that express a deteriorating psychosis having many symptoms in common, but their appearance depending upon the stage of the particular case. Bianchi[11] is inclined to group all these disorders under the term *sensory insanity* and in speaking of them says, "they represent also a changeable phase, a chronological feature of a complex psychosis. Now these syndromes which represent a part of a morbid picture cannot rise to the dignity of psychopathic figures by themselves. They must be framed in a picture which includes them all."

The false paranoid state of hysterical type is

often nothing more than the semi persecutory ideas which originate in patients because they do not believe that the hypochondriacal complaints and the alleged importance of the ailment are fully appreciated by those about them. Sometimes illusions or hallucinations which are the outgrowth of perverted cutaneous sensation or sexual dysesthesia lead to delusions or the latter may be of remote origin and is sometimes associated with convulsions and other symptoms of major hysteria. While such patients are often maniacal, the elation is not continued nor does it resemble true symptomatic mania. It is often of rather precipitate appearance and is rarely preceded by depression. Visual hallucinations are common and the contents of the confused delusions have usually a religious or erotic color.

M. C., girl of seventeen, mother and father psychopathic; family history of epilepsy, dementia, and other psychoses. Patient as child excitable, impulsive, lazy, and spoiled. Was unsocial at times and sulked and masturbated. At boarding school she did not learn easily, gossiped, and made mischief. Late psychoanalysis revealed possible homosexual attachment with no evidence of reciprocity; sexual ideas and self-recrimination. Removed from school late in 1908. To nurse she said she "had done something wrong" that "girls at school thought her pregnant." Worried and cried much; thought she was "growing larger," looked in glass for confirmation and asked nurse whether the latter "*thought it was all imagination.*" When asked why she thought herself pregnant told nurse she had "read something in newspapers." Constant self accusations of wickedness at school. When remonstrated with said, "Why! I guess I'm silly." The mother, a foolish woman, told her she was insane like her cousin, who actually was. Became excited, unreasonable, and would not eat. Removed to a private hospital—very violent, requiring several nurses to restrain her. Could be fed only with difficulty by tube. Tore her clothes and other things. Constantly spoke of being "bad" or "wicked"—much psychomotor activity. In spite of this she would calm down and smile intelligently when seen by strangers, of whom the writer was one. She evidently had more insight than she cared to admit. Taken to "Bloomingdale" November 13, 1908, discharged recovered May 19, 1909. Same disorderly behavior, insomnia, and confusion. *A few days after admission she ate a good dinner voluntarily as she did at another time when it was attractive.* At other times she refused eggs and milk. "She gives very much the effect of a spoiled child as well as of a very sick one." Spoke of being bad, "she had a good and bad side and bad side was getting her into trouble." Said she was afire and her external genital organs were swollen. At times laughs in a frank and open manner. Her confusion is worse at night. When threatened with tube she takes both eggs and milk voluntarily in fair quantities. Complained of maltreatment. Dec. 9.—Greatly improved by the use of wet packs. Patient able to play checkers and talked a little. Three days later excitedly threw herself through a glass door. Psychomotor outburst coincided with approach of menstruation. Dec. 30.—Greatly improved. Makes baskets, dances, in a tantrum tore her waist. Examination made. May 15, 1909.—Showed that she had almost recovered her insight. At one time during November she had for a few days doubtful hallucinations, saying she was lying on glass, and that she saw something running over a towel, that the dishes were moving or talking; that she heard a man call her a "cat," but these were episodical. She does not appear to have been disoriented but obstinate and stubborn, and disinclined to give information which she undoubtedly possessed. Throughout her illness she was whining and complaining, yet could suddenly become apparently quite herself for a time, but soon lacked self-control. She had no delusional reason for refusing food; upon an occasion she mischievously said, "I am dying; I am dead now" and laughed. This was when she was apparently intelligent in other ways. Upon January 10 she wrote a simple though coherent letter to her sister. At one time she complained of feeling "funny," her joints ached, and she felt "choked." Pin points could be felt when applied to forehead. In one of her final communications she made suspicious misstatements, denying simple things she had admitted before which caused Dr. Hoch to observe she "had not the appearance of one who was deliberately lying, yet the whole denial was striking." At one visit I purposely imitated the drawing of a cork from an imaginary bottle. She subsequently reached the incident and said there was a real bottle.

In this case, which was spoken of as one of dementia precox, there was a decided coloring of hysteria and a great deal of exaggeration of her natural traits.*

The so-called hysterical paranoia of Krafft-Ebing is simply the true primary delusional insanity plus the hysterical coloring or the acute derangement that has rapidly grown out of affective disturbances. The ordinary idea of the pathogeny of paranoia is that it depends primarily and alone upon a derangement of judgment and it is the dictum of Hitzig as well as Kraepelin that delusions are due to "imbecility" as well as deranged judgment. Störring[12] says emphatically that there is no imbecility in the early stages of paranoia and insists upon its well-known fact that the powers of judgment may be "above the average in matters unrelated to their delusions." His assumption is that *justifiable* suspisions, unhappiness due to irritable weakness, or frequently repeated emotions ending in persistent moods, lead to the formation of insane delusions. Meynert is quoted by him to the effect that a large number of insane false beliefs are because patients deduce facts from their *own moods* and not moods from *external* conditions as sane men do."

At least during the early formation of insane false beliefs this instability of affectivity is present and the patient is often unable to resist the dominance of the delusions that spring from this cause and the emotional nature of the psychosis becomes apparent. Later the evolution of other fixed ideas in conjunction with the initial delusion marks the real disordered perversion of judgment which signalizes the true paranoia.

Krafft-Ebing in considering the distinctive clinical features of so-called hysterical paranoia, says that the delusions of persecution are the outgrowth of distorted or false interpretation of the patient's will. Known unpleasant subjective impressions, thus the globus, clavus, myodynias and others of the sensory syndrome, result in the creation of delusions of abnormal lightness, the removal of internal organs; visual hallucinations which are so much more common than in true paranoia are followed by delusions in which animals, death, corpses,

*I am indebted to Drs. A. Hoch and Pringle for the use of additional notes.

and play of color are concerned—in fact, all manner of painful sensations from the uterus and pelvic organs are made to do duty as delusions usually of a picturesque and extreme character in which false accusations and pseudologic tales of impossible sexual assault and experience figure.

Miss X, twenty, Hebrew teacher, no history of previous trouble. Mother psychopathic, temperamentally sentimental, musical talent; psychoanalysis reveals no remote sexual embarrassment, yet her manner and conduct show some present erotic erethism. After a slight injury to the lower dorsal region in June, 1910, she suffered great pain, and spinal hyperesthesia, insomnia, restlessness, and subsequent excitability appeared which developed into apparent acute mania. While she was at a summer resort shortly after the trauma her friends noted a change in her conduct and later she showed signs of a pressure of activity; she wanted to play tennis all the time; spoke boastfully of several men who were anxious to marry her. Her activity rapidly increased and she became unmanageable. Spoke of killing father because she feared he would kill her; again, immediately after she would excuse the desire to kill him. Became untidy and threw party masticated food on dishes about. Assaulted nurses and tore clothing.

The patient was taken to a private institution in August in a very excited condition and struggled violently. During the whole time she kept up a continual run of disconnected utterances. When visited by the physician she showed much psychomotor activity. Talked constantly, was playful in conduct, elated in spirits, laughing frequently. She was very alert, but her attention could not be obtained for more than an instant. There was a marked tendency to distractability. During the physical examination she would frequently make remarks relative to doctors and her health. Replies were irrelevant and frequently facetious. She pretended not to know my identity. There was a moderate degree of clouding of consciousness and tube feeding was resorted to in order to maintain nutrition. For two months following admission the psychomotor activity kept up. About the latter part of October she showed for a time less activity and was quiet enough to answer relevantly, showing that she had a correct idea of her environment, and made repeated requests to go to the city to see her people. A day or two later she received a visit from her father, following which she again became active.

Following this lucid period she had others, during some of which she was visited by her friends. These periods were usually of short duration and passed abruptly into a recurrence of the excitement. About the middle of January, six months after admission, she again became quiet, took more interest in herself and her surroundings, and developed insight which she did not have at any of the other lucid periods, and was very reasonable and willing to cooperate in the treatment of her case. During her entire treatment, in spite of her conduct, she had a much more full insight than was superficially apparent and could be pinned down to orderly response although she would instantly indulge in disorderly mischievous excesses and would at times adopt purposive suggestions to betray herself. The contents of her hallucinations and her verbigeration, could also be easily changed by outside influence. Even while in an apparent state of violent excitement and markedly incoherent she would indite absolutely sane letters to her parents. They were well written and expressed, but after they were dispatched she would again within a short time indulge in all her disorderly acts. It was impossible by psychoanalysis to detect a hidden sexual starting point.

This case was diagnosed as a phase of manic-depressive insanity, but the hysterical element was always present. She has, since her discharge about a year ago, shown no fresh symptoms.*

The combination of hysteria and epilepsy was very fully discussed by Charcot and his school from the clinical standpoint.[13] Since the mechanism of the psychoneuroses has been studied systematically by others it has been held that true epilepsy is never of psychogenetic origin but that many kinds of epileptiform convulsions which have been looked upon as examples of the veritable mal caducens are in reality symptoms of major hysteria. It has even been admitted that these spurious fits may present all the symptoms of epilepsy "from fixed pupils to sphincter relaxation," but that tongue biting never occurs. While this is ordinarily true there are exceptions, and I think the time has come when we cannot look upon this symptom as pathognomonic, but the result only of suddenly exerted local violence incident to a severe fit of any kind.† The true test of real epilepsy seems to be as Frink[14] points out that psychotherapeutic measures are inefficient in controlling the true fits, which is not the case where they are due to psychogenetic causation. Spiller[15] refers to the resemblance of certain attacks of this kind to true psychic epilepsy.

When the element of hysteria and instability exist there are apt to be *accès* of psychotic disorder.

A case of this kind of more than ordinary interest came under the care of the writer in 1906. The patient was a dissipated, energetic man of about forty-five, a promoter and speculator who was addicted to venery, but had had no resulting infection. His conversation was apt to be salacious and at times boastful. He was restless, talked quickly, and in an exaggerated manner. There were no evidences of any disease whatever except a certain amount of arteriosclerosis and a rather slow pulse, which at night approached a true brachycardia. His wife stated that he would, apparently when asleep and dreaming, awake, sit up, and excitedly repeat a filthy erotic sentence, but would when verbally soothed fall asleep again. This would sometimes occur several times at night, and the formula would be the same, not only upon the particular night but upon succeeding occasions. The morning after he would be oblivious of what had occurred, or at best have a hazy recollection.

Bromides and rest did some good, but the phenomena were repeated. For some time he disappeared, but in the summer of 1911 I saw him again and found that upon two or three occasions he had bitten his tongue, and had had severe attacks of grand mal. Dr. Foster Kennedy, who saw him, was unable to find any objective signs of brain mischief, and the Wassermann examination was negative. The same attacks expressed by salacious repetition were present even upon the night in which the major attacks occurred. During the day time he was perfectly normal, conducted his busi-

*I am indebted to Dr. W. S. Browne of Sanford Hall, Flushing, N. Y., for records of this case.

†For many years Schroeder Van der Kolk and his school regarded this symptom as definitely indicative of a lesion of the floor of the fourth ventricle.

ness without trouble, and never had an attack of any kind.

It was my idea in the beginning that he suffered from one of the irregular forms of petit mal first detected by Hughlings Jackson, but the conclusion was later forced upon me that the curious erotic states were the residual effects of interrupted dreams of a lascivious character in which the same content existed. There was no need for psychoanalysis for there was nothing concealed. Hygienic treatment, discipline, watching, and psychotherapy effected a disappearance of the major attacks and decidedly diminished the lesser, but there is little chance for permanent improvement because of his dissipated mode of life.

The Obsessional Psychoses.—A simple example of what scarcely exceeds a physiological departure is the tendency many healthy people have to doubt or question the final accomplishment of a volitional act, and which prompts them to try the gas cock, or to open letters closed and directed by them, lest a mistake has been made. More grave and besetting doubts may arise, influencing conduct, bringing misery, and leading to coercive ideas* (Zwangvorstellung) which it is difficult to disobey. Possibly they do not at first pass the border line of introspection, but lead to self catechising and speculation regarding the question of infinity, or metaphysical or religious questioning.

The subject may express his fear of contamination or dirt (mysophobia) which leads him to wash his hands freuently, the fear of open space (agoraphobia), compelling ideas that force him to count or repeat words (arithmomania, onomatomania), to touch objects in his daily walk (delire du toucher), to avoid crowded halls or confined spaces (claustrophobia).†

The more serious manifestations of this kind of psychasthenia occasionally find vent in obsessions to steal (kleptomania), to set fire (pyromania), and in compelling impulses to drink (dipsomania), while sexual obsessions may lead the victim to commit perverted acts, especially in conjunction with the latter. Again the sight of a sharp weapon may possibly lead to the impulsive commission of a crime of violence.‡ All these forms of mental weakness do not strictly come under the head of insanity because the subject knows the nature of his obsessions and their absurdity, yet he is unable to fully escape their influence.

According to Westphall these besetting ideas "enter into the foreground of consciousness against and despite a man's will. It is important to drive them away. They impede and thwart the normal train of ideas, and their victim inwardly recognizes that they are abnormal and foreign to him and confronts them with sane consciousness."

Störring in commenting upon this writer's conclusion says "that the characteristics emphasized by Westphall, are, first, the mental coercion with which the ideas are forced upon consciousness. Second, the consequent derangement of the train of ideas, and lastly the subjective consciousness of abnormality.

With this there is always much anxiety, and strain—sensations that may lead to serious consequences so far as the genesis of actual insanity is concerned. This anxiety is, as a rule, a result of the obsession, no matter what may be its nature.

In rare cases these forms of obsession may be so aggravated that they finally assume the appearance of a grave psychosis; in fact, they are practically the expression of degeneracy that may find expression in other ways. Delusions and hallucinations and complex mental disorganization may then actually be present. Coercive ideas may, therefore, become absolute insane delusions, and according to Friedman this is the case when they give rise to an established judgment of reality, and such permanency and false realization are due to extreme anxiety rather than intensity of the idea. When this point is passed and the unreality is unperceived or accepted, the patient, being unable to analyze it or know that he has passed the borderline, is really insane.

A case which closely approached this point is that of J. V., fifty years, capitalist. Nothing of moment in his history. Comes from healthy stock, no previous bad habits. In April, 1908, he consulted me about his condition of extreme distress caused by coercive ideas which compelled him constantly to examine coal hole covers as to their safety. He was obliged in his walks to test all those he went by, trying to lift them with the toe of his shoe. He also was obsessed with the idea that he had misdirected letters and had compromised himself by writing his business affairs to the wrong parties. This caused great suffering and anxiety, insomnia, and fear of consequences. By means of psychotherapy consisting of mild assurances and elucidation, and the internal administration of the glycerophosphates he recovered entirely and went to his home in a remote city. Toward the end of 1908, as the result of hard work incident to the participation in fresh ventures, he again became a wakeful, irritable invalid and consulted a physician who injected gonococcic serum with the idea that certain joint pains were of gonorrheic origin, although he had never had this disease and was a man of unexceptional morals. The results were disastrous; he again became obsessed, slept but little, ate irregularly, and took insufficient food. He was so distracted that he could not follow his business. At this time coercive doubts dominated him to a great degree. He was so strongly convinced that he might have written offensive letters to others or compromised himself, that he would allow no one to empty his waste basket, but even after opening letters and examining them he would tear them up, but after office hours would piece together the scraps in his basket to assure himself again that he had not committed a blunder. He finally would not write but resorted entirely to the typewriter—even then his clerk had to open the letters. When he went home he picked up pieces of paper in the streets to see if some bit of his correspondence had not gone adrift. Upon an occasion after retiring he looked out of his window and saw a paper attached to the fence and fluttering in the wind. He arose in the middle of the night and detached it to find out its contents. About February, 1909, he came to me suffering intensely from his indecision. He was then accompanied by his

*Du Fursac divides them into *intellectual*, in which there is a voluntary reaction, and *inhibitory*, when abulia results, but this division is perhaps too arbitrary, as there are many exceptions. To the former belong the persistent ideas of unreality non existent doubts about eternity, neglected duties, and conscientious scruples.

†Janet describes no less than five kinds of obsession, with thirty-three subdivisions, three mental manias, with twenty-four subdivisions. ("Les Obsessions et la Psychasthenie." Paris, 1903.)

‡Freud says these ideas "have for their source dissatisfaction with their marriage and the fear of seductive thoughts of sexual nature."

brother, whom he kept with him constantly, fearing that he might write some letter. When asked what the insulting contents of the letters might be his replies were indicative of the existence of mild delusions regarding his own chastity with some mention of suicide as a means of escape. Psychotherapy and a trip to Europe in company with the brother and abstinence from all business gradually effected a cure and his subsequent marriage to a sensible woman made it complete. In a letter dated October 7, 1911, he said he was then happy and busy.

In this case the anxiety was rapidly leading to the fixation of the dominating idea, and it is conceivable how a true delusional psychosis could have developed.

The disposition has been to look upon all these cases as examples of simple psychasthenia, when in reality their derangement is often but the beginning of something far more serious. When we take into account the fact that certain mental disorders with limited delusions have with this a common form of origin in heredity and temperamental predisposing influence, it is not difficult to account for the ultimate trend of some obsessional disorders. The same weakness of makeup which, for instance, conduces to dementia precox may simply find expression in hysterical or obsessional states, in fact, dementia precox is sometimes symptomatized by striking obsessions.

Brief notes of two cases will illustrate what is meant.

E. J., a youth of eighteen, parents ignorant and neurotic. As a boy had chorea and minor infantile diseases. He is physically badly developed, is oxycephalic and has Morel's ears. Always timid and "nervous," slept badly and dreamed a great deal. Onanist, dull at school, and very ignorant. At puberty he became shy, retiring, and afterward conceited. Dressed conspicuously, constantly quarreled with schoolmates, and developed the morbid idea that they were inimical to him and envious of him. Obsessions developed that he was contaminated by one of them, and that the ash of a cigarette that had entered his eye had communicated syphilis. He had to be reasoned with constantly and came to my house at all hours, day and night. He was grandiloquent in conversation and vain—boasted of his strength and claimed that women generally admired him. At other times was introspective and indulged in doubts as to reality. He was very irresolute and would avoid previous engagements because of some immeasurable fear of danger. For days at a time he would not exert himself and there was a lack of initiative. His conversation was silly and he was without ambition or purpose, his only apparent mental energy being shown in begging, Dr. G. de F. Smith, and myself, to assure him of the fact that he had not contracted syphilis.

This case is one where the psychasthenia has extended to the point of hallucinative formation and clouding of consciousness.

A. M. L., seventeen, father eccentric, mother's family psychopathic, maternal grandfather a spiritualist and "crank," mother's brother a "free lover," patient's mother and sister psychasthenic: both have obsessions with doubts and fears. No alcoholism. Patient graduated from high school. Father says he is industrious but this is doubtful. Was an onanist, but no special introspection growing therefrom, although he refers to the immorality of his boyish associates and was evidently a party to their transgressions. For some years presented arithomomania, persistently counting to sixteen; facial tic consisting of double blepharospasm. Has for months been obsessed to count fence posts and railroad ties. When he reached school he would turn back to count trees that he had passed, and then on returning lie and invent an excuse for his truancy; fear of "going to town" so that he remained much at home in the society of his obsessed family. Periods of mysophobia. When he got into bed would arise eight or ten times thinking he had "got in on the wrong side."

Would say something was missing from his dress that ought to be there, and would constantly turn about in front of the mirror and ask his mother and sister to inspect him. After repeated assurances would repeat the performance. During past few months has been retiring, preferring his own society. Said that in a low part of the city he saw people he knew (who were really not there), in windows who spoke to him. He felt embarrassed and said, "How could people sit and look out of the window, particularly people whom I knew ought to be elsewhere, and I had to think them back where they belonged." When he went home he said "how could these people live in such places?" and he strove to adjust his ideas by saying "they have to live there because the rent is cheap."

These hallucinations were constant, and though he knew he was mistaken, he could not be fully reassured. His manner is restive and of late he has not attended to his work, but has worried a great deal. He is also troubled by insomnia and is kept awake by onomatomanic obsessions which compel him to say, *"Oh! Oh, dear! Dear! Oh!"* etc.

The importance of coercive ideas which constitute so-called kleptomania, pyromania, dipsomania, and other impulsive acts are not always recognized as pathological evidences and one of them is often ridiculed by the press and public. Much interest therefore is attached to those obsessions which lead to the commission of crime and to the defense of responsibility of the subject, and their real nature should be better understood. While the defendant in such cases probably knows the difference between right and wrong which is the test applied by the courts, he belongs to the class of those who have pathological obsessions that at the time destroy the power of distinction and interfere with the choice, as they destroy the free exercise of the will. Wharton and Stillé[16] refer to the opinion of Justice Somerville[17] who held "that a man is never responsible, if, by reason of duress of mental disease, he has so far lost power to choose between right and wrong as not to be able to avoid doing the act, so that his free agency was at the time destroyed, and at the same time the crime was so connected with such mental disease in the relation of cause and effect as to have been the product or offering of it solely."

The Freudian explanation of many obsessional states which is in the main correct, does not, I think, bear out the application he makes. His reference to the sexual reminiscences seem too narrow. Thus, for instance, the mysophobic obsessions are said to imply moral "uncleanliness," while the compelling impulse to pick up fragments of paper is ascribed in one case to the latent memory of a clandestine love correspondence. Too many of the patients of the first class actually refer to the fear of contamination of dirt or disease, while in the case of J. V., which is one of the second class, no

sexual coloring or hidden trauma whatever were found. Freud also accounts for agoraphobic obsessions as engendered by the fear of dizziness connected with a neurasthenic state which seems to be equally far fetched. The hypochondriacal expressions of the introspective masturbator are, of course, sometimes manifested in reactions springing from his sense of hidden shame and depressed state.

The prognosis of the minor mental derangements to which reference has been made is by no means as good as might be at first supposed from their apparent simple functional nature, for there is too often an underlying constitutional weakness, which may be traced back to alcoholism or insanity in other generations. Obsessional conditions especially, are more frequently found in people with alcoholic parents. Perhaps in some the particular compulsive idea is really the outgrowth of a disturbance of emotional life dependent upon the theory that "the sexual excitement which is kept away from consciousness produces physiological effects which are the substratum of the feelings of distress or anxiety."

There seems to be an arbitrary agreement among the latter-day psychiatrists that the *ipse dixit* of the psychoanalyst must be really the last word.

Admitting the value of Freud's theories and methods, and those as well of Dubois and others, there are many cases where psychotherapy fails utterly, and some of the apparent cures are but temporary. The hysteric habit, if such a term can be used, is too deep seated for its uprooting, even though the physician is able by catechism to lay bare a hidden trauma, or to correct and apparently regulate the disordered mental operations arising therefrom. It must be the experience of many that after patient work extending sometimes over months or years, there is a goodly number of cases that do not pass a certain point of improvement. On the other hand, brilliant results may follow two or three seances, the patient being reassured and comforted. Temperamental influences always handicap the efforts of the most conscientious and painstaking psychotherapeutists, and the "catharsis" which is supposed to turn out the offending sexual ideas does not take place.

The method of substituting a healthy train of ideas or a new picture to supplant the old and offensive one, is the procedure followed by Dubois, Janet, the late Russell Sturgis, Putnam, and others, the besetting complex being ultimately eradicated; but it must be realized at the same time that there is no kind of psychotherapy suited to every case.

The radical teachings of Freud have borne fruit and the extremes to which he and his disciples have gone would suggest that nearly everyone is blighted by some corrupt sexual experience and that really no one is pure. Patients are said to be homosexual and perverted, and reports of this kind of psychoanalysis with salacious details stare one in the face from the pages of many contemporaneous medical journals. Freud himself would make us believe that even incest is not an unusual occurrence, for he has applied the name of Œdipus to a particular complex which is a form of the anxiety-neurosis. While it is true that occasional disgusting experiences in the life of a psychasthenic subject are stirred up, there is, I am convinced, great exaggeration.

It is encouraging to find notable exceptions to the sexual school. Briquet, the greatest writer upon the subject in his time and perhaps any other, had no difficulty in discovering causes, while in our own time many cases have been investigated by psychoanalytic methods without any hidden erotic concepts. J. J. Putnam and Linenthal and Taylor of Boston[18] have reported six cases where no "revolting idea" was unearthed, although "a love affair which had a distressing outcome" accounted for the psychoneurosis in one woman. In all the others, falls, worry, and mental perturbation of other kinds were the causes of the disorder.

There is nothing strictly new in psychotherapy, or anything unfamiliar to scores of experienced medical men who have for decades used suggestion and substitution, and who certainly have not been conscientious practitioners if they have not thoroughly delved for every possible factor and every disturbing influence in the patient's life. It is not always necessary to hypnotize the subject to accomplish results—though it is possible sometimes in this way to get at reminiscences that enter into the formation of the psychotic state. By this means the author many years ago systematically made diagnoses which were apparently impossible by simple interrogation, and was able to substitute fresh ideas and give assurance.[19]

These cases are so different that it is difficult to lay down any special directions. So far as psychotherapy is concerned we must be governed by the indications of the particular case. It is not only important sometimes to bring the victim face to face with the concealed ideas which have led to his instability and irresolution, but he should be taught self-control, and be made when he does so to feel the satisfaction of *knowing* he has conquered at least for a time. Surrender is conducive to a continuance of his disorder. Should change and isolation be indicated they will do much for some cases; the same may be said for the provision of all absorbing and non-fatiguing occupation. Before closing, I wish to reiterate a word of warning against the ill-judged use of methods of psychoanalysis which stir up erotic and unclean ideas in women who at best cannot profit by sexual excitement, and who are often so unstable and defective as to be beyond the reach of medical skill.

REFERENCES.

1. "Outlines of Psychiatry," p. 14.
2. "Popular Fallacies About Insanity," by H. R. Stedman, Boston, 1911.
3. "Mental Pathology in Its Relation to Normal Psychology," etc., by Gustav Störring, English Translation, London, 1907.
4. "On Habit Neuroses and Psycho-Neuroses," etc., S. Ferenczi, an abridged translation by C. Macfie Campbell, M.D., etc., State Hospitals Bulletin, March, 1910, p. 5.
5. "The Form and Content of the Psychoses—the Rôle of Psycho-Analysis in Psychiatry," by C. Macfie Campbell, B.S.C., M.D., etc., 1911.
6. Report of the Department of Neurology, Harvard Medical School, Vol. IV, p. 56.
7. *Deutsche medizinische Wochenschrift*, Nov. 2, 1911.
8. De Fursac: "Manual of Psychiatry," New York, 1905, p. 321.
9. Hamilton, Allan McLane: "Railway and Other Accidents," p. 78, New York, Wm. Wood & Co., 1904.
10. Clouston: "Neuroses of Development," p. 108, et seq., London, 1891.
11. Bianchi, Leonardo: "Text Book of Psychiatry," English Translation, p. 704, New York, 1906.
12. Störring: p. 212.
13. Hamilton, Allan M'Lane, *American Journal of the Medical Sciences*, July, 1879.
14. Frink: *New York Medical Journal*, April 22, 1911.
15. Spiller: "Psychasthenic Attacks," *The Journal of Abnormal Psychology*, July, 1907, p. 265.
16. Wharton and Stillé: Vol. I, p. 722, Section 844.

Also see p. 720, Sections 838-841, for a full consideration of the medicolegal aspects of obsession.

17. Parsons vs. State, 8 Ala. 577; 60 Am. Reports 193, 2 So. 854.

18. Reports on Neurology, Harvard Medical School, Vol. II, pp. 1, 145.

19. Hamilton, Allan McLane. "Mental Medicine," *The Century Magazine*, Vol. XLVI, p. 430, July, 1893.

*50 Madison Avenue.

PROMINENT EARS.*

By ROBERT T. MORRIS, M.D.

NEW YORK,

PROFESSOR IN SURGERY AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

PROMINENT external ears may deflect currents of cold air against a delicate drum membrane. Discomfort or even danger from this source of irritation on windy days will make it desirable to change the "set" of certain ears. The subject has not received quite as much attention as it seems to deserve, because surgeons of standing do not quite like to operate for the purpose of obtaining cosmetic effects only. It is somewhat beneath their dignity to assume the responsibility of subjecting a patient to operation excepting in matters relating to life or utility of the individual, and the resetting of ears would on first thought be classified among cosmetic operations, to which surgeons are instinctively rather averse.

A good deal of mental suffering is really caused sensitive people when they attract the direct gaze of children whose interest finds a target in some defect. Dr. Keen allowed competent surgeons to take charge of the subject of removing moles, when he pointed out the tendency of some moles to undergo malignant degeneration.

The danger from deflection of currents of cold air into the ear should make us give serious consideration to the matter of resetting prominent external ears, even though we might be averse to doing

Fig. 1.—M. F., before operation.

the work on cosmetic grounds alone, or for the mental relief of people who found their ears an object of attention by children in the street car.

One reason why prominent ears have not been set back more frequently is perhaps because of an operation sometimes done which consists in simply excising an ellipse of skin from ear and scalp and suturing the margins together without excising cartilage. Elastic fibrocartilage exerting ceaseless traction upon sutured skin has a tendency to gradually cause recurrence of the original deformity.

For many years I have preferred the method of excising practically all the fibrocartilage of the

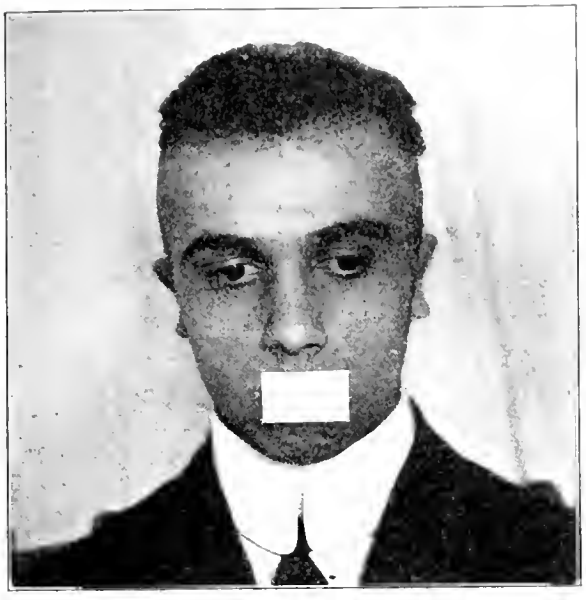

Fig. 2.—M. F., after operation.

concha, antihelix, and antitragus. As a preliminary step an ellipse of skin is removed from the posterior part of the ear and from the mastoid region of the scalp. The ellipse is of such shape that about one-half relates to the ear and the other half to the mastoid region of the scalp.

It is best to press the ear flat against the mastoid region before determining upon the lines for incision. The ear is then grasped by the helix, drawn well forward, and the ellipse of skin snipped away with a pair of curved scissors, leaving subcutaneous structures as nearly intact as possible. The blood supply to the ear is large, and commonly requires ligation of branches of the posterior auricular and superficial temporal arteries. This ligation is best done with catgut threaded in a needle, rather than with artery forceps.

Use a pair of small but strong curved scissors for outlining the cartilage to be removed, and then gradually trim the cartilage away from the skin of the anterior aspect of the ear by alternately pressing and snipping.

The skin from which cartilage is removed is thin, but well supplied with blood, and does not slough subsequently. The very thin skin over concha and antihelix may be buttonholed at one or more points while cartilage is being removed, but this is desirable, and if one is so dexterous in technique as wholly to avoid buttonholing the skin he must purposely make one or more openings through it later for purposes of drainage. This constitutes a feature of prime importance in the operation, perhaps the most important single point in technique relating to the entire operation. The reason is this: When the ear, shorn of cartilage, is sutured back over the mastoid region, the space from which cartilage was removed has a tendency to fill with blood clot. Blood clot collecting beneath this thin skin may lead to failure of union or to

*Cases reported at the Clinical Society of the New York Post-Graduate Hospital, March 15, 1912.

sepsis. If, on the other hand, the skin is buttonholed, purposely or accidentally, blood promptly escapes upon the dressings, and we have no damming or pocketing of clot.

Another feature of consequence in the operation, small but important, relates to management of the external auditory meatus. This should be plugged

Fig. 3.—Dr. B., after operation.

with absorbent cotton in advance of operation; otherwise blood may enter the meatus and form a troublesome clot upon the drum membrane. Neat application of the dressing is very important. After suturing skin margins of ear to skin margins of scalp two thicknesses of iodoform gauze cut to the shape of the wound line are nicely fitted between skin of helix and skin of scalp. Iodoform gauze is daintily packed upon the skin of the anterior part of the ear with attention to depressions, and to the fossa of the helix, compressing the skin evenly and nicely, so that blood cannot collect beneath it. We then have practically a skin graft with tendency to form immediate union.

Gauze must not be packed into the meatus. Leave the meatus open, or loosely covered with gauze. Failure of primary union has occurred but twice among my cases, and in these cases, when granulation appeared, secondary adhesion was obtained without difficulty.

The chief danger from the operation, which I have anticipated but have not seen developed, is perichondritis of the cartilage remaining in the helix. This perichondritis, which is familiar to us in the ears of athletes, I assume might appear after operation. It would be well to keep this point in mind, at any rate.

The two patients whom I show this evening are M. F., who entered the hospital in February, and Dr. B., who entered a month or so previously. They were not confined to bed by their operations, but remained at the hospital for a few days to have the dressings looked after properly. The photographs of M. F. give a full front view before and after operation; the photograph of Dr. B. from behind shows that helix and lobe are the only parts of the ear allowed to remain free after suturing.

616 Madison Avenue.

MALFORMATION OF TAENIA SAGINATA (T. triedre).

By G. A. MacCALLUM, M.D.,

NEW YORK.

The unusual specimen herein described had as its host a woman in Canada who recently consulted Dr. L. Morden of Brooklyn, and through whose courtesy we are allowed to report it.

The specimen is shown in Fig. 1 and is of the form of *Taenia saginata* known to the French as *Tenias triedres, triquetres, or prismatiques* and considered a monstrosity. While this particular abnormal form of *Taenia saginata* or beef tapeworm is rare, yet it has been frequently reported in Europe. Blanchard, Cobbold, Leuckart, Neumann, Coats, Braun, and many others have reported its occurrence, but as far as our opportunity for reference goes we do not find it reported in American literature, hence this record.

Taenia saginata, as is well known, is probably more prone to malformation than any other of the cestodes, but why this should be so is not known. Some helminthologists have gone so far as to suggest that this particular form should rank as a species. For instance, Brera named it *T. hybrida*, Kuchenmeister *T. capensis*, and Cobbold *T. lophosoma*. However, it is now considered that, notwithstanding its abnormalities in form, they all belong to the one species, *T. saginata* or beef taenia.

In this particular malformation the individual at once suggests the partial fusion of two worms. As may be seen in Fig. 1, the body presents itself in the form of three leaves or folds, a cross section of which shows the bifurcated appearance. Writers describe the scolex as fused also, being larger and presenting six suckers instead of four as in the normal head.

The cross section of the body in Fig. 2 shows it to be bifurcated, the longer and thicker leaf being divided into two, and the line of division on the surface being shown on each side by a shallow groove. Each proglottis shows plainly the genital

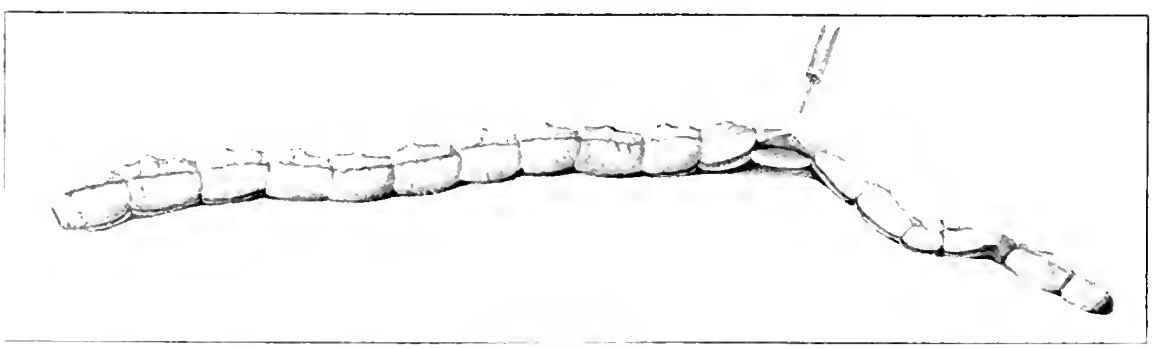

Fig. 1.—Sketch of malformed Taenia showing lateral splitting of segments.

aperture at the center of the edge of the undivided portion, and from it the reproductive organs may be easily traced and located chiefly in the thicker portion of the segment, although, as will be seen by the plate, some folds of the uterus and some of the testes occupy the middle of the whole length of the bifurcating leaves or folds. Again the water vascular canal is quite large in the thicker fold but exceedingly small in each of the others. Although the worm may represent the fusion of two individuals, there is no trace of two sets of organs.

Fig. 2.—Transverse section of segment of malformed Taenia saginata showing: A, Cirrhus; B and E, Water vascular channels; C, Uterus with eggs; D, Lobule of testis; F, Vagina near which are portions of the vas deferens.

981 Madison Avenue.

PEDIATRIC MEMORANDA.

ATYPICAL INCIPIENT POLIOMYELITIS AND ITS DIAGNOSTIC DIFFICULTIES.

By HERMAN B. SHEFFIELD, M.D.,

NEW YORK.

A DECADE or two ago the diagnosis of acute poliomyelitis called for no extraordinary skill. At that time the poliomyelitis producing microorganism was supposed very rarely to venture beyond the area of the anterior gray horns of the spinal cord and, accordingly, the paralysis was apparently limited to the extremities. So rarely did the old authors find involvement of other parts of the body that Gowers,* for example, deemed it important to emphasize that on one ocasion he had observed unilateral paralysis of the face. Evidently the disease has since undergone many and material changes. It is now fully established that the poliomyelitic inflammatory process often extends also to the posterior horns of the cord, the medulla, pons, cerebellum, cerebri cura, and meninges, giving rise to complex clinical pictures which in their incipiency lead to gross diagnostic errors.

Poliomyelitis Affecting the Face, Abdomen, Spine, and Extremities; Resembling Encephalitis.—The twenty-months-old girl, born of healthy German parents, and apparently in the best of health, was suddenly seized with violent vomiting and general bodily pain. After administering a dose of castor oil and a soap-suds enema, the vomiting partly subsided, but the child passed a very restless night, twitching, tossing, and talking and crying from pain. I saw her in the morning. She was in a state of partial stupor, her head was slightly retracted, her neck stiff, her body, except for occasional twitching, motionless and her eyes rolling upward between the half-closed lids. Her temperature was 103° F. per rectum. On careful examination I noticed that the whole right side of the body, including the face, was paralyzed. The face was drawn to the left side, the lower lip drooped and on pulling the tongue forward the patient seemed to experience considerable difficulty to draw it back into the mouth. As the clinical picture remained unchanged in the afternoon, I felt quite certain that the child was suffering from acute encephalitis, possibly of grippal origin. I was not a little surprised, however, when I found the next morning that the paralysis had extended to the left forearm and the abdominal and spinal muscles (see Fig. 1); that the general rigidity had subsided, and that the right patellar reflex was abolished. The case was, of course, very clear thereafter. I was evidently dealing with poliomyelitis involving the pons, medulla, and the anterior and posterior horns of the spinal cord. In hospital practice the diagnosis could, perhaps, be facilitated by an examination of the blood and cerebrospinal fluid, which in poliomyelitis shows a marked diminution in the number of leucocytes (3500) in the blood, and an increase of lymphocytes and protein matter in the cerebrospinal fluid. In private practice, however, these data are rarely available, since by the time the results of the examination are obtained, the diagnosis can usually be made from the subsequently developing new symptoms or recession of the paralysis. The prevalence of the disease in epidemic form occasionaly serves well to elucidate obscure cases, especially when there is a history of direct exposure to infection (as it occurred in cases 4 and 5). On the other hand, epidemicity is also apt to cloud our judgment and lead to "snap" diagnoses—many other brain and cord affections or convulsions from various causes helping to swell the statistics of genuine poliomyelitis.

Poliomyelitis Affecting the Left Muscles of the Neck, Shoulder, and Tongue; Resembling Men-

*Diseases of the Nervous System, Vol. I, 1893.

gitis. This case, a robust girl four years old, came under the observation of Dr. J. L. Rubinstein. The child was apparently perfectly well up to two days before. At that time she complained of a sore throat which the doctor thought was due to the grip. The following day she complained of

Fig. 1.

severe headache, and toward evening began to vomit. The attending physician having been busy with other cases, Dr. M. Krakowski was hastily summoned instead. He found the patient in semicoma, delirious, with a temperature of 104° F., head strongly retracted, Kernig's sign marked and her whole appearance that of a case of meningitis. The next morning, through the courtesy of Dr. Rubinstein, I had the opportunity to see the case with him as well as Dr. Krakowski. On mere inspection, noting the peculiar "paralytic attitude" of the body, I surmised that the child was suffering from poliomyelitis, but after carefully examining the patient, I very much hesitated to express a positive opinion. I found her in a moderate stupor, from which she could be roused when talked to firmly; the neck was stiff, and when the head was flexed downward toward the sternum there was concomitant flexion of the legs upon the abdomen (Brudzinski's sign), slightly exaggerated patellar reflexes, slight Kernig's sign; delayed pupillary reaction and rolling of the eyes upward and sideways, and distinct *Taches cerebrales.* I found, however, that the cerebrospinal fluid escaped very leisurely, and was serous in character. After discussing all the diagnostic possibilities, I concluded that we were probably dealing with polioencephalitis and suggested to wait for further developments. As there was but slight improvement in the child's condition the following day, the parents decided to consult their previous family physician, a gentleman of large experience. This doctor unhesitatingly pronounced the case as meningitis and advised to have the patient at once sent to the hospital, in order to enable them to employ Flexner's meningococcic serum—before it was too late. The child was transferred to Lebanon Hospital. To my great surprise I learned a few days later that there was supposed to be absolutely nothing the matter with the little girl and that she probably had suffered from a slight attack of the grip. However, when about two weeks later the child had returned from the hospital she was unable to rotate her head to the left side; her upper arm was partially paralyzed and on protruding the tongue it would deviate to the right side. The poliomyelitis apparently became localized in the left medulla and upper cervical region.

Poliomyelitis Affecting the Superficial and Deep Muscles of the Neck and Extremities; Resembling Polyneuritis.—The little girl was three years old, delicate from birth and subject to frequent "colds and coughs," apparently due to enlarged tonsils and adenoids. She had not been feeling well for two days, as the parents put it, "was terribly weak, had pain in swallowing, and refused to take any nourishment." As I went about to examine her she cried bitterly with pain. I was informed that on one occasion a mouthful of water came back through the nose. The throat was free from a deposit, but deglutition was difficult nevertheless. Her temperature was only 100° F. She was able to move her legs from one part of the bed to another, but complained of pain while doing it. The same was true of the upper extremities, especially of the hands. She could rotate her head laterally and there was neither retraction nor stiffness of the neck. We thus had: symmetrical paresis of the extremities, intense pain, difficult deglutition, regurgitation of fluids through the nose and nasal

Fig. 2.

tone of voice (which she always had owing to the adenoids)—*i. e.* a typical picture of postdiphtheritic neuritis—and yet no history of diphtheria or of any other grave disease within six weeks previous to this attack. I ordered 3 grains of sodium salicylate and 1 100 grain of strychnine to be given

every three hours. The next day she was entirely free from pain and apparently happy. No longer objecting to the examination, I went over the case most carefully, and as I propped the child up against the pillow to give a real good look at her throat I was surprised to note that her head dropped forward upon the sternum like a dead weight, the patient being unable to lift it in position. On removing the pillow and placing the patient in slanting position, the head dropped also forcibly backward. The accompanying illustration (Fig. 2) was taken about six weeks later. She has gradually greatly improved though she still (four years after the attack) shows lack of strength in the anteroposterior mobility of the head. With all our latest scientific data on the subject, I am not aware of any diagnostic means which would have enabled to differentiate this case from polyneuritis at so early a stage.

Poliomyelitis Affecting the Left Glutei and Abdominal Muscles; Resembling Tuberculous Coxitis.—J. C., two years old, came to the Babies' Hospital Dispensary (Dr. H. E. Hale's division) with the following history: Having been perfectly well up to four days before, he suddenly complained of pain in the legs and seemed to have a slight rise of temperature. The family physician was consulted, but finding no tangible cause for the complaint he administered a laxative and ordered to keep the child in bed for a day or two. The next

Fig. 3.

day the patient was out of bed, but off and on continued to complain of pain, especially in the left leg. It was for this symptom that he was brought under our observation. On examination I found that he was able to make free use of the extremities while in sitting posture and also able to walk, though he did it with reluctance, holding the leg stiff. The child's musculature as a whole was flabby and no perceptible difference could be elicited between the muscles of the different extremities. As pain and a slight limp were at that time the most characteristic symptoms, and as the onset

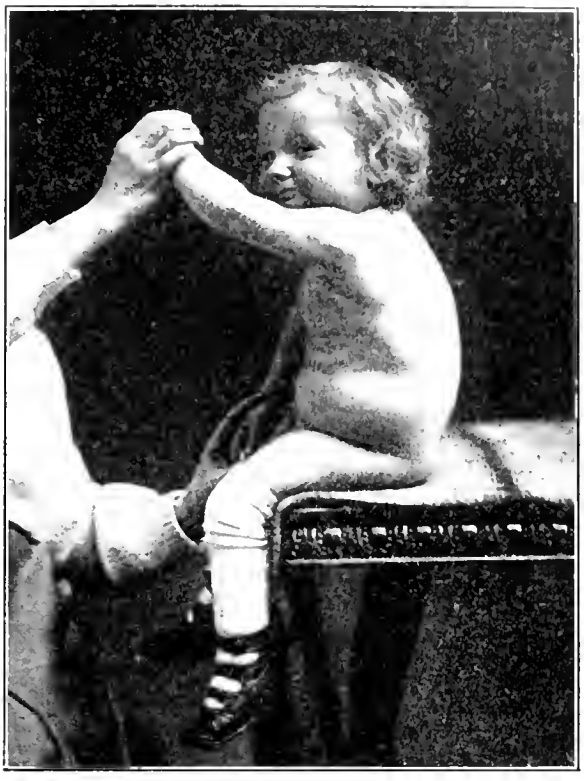

Fig. 4.

and course of the attack were so exceptionally brief, it required quite a stretch of imagination to pronounce the case as poliomyelitis. Indeed, noting also that there was slight asymmetry between the gluteal regions (which later proved to be atrophy of left gluteal muscles), and on further inquiry having learned that the child had recently sustained a fall, I was rather inclined to the belief that the patient might be suffering from incipient coxitis. I could not help thinking also of rheumatism—pain being the predominating factor. However, all speculative theories soon went to naught. On the second visit, one week later, I found the left gluteal muscles distinctly atrophied and the abdominal muscles (see Fig. 3) equally affected. Moreover, a few days later J. R., a little girl seventeen months old, living in the same flat one floor above, was brought to the clinic suffering from complete paralysis of the left leg, except the foot, partial paralysis of the right leg and unilateral paralysis of the abdominal muscles (Fig. 4). This child had the attack of poliomyelitis about two weeks before the aforementioned boy, her playmate.

127 West Eighty-seventh Street.

Worms as a Vehicle of Infection in Cholera.—B. Ghosio believes that worms that live in the water play a large rôle in spreading cholera and typhoid fever. In a certain town the water supply was found to be infected with cholera vibrios, and chemical disinfectants were added to the water until these were no longer found. The water worms were also killed. The author found living cholera vibrios in the dead bodies of the worms. Many of the water worms are migratory and travel a considerable distance through the ground, carrying with them various bacteria, which they may deposit on vegetable matter, especially after rains. This is an important method of disease transmission.—*Il Policlinico.*

PELLAGRA IN THE CANAL ZONE.

By W. E. DEEKS, M.A., M.D.,
ANCON, CANAL ZONE,
CHIEF OF MEDICAL CLINIC, ANCON HOSPITAL.

SINCE the recent awakening of the medical profession to the widespread existence among them of the hitherto almost unknown disease on this continent—pellagra—reports of cases have issued from many parts of the temperate and tropical zones. It will be of interest, therefore, to report, both from an etiological and therapeutical standpoint, the following cases that were admitted to Ancon Hospital. It is not the intention of the author to discuss the different theories at present advocated as to the etiology of the disease, but to briefly draw from the results obtained conclusions which may throw some light on this interesting affliction.

CASE I.—J. W. O., Martiniquan woman; colored; 36 years of age; was admitted to Ancon Hospital June 16, 1910, with acute pellagra. The dermatitis was characteristic on the hands, forearms, and shins, also the mucous membranes of the mouth, rectum, and vagina. She complained of pain in the stomach, also on urination, and was sensitive to pressure over the abdomen. There was a serosanguinolent discharge from the vagina. The parts about the rectum were excoriated. The leucocytes were 10,400 with 65 per cent. polynuclears, 1 per cent. large mononuclears, and 18 per cent. lymphocytes. On admission the temperature was 100.2°, pulse, 128, and respirations, 24. The temperature and toxic conditions increased daily, and she died on the 21st, five days after admission, with a temperature of 107°. Post-mortem: There were found an acute and subacute spinal meningitis, chronic interstitial nephritis, and chronic cholecystitis.

CASE II.—L. D., Martiniquan; colored; male; age, 40; four and one-half years on the Isthmus; was admitted July 13, 1910, complaining of having been sick for eight days, and unable to work because of pain in the joints and extremities. On admission the temperature was 100.4°; pulse, 128, and respirations, 54. Patellar reflexes absent; Romberg's sign present; gait, ataxic; unable to coordinate. He had the characteristic oral mucous membranes, but no dermatitis. From the midday of his admission he vomited almost constantly, was nervous, slept badly, and developed an uncontrollable diarrhea; temperature increased, and he died on the fourteenth day after his admission with a temperature of 106°. His leucocyte count on admission was 11,200; polynuclears, 81 per cent.; large mononuclears, 4 per cent., and small mononuclears, 15 per cent. Post-mortem findings: Acute and chronic ulcerative colitis, proctitis, and lymphadenitis (mesenteric and mescolic), chronic degenerative myocarditis, acute degenerative nephritis, and edema of the lung.

CASE III.—V. C., female; colored; age, 40; from Guadeloupe; was admitted to the hospital June 4, 1911, from Gorgona. She had been three months on the Isthmus. On admission she complained of having been ill twelve days with fever, vomiting, diarrhea, and pain in the back. She had the typical dermatitis on the hands, forearms, and breasts, the red hyperemia of the oral mucous membranes, doughy abdominal skin, vaginitis, and proctitis, with excoriated skin about the perineum. In the vaginal discharges were gonococci. The leucocyte count was 13,000; temperature on admission, 100; pulse, 120; respirations, 36. She died on the fifth day after admission with a temperature of 100.5°. The autopsy showed multiple infarction of the kidneys and spleen, chronic nephritis, acute capillary bronchitis, acute splenitis, chronic adhesive peritonitis, syphilitic cirrhosis, myocarditis, and ulcerative stomatitis, and a general septicemia of undetermined origin.

CASE IV.—S. C., colored; female; Martiniquan; local residence, Culebra; five years on the Isthmus. Was in the Ancon Asylum suffering from paranoid dementia præcox from June 26, 1909, to September 13, 1910. She was discharged at the request of her husband, and was readmitted July 25, 1911, to the medical wards with a temperature of 100.4°; pulse, 128; respirations, 24. Her condition on admission was very critical, almost comatose. The dermatitis on the hands, forearms, and feet was very characteristic, also the acute inflammatory condition of the oral, vaginal, and rectal mucous membranes, with excoriated perineum and inner surfaces of the thighs. Her stools contained the ova of uncinaria and ascaris, with plenty of blood and pus. The urine contained a few hyaline casts; hemoglobin, 90 per cent., and leucocytes, 9,400. There was no diarrhea. At this time, being impressed with the similarity of the early symptoms of pellagra, and those of patients who were large consumers of cane sugar and starchy foods, to the exclusion of meats, green vegetables, and fruits, the writer decided to use a special diet in which sugars and starches were absolutely excluded. The patient was given a diet of orange juice, milk, meat broth, and eggs, and the only medication was dilute nitric acid, 20 to 30 drops, three times daily in one-half glass of water on an empty stomach. An occasional dose of castor oil was also administered. Improvement in her physical condition was marked after the first two or three days, and in three weeks the dermatitis had practically disappeared, leaving a clear skin with only slight pigmentation. All the mucous membranes became perfectly normal, and physically the patient could be considered well. As her strength returned her mental symptoms became worse, and on the 22d of August, about a month after admission, she was transferred to the asylum in a maniacal condition. She died September 3, twelve days later, and post-mortem findings revealed only a slight diffuse nephritis with a moderate acute degenerative process superadded, and a slight chronic ulcerative metritis, not enough to account for her death.

CASE V.—G. P., Martiniquan; female; colored; age, 27; six months on the Isthmus; was admitted August 22, 1911, with a temperature of 103°; pulse, 120, and respirations, 32. Her physical examination was negative except for the characteristic stomatitis, vaginitis, and proctitis. She also suffered from pains in the lower extremities and abdomen. There was no dermatitis. Her leucocytes were 17,200. After three weeks of treatment she was discharged practically well.

CASE VI.—M. D., female; colored; age, 33; a native of Trinidad; was admitted from Gorgona on August 23, 1911, with a history of about one month's illness. She complained of some fever, anorexia, abdominal pain, sore mouth and throat, and more recently diarrhea. She had the characteristic intense stomatitis with superadded white exudate, an intense vaginitis, some nephritis, and a diarrhea with plenty of pus and blood in the stool. Her leucocyte count was 11,000. She was put on treatment, and was discharged well on Oc-

tober 21, 1911. She was on admission in a very critical condition, much prostrated, but was able to sit up and move about three weeks after admission.

Case VII.—J. G., Martiniquan laborer; colored; age, 26; had been on the Isthmus six years; was admitted to the hospital on September 27, 1911, complaining of swollen legs and arms, and sore mouth. He had the characteristic dermatitis of the forearms and hands, and the sore mouth. Otherwise the physical examination, including the stools and urine, was negative. He was placed on treatment, and discharged well on October 15.

Case VIII.—H. W., female; colored; Jamaican; age, 25; who had been several years resident on the Isthmus, was admitted from Paraiso on September 16 with a temperature of 102.5°; pulse, 120; respirations, 20. In this case the dermatitis was very marked on the dorsum of the hands, wrists, and forearms. There were the usual mouth and vaginal symptoms characteristic of the affection, but no diarrhea. She improved rapidly under treatment, and was discharged November 11.

Case IX.—I. H., female; Jamaican; colored; age, 35; with a history of eight years' residence on the Isthmus; was admitted September 24, 1911, suffering from diarrhea of 15 days' standing. The oral and vaginal mucous membranes were in a highly inflamed, irritable, red condition, and the dermatitis, which extended up to and included the elbows of the upper extremities and the dorsal surfaces of both feet and toes, was very characteristic. Blood examination showed 75 per cent. of hemoglobin, 3,640,000 reds, and 4,800 whites. Stool examination showed blood and pus, and urine showed pus, albumin, hyaline, and granular casts. Her condition was very grave; temperature, 99°; pulse, 110, and respirations, 20. Under treatment she began to improve, and by the middle of October she was able to be up and around. She was discharged well on the 22d of October. The mental symptoms characteristic of the later stages of the disease were present only in showing extreme irritability.

Case X.—H. W. B., Jamaican; female; colored; age, 27; arrived on the Isthmus when a child; was admitted October 26, 1911, complaining for seven days of fever at night, sore mouth, with extreme salivation, constant pains in the abdomen, frequent watery bowel movements, occasionally with blood. The oral, vaginal, and anal mucous membranes were exceedingly red and irritable, and the abdominal pain distressing. There was a patch of dermatitis on the right side of the abdomen about the size of the palm of the hand, but none on the extremities. Her stools showed microscopically pus cells, her urine a slight trace of albumin, hyaline, and granular casts. Her blood showed 2,624,000 red cells, 21,600 whites, with 80 per cent. polynuclears, 17 per cent. small mononuclears, and 3 per cent. large mononuclears cells. Her mouth and vaginal mucous membranes recovered very quickly, and in four days the irritable condition was almost gone. Her abdominal condition persisted, and was very much worse for one week after treatment was begun. Her face had the drawn expression of a fatal peritonitis. The use of saline enemata, however, with bismuth subnitrate by mouth relieved this, and convalescence rapidly ensued. She was discharged well on November 21, 1911.

Case XI.—M. M., female; Barbadian; age, 29; three years on the Isthmus; was admitted to the surgical side October 30, 1911, complaining of nausea, vomiting for the past two months, with some vertigo and numbness of the legs of two days' duration. She had some chronic pelvic peritonitis, for which an operation was performed. On November 13, two weeks after admission, my attention was directed to her because of the peculiar condition of her tongue. On examination she was found to have not only the characteristic tongue, but also the vagina, and the doughy, inelastic skin, with patches of pigmentation about the elbows. The case was not a very severe one, and on treatment she rapidly recovered. The symptoms she complained of on admission were more or less typical of pellagra patients. She was discharged well on November 26.

Case XII.—W. J. M., white; American; born in Indiana; aged 34; a conductor who had been four years on the Isthmus; was admitted to the hospital November 1, complaining of having been for two days ill with chilly sensations, slight fever, headache, nausea, vomiting, and insomnia, sore throat, and burning in the stomach. The upper extremities and neck were affected by a severe dermatitis, which he said had existed for two weeks and was caused by sunburn. The dermatitis extended to above the middle of the arms, corresponding precisely to the parts uncovered by his undershirt. He wore elastic sleeve holders above his elbows, and the part protected by them was free from dermatitis, thus proving beyond question that the dermatitis is excited at times by the sun's rays. His tongue was so irritable, red, and inflamed that he could not protrude it. The buccal mucous membranes in a similar condition with ulcerated lesions on the lower lip, and constant salivation was present. The skin was so doughy that when a fold was caught up it remained in that condition for some time. He had an associated very severe acute nephritis, with a large amount of albumen, hyaline, granular and epithelial casts, and was passing from 11 to 20 ounces of urine daily. Nausea and vomiting were almost constant, and insomnia from the distress and burning in his stomach. His blood examination showed a leucocytosis of 17,000, and a differential of 86.5 per cent. polynuclears, 4 per cent. small mononuclears, 6.5 per cent. large mononuclears, and 3 per cent. transitionals. For two days after admission he had to be kept under the influence of morphine, and his life was despaired of. For four days only liquid could be retained. Convalescence then began and progressed rapidly. The oral symptoms first cleared up, and the stomach distress disappeared. Three weeks after admission his only complaints were of dull rheumatic pains in his legs and hips. He was discharged November 29 well, except for occasional hyaline and granular casts in his urine. The albumin had entirely disappeared. No case could be more typical of severe pellagra than this, though he had not reached the stage where diarrhea and mental symptoms appear.

(Since this article was sent in for publication four more cases have been admitted. Two have been discharged well, the other two are convalescent. A fifth case was admitted moribund and died the date of admission.)

The above cases have all been presented before the Canal Zone Medical Society, either in the acute or convalescent stage. They were all colored but one; the colored patients belonged to different islands in the West Indies, and came from different towns and villages in the Canal Zone. There were two males and ten females. The symptoms were

fairly constant. The red, raw beef, irritable tongue, protruded with difficulty, and in later stages accumulating a dirty, necrotic, and diphtheritic membrane on its edge, is absolutely characteristic, and constant in my experience here. This is associated with a stomatitis with inflamed buccal mucous membranes. Salivation is present in a marked degree. The second most constant symptom is, in women, a vaginitis of similar appearance, to the naked eye, to the stomatitis, with an irritating discharge which excoriates the skin surrounding the orifice, and associated with this is a proctitis, also of similar character. The third most constant group of symptoms are those associated with the gastro-intestinal tract, the burning in the stomach and chest, the latter in consequence of the esophagitis, nausea, often severe vomiting, and later a diarrhea, due to a more or less severe enterocolitis. Fourth: The skin lesions. In all the cases here observed the doughy, inelastic, or myxenoid skin, which I have previously described in connection with amoebic colitis, chronic inflammatory, and suppurative conditions of any of the abdominal viscera, is present in pellagra to a very marked degree, particularly over the abdomen. The dermatitis which is frequently present in the extremities, neck, elbows, and about old scars, has probably different exciting causes. It was present in only seven of the twelve cases. The most frequent cause is the sun's rays, causing first an erythema, and later a dermatitis, as illustrated beautifully in case 12. Second, as Bass has pointed out, there occurs autoinoculation from the salivary and nasal secretions. Third, on the end of the elbows, or parts of the skin subjected to much pressure, where there is a greater determination of blood to the part and hence more of the toxic agent.

Fifth: There is always more or less severe acute nephritis, which disappears with the convalescence of the patient. In all the cases here albumin in greater or lesser quantities has been present, with hyaline and granular casts. In case 12 this condition was very severe, and necessitated his detention in the hospital at least two weeks longer than was otherwise necessary. Sixth: The mental symptoms are in my experience developments of very late stages of the disease, and when present the prognosis must be much graver. Death is due apparently to different causes, either exhaustion from inanition, or from secondary or terminal infection, general or localized. It is not uncommon to have extreme motor weakness and dull aching, or rheumatic pains, in the extremities. The lesions are mainly associated with the alimentary tract.

Etiology: From the above cases certain facts stand out prominently, and from these some conclusions can be drawn as to etiology. They are: (1) There is no endemic centre. The patients were admitted from different localities on the Zone and came from different islands to the Zone. (2) Women were affected out of all proportion to the men, when the population here is considered. This is significant and will be referred to later on. (3) No race is exempt, but the disease seems to prevail among the poorer people, or those accustomed to live upon the cheaper or less nutritious foods. This leads to a consideration of the nature of these foods. Careful inquiry was made as to the diet in the above cases. Though it is very difficult to get anything like accurate information from the uneducated colored people, enough was gleaned to conclude that the usual corn diet which has been held responsible for the disease for years is only a subsidiary factor. When consumed largely it probably is an important factor, but when taken sparingly is no more of a factor than any other cereal or starchy food.

For some years my attention has specially been directed towards the influence of diet in disease, and the rôle played by the different groups of food stuffs in the etiology of many affections. The information thus obtained when applied to a study of pellagra cases has been suggestive not only as to etiology, but also as to treatment.

In the *New York Medical Journal*, June and July, 1904, the author published an article entitled "The Carbohydrates as Etiological Factors in Stomach Disorders," in which attention was drawn to the ingestion of cane sugar being responsible for practically all of the cases of so-called hyperchlorhydria or acid dyspepsia, and second, the consumption of the starchy group, including chiefly bread and potatoes to the exclusion of proteids and green stuffs, underlying that large group of so-called flatulent dyspepsias. These two types grade one into the other. About one year later, in the same journal, attention was drawn to the fact that acute rheumatism and rheumatic manifestations followed the use of these same foods, the result of an autointoxication with, in acute cases, a superadded infection on the irritated tissues. In the MEDICAL RECORD, October 8, 1910, another article was published on this same subject, entitled "The Carbohydrate Diathesis," in which it was advanced that not only stomach disorders and rheumatic affections were the result of this group of food stuffs, directly or indirectly, but many others, including nephritis. The similarity of the digestive troubles preceding the typical pellagrous manifestations to those of the carbohydrate group was so suggestive that a study of the diet as a whole was undertaken without the centralizing thought that corn must be held responsible, but that other food factors might contribute. This has been abundantly and strikingly confirmed. In some cases no history of the consumption of corn in any form could be obtained; in others only in great moderation. All, however, are consumers largely of sweet and starchy foods to the practical exclusion of proteids, green vegetables, and fresh fruits. In all, the sweet condensed milks of commerce, cane sugar, jams, rice, potatoes (Irish and sweet), and bread were the staples of their food, while meat or fish was consumed once or twice a week and vegetables and fruits practically not at all.

From an extensive experience here in the tropics it has been found by those of us who are interested in the subject of diet and its influence on disease that health is best maintained and much suffering avoided when sweet and starchy foods are excluded from the dietary or reduced to a minimum. There is no question that our metabolic activities here are less than in the North, corresponding to the lack of energy which is notorious in a warm, humid climate; and the proper digestion and assimilation of the carbohydrate group requires the highest degree of metabolic activity. When this does not take place fermentation or incomplete metabolism results, with the development of toxic products, which are absorbed into the system, thus causing a general autointoxication. That is the reason why pellagra always diminishes or disappears in the winter and lights up in the spring. That is the reason why women are more affected than men, because they do not do the same amount of physical work as men, their lives are more sedentary, and consequently their digestive functions are more sluggish.

The reasons why pellagra is on the increase as shown by statistics are two: First, a better knowledge of the disease, and consequently more cases are reported. Second, and more important, because the consumption of sugar has increased inordinately in all civilized countries. For example, in England 300 per cent. per capita in fifty years. Last year the United States consumed 3,350,000 tons of sugar, or in a population of 90,000,000 almost 74½ pounds per capita, or 3.28 ounces daily. Provided, however, that only one-half of this amount is consumed, that is more than sufficient to set up the train of symptoms from which the American race now suffers. Taking into consideration that one half the citizens do not consume one-quarter of this amount per capita, it can readily be seen to what extent some of the people have adopted the use of this form of chemical alcohol. There is nothing in the stomach to convert it into an assimilable product, consequently it is subject to the action of the bacteria of fermentation, which convert it into irritating, diffusible organic acids by taking up hydroxyl molecules, thus producing more of them by weight than the sugar ingested. These produce local irritations and subsequent toxemia. Starchy products act similarly, but in a milder degree, and produce more flatulence. The use of the much advertised cereal products has increased in like proportion to that of sugar.

I believe that it is not corn alone, but any cereal or starch food in conjunction with cane sugar, in a warm climate, where there is lessened metabolic activity, and consequent inadequate elaboration of digestive elements, which initiates the autointoxication responsible for the symptom-complex known as pellagra. The proof thereof lies not in the determination of the elusive complex physicochemical substances, the result of fermentation or defective metabolic elaboration, but in the results obtained by physiological treatment based on the above-mentioned hypothesis. True, it may be stated that my cases were not extreme; some were and some were not. The first three cases above reported were very severe and died within a few days of admission; the fourth case died as a result of her mental degeneration after the physical symptoms were entirely well, and the only remnant was the pigmentation, which always follows in a marked degree the dermatitis in colored patients. The other eight cases all recovered, and that in a remarkably short time, considering the gravity of some of them. The first three cases received nothing but symptomatic treatment; the last nine were treated according to my conception of the disease physiologically, and hence the results.

Treatment: This consists (1) in limiting the nourishment absolutely to fresh fruit juice, preferably orange, meat broths, and milk, as long as there is nausea or vomiting, and the absolute avoidance of everything which contains sweet or starchy elements; (2) in the administration of from 15 to 30 drops of dilute nitric acid in three-fourths of a tumbler of water three times daily on an empty stomach. I have found by practical experience that no substance will relieve as quickly or as satisfactorily gastric acidity as this mineral acid. When the stomach condition improves, which is generally in three or four days, a carbohydrate-free diet is ordered. This consists, in addition to the above, of eggs, meats of all kinds, fish, green vegetables such as lettuce, celery, onions, tomatoes, beets, carrots, spinach, chayoti, vegetable marrow, okra, green peas, string beans, egg plant, etc., and fresh fruits of all kinds, there being no limitation. The nitric acid is continued three times daily before meals. Any other medication is but symptomatic, as indicated. The results obtained follow as quickly as do those from the treatment of gastric acidity in the same manner.

Recurrences: As yet I have had no experience with this, but I believe that the reason for recurrence in this affection is that hospital patients are necessarily restricted in their diet, and when recovery ensues they are discharged, not warned to avoid anything but corn and corn products, and they relapse to their former diet. If, however, they were told to avoid sugar in every form, cereals and an excess of starchy food, I do not believe that relapses would occur. It is interesting and exceedingly important in these cases to observe how rapidly the most severe acute nephritis clears up in this diet. The effects are just as rapid as those of a nephritis following scarlet fever or malaria. I have been so impressed with this fact that I now believe that almost all of our acute and chronic nephritic cases, the latter particularly of the interstitial type, other than those resulting from the toxic acute infectious diseases, are due to an autointoxication, the result of the ingestion of sweet and starchy foods to excess. The results here obtained in treating these cases on the diet above suggested for pellagra cases have been astonishing. The increased vigor which follows in interstitial cases with the disappearance of the neuralgia, polyuria, and albumin, and the diminution of casts, the hemoglobin recovery, and the apparent restoration to health have been so striking that I am following this method now in the treatment of these cases.

In presenting this paper to the profession I do so in the hope that my results will encourage some others to try these simple measures, for I believe that therein lies the etiology and the treatment of pellagra.

A CASE OF ACROPARESTHESIA.

By AUGUSTUS MAVERICK, M.D.,

SAN ANTONIO, TEXAS.

The rarity, in this country at least, of Raynaud's disease, erythromelalgia, scleroderma, and angioneurotic edema, renders these affections of little practical importance, but there is another symptom complex belonging to this group of vasomotor trophic neuroses, namely, acroparesthesia, which is by no means very rare. It is only within recent years that the Germans have given acroparesthesia its name and have recognized it as a well-defined neurosis. In the text-books and systems of medicine in this country acroparesthesia is hardly recognized as a distinct clinical entity. As the name implies, the chief feature of this affection is a paresthesia of an extremity. The patient complains of "needles and pins," tingling, pricking, itching, or like sensations in the fingers, and especially the finger tips. These sensations may continue off and on for weeks, months, and often years. They may prove merely troublesome, but too commonly the pain or discomfort is severe, disturbing the sufferer's sleep and seriously interfering with his work. The hand itself, and sometimes the arm, may share the symptoms. The affection is usually bilateral, but one hand is apt to suffer more, and not all the fingers are involved to the same degree. Less commonly, acroparesthesia is

seen in the toes. There are intervals free or almost free from symptoms, and others in which the suffering is intense. Night, and especially toward morning, is generally the worst time. Patients often complain of a numbness, stiffness, and clumsiness of the fingers and a feeling as though they are swollen; a smaller group experience marked hyperesthesia, which makes use of the hands at times almost impossible. There are no symptoms of involvement of the central nervous system, acroparesthesia being limited apparently to the sensory and vascular nerve endings and ganglia of the part. Examination of the fingers affected may show nothing varying from the normal; vasomotor phenomena, however, are not uncommon, the fingers are sometimes very red and perspire freely, but more often they are pale and cool. Sensations of pain, touch, and temperature are often disturbed; partial anesthesia is more common than hyperesthesia. A rarer group of cases of acroparesthesia is described in which the affected fingers are cyanotic and show marked vasomotor disturbance; these border very close on the diagnosis of Raynaud's disease. The close relationship with the other vasomotor trophic neuroses is also well shown, in instances recorded in which acroparesthesia is followed by atrophy and tightening of the skin over the finger tips and other signs of scleroderma or sclerodactylia.

The onset of acroparesthesia is usually, but not always, gradual. In many cases no satisfactory cause can be found. Sometimes local influences affecting the hands or feet are responsible. This is true in cases seen among tailors, seamstresses, embroiderers, cigarmakers, diamond cutters, bookbinders, and other occupations which demand constant use of the fingers. More common yet are cases among washerwomen and others having their hands a great deal in cold water. Exposure to cold in any form is important in the etiology. Arteriosclerosis may play a part in some cases, possibly also alcoholism. In acroparesthesia of the feet the patient may give a history of excessive walking or standing, and some of these cases show varicose veins. The majority of patients are women, and the age of predilection is from thirty to sixty. In women acroparesthesia is frequently influenced by the climacterium, the puerperium, and pregnancy, and cases have been reported following removal of the ovaries and uterus. The diagnosis of acroparesthesia is easy. It must be remembered, however, that peripheral paresthesia may be an early symptom of tabes, of spinal neoplasm, of acromegaly, of beginning polyneuritis, and threatened apoplexy. Proper examination must also exclude the possibility of diabetes and lead poisoning and a temporary paresthesia of neurasthenic or hysterical origin. The prognosis is good as concerns life, but bad as to duration of the symptoms. Fortunate are the cases lasting only a few weeks, for the majority prove very obstinate to treatment and persist for months or years. The treatment recommended is massage and the use of hot-water douches (with or without the addition of salts) or hot and cold water alternately; also the Faradic brush and galvanic hand bath. Injurious occupations as far as possible must be removed. The general health of the patient may demand tonic or other measures. Surgical relief directed to the individual nerves may be considered when the involvement is not too extensive.

The following case of acroparesthesia is more or less typical: A retired sea captain of sixty, robust and vigorous, with hair partly gray and with a florid complexion, complained of a burning or stinging sensation in the outer three fingers of both hands, most marked and often extremely painful in the ball of the left thumb. This had come on gradully about two years previously and had persisted constantly, although only very severe at intervals. These intervals were apparently neither influenced by the weather nor the diet. He drank on an average of 2 ounces of whiskey or brandy a day and smoked three or four cigars. He had once given up drinking and smoking for over a month without relieving his symptoms. The discomfort in his thumb was usually worse at night and he would often rise and soak his hand in hot water, which gave temporary relief and aided him in getting to sleep. He said he had visited "over sixty doctors," including "several London specialists." Gout and rheumatism had been the usual diagnosis. Acroparesthesia was a "new one" for him. He had "tried all kinds of physics and systems" without relief and had finally come to the conclusion that "all doctors are fools." During his life he had experienced much exposure from cold and dampness, but had never been ill as far as he remembered. There was no history of any past cardiac, pulmonary, hepatic, renal or intestinal symptoms, or of syphilis. He confessed to having been a "steady but sober" user of whisky and brandy for an indefinite period. Physical examination showed a well-nourished body, the muscles fairly well developed and the skin beginning to lose its elasticity. The peripheral arteries were only moderately sclerosed. Eyesight was good except for a little hypermetropia; no Argyll-Robertson pupil. Lungs apparently normal, liver and spleen not felt, abdomen negative. Heart sounds good, except for moderate accentuation of the second aortic. There was no evidence of gouty or rheumatic trouble. The urine showed no albumin and no sugar, and was otherwise normal, save for two or three hyaline casts. The knee and elbow reflexes were present, but feeble. No tremors; no Rhomberg's sign. The involved fingers showed nothing peculiar except possibly a little abnormal pallor. There was lessened sensation to touch and pain over the right thumb and to a limited extent over the other affected fingers. The sensation of heat and cold were not tested. There were no motor symptoms evident; the grip was strong.

The treatment consisted of a full diet and a lessened consumption of alcohol. Sprudel salts were given twice daily and local douches of hot and cold water four times a day. Later, an irritating ointment of tincture of capsicum was added. These measures at first appeared very beneficial, but a return of the symptoms in full after a few months made it appear as if the relief had been a regular feature of the affection. The patient declared that he could get along very well with the other fingers if only the pain in the ball of the thumb would cease. The best I could suggest was partial excision of one or more cutaneous nerve branches which supplied this finger. Soon after, the patient returned to his home in England. Two months later I had a letter from him. He stated that he had followed instructions and had had "a piece of nerve cut from the thumb" one month before. He had experienced no pain in this mem-

her since, although, he wrote, "my thumb feels so dead all the time now, that I sometimes wish a few old tinglings would come back and wake it up."

Two excellent accounts of acroparesthesia, translated from the German, may be found in Strumpell's text-book, and in Cassirer's article in "Modern Clinical Medicine."

507 Bedell Building.

BERBERINE.

By WILLIAM FRANCIS WAUGH, A.M., M.D.,

CHICAGO, ILL.

PROFESSOR OF THERAPEUTICS, BENNETT MEDICAL COLLEGE (MEDICAL DEPARTMENT LOYOLA UNIVERSITY).

Plants have been applied as medicines from time immemorial. Of many we know to-day no more than did Hippocrates; of many others we know but the merest surface indications. The day will come when the eye of modern science will be directed to the drug plants, a new study will be made under modern methods, and we shall find many a gem of priceless worth in this neglected field.

As an example of what awaits the investigator, take berberine. This alkaloid is found in many plants of various families. It is derived commercially from hydrastis canadensis, but the increasing scarcity of that plant must soon direct the extractor of active principles to berberis, menispermum, xanthoxylon, and other plants, from which a plentiful supply can be secured. It is one of the economic advantages of the alkaloids that all portions of the plant containing them may be utilized, instead of wasting all but the official part.

By the standard works on therapeutics berberine is ranked as a simple bitter. All the experimentors have given us is that, in large doses, injected intravenously in dogs, berberine causes paralysis of the posterior extremities and a few other highly undesirable things. Judging by their results, there is no place for berberine not amply filled by quassia.

Our great difficulty is that nothing like a scientific study has ever been given to berberine. We get a bit of misinformation and it is handed down for generations, nobody taking the trouble to prove or disprove it, until it becomes fixed as a part of the general acceptance of our profession. For example, the legend as to the superiority of the second year's leaves of digitalis, recently proved false.

When we turn to the field of clinical research we find some curious observations. Plants containing berberine have been lauded as causing contraction of a malarial spleen. Others containing berberine have been suggested as contracting the uterus, inducing abortion, or checking the growth of uterine fibroids. The berberine plants have been given to combat flatulence, dilatation, and ptosis of the stomach and intestine.

Here are three distinct applications made of plants that possess one thing in common, that they contain berberine. The three maladies mentioned have this common feature, that the effects obtained indicate contraction of the connective tissue elements of the parts involved. There is a third common feature that in each the remedy was administered in *moderate doses for prolonged periods*. Gathering up the threads, we find ourselves justified in advancing this proposition as a working hypothesis: That berberine, given in moderate doses for a prolonged period, specifically induces contraction of relaxed connective tissue.

Assuming this to be true, we have in berberine a remedy for this connective relaxation in any disease where this pathological condition appears as a factor. Beginning with enlarged spleen, I have for years advised that berberine should be administered in doses of a centigram seven times a day, gradually increased to three centigrams, and continued for six to twenty-four weeks. At the same time quinine arsenate is given, six centigrams a day, to act upon the parasites forced from the splenic cloisons into the circulation. The contents of the bowels are also kept soluble; and disinfected by a sufficiency of sulphocarbolate of zinc. Should there be any reader who does not realize the value of this latter feature in treating malaria, I would advise him to go to the malarial belt next fall, and make observations at first hand. From this seat of paludal war I have many satisfactory reports on this method.

My opportunities for observing uterine fibroids treated by berberine have been too few to justify me in more than merely mentioning the plan, as a suggestion in cases where operation cannot be made.

In gastroptosis, enteroptosis, displaced kidneys, prolapsus uteri, dilatation of the stomach and bowels, pendulous relaxed belly, and other cases, we see relaxation of the connective tissue framework or supports as a factor. In all these I have employed suitable mechanical support, which does not alone effect a cure, and have given berberine, which adds the one needed element to convert palliation into cure. It is hardly necessary to add that in treating dilatation of the stomach a rigid dietary régime is absolutely necessary.

So far as my observations go, they have given support to our hypothesis. I have no statistics to submit, not even a solitary case record. Statistics may be made to support anything, even the anti-vaccinator. They are only of value after a remedy has been put to general trial, when the use it proves to have for the profession at large may show its true worth, and not the applications made by a single individual with possibly exceptional circumstances. The experience of Mayo's anesthetist with ether is certainly not that of the general practitioner.

I believe berberine, given in daily doses of one to three grains for not less than six weeks, tends to induce contraction of relaxed connective tissue, and may be advantageously applied in every malady where that pathological element is a factor of importance.

Venesection in Eclampsia and the Preeclamptic State.—M. Potocki advocates the use of venesection in all albuminuric cases in pregnancy in which convulsions are threatened or have begun. If a liberal amount of blood is removed, *i.e.* 600 to 1,000 grams, relief is at once obtained. The use of chloroform and chloral as sedatives in convulsions has a bad effect on the liver and kidneys, which should be able to remove the poisons from the organism. Jaundice is frequent after the long use of chloroform in eclampsia, and even after laparotomies. Increased arterial tension is one of the most important symptoms of the eclamptic or preeclamptic state, and remedies should be administered for its relief. Often the congested, violet face of the eclamptic suggests the necessity of venesection. The author has used venesection in a number of preeclamptic cases with the result that the headache and agitation were relieved and the patients were delivered normally of living children. None of the patients died. Tarnier states that placing the patient on a milk diet for a week will relieve the albuminuria. But one cannot always wait a week for this remedy to act and convulsions may occur before the week has elapsed.—*Journal de Médecine de Paris.*

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JUSTICE TO THE MARINE-HOSPITAL SERVICE.

After many years of patient waiting the officers of the U. S. Public Health and Marine-Hospital Service, will soon, it is hoped, obtain from a grateful but not over liberal country, a recognition more substantial than editorial encomiums, of the value of their labors in the cause of public health. Up to within four or five years the medical officers of the Army, of the Navy, of the Revenue-Cutter Service, and of the Marine-Hospital Service were on a practical equality as regards pay. This pay was, however, so inadequate in view of the character of the service demanded and so far below the amount that men of equal attainments could earn in civil practice, that the services began to suffer for lack of candidates. To make up for the diminishing numbers in the regular services civilian physicians were hired, but as these "contract surgeons" were accorded no rank and had no assurance of permanence in the service, their employment was only a makeshift and was far from satisfactory. Some of them were good surgeons, but they seldom became good military surgeons, and the services continued to suffer. Finally Congress was led to recognize the magnitude of the evil and passed efficiency bills for the Army, Navy, and Revenue-Cutter Service, raising the pay of medical officers in each grade of these services about $500 a year. The Marine-Hospital Service was, however, ignored, the efficiency bill in its favor being lost. The result of this was to embarrass the Service greatly, not only in its endeavor to get new men, but even in its power to retain its old officers. It is well known to the medical profession, if not to the public, that the Marine-Hospital Service has recently lost some of its most capable officers, men of the highest attainments as scientists and sanitarians, with a practical training which only years of service could give. These men had families to support and children to educate, and they could not, in justice to themselves and their families, refuse positions of honor and far greater profit offered to them in other fields.

To show under what substantial disadvantages the officers of the Marine-Hospital Service labor we may compare their pay with that now given the medical officers of equal rank in the Army or the Navy, the two latter being practically the same. In the Army the pay in the different ranks is $6,000, $5,000, $4,500, $4,000, $2,400, $2,000. In the Marine-Hospital Service the pay is $5,000 ($1,000 less), $4,000 ($540 less), $3,500 ($1,000 less), $3,500 ($500 less), $2,000 ($400 less), $1,600 ($400 less). In this comparison no account is taken of the commutation rates and allowances for fuel and lights, in which the discrepancy is great. On first thought, one might say this difference in pay and emoluments was justified by the fact that the members of the medical corps of the Army and Navy must risk their lives in time of war. But one forgets that the officers of the Marine-Hospital Service are constantly at war with disease and risk their lives daily. Much is said, and justly, in praise of the heroism of the Army yellow fever commission under Major Reed in Cuba, two of the members of which died of the disease or its sequelæ. But it should not be forgotten—perhaps it is not known—that fourteen of the officers of the Marine-Hospital Service have contracted yellow fever in line of duty and six have died therefrom; others have suffered from typhoid fever, tropical dysentery, cholera, and typhus fever—all in the day's work. When yellow fever visits New Orleans, the Marine-Hospital Service is called upon to fight it; when the plague invades San Francisco, again the officers of the Marine-Hospital Service are sent to repel it. The officers detailed to this dangerous duty go as promptly and as bravely to the scene of warfare with disease as do the medical officers of the Army and Navy to battle. The Army and the Navy are necessary to the safety of the country and the medical officers of these services are necessary to preserve the health of the defenders of the nation, but the officers of the Public Health and Marine-Hospital Service are even more immediately and directly necessary to the health of the community than are their colleagues in the military branches of the public service. They have charge of all but four or five of the quarantine stations of the country, certain of them are on duty constantly in disease-infected ports of Europe and the East to inspect passengers embarking thence for the United States and to warn quarantine officers here of the possible invasion of epidemic disease. The Service maintains a laboratory for the study of disease and to maintain the purity and efficacy of vaccine virus and antisera. In fact, were this Service to be crippled by the loss of trained officers and inability to obtain as recruits capable men of sound medical training, the health of the country would be greatly imperiled.

Fortunately Congress has awakened to this danger and has wisely taken steps to avert it. A bill to raise the pay of the officers of the Public Health and Marine-Hospital Service to a parity with that of medical officers in the Army and Navy has passed the Senate and has been introduced in the House of Representatives. It was referred to the Committee on Interstate and Foreign Commerce, which has reported it without amendment and with a recommendation that it pass. It is now in the Committee on Appropriations and if it secures the approval of that committee will undoubtedly be approved by the House. It hardly seems possible that it can fail to pass the Committee, for it involves a total increase of expendi-

tures of only about $100,000—a very small sum to insure the maintenance of the present efficiency of the Service.

This is a matter of vital concern to every citizen of the Republic, and we as medical men, knowing especially the dangers to which our country is constantly exposed by disease within and without, and knowing also that one of our greatest safeguards lies in the efficiency of the personnel of the Public Health and Marine-Hospital Service, should individually and collectively urge upon our representatives in Congress the necessity of strengthening this arm of the public service by an act of simple justice to a body of earnest and self sacrificing workers for the common weal.

A NEW THEORY OF NEPHRITIS.

In spite of much experimental work and clinical observation the pathological physiology of nephritis has not yet been cleared up. The great differences in the urinary changes observed in the different types of the disease, the presence or absence of edema, the accompanying cardiovascular changes, all have remained almost as obscure in their causation as at the time when Bright wrote his classical descriptions of the kidneys found by him post mortem in patients with nephritis. Every new theory of the disease, however strange to our ears, must therefore be seriously considered by the medical profession, and one such theory has recently been put forth by Martin H. Fischer* in an essay which was awarded the Cartwright Prize of the Association of the Alumni of the College of Physicians and Surgeons in this city.

Fischer's work is founded upon the study of colloids and their behaviour under different experimental conditions, comparable to those under which the kidneys perform their work in health and in disease. The colloids involved in nephritis, according to Fischer, consist in the main of the blood, which is essentially a suspension of colloids in which are floating fairly solid jelly-like structures or cells; of the "urinary membrane," which includes all the structures that lie in the kidney between the blood on one side and the urine on the other, and of the urine, which normally is a solution of salts and is not colloid in nature, but whose colloid content rises in nephritis. Albuminuria, that chief urinary change in nephritis, has always been held to be due to the escape of the albumin of the blood through the diseased kidney, or what Fischer terms "the urinary membrane." To Fischer, however, albuminuria is something quite independent of the blood; its albumin is derived not from that tissue but from the kidney itself, whenever circumstances arise that favor the transition of the gelatinous colloids of that organ to the soluble state in which albumin is found in the urine. These circumstances may arise in different ways, but their chief mark is the fact that they produce an increased amount of acid in the kidney and thus favor the solution of its colloids. This production of acid is to Fischer the alpha and omega of nephritis, the cause of albuminuria, the cause of the morphological changes in the kidney, the cause of the production of casts, of the variations in the amount of urine, and of the dissolved substances secreted by the kidney. While the normal kidney is not acid in reaction, a kidney of nephritis, as shown by microchemical methods, becomes acid, and takes up corresponding dyes. Sections of freshly excised kidney take up such stains but very slowly, and very slowly give up albumin to the solution in which they are immersed. But let a trace of acid be added and all parts of the kidney become deeply stained, and the albumin content of the surrounding fluid is quickly increased.

The morphological changes in the nephritic kidney are likewise explained by the accumulation of acid; it leads to the absorption of water by the individual cells, to the "edema" of them, and a consequent increase in the size of the kidney; it produces changes in its colloids and consequent "cloudy swelling" of the cells; it leads to the filling of the uriniferous tubules by the dissolved colloids and the consequent appearance of casts in the urine. Only subsequently the damaged tissues are replaced by connective tissue which slowly takes up the space of the parenchymatous cells, slowly contracts and leads to the appearance of the later stage of the nephritic kidney, namely, the small or atrophied organ.

This, in brief, is Fischer's thesis and it is supported by numerous experiments and by clinical observations of patients on whom treatment founded upon his theory of nephritis has been tried. There are many flaws in his argument. It is far from being proved that experimental nephritis produced in animals is comparable to the nephritis in human beings. It is difficult to follow his argument, when he attempts to show that acidosis in such conditions as diabetes may not result in nephritis because of the difference in the acids present, both in quantity and quality, from those responsible for the phenomena in nephritis. It is still more difficult to wave lightly away all the evidence we have of the important rôle of salt-free diet in the reduction of nephritic edema and accept instead Fischer's methods of treating edema by intravenous or rectal administration of concentrated solutions of alkalies and salt, etc., etc. Yet his theories of the "principles" of nephritis are plausible enough; their truth or falseness should be easily established by well-planned experiments in the laboratories and careful observations in the wards. Nephritis is too important a chapter in human pathology to excuse any disinclination to test out any new and reasonable theory of its etiology, disinclination founded mostly on the well-known tendency of the human mind to cling to old beliefs and explanations rather than to accept novel and revolutionary ones.

* Nephritis. An Experimental and Critical Study of its Nature, Cause, and the Prinicples of its Relief. By Martin H. Fischer, Eichberg Professor of Physiology in the University of Cincinnati. Price $2.50. New York: John Wiley & Sons. 1912.

THE MENTALLY DEFECTIVE AND INSANE AMONG IMMIGRANTS.

The danger to society which exists from the mating of the unfit has long been recognized in a general way, but it is only since the new incentive which the revival of Mendelism has given to the study of

heredity that we are beginning to have light shed upon the dark places of this much involved and complicated problem.

As illustrating the inheritance of a bad mental twist from one ancestor alone, Conklin* cites the case of a young man of good family who, after his discharge from the Continental army, mated with a feeble minded girl in New Jersey. From this union came a feeble minded daughter whose blood can be traced in 480 descendants; of this number 143 were distinctly feeble minded. The young man whose illegitimate escapade started this long strain of defective stock subsequently married a normal woman of good ancestry. From this marriage there were eight normal children from whom a total of only 365 descendants have arisen. Of the 365 there are no feeble minded and only one insane. This family history bears out the belief that feeble minded stock not only tends to reproduce its kind, but also that it is more prolific than the normal. Thus the danger from the introduction of tainted blood into the social organism assumes a twofold importance, and fully warrants the alarm which is felt by the immigration restrictionists over the number of alien insane and defectives which are annually increasing our already sufficiently large stock of these classes. The law provides for the deportation of "all idiots, imbeciles, feeble minded persons, epileptics, insane persons, and persons who have been insane within five years previous, or persons who have had two or more attacks of insanity at any time previously." Until 1905 not more than 35 immigrants were denied admission on account of insanity in any single year, but since that time, and without any especial change in the law, the number has arisen to nearly 200 annually, and nearly as many defectives as insane persons have been excluded.† It therefore appears that the effectiveness of the law dealing with the exclusion of the insane and mentally defective depends entirely upon the means provided for its enforcement. These means must necessarily reflect public opinion. Given a popular law, and its enforcement is rigidly observed, whereas the law that does not meet with public favor is more honored in the breach than the observance.

The signs of the times point to an increasing desire on the part of all concerned to see this phase of the immigration restriction law still more rigidly enforced, but as pointed out in the annual report of the Commissioner General of Immigration, there is an inadequacy of time and facility for its proper enforcement. This means that the corps of examining physicians and interpreters is not sufficiently large, and that there is no practicable way in which all arriving aliens can be detained for inquiry into their mental condition. To overcome one of these difficulties a bill was introduced into the Senate last summer in which it was proposed that physicians be placed upon immigrant ships at the time of their embarkation for this country. In this way it was thought that the steerage passengers could be kept under observation for the period of their voyage, and thus the number of detected insane and mentally defective might be materially increased. That the problem is worthy of the best thought of the administrative officers at all immigration stations is evidenced by the ever-increasing testimony to the prevalence of insanity and feeble mindedness among the alien population. Thus in New York State, where the influence of the foreign born in every sphere is most keenly felt, it has been shown that immigrants in the proportion of 1 to 250 of all who come to that state are admitted to the psychopathic wards of Bellevue Hospital and Kings County Hospital, and to the New York State Hospitals during the first year of their arrival.

Relative to the prevalence of mental deficiency among alien children, recent census statistics show that the progeny of aliens or naturalized citizens are responsible for 30 per cent. of the feeble minded in the general population of the United States. The researches of Dr. Isabelle Smart, who has long been prominently identified with the work of educating "backward children" in the New York public schools, also bears out the general impression that the immigrant contributes more than his proportionate share to this class. But even though the alien population should contribute only its proportionate share to the insane and mentally defective, the methods for the detection of these classes before the final landing should be increased to the highest point of efficiency; for after all, the question is not so much one of determining the exact amount of increase of tainted stock from foreign blood as it is to prevent all such increase from every possible source.

*W. J. Conklin, "The Mating of the Unfit," a Study in Eugenics.

†F. M. Salmon: N. Y. State Hospitals Bulletin, November, 1911.

THE ROLE OF GARDEN VEGETABLES IN THE DISSEMINATION OF TYPHOID FEVER.

Whatever the medium by which the typhoid fever germs may be spread, the question of their viability outside the human body is of primary importance. This problem has been worked out by many investigators so far as the usual media of water, milk, and soil are concerned, but until comparatively recently very little attention has been paid to the rôle of raw foodstuffs, such as fruit and vegetables, in conveying infection which they may have acquired during cultivation.

In order to increase our knowledge on this phase of the subject, R. H. Creel* carried out a series of experiments in raising radishes and lettuce on soil which was infected with the *Bacillus typhosus*. This infection was accomplished subsequent to the seeding, but prior to the appearance of the plants. As a result of this work he found that plants would take up with them on their leaves and stems the microorganisms which they encountered as they pushed their way through the infected soil. Furthermore, it was found that *Bacillus typhosus* could be recovered from the leaves and stems of plants that were to all appearances entirely free from adhering particles of dirt. In order to determine how far natural rainfall might be expected to free the vegetables from the organism, a leaf of lettuce from an infected bed was repeatedly washed with sterile water, and then the leaf, in an almost

*Public Health Reports, February 9, 1912.

macerated condition, was rubbed on an Endo plate culture. This experiment yielded positive results, and seems to warrant the conclusion that ordinary cleansing by rainfall, or under the kitchen faucet, will not free the infected plants from the germs. Furthermore, under conditions most unfavorable to the growth of *Bacillus typhosus*, the infection lasted at least thirty-one days, which is a period sufficiently long for the maturity of quick-growing varieties of lettuce and radishes.

In view of the results of his experiments, and considering the fact that other observers have proven that the life of *Bacillus typhosus* in soil may be prolonged to sixty or even seventy days, Creel considers that the fertilization of garden soil by human excreta assumes a two-fold importance. First, the vegetables, such as lettuce, radishes, and celery, may directly convey the infection, and second, the soil may serve as a reservoir for bacteria. Drainage from such germ-soaked areas may carry the microorganisms to streams of water, and thus keep up the infection much longer than if the water were directly infected.

In view of the already well-known dangers incidental to the exposure of night-soil in such situations as to render it easily accessible to the house fly, it would seem that these experiments serve to add another strong argument against the use of human excreta as a garden fertilizer.

HYGIENE OF THE MOUTH.

The vital importance to a race and nation that its members should have good teeth and a healthy condition of the mouth is being emphasized more and more every day. William Hunter, a well-known British physician, has been especially persistent in preaching the godliness of cleanliness so far as the mouth is concerned. To neglect of the hygiene of the mouth he attributes a large number of serious diseases, both local and general: in the mouth itself dental necrosis in all cases, gingivitis, and stomatitis of every degree of intensity, suppuration around decayed teeth and deposition of tartar; in the jaws, periostitis, alveolar abscesses, osteomyelitis, maxillary abscess; in parts adjacent to the mouth, tonsillitis, pharyngitis, otitis, glandular enlargements, etc. Gastric catarrh and anemia are also laid to the charge of the unclean mouth.

Goadbey, in a recent Hunterian Lecture, referred to the menace of neglected mouth hygiene in the following terms: "Lowered vitality favors the vegetation of microorganisms in the mouth, these attack the teeth and the diseased teeth still further lower the vitality so that a vicious circle is established. The efforts for the prevention of caries will serve equally well to prevent those ill effects to the general system which proceed from unhealthy conditions of the teeth. The dental surgeon and medical practitioner alike must strive after the ideal, which to vary an old saying, should be *dens sana in corpore sano.*"

Various medical writers in all countries have laid stress recently on the enormous importance of mouth hygiene. In the first instance the teeth themselves should be cared for, all decayed teeth should be removed, and the mouth should be kept clean and wholesome by intelligent brushing. But it is not enough in order to guard against disease simply to keep the mouth clean, although in itself this is an essential step in the right direction. The employment more or less frequently of an efficient disinfectant is indicated. The fact must be borne in mind that the mouth is the main avenue for the entrance of a large number of infections.

Difficulty of the Diagnosis of Methylism.

Our knowledge of methylism is due largely to the labors of ophthalmologists, who, when their aid is sought for sudden amaurosis or blindness, have learned to associate such conditions with the possible consumption of wood alcohol in some one of half a dozen forms. But in only a certain percentage of cases does vision suffer, and then only when actual optic neuritis has developed. It is hardly conceivable that any substance is so peculiarly neurotropic as to attack invariably the optic nerves alone, to the exclusion of other nervous tissues. In the absence of ocular symptoms is there any other phenomenon to suggest methylism to the exclusion of many other affections? If the matter vomited or washed from the stomach be tested for methyl alcohol, it would appear that while certain tests result positively others may give negative results. The odor of acetone in the stomach contents and urine is not conclusive. That in sudden death from methylism, with its accompanying cyanosis, dyspnea, coma, dilated pupils, etc., the nature of the affection is in any way suggested is contradicted by the early experiences in the recent Berlin episode. In recovered cases there are apparently no sequelæ—when blindness has not occurred—to cause suspicion as to the true nature of the antecedent illness. At a recent meeting of the Leipzig Medical Society (*Deutsche medizinische Wochenschrift*, February 8), Marchand, the well known pathologist, reports three autopsies on victims of acute methylism. There was either an absence of pathological finds or these were at best equivocal. One victim had died comatose, with cyanosis, dyspnea, and absence of radial pulse. He showed no pathological finds whatever. One test of the stomach contents for methyl alcohol resulted positively. Another subject died with delirium, fever, wretched pulse, and badly reacting pupils. There was found hyperemia of the meninges and most of the viscera, but the intestine and kidneys showed no lesions. There was methyl alcohol in the stomach contents and formic acid and acetone in the urine. The viscera, all had a strong acetone-like odor. In a third case tests of the stomach contents for methyl alcohol gave conflicting results, but there was formic acid in the urine and the viscera smelled strongly of acetone. It is evident that some difficulty may be experienced in proving death from methylism if cases of forensic import occur.

News of the Week.

Vital Statistics of New York City for February.—The number of deaths recorded during February, 1912, was 6,546, giving a death rate of 15.94 per 1,000, compared with 6,470 deaths and a rate of 16.94 per 1,000 in the corresponding month of 1911, a decrease of exactly one point per thousand in the death rate, corresponding to a lessened mortality of

431 persons during the month. The causes showing a decreased mortality were as follows: Scarlet fever, 19; whooping-cough, 19; influenza, 50; cerebrospinal meningitis, 13; acute bronchitis, 17; chronic bronchitis, 23; bronchopneumonia, 25; other respiratory diseases, 29; diarrheal diseases under five years of age, 79, and cirrhosis of the liver, 37. The causes showing increased mortality were as follows: Typhoid fever, 12; measles, 10; tuberculosis of the lungs, 55; cancer, 47; apoplexy, 32; organic heart diseases, 140; lobar pneumonia, 41; Bright's disease and nephritis, 11; old age, 11; accidental deaths, 10; homicides, 23, and suicides, 6. The decreased mortality from diarrheal diseases under five years of age is considerable and may be indicative of the effect of the increase in the number of infants' milk stations established, and the accompanying dissemination of information among the mothers who obtain milk from these depots. There were 95 deaths of non-residents recorded in the city during the month, which if deducted from the total number of deaths would give a death rate of 15.70 per 1,000 for the entire city. There were 11,093 births recorded during the month, an increase of 287 over the corresponding month of last year.

Bacteriologist (Male) Wanted in the Philippine Service.—The United States Civil Service Commission announces an examination to secure eligibles from which to make certification to fill a vacancy in the position of research bacteriologist in the biological laboratory of the Bureau of Science, Manila, Philippine Islands, at a salary of $2,500 a year, and vacancies requiring similar qualifications as they may occur in the Philippine Service, unless it is found to be in the interest of the service to fill the vacancy by reinstatement, transfer, or promotion. It will not be necessary for applicants to appear at any place for examination. Their eligibility will be determined upon the evidence furnished in connection with application and examination Form B. I. A. 2, concerning their training and the work which they have accomplished. Applicants may, if they desire, submit with their applications copies of theses or publications which have been prepared by them. This position is for a research bacteriologist with clinical experience, and applicants must be graduates in medicine; in addition they must show that they have specialized extensively in bacteriology and are capable of doing original research work. The ordinary bacteriological training incident to a medical course or a hospital interneship will not be considered in this connection. All statements relating to training, experience, and fitness are subject to verification. Applicants must be willing to enter into a contract requiring at least two years' residence in the Philippine Islands. The work comprises investigations in tropical medicine in conjunction with the chief of the biological laboratory, who is also professor of tropical medicine in the College of Medicine and Surgery. The clinical material of the Philippine General Hospital and the hospital of the government prison will be available for study in connection with bacteriological investigation. It is stated by the Bureau of Science that opportunities exist for promotion to higher places as vacancies occur, and at present there are six positions in this laboratory above the one in question, at salaries ranging from $2,500 to $5,000 a year. The library of the Bureau of Science and the equipment are of the very best and strictly modern, so that this position offers a unique opportunity for a young man who is ambitious and who desires to make a name in research work in this specialty. Age limit, eighteen to forty years on the date of the examination. Applicants should at once apply for Form B. I. A. 2 to the United States Civil Service Commission, Washington, D. C., to the secretary of the board of examiners, post office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; old customhouse, St. Louis, Mo.; or to the chairman of the Porto Rican Civil Service Commission, San Juan, P. R. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington prior to the hour of closing business on April 6, 1912.

The Hot Springs of Arkansas.—By act of April 20, 1832, Congress provided that four sections of land in the territory of Arkansas, including the Hot Springs, a total of 2,560 acres, should be reserved from sale or entry in order that they might be preserved in perpetuity for the benefit of the sick. When the State of Arkansas was created the Federal Government still retained the ownership of the four sections, but did not reserve the jurisdiction. By later acts the size of the reservation was reduced to 911 acres, the present area. All of the springs are on the Government reservation, but there has grown up around them the city of Hot Springs, over which the Government has no jurisdiction or control. The result was that the city of Hot Springs became what is known as a "wide-open" town, much to the detriment of the place as a health resort. The National Government has, however, succeeded in doing away with most of the abuses and has also appointed a medical director to have full supervision of sanitation, hygiene, and all that pertains to the bathing of patients. A recently issued report of the medical director, Dr. H. M. Hallock, is the first official publication by the Department of the Interior dealing directly with the medical problems involved. Under the supervision of the medical director considerable progress has been made in bettering those conditions that are of especial medical interest. Two new sanitary bathhouses have been fully equipped and provided with a complete blast system of ventilation, and a third has been entirely remodeled, enlarged, ventilated, and made sanitary in every respect.

Faculty Changes at Tufts.—Announcement is made of the appointment of Dr. William Merritt Conant to the chair of clinical surgery at Tufts Medical School to succeed Dr. David D. Scannell, resigned. Dr. William Allen Brooks, Jr., is appointed assistant professor of clinical surgery. Dr. Frederick M. Briggs has been made professor of surgery.

The Massachusetts State Board of Registration was subjected to sharp criticism by the committee on public health of the State Legislature on March 12. Charges were made that the examination questions are kept secret so that they need not be varied from one examination to the other, that applicants are examined on subjects not required by statute, that the graduates of one medical school are discriminated against in the examinations, and that in at least one instance a candidate who had been rejected was subsequently granted a license upon threatening to bring suit against the board.

Suit by a Nurse for Reinstatement.—A jury before Supreme Court Justice Newburger recently brought in a verdict for the defendant in a suit by a woman for many years supervising nurse at Harlem Hospital, for a writ of mandamus directing the board of trustees of Bellevue and Allied Hospitals to reinstate her. The jury found that the nurse's place had been abolished for the sake of economy and that her removal was in good faith.

Dr. Harvey W. Wiley, Chief of the Bureau of Chemistry of the Department of Agriculture, resigned on March 15, his resignation being accepted with expressions of regret from both President Taft and Secretary Wilson. Dr. H. R. Bigelow, Dr. Wiley's former assistant, is temporarily in charge of the bureau, and is spoken of as his probable successor. Others who have been mentioned as possible appointees to the position of chief chemist are Dr. William J. Gies, professor of chemistry at Columbia University, and Dr. Lucius P. Brown of Tennessee, who was president of the National Pure Food Congress last year. Dr. Wiley's resignation was purely of his own volition, and it is denied that any pressure was put upon him to leave the department. It is announced that he will be contributing editor to *Good Housekeeping* magazine.

A Bacteriological Quarantine Board.—Announcement is made by the Health Officer of the Port that he has appointed four pathologists to take charge of the bacteriological laboratory at Quarantine and to be responsible for the diagnosis of suspects in case of a threatened invasion by cholera or other infectious disease. The new board consists of Drs. F. C. Wood and John Larkin of the College of Physicians and Surgeons, Dr. James Ewing of Cornell Medical School, and Dr. Joshua Van Cott of the Long Island College Hospital.

Charged with Not Reporting Meningitis.—The house surgeon of the Charity Hospital, New Orleans, has been charged by the president of the City Board of Health with failure to report fifteen cases of cerebrospinal meningitis. The accused official denies that he has failed to report any cases of communicable disease in the hospital and says there are no cases there of meningitis.

Neosalvarsan is the name given by Ehrlich to a modification of 606 which forms a neutral solution in distilled water without the use of any other solvent. The Berlin correspondent of the *New York Times* says that the modified 606 can be given in larger doses than the original without any untoward effects and that the technique of its administration is reduced to the simplest form. Dr. Schreiber of Magdeburg is experimenting with the modified drug and will soon publish his report.

Adrenalin in Cholera.—A despatch to *The Sun* from Tunis states that Dr. Naame, a French physician of that place, claims that the intravenous injection of adrenalin is positively curative in cholera. He says that he has employed the remedy in twenty cases of cholera, recovery being obtained in every instance.

Vivisection Necessary.—The *New York Times* states that the report of the British Royal Commission on Vivisection as to experiments on animals which have been adequately safeguarded in a legal manner is to the effect that they are morally justifiable and should not be prohibited. The investigation of the commission has extended over a period of six years.

Medical Society of the State of New York.—The 106th annual meeting of the Medical Society of the State of New York will be held at Albany on April 16, 17, and 18, 1912. Not only the members of the Medical Society of the State of New York, but also all physicians in good standing, will be welcome. The meetings open to the public are the address of Dr. Wiley, Tuesday noon; the evening addresses on "Prevention of Blindness," "Prevention of Deafness," "Prevention of Insanity," "Prevention of Tuberculosis," and the address of Dr. Cannon on "The Benefits of Vivisection to Mankind." Also, all the meetings in the Section on Public Health will be open to the public. The other meetings are strictly medical and open only to the profession, but medical guests are welcome.

The Spalding County, Ga., Medical Society, at its meeting on March 7, elected the following officers: *President*, Dr. E. R. Anthony; *Vice-President*, Dr. J. S. Wells; *Secretary*, Dr. J. M. Thomas; *Censor*, Dr. T. J. Phillips.

Canadian Military Medical Officers.—The fifth annual conference of the Association of Medical Officers of the militia of Canada met in Ottawa on February 28 and 29. Addresses were made by Colonel Samuel Hughes, Minister of Militia; Sir James Grant of Ottawa, Major J. T. Clark of Halifax, Dental-Surgeon Lanthier of Quebec, and a number of papers on military medical topics were read and discussed.

A Discussion on Mental Diseases.—There is to be held in Chicago, April 17, 18, and 19, 1912, a meeting under the auspices of the West Side Branch of the Chicago Medical Society and the Chicago Medical Society for the purpose of discussing mental diseases in their various phases. Alienists and neurologists from different States have been invited to participate in this meeting. The object of the meeting is for scientific purposes for those engaged in this line of work, educational to the general practitioner, and educational to the public.

American Urological Association.—At a meeting of the New York Society of the American Urological Association held at the Academy of Medicine, March 6, 1912, the following officers for the year 1912 were elected: *President*, Walter Brooks Brouner; *Vice-President*, Benjamin S. Barringer; *Secretary*, Clarence R. O'Crowley; *Treasurer*, Julius J. Valentine. The American Urological Association will hold its annual meeting at the Hotel Astor, April 2, 3, and 4, being the guests of the New York Society. The morning sessions will be devoted to visiting the various genito-urinary clinics here. The afternoon sessions will be devoted to the reading and discussion of scientific papers.

The Late Dr. Weber.—At a stated meeting of the Medical Board of St. Mark's Hospital the following resolutions were unanimously adopted: *Whereas:* Dr. Leonard Weber, the consulting physician of our Medical Board, has departed this life Therefore, be it resolved: That the medical profession loses in him one of its foremost members and New York City one of its most brilliant men. Further resolved: That we deplore in his demise the loss of a most faithful co-worker, and St. Mark's Hospital the absence of a most efficient benefactor. Further resolved: That these resolutions be spread upon the minutes of our board, and a copy thereof be sent to his bereaved widow, and the same be published in the MEDICAL RECORD and the *New York Medical Journal*. Signed, C. A. Von Ramdohr, M.D., Chairman; Benjamin T. Tilton, M.D.; Ignatz Morvay Rottenberg, M.D., Committee.

Obituary Notes.—Dr. FREDERICK H. COLTON of

Brooklyn, N. Y., died on March 10 at the age of 73 years. He was born in Long Meadow, Mass., was graduated in arts from Yale College in 1860 and in medicine from the Long Island College Hospital in 1864. While a student he served a year during the Civil War in the medical corps of the U. S. Army. He was visiting physician at the Long Island College Hospital, St. John's Hospital, and the Brooklyn Home for Aged Men and Cripples. He was president of the board of directors of the Eye and Ear Hospital and was a member of the Kings County Medical Society, the Medical Society of the State of New York, the Practitioners' Club, and the Associated Physicians of Long Island.

Dr. THOMAS A. SCHERER died at Catasaqua, Pa., on March 9, at the age of fifty-eight years. He was graduated from Jefferson Medical College in the class of 1883.

Dr. ALVERD E. WINCHELL, who was the oldest member of the Connecticut Medical Society, and a prominent physician in New Haven, died March 7, of pneumonia, at the age of eighty-one years. He was a graduate of the College of Physicians and Surgeons, New York, in the class of 1865.

Dr. ALEXANDER HADDON of New York City died on March 16, of disease of the heart, at the age of 79 years. He was born in Orange County, N. Y., and was graduated from the College of Physicians and Surgeons (Columbia University) in 1859. He was one of the organizers of the Northeastern Dispensary, and was also for thirteen years on the attending staff of the Presbyterian Hospital.

Dr. MARY FRANCIS BUTTERWORTH of Revere, Mass., died on March 13 at the age of 66 years. She was born in Beverly, Mass. On the death of her husband, Chief Engineer James Butterworth, U.S.N., in 1891, she began the study of medicine and was graduated from the Tufts Medical School in 1895.

Dr. JOHN MILLER KENNEDY of this city died March 12, at the age of 49 years. He was a graduate of the College of Physicians and Surgeons (Columbia University) in 1887, and was a member of the Society of Alumni of City Hospital, and of the West End Medical Society.

Dr. CARLOS P. TUCKER, a graduate of the College of Physicians and Surgeons in the class of 1849 and for fifty-seven years a practicing physician in this city, died on March 10 at his home in Mount Vernon. He was born 90 years ago at Exeter, N. Y. Dr. Tucker was attending surgeon at Trinity Infirmary for many years and he was one of the earliest members of the Academy of Medicine.

Dr. H. HAMILTON RICKABY died at his home in this city on March 10, in his seventy-first year. He had practiced medicine in New York for forty-five years, after being graduated in medicine from the New York University in 1867. He was a member of the staffs of the Metropolitan and Hahnemann Hospitals and for several years was superintendent of the West Homeopathic Dispensary.

Dr. WILLIAM SPRENGER of New Haven, Conn., died March 13, at the age of 64 years. He was born in Switzerland, studied medicine in Germany, and served as surgeon during the Franco-Prussian war, being decorated with the Maltese Cross for his services. Later he came to America, and obtained a medical degree from the University of Vermont in 1891. He was an *x*-ray expert, and was at one time instructor in the use of the Roentgen ray at the Yale Medical School. He had had a cancer of the hand resulting from an *x*-ray burn.

Correspondence.

THE MODIFICATION OF COW'S MILK.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—The following formulæ for modifying cow's milk have been found to be efficacious and easier to remember than the formulæ given in the text-books. In comparing the composition of human milk and cow's milk, the following differences are to be noted:

Human milk: Protein, 1.5 per cent., fat 4 per cent., sugar 7 per cent. Whole cow's milk: Protein 4 per cent., fat 4 per cent., sugar 4 per cent. Top 4 ounces of 1-quart bottle of milk after standing for six hours: Protein 4 per cent., fat 20 per cent., sugar 4 per cent.

If it is desired to make a mixture consisting of a total of 20 ounces, the following calculation may be performed:

1. What percentages of fat, proteins and carbohydrates do we need for the 20 ounces of the mixture? The answer is: $1.5 \times 20 = 30$ per cent. protein; $4 \times 20 = 80$ per cent. fat; $7 \times 20 = 140$ per cent. carbohydrate.

2. How many ounces of the whole milk are needed to furnish the required percentage of protein? The answer is: $30 \div 4 = 7\frac{1}{2}$ ounces.

3. What percentages of fat and carbohydrate are contained in the $7\frac{1}{2}$ ounces? The answer is: $4 \times 7\frac{1}{2} = 30$ per cent. of fat; and $4 \times 7\frac{1}{2} = 30$ per cent. of carbohydrate.

4. What percentages of fat and carbohydrate are missing in the mixture? Answer: $80 - 30 = 50$ per cent. of fat; $120 - 30 = 90$ per cent. of carbohydrate.

5. How much cream should one take of the upper 4 ounces in order to obtain the necessary 50 per cent. of fat? Answer: $50 \div 20 = 2.5$ ounces.

6. How much carbohydrate do we add to the mixture by using $2\frac{1}{2}$ ounces of cream? Answer: $4 \times 2\frac{1}{2} = 10$ per cent.

7. How much more carbohydrate do we need in our 20-ounce mixture? Answer: $90 - 10 = 80$ per cent.

8. How much sugar do we have to add in order to get the full percentage of carbohydrate? Answer: 1 ounce = 480 grains of pure sugar = 100 per cent.; $X = 80$ per cent.; or $480 \div 100 = X : 80 = 384$ grains.

9. How much milk and cream are needed for the 20-ounce mixture? Answer: $7\frac{1}{2} + 2\frac{1}{2} = 10$ ounces.

10. How much water do we have to use for this 20-ounce mixture? Answer: $20 - 10 = 10$ ounces.

The completed formula will be as follows: Whole milk, $7\frac{1}{2}$ ounces; upper 4 ounces of cream, $2\frac{1}{2}$ ounces; sugar, $6\frac{1}{2}$ drams, and water sufficient to make 20 ounces.

M. A. HELFGOTT, SR., M.M.C.
1323 HOLLINS ST., BALTIMORE, MD.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

TROPICAL SCHOOL—CANCER RESEARCH—EXOPHTHALMIC GOITER—INSURANCE—OBITUARY.

LONDON, March 1, 1912.

ON Wednesday the Lord Mayor, Sir T. Crosby, M.D., presided at the Mansion House over a meeting of which the object was to raise £10,000 in aid of the London School of Tropical Medicine. The Secretary of State for the Colonies, Mr. L. Harcourt, made an earnest appeal, read a letter he had

received in favor of it from his great predecessor, Mr. Joseph Chamberlain, and gave some details as to the progress made and the prospects open. He was informed that 1,300 students had been trained, nearly 500 of whom had passed into the service of the Dominions and Crown Colonies, and many colonial officials had profited by a stay in the hospital, which was placed in proximity to the wharves where ships from all ports brought victims of tropical diseases. Sir Patrick Manson, to whose foresight the school owed its existence and who had been all along its senior physician and teacher, read the official report. The contributions announced amounted to £2,293, to which is to be added £250 given by a gentleman present after the close of the proceedings.

At the annual meeting of the Cancer Hospital on Wednesday it was reported that the feature of the year's work was the completion of its Research Institute. In the electric and radiotherapeutic department, for which a new building would be opened about May next, a large supply of radium was secured. Dr. Robert Knox, head of this department, said that up to the present he saw no indication that it would take the place of operative measures. X-rays had been beneficial in a large percentage of cases by relieving pain. The chairman said that the new Research Institute of this hospital opened some months ago by the Duke of Connaught, was in construction and equipment a model of its kind—the most perfect for its purpose to be found anywhere.

I gave you last week a pretty full account of Dr. T. P. Dunhill's great experience and success in the surgical treatment of exophthalmic goiter. But there is more to be said, and the meeting of the three sections of the R. S. M. has had to be adjourned twice to afford an opportunity of full discussion, the result of which will, I think, be to show that the very pessimistic prognosis that long prevailed has been for some time undermined by those who have had much experience in the disease. Writers and editors of manuals will have to modify many of their statements. Side by side with Dr. Dunlop's paper the meeting had before it a contribution from Dr. George Murray, the professor of medicine at Victoria University and physician to the Manchester Infirmary, who had been invited to state the general principles of treatment. Admitting thyroid autointoxication as now generally accepted as the cause of the symptoms, he held the treatment was comparable to that of other toxemias due to microbic infection. But we know that some cases spontaneously recover—this in his experience might occur at any time from nine months to seven years. In some cases a degree of tolerance might be established. Atrophy of the redundant epithelium seemed to occur and he had seen this go too far in a case in which the goiter symptoms gave place to those of myxedema.

Rest, bodily and mental, diminished the activity of the thyroid. Diet had some effect. Excess of proteids should be avoided. The milk of goats and other animals after removal of their thyroids had been tried, so had their serum and even dried blood. Arsenic and belladonna seemed to depress the activity; iodine had the opposite effect. Cytolytic serum was not specific and was apt to produce degeneration of other organs. X-rays tried in one case failed, but on operation he found some changes suggesting that a longer course might have succeeded. Some adhesions to trachea might also have been due to the rays. A mild faradic current two or three hours a day had seemed beneficial and possibly reduced activity. Of 300 cases he had seen (276 women and 24 men) 10 were operated on, 9 by partial thyroidectomy, and 1 by ligature of both superior thyroid arteries. The first 3 cases died almost immediately; 1 man 4½ years ago after 9 years was ligatured and now is generally improved and can cycle; another partially thyroidectomized in May, 1911, was cured by September. A woman anxious for operation on account of pain, had 1 lobe removed in 1907 and is now well. Another in 1910 has still some symptoms, but is greatly improved, pulse 76 instead of 130. In 6 of his 10 cases 4 were operated on for pain or dyspnea. Of the 7 survivors 2 are cured, 4 are improved, and 1 has just recovered from the operation. He would advise operation whenever there is distinct stridor from compression or persistent pain in the enlarged thyroid, but not in mild cases, nor in very severe ones with marked cardiac failure. In moderate cases if full medical treatment for 12 months proved useless he would recommend surgery. The grave dangers that formerly deterred have been remarkably reduced.

Sir V. Horsley did not adopt Dr. Dunhill's four classes, but thought three sufficient: (1) true exophthalmic goiter with watery secretion; (2) parenchymatous with exophthalmic symptoms; (3) very rare cases when the whole gland was diseased and he removed it all and grafted normal gland beneath the peritoneum. He agreed with Dr. Dunhill that the danger was practically nil, except in dernier ressort cases. He had given up ligature of arteries as less effective than excision. No medical treatment would cure in an adult but should be tried for at least three months before operation. Many cases got well spontaneously or under rest and faradism. He had only operated under general anesthesia.

Mr. Leedham-Green of Birmingham referred to the mortality of six German surgeons stated at the congress last year, which differed between 3 and 17.3 per cent. Comparison with average conservative treatment was not easy for want of full statistics, but many hundreds of published cases gave an average of 15 per cent. His own cases were 30 in number and 3 had died (1 from pneumonia, 1 heart failure, 1 weeks later from phthisis); of the others 2 had relapsed from hypertrophy of the other lobe. All the others were at work. His best results were when he removed most tissue. He used local anesthesia.

Mr. Lynn Thomas of Cardiff said most cases in Wales came from near the sea; none from the mountains to which he sent patients after operation. Emotional disturbance was an important factor in this disease and he had seen a case die from it, so an eye should be kept on patients after operation. Dr. Hale White had investigated many cases with the aid of an actuary and found the mortality of healthy persons at the same ages five against eight of goiter cases not operated on. Years must elapse before we can compute the expectancy of life of persons whose thyroids have been removed.

Dr. Hector Mackenzie wanted more detail of Dr. Dunlop's cases, but did not give much as to his own experience. He did not think the operation could ever be regarded as necessary.

Dr. Albert Kocher said that at Berne they had done 865 operations on 669 patients, of whom 130 suffered from simple hyperthyroidism and all but two were cured. (They died of postoperative

pneumonia.) For progressing Graves' disease 539 were operated on and the results of 300 collected so far, giving 160 or 45 per cent. radical cures. More than half of the 160 were very severe and of long duration and in some several operations, up to 5, were needed; 149 still had some symptoms, though they were much benefited; 5 per cent. had had recurrence but in milder form; 6 per cent. died from other diseases. He thought all might be cured if operated on soon after the outbreak of the disease. In four cases only was a general anesthetic used and that because of the patient's lack of self-control. His objection to it was the liability to vomiting after it and the difficulty of sparing the laryngeal nerve.

M. Wilfred Trotter thought it reasonable to run some risk to avoid years of a very miserable condition. From simple goiter he had not lost a case, but in exophthalmic cases the mortality was about 10 per cent., but he operated on very bad cases, as those most in need of relief, and in which the results were most brilliant. More than half his cases were severe. A reduction of mortality to 5 per cent. should be possible and then operation could be done on a large scale. He used atropine, morphine, and scopolamine followed by ether. The atropine restrained the excess of mucus and should be acting before the anesthetic was given. Fear caused excessive tachycardia when the pulse might be uncountable for hours. The anesthetic did not steady such a case and the least laryngeal spasm might be fatal. He had his patients anesthetized in bed in the ward. Speed in operating was less important than gentleness, for dragging on the nerve or injury to the tissue must by no means occur. Drainage might sometimes be necessary after ether, otherwise he did not use it.

Dr. D. Buxton made some remarks on anesthesia. Some patients were shown by Messrs. Paterson and Berry and the discussion again adjourned.

The Insurance Act seems to be giving trouble outside the profession. The commissioners have been sufficiently perturbed by the dissolution of a number of the smaller Friendly Societies to send out a letter urging them to refrain from doing so. They are also making, they say, every effort by lecturers and conferences to give information as to the working of the act and to its effect on the societies. It does not say much for the care with which an Act of Parliament has been drafted, that it should be necessary to engage a band of lecturers to explain it to those it most concerns. The rules of the Friendly Societies appear to be drawn up with more care.

The medical men of various societies and sick clubs whose contracts expire at midsummer are giving notices that the agreements will not be renewed on the same terms.

In the House of Commons last night inconvenient questions were asked about the patronage being bestowed under the act and the offices created and the salaries, but the Government replied by closing the subject.

Dr. Alfred Harry Young, late professor of anatomy and pro-vice-chancellor, Manchester University, died on the 23d ult., aged 60. He had been an examiner for Oxford, London, Liverpool, and Birmingham Universities as well as for the Royal Colleges. Was consulting surgeon to the Salford Royal Hospital, the Manchester Consumption Hospital, and various institutions, and ex-president of several medical societies. He went to Manchester in 1877 and retired in 1909 on account of ill health. He lectured at Owens College before its incorporation in Manchester University. In 1885 took the chair of pathology and was appointed Dean of the Medical School. The degree of LL.D. was conferred upon him. He wrote on embryology and other subjects in Cunningham's Text-book and edited "Studies in Anatomy from the Anatomical Department of Manchester University."

Sir Francis R. Cruise, M.D., LL.D., D.L., Physician to the King in Ireland, died on February 26. Born in 1834 he graduated in Dublin University—M.A. 1856 and M.D. 1858. In 1861 he was elected on the staff of the Mater Misericordiæ Hospital, which he served for many years. He was president of the Royal College of Physicians in Ireland from 1884 to 1886. In 1901 was appointed physician in ordinary to King Edward. A knighthood was conferred on him in 1896. In 1905 he received from the Pope the decoration of St. Gregory. Sir Francis was a lineal descendant of Sir Maurice Cruise, who settled in Ireland in the twelfth century and whose tomb, with the date of his death (1216), still exists near the ruins of Cruisetown Castle. Besides numerous contributions to medicine Sir Francis wrote the Life of Thomas à Kempis and a revised translation of the "Imitation of Christ," as well as various articles on the subject. He had made a profound study of everything relating to à Kempis, who he held to be the author of the "Imitation."

Another loss to the profession in Dublin is by the death of Dr. Henry Fitzgibbon, which occurred on February 23, in his 71st year. He graduated from Trinity College in 1866 and for a time engaged in general practice. But after a time was appointed surgeon to the City of Dublin Hospital, next to the Westmoreland Lock Hospital, and consultant to Mercer's Hospital. He held many other important posts in Dublin, including visitor in Lunacy, member of the Board of Superintendence of the Hospitals. He was president of the Royal College of Surgeons in 1888-9. He made many valuable contributions to the societies, to the *Medical Press and Circular*, and other journals.

Dr. J. Blake Maurice, J.P., died suddenly on February 14, aged 72. He qualified in 1861, took M.D., St. And. the next year, and the F.R.C.S. in 1864. He was a magistrate for Wiltshire and medical officer at several institutions in the country.

Dr. M. Ogilvy Ramsay, surgeon to the Cumberland Infirmary, died on February 15 after four days' illness. He was M.A., St. And., and M.D., Edin, 1895, as well as F.R.C.S. Ed. He had practised in Carlisle for some 20 years, where he was greatly esteemed and will be deeply regretted. He contributed "Reports on Influenza" to *St. Bartholomew's Hospital Reporter*, 1890, and "Tracheotomy in Diphtheria" to the same.

OUR PARIS LETTER.

(From Our Regular Correspondent.)

OFFICERS OF THE ACADEMY OF MEDICINE FOR 1912—DISINFECTION OF THE HANDS BY ALCOHOL—SURGICAL MEASURES FOLLOWING THE ACCIDENTAL INGESTION OF CORROSIVE LIQUIDS—PROGNOSIS OF BRIGHT'S DISEASE BY THE AMOUNT OF UREA IN THE BLOOD—PROFESSOR LANNELONGUE.

PARIS, January 30, 1912.

THE Academy of Medicine installed its officers for 1912, with Gariel as president, with Chaveau unanimously elected vice-president, and with Blanchard

as secretary. The disinfection of the hands by alcohol was the subject of papers by Marquis and Savariaud. This measure has been made the subject of numerous works and a certain number of surgeons make constant use of this method of disinfection. Until lately it was thought that the disinfectant properties of alcohol were almost nil. Marquis thinks, on the contrary, that alcohol owes its antiseptic power to its penetration. By the use of a special procedure he shows that this impregnation reaches to the bases of the hair follicles. Alcoholization of the hands should last for four minutes at least, and be made with alcohol with a degree of concentration of 90 to 100 per cent. Hands disinfected thus remain sterile for from 15 to 30 minutes; this use of alcohol may be made without that of soap or previous washing. It presents considerable advantages in time of war, it affords a saving of time and labor, and permits us to solve economically the problem of disinfection of the hands.

Pierre Delbet thinks that when the hands are soiled with cultures of microbes with resistant spores we can never be sure of sterilization. Delbet made a series of experiments on this subject; after having touched cultures of microorganisms he dried his hands by placing them in a current of air from a ventilator. After complete desiccation he commenced to cleanse his hands by washing them with soap, then with alcohol and hydrogen dioxide, 12 volumes solution. When the hands were supposedly clean he introduced them into balloons filled with bouillon culture and moved them about for five minutes, all precautions being taken during these manipulations to prevent contamination from without. To appreciate approximately the number of microbes left on the hands the whole amount of bouillon was placed in 514 culture tubes; all these tubes were contaminated. Delbet says that his confidence in the possibility of asepsis of the hands has been so shaken by the results of these experiments that he no longer dares to operate without gloves.

A paper dealing with the surgical operative measures necessitated by the accidental ingestion of corrosive liquids was recently presented by Potherat and Mauclaire. As a result of the ingestion of corrosive liquids there occur ulcerative, inflammatory, cicatricial, retractile, and stenosing lesions in which two distinct phases may be distinguished: one primary, immediate, due to the ingested corrosive liquids; and a second due to the occurrence of pyloric stenosis by cicatricial retraction. In the case presented by Potherat it was remarkable to note that the caustic which had severely burned the stomach in the pyloric region had traversed the mouth, pharynx, esophagus, and cardia without burning them; the liquid seems not to have a corrosive action except after it has stagnated for a time.

Mauclaire had occasion to attempt an operation two hours and a half after the ingestion of hydrochloric acid, for the purpose of evacuating the stomach contents, to wash it out with an alkaline solution, and finally to suture the stomach if there was any perforation. Now in the course of the operation Mauclaire found that there was a perforation on the anterior wall of the size of a five centime piece. The peritoneal cavity already contained a sero-sanguinolent liquid. The peritoneum and the posterior cavity of the omentum were drained, the perforation in the stomach was sutured to the skin, lastly an injection of Vichy water was made into the stomach. In spite of his care the patient died some hours after the operation. Mauclaire thinks that in all such cases an immediate operation should be done, for to wait and attempt lavage of the stomach is to lose precious time and is often impossible, because of the spasm of the esophagus and cardia prevents catheterism in many cases.

At the Medical Society of the Hospitals Fernand Widal discussed the prognosis of Bright's disease from the dosage of urea in the blood. The amount of urea in the blood is of importance in giving a prognosis of Bright's disease. In the question so difficult to solve of the prognosis of renal insufficiency it is the amount of urea in the blood that furnishes the only exact element that we possess at the present time. The importance of the examination of nephritic blood from the point of view of its content in urea is of considerable practical worth.

In the normal condition the amount of urea varies between 0.15 and 0.50 per liter of blood serum; when the proportion of urea passes 0.50 there is retention. The organism cannot long tolerate doses higher than 4 grams per liter of blood. The symptoms which accompany retention of urea in the blood are loss of appetite, torpor, pruritis, and uremic retinitis. The interest in the examination for urea in nephritic blood is that it furnishes exactitude in the prognosis and thus allows us to judge accurately of the gravity of the situation which nothing in the general condition of the patient would show.

Professor Lannelongue, President of the Academy of Medicine of Paris, Member of the Institute, died at the age of 70 years. This eminent master had a peculiarly brilliant career. Especially known are his remarkable works on bone suppurations, from osteomyelitis to tuberculosis, and everyone knows the clarity with which he portrayed these conditions up to that time so confused. It was he who showed the tuberculous nature of cold abscesses, fungous arthritis, and numberless cases of arthritis in infancy, before him so confused, so clear since his discoveries. It is for this that the name of Lannelongue will live in the future as the name of a creator. The scientific work of Lannelongue is of great importance in extent and originality. Aside from numerous publications on tuberculosis he was the author of many other works on various subjects. To popularize the results of his experience Lannelongue held weekly clinics for fifteen years at the Hôpital Trousseau, which were much frequented. Aside from his eminent scientific position he had many friendships in the political world. He was the friend and confidant of Gambetta, whom he had the grief to see die because illustrious physicians refused his advice. This man of such large intelligence devoted the last years of his life to a voyage around the world, which he made the subject of a book full of youth and ringing with patriotism. Lannelongue was Senator, Commander of the Legion of Honor, and a high dignitary in many foreign orders. In the midst of all this distinction, of which he realized the ephemeral nature, he was wise enough to remain simple, exempt from pretension, and easy of access to the afflicted. The numerous important works of Lannelongue and of his distinguished pupils, inspired by his examples, will assure him an imperishable renown.

Progress of Medical Science.

Boston Medical and Surgical Journal

March 7, 1912.

John Hunter. F. L. Burnett.
The Value of Intrauterine Douches, Packing and Antiseptics in the Treatment of Miscarriage. A study of the Results in Two Thousand Cases. E. B. Young and J. T. Williams.
Methods of Favoring Proteid Digestion. R. B. Hunt
Amaurotic Family Idiocy. R. M. Smith.
A Card for the Rapid Calculation of Milk Modifications. J. Herbert Young.
Observations on European and American Orthopedic Apparatus. W. H. Kraus.

The Treatment of Miscarriage.—E. B. Young and J. T. Williams studied the relative value of intrauterine douches, packing, and antiseptics in the treatment of miscarriage. On the basis of the results obtained in two thousand cases they conclude that salpingitis has been more common after intrauterine douches. Intrauterine douches of sterile water or salt solution have not given as good results as simply wiping the uterine cavity with sterile gauze. Antiseptic douches have given poorer results than simple sterile solutions. Swabbing the uterine cavity with tincture of iodine has given the best results. Packing the uterus to control hemorrhage does not greatly increase the liability to infection. For packing, gauze saturated with 50 per cent. alcohol in "clean," and plain sterile gauze in "infected" cases have given the most satisfactory results.

Methods of Favoring Proteid Digestion.—R. B. Hunt describes the various methods by means of which one may aid the child in the digestion of the excessive amount of insoluble casein contained in cow's milk. Boiling the milk prevents it from coagulating normally, if at all, with rennet. Cereal diluents have a twofold action: (1) they furnish a mechanical aid to the peristaltic action of the stomach in grinding the curd into more flocculent particles; (2) they have a colloidal action, the flocculi of precipitated casein being surrounded with a gelatinous envelope, and being prevented from coalescing into dense masses. Chemical agents aid proteid digestion either by the formation of soluble salts or by a retarding action on the enzyme rennin. The chief influence of lime water consists in its effect in retarding the clotting action of rennin. Bicarbonate of soda causes the liberation of carbon dioxide, which produces a more porous curd. If sodium citrate is used the sodium unites with the paracasein, forming sorium paracasein which is a fluid, while citric acid is liberated and unites with the calcium, forming the citrate of calcium which is absorbed. Predigestion of milk by means of pancreatin is a method that is used least of all methods. The use of whey eliminates the large mass of insoluble casein.

Amaurotic Family Idiocy.—R. M. Smith summarizes the symptoms of this disease as follows: (1) A progressive paralysis—flaccid or spastic in type—occurring in an infant previously normal and well developed; (2) blindness with typical changes in the fundi of the eyes; (3) mental deficiency going on to idiocy; (4) nystagmus, drooling, and gurgling in the throat; (5) occurrence in Hebrews, often in several members of the same family. The pathological findings of this disease are distinctive. The lesions are confined to the central nervous system. Every cell of the entire central gray matter, brain, cord, and spinal ganglia, is involved. The changes are degenerative in type and consist of a swelling of the cell protoplasm which by pressure causes a mechanical destruction of the cell fibrils. Ultimately the cell body is a mass of detritus. The axis cylinders are not involved in the process. The characteristic appearance in the fundi of the eyes is due to the degeneration of the ganglion cells of the retina and the nerve fibers of the optic nerves, which are, of course, really a part of the central nervous system. The cells are more numerous in the macula region than elsewhere, so that region appears white. The red spot is due to the contrast of the retinal vessels with the white surroundings.

Orthopedic Apparatus. W. H. Kraus advocates the standardization of certain common types of appliance. He would urge that, whenever it is practical, at least in the more complicated forms, the instrument maker be consulted in the presence of the patient and be allowed to take any measurements he desires. It is recognized that an ill-fitting apparatus may do harm, and rarely serves its purpose as a support. The brace should be so carefully worked out in detail that it may, as far as possible, adapt itself to give adequate support in whatever position or under whatever anatomical peculiarities it is called upon to serve. To attain this nicety of fit it is very important that the maker of the instrument should be allowed to take his own measurements of the patient. However, this should never be left entirely to the mechanician. There is at present no uniformity of type or style so that a hip brace, for example, can be fitted as the tailor fits an overcoat. The measuring, the fitting, and the working of the brace should all be carefully followed and observed by the physician in charge, who alone can fully appreciate the requirements.

New York Medical Journal.

March 9, 1912.

A Report of Bone Transplantation and Osteoplasty in the Treatment of Pott's Disease of the Spine. F. H. Albee.
Moderately Contracted Pelvis and Induction of Labor. E. McDonald.
The Neglected Cold. J. B. Huber.
Moral Problems of College Life. S. Egbert.
What a Father Should Tell His Son. I. S. Wile.
What a Mother Should Tell Her Child. M. S. Macy.
A Study of the Bacteria of the Conjunctiva. K. M. Lynch.
The Trace of Urinary Albumin. B. G. R. Williams.
Strangulation of Intestine Beneath a Persistent Inguinal Genital Ligament. C. H. Wallace.

Bone Transplantation in Treatment of Pott's Disease.—By F. H. Albee. (See MEDICAL RECORD, January 20, 1912, page 146.)

The Moderately Contracted Pelvis.—E. McDonald states that any degree of pelvic contraction is only relative to the size of the fetus and a pelvis should be judged to be large or small as to whether or not it will admit the passage of the head. The ever present obstetric problem is whether a fetal head of unknown dimensions can be delivered through a pelvis whose measurements can be ascertained. For measuring the fetal head the author has devised the following method: An ordinary pelvimeter of simple construction is taken and two rings of adhesive plaster, about 1 cm. in width, are fastened to each tip. These rings are faced inside with adhesive plaster, back inward, and are made sufficiently large readily to admit the middle and index fingers. The knob-like tips of the pelvimeter should project about 1 cm. beyond the palpating fingers. The patient is laid on her back and the operator stands as if to palpate for the position of the head. An accurate diagnosis of the fetal position, not only in regard to the occiput, but also in regard to the flexion of the head is essential to success. The bladder must be empty. The occiput and sinciput are located; then the fingers are thrust into the rings and the knobs of the instrument approximated to these points as closely as possible. The weight of the hinge side of the pelvimeter is supported by the finger of an assistant, or may be held up by a string attached to the operator's arm or buttonhole. It is necessary that the hinge side should have free play of movement in order that one or other tip may be depressed, if occasion requires. The tips are held firmly against the cephalic poles and the scale is read. This gives the occipitofrontal diameter.

The Neglected "Cold."—J. B. Huber states that colds seem to be the exclusive privilege of civilization. The human race did not snuffle much until it began to build houses and to wear clothes. An essential element in the catching of colds has been the disturbance of equilibrium

in the body through constantly passing from the superheated home into low temperatures without the house. In some cases of catching cold there is a nervous element, but most cases are the result of bacterial infection. The catarrhal habit is favored by overeating, indigestion, and malnutrition.

Moral Problems of College Life.—S. Eggert states that from the mind of the young man at college should be eradicated the fallacious doctrine that sexual continence is incompatible with good health upon the part of men. The ethical and moral sense of the student should be appealed to and impressed along two lines: First, by emphasizing the importance and influence both physically and morally of one's present actions upon one's later life and especially with respect to one's future family relations, and secondly, by demonstrating the inevitable and positive influence for evil which is inflicted upon the participating woman.

The Bacteria of the Conjunctiva.—K. M. Lynch states that in order to determine the frequency and kinds of bacteria present in the conjunctival sac normally, and in both acute and chronic inflammatory conditions, a study of 200 spreads was made in the Philadelphia General Hospital in the summer of 1911. Spreads were made from the lower conjunctival surface, back near the fornix, with small cotton tipped wooden applicators, previously sterilized, and upon slides cleaned with alcohol. A summary of the study shows 57.6 per cent. of normal conjunctivæ to harbor the xerosis bacillus, 20 per cent. the pneumococcus, 3.8 per cent. the diplobacillus of Morax-Axenfeld, 3.8 per cent. staphylococci, 0.2 per cent. Friedländer's bacillus, 3 per cent. yeast fungi, and a few contain unrecognized bacteria, while in only 4 per cent. no bacteria can be found. In the acute cases it was demonstrated that practically always the conjunctival sac contained the xerosis bacillus immediately after a gonococcic infection, while the pneumococcus, pneumobacillus, and staphylococcus were each present in a few in pure culture. In the chronic cases the xerosis bacillus was demonstrated in nearly a hundred per cent., while mixed with it in a few cases were the diplobacillus of Morax-Axenfeld, the pneumobacillus, and the staphylococcus.

The Trace of Urinary Albumin.—B. G. R. Williams states that practically every urine contains a trace of serum albumin, which is revealed only when certain special methods are used. In order to obtain reliable deductions with regard to pathological albuminuria the Boston and the picric acid tests may be relied upon. The author recommends the following technique for the latter: Equal parts of the filtered urine and a filtered, concentrated, aqueous solution of pure picric acid are mixed in a test tube and set aside. After an interval of 15 to 40 minutes, the tube is examined beside a control with a sample known to be normal. If a sediment is present in the bottom of the tube, the test is probably positive. One should shake the tube well and hold it in the direct rays of the sun, comparing the control specimen. The milky appearance may be due to the serum albumin, but albumoses, peptones, and nucleoalbumins may likewise contribute. Then the sample should be heated. If the contents "clear," no true serum albumin is present. If the patient has been taking santal oil or copaiba, one should add an excess, twice the volume, of ether, shaking well to dissolve the resinous acids.

Strangulation of Intestine Beneath a Persistent Inguino-Genital Ligament.—By C. H. Wallace. (See MEDICAL RECORD, February 13, 1912, page 240.)

The Journal of the American Medical Association.

March 9, 1912.

Spinal Decompression; Reports of Seven Cases and Remarks on the Dangers of and Justification for Exploratory Operations. P. Bailey and C. A. Elsberg.

Position as a Factor in Drainage of the Peritoneal Cavity. W. Coughlin.

Clinical Aspects of Syphilis of the Liver. V. L. Schrager.

Muscular Development, the Causes for the Lack of It and the Value of Physical Exercise. H. M. Friedman.

Localization of *Spirochæta Pallida* in the Heart Muscle in Congenital Syphilis in the Absence of Histologic Lesions or Spirochetes Elsewhere in the Body. A. S. Warthin and E. J. Snyder.

A Case of Leprosy in Indiana. N. D. Brayton.

Cystic Appendix Vermiformis of Unusual Size. R. A. Noble.

Removal of Foreign Body from the Right Bronchus. F. C. Todd.

A Contribution to the Study of Rat Leprosy. H. Zinsser and E. G. Carey.

The Treatment of Occluded "S." E. W. Scripture.

The Results of the Treatment of Cancer of the Uterus by the Actual Cautery, with a Practical Method for Its Application. J. E. Percy.

Radiographs in the Diagnosis of Gastrointestinal Adhesions and Ulcers. S. Tousey.

Relative Frequency of Aortic Regurgitation. J. E. Grume.

Spinal Decompression.—P. Bailey and C. A. Elsberg conclude that the free removal of spinous processes and lamina with the opening of the dura may have a profound effect on the spinal cord in certain pathological conditions. There are a number of intradural conditions which present symptoms as yet indistinguishable from those of spinal tumor. Even in the absence of increased intradural pressure or a discoverable lesion the operation of laminectomy and incision of the dura may be of great benefit. For these reasons and on account of its relative safety in experienced hands exploratory operations should be done more often.

Peritoneal Drainage.—W. Coughlin concludes from his experiments that the pelvic cavity could not be completely drained of water by raising the supine body even to 90 deg. "bolt upright." The pelvic cavity could be completely emptied of water by turning the horizontally placed body just more than midway between pronation and supination. Water found its way from the left loin to an exit just below and internal to the right anterior superior iliac spine with the body raised to 45 deg. in the right lateral position. With a distended condition of the intestines, although water gravitated less readily, practically the same results were obtained. Although water found its way from the left loin, it did not so easily find its way from the right loin to an exit just below and internal to the left anterior superior iliac spine; no matter how high the left laterally lying body was raised a quantity remained in the right loin.

Syphilis of the Liver.—V. L. Schrager notes that clinical statistics underestimate the frequency of syphilis of the liver. The Wassermann reaction reveals a greater number of cases. The symptom-complex of syphilis of the liver is not pathognomonic, as it simulates almost every hepatic disease; occasionally it simulates fabrile diseases. Whenever the diagnosis is uncertain, resort should be had to the therapeutic test as well as to the Wassermann reaction. Mixed treatment has a striking effect on lues of the liver frequently, regardless of the time it has existed.

Muscular Development.—H. M. Friedman states that it might be well to note that, aside from the ability of a well-developed muscular system to endure the physical hardships of life, a good musculature is necessary in order to have a healthy body; that muscular development is influenced by climatic, dietetic, and hygienic conditions; that frequent crossing between widely different races seems to lower the standard of physical development, as well as to a too close in-breeding; that, while civilization tends to a physical deterioration in general, much can be done to check this tendency through intelligent, systematic physical education, begun in childhood and continued throughout life.

The Occluded "S."—E. W. Scripture states that one of the most frequent defects in speech of the illiterate or the defective is the occluded "s." In making the normal "s" the tongue is pressed against the hard palate rather tightly, but a narrow groove is left in the middle so that a jet of air passes through, and it is this that produces the distinctive sound of "s." A child with the occluded "s" an-

parently uses "t" and "d" instead of "s" and "z," saying "tun," "toap," and "toup" instead of "sun," "soap," and "soup," and "Liddy" instead of "Lizzy." The occluded "s" may be defined as an "s" made with excessive tongue pressure closing up the narrow channel. Treatment by having the child imitate the "s" of normal speech usually aggravates the defect, as the child is already making too much effort with his tongue. One rarely succeeds in teaching him to relax the tongue directly. The treatment the author has used is to place a small stick probe over the middle of the tongue while the patient is saying "s." This makes a groove through which the air escapes with a hissing sound and makes it impossible to produce the "t" sound. After repeated trials the child learns to recognize the "s" and learns how to make it without the use of the stick.

The Cautery in Cancer of the Uterus.—By J. F Percy. (See MEDICAL RECORD, February 3, 1912, page 246.)

The Lancet.

March 21, 1912.

Glycosuria. A. E. Garrod.
The Significance of the Symptoms in Cases of Duodenal Ulcer. G. Mansell Moullin.
The Differential Diagnosis of Certain Infectious Diseases. F. Thomson.
Cystitis; Its Causes and Its Treatment. D. Newman.
Two Cases of Volvulus Coincident with Strangulated Hernia. F. Fraser.
A Vaginal Pessary Retained for Twenty-nine Years. Perforation of the Bladder and Fixation of the Instrument by a Large Phosphatic Vesical Calculus; Lithottipsy; Recovery. A. C. Butler-Smythe.
Two Cases of Pneumonia Treated with Pneumococcus Vaccine. G. P. Jones.

Glycosuria.—A. E. Garrod states that transient glycosuria may result from widely different causes, the removal of which will restore the sugar tolerance. But in the majority of instances the impression is justified that diabetes once established is a permanent condition. There are racial and hereditary tendencies that favor an instability of the carbohydrate metabolism. Various organs of the body share in the causation of glycosuria. The author advances the following hypothesis: One may conceive of a group of enzymes carrying on the actual work of the metabolism of carbohydrates, as of other branches of metabolism. One may picture to oneself the glands of internal secretion as directing, controlling, and supervising the work of the enzyme laborers, now restraining their activity, and now stimulating them to increased exertions. Of the several glands concerned in this work, among which the pancreas stands preeminent, one may conceive of some as helping and some as hindering the actions of others, so that, if the influence of one of them be withdrawn, or be too powerfully exerted, the balance normally maintained is overthrown and disorder results. Lastly, one may picture these overseer glands as themselves controlled by a still higher authority resident in the nervous system, for the influence of the nervous system upon the glands of internal secretion hardly admits of doubt. The author discusses the relation between glycosuria and of the nervous system, diseases of the pancreas, liver, and intestines, and febrile disorders.

Significance of Symptoms in Duodenal Ulcer.—G. Mansell Moullin states that there may be an ulcer in the duodenum without symptoms of any kind (in many instances in which an ulcer has been found post mortem its existence had never been suspected during life); that the characteristic symptoms may be present without even so much as a white patch on the serous coat; that fairly deep ulceration may occur in the mucous membrane without visible change on the serous surface, post mortem at any rate; that a great deal may happen upon the serous surface in the way of thickening and adhesion without anything to correspond beneath; and that the presence of a trivial scar, far too small and too superficial to cause stenosis or obstruction, is not enough to account for the symptoms assigned to duodenal ulcer; and still less for their recurrence after perhaps years of freedom. The most characteristic symptom of duodenal ulcer is the pain. But hunger pain may and does occur in its most typical form in many other disorders besides duodenal ulcer, as in chronic ulcer on the lesser curvature of the stomach at the cardiac end, in gallstones, chronic inflammation of the appendix, and other abdominal troubles. The immediate cause of the pain in duodenal ulcer is not the irritation of the ulcer by the acid chyme passing over it, but is the violent muscular contraction of the muscular coat at or near the pylorus, which contraction is set up by the food leaving the stomach. As regards the significance of hemorrhage in duodenal ulcer it is stated that this symptom is of very frequent occurrence, much more frequent than is usually believed, but unless the hemorrhage is profuse it is no proof of the presence of an ulcer. Melena, where all the other symptoms point to the presence of an ulcer in the duodenum, may be regarded as confirmatory evidence; if it is in large amount, as strong confirmatory evidence; but there can be no question that ulceration of the duodenum may and does occur without melena, and that conversely small hemorrhages from the duodenum are equally common without ulcer. Though hyperchlorhydria is present in about 60 per cent. of cases diagnosed as duodenal ulcer, and though when present it may help in the actual production of the ulcer, its presence even in an exaggerated form is not evidence of the existence of an ulcer. The author asks: What is the real significance of these symptoms? What is the condition of the stomach and duodenum that underlies them all? And why do hunger pain, pyloric spasm, occult hemorrhages, gastrostaxis, and hyperchlorhydria occur in this association? The author is convinced that the solution is to be found in the intensely hyperemic and hyperesthetic state of the mucous membrane present in these cases.

Treatment of Cystitis.—D. Newman states that in mild *Bacillus coli* infection of the bladder internal medication is designed to lessen the irritability of the vesical mucous membrane, to hinder the propagation of the infective organisms, and to clear them out of the bladder. The administration of urinary antiseptics by the mouth and local applications to the bladder are not suitable during the acute stage, but they are indicated as the inflammation subsides. Irrigations with a 1 per cent. solution of boric acid are useful. The treatment of the severer forms of acute cystitis due to the pneumococcus, streptococcus, gonococcus or tubercle bacillus is constitutional and local The patient must remain in bed and the symptoms may be relieved by warm baths and sitz baths with aromatic herbs, or hot moist compresses may be kept on the abdomen. Diet should be plain and the quantity limited, and bland fluids should be given in considerable quantity. The drugs given must depend upon the reaction of the urine, but in all cases phenacetin and extract of hyoscyamus—for an adult 5 grains of each three times daily—should be taken. Opium should be avoided, but morphine may be given hypodermically if demanded on account of the pain. Vaccines are of special value in these cases.

British Medical Journal

March 21, 1912.

Pruritus Vulvæ; Its Etiology and Treatment. R. A. Gibbons.
Retroversion of the Uterus. W. J. Gow.
Four Successful Cases of Cesarean Section. C. Y. Pearson.
The Diagnosis of Ectopic Gestation. R. Davies-Colley.
Albuminuria in Pregnancy. H. M. Raven.
Chickenpox During the Puerperium. B. Myers.

Pruritus Vulvæ.—R. A. Gibbons states that this condition may be symptomatic or essential. In the latter case it is a pure neurosis, which, however, is extremely rare. Most of the cases of true pruritus are in women who are passing through or who have passed through the climacteric period. Some cases of pruritus start from a

slight abrasion due to mechanical injury. A common association is with diabetes. Some observers attribute the pruritus in this instance to the local irritation by the sugar; others to some hematogenous cause analogous to that which causes the pruritus of jaundice, while others attribute the irritation to some constituent in the urine besides sugar. Local causes of pruritus are the pediculi and ascarides, the thrush fungus and the gonococcus. Other causes are lack of cleanliness, eczema, the presence of a pessary, masturbation, small varicose veins, and small ulcerations about the hymen. Kraurosis vulvæ is an important cause of pruritus. It has been described as an atrophic retraction affecting the vaginal orifice, the labia minora, the frenum and prepuce of the clitoris, and the inner surface of the labia majora. This retraction is accompanied by necrosis of the epidermis and by hyperplasia of the connective tissue, causing retraction and shrinking of the genital organs. The treatment of pruritus vulvæ is considered under three heads: internal remedies, external remedies, and operation. Internal measures include regulation of the diet, and the administration of bromides and similarly acting drugs. External remedies include the use of antipruritic lotions or ointments and soothing sitz baths such as the bran bath. A 5 per cent. solution of cocaine is often of great service. Liquor potassæ and solutions of corrosive sublimate and lead subacetate are frequently effective. Menthol in solutions of 5 to 20 grains to the ounce rarely fails to afford relief. Nitrate of silver applied in a strength up to 40 grains to the ounce is also of value, particularly in cases that have lasted for some time. The operative measures that have been recommended are the application of some form of cautery, the excision of the affected parts, and the division of nerves.

Diagnosis of Ectopic Gestation.—R. Davies-Colley states that a salpingitis should be suspected in the presence of a history of previous similar attacks or of a recent source of infection, hemorrhage profuse but not persistent, considerable pyrexia, a tumor, irregular, central, and very tender, and a rapid resolution. Hematocele may be diagnosed where there is no history of previous attacks and no recent source of infection; where the hemorrhage is slight in amount but persistent; when pyrexia is slight; when there is a unilateral and not very tender tumor; when there is very slow resolution, and when there are signs of pregnancy in the breast, etc.

Chickenpox During the Puerperium.—B. Myers reports a case of chickenpox complicating the puerperium, the peculiarities of which, as far as the mother was concerned, were the predilection of the pocks for the labia majora and breasts, parts which were, one may presume, receiving a more generous blood supply due to her recent pregnancy than would otherwise obtain. The appearance of the first spot on the buttock was unusual. This spot, although at first unlike chickenpox, subsequently went through the usual changes in a typical manner.

Berliner klinische Wochenschrift.

February 26, 1912.

Ozena and Diphtheria.—Neufeld refers first to the persistent obscurity concerning the nature of ozena which obtains in nearly all its aspects. Among the bacteria accused of causing the affection is one which is indistinguishable from the Klebs-Loeffler bacillus, which fact suggests naturally that subjects with ozena and perhaps with ordinary atrophic rhinitis may be diphtheria carriers. In most of the cases in which this bacillus was found in almost pure culture there was none of the odor of ozena. In some of the cases the bacilli were found to be virulent. In the series of cases in which this research was conducted, diphtheria had first been suggested by the clinical presence of so-called chronic pharyngeal diphtheroid, developing in pharynges which were the seat or ordinary pharyngitis sicca. In but one of six cases studied was there a history of ordinary diphtheria, and in but one case was Abel's ozena bacillus present. The conclusion reached by Neisser, who made this research, was merely that ozena may play a not unessential rôle in the spread of diphtheria. This theory, however, never made any headway among practical rhinologists, while Behring seems more or less sceptical concerning it. There is no question that a bacillus resembling Klebs-Loeffler's is frequently present in ozena. It is highly important that its identity with the latter be either proved or disproved once for all. The author has, therefore, studied fourteen cases of genuine ozena and seven cases of atrophic rhinitis with this end in view. The research was necessarily highly technical in character and the conclusion reached was that the bacillus must be a pseudodiphtheritic one and the condition which it sets up only a false diphtheria.

Statistics of Peptic Ulcers.—Paus has compiled and analyzed some figures relating to the incidence of peptic ulcers in various continental cities. These are based wholly on autopsy reports and some of these extend back over fifty years. Facts collated are the incidence, separately of gastric and duodenal ulcers, which enables a ready calculation of the relative preponderance of the former. The author finds the percentage of duodenal ulcer remarkably constant, varying but little either way from 1 per cent., the average being about 7-10 per cent. On the other hand there was a very great discrepancy between the gastric ulcer percentages. In Cracow this was less than 1 per cent; in Prague about 1.5 in one material and 9 in another (both ancient); in Berne 3.4 (recent material); in Münich 5.16 (recent); in Jena about 9 (old), etc. etc. These fluctuations do not seem to be due to any selection resulting from the age of the statistics. The average for gastric ulcer is 3.4 per cent.; in other words, its total incidence is five times that of duodenal ulcer. The author has controlled a large material which extends over twelve years and embraces 3,000 sections. He included scars along with actual ulcers and finds in all 99 cases or 3.3 per cent. Of this number 83 (2.77 per cent.) were gastric and 22 (0.73) duodenal. His ratio was, therefore, somewhat lower than that found in published reports. It further appears that peptic ulcer is of common occurrence, and that duodenal ulcer alone is more common than has generally been believed. Duodenal ulcer is more common in males; gastric ulcer shows practically no sex element. Both affections appear at any age. There is some special tendency for peptic ulcer to be associated with disease of the cardiovascular system.

Deutsche medizinische Wochenschrift.

February 29, 1912.

Causal Relationship Between the Nose and Articular Rheumatism.—Senator relates several cases which appear to demonstrate such a relationship. In a young woman aged twenty-one a polypus was removed from a lower turbinal with the conchotome under aseptic precautions. The wound healed cleanly and the opposite side was treated in the same way and two weeks later a supplementary operation was done with the snare. From 5 to 6 days after the third operation acute articular rheumatism developed without apparent cause. It was severe in type and complicated by endocarditis. If the case were not an example of pure coincidence there should be others on record, and the author has already found two such cases in literature. To these may straightway be added others known to have occurred in connection with removal of adenoids. In one of the three cases of acute articular rheumatism following turbinectomy there had been a traumatic angina set up by the intervention. This fact is of

twofold interest. First, it shows the local presence of the cause of the blood infection, and second it serves as an example of the sequence sometimes encountered of angina and acute rheumatism. We cannot well avoid the full force of the conclusion that the infection in such cases might under more unfavorable circumstances have presented the picture not of acute polyarthritis, but of actual septicopyemia, such as has doubtless often followed operations in the nose and mouth in preantiseptic days.

Syphilitic Joint Affections.—Bering does not refer here to certain well known forms of arthropathy of luetic origin. He does not include any effects of hereditary syphilis, nor the dropsical joints sometimes seen in early syphilis, nor destructive affections due to the extension of syphilitic lesions of the epiphyses. The lesions described by him are essential, painful, and multiple, so that they would impose themselves first as examples of subacute articular or gonorrheal rheumatism. Their syphilitic nature is suggested first by the presence of a positive Wassermann reaction; second by the effects of treatment, especially with salvarsan. A history and collateral evidence of syphilis is usually forthcoming, but under the old order of things such cases would very often have been termed gonococcus arthritis, or in the absence of a history of gonorrhea would have passed readily for simple articular rheumatism. From an analysis of eleven cases the author describes this relatively new syndrome as follows: Given a history of syphilis dating back from one or two to many years, usually with a single inunction course at the time, there develops—as a rule slowly—a painful swelling of one or several joints. Locomotion is not much hindered. After some weeks there may be a sudden copious joint effusion or collections of fluid just outside the articulation. The joint structures are spared. This condition is certainly not associated with any general relapse of syphilis nor has it been preceded by such relapse. In a minority of cases, local symptoms of late syphilis coexist. As a rule the Wassermann was positive (all but one case of comparatively recent incidence and treatment). This kind of arthropathy does not differ notably from that recorded in standard works as occasionally seen in early syphilis but its status is reestablished through control by the Wassermann reaction and salvarsan. The morbid process is probably seated in the joint capsule.

Münchener medizinische Wochenschrift.

February 27, 1912.

Toxicity of Urine and Bloodserum in Eclampsia.—Von Behring and Zangemeister have conducted a joint research into these subjects at the University of Marburg. Their conclusions are extensive and perhaps far reaching. In two subjects with eclampsia during labor the toxicity of both fluids could be demonstrated on guinea pigs, the type being anaphylactic throughout including autopsy finds. The amniotic fluid was nontoxic. The toxicity of the urine and serum vanished soon after delivery, and the toxic principle in the two fluids was one and the same. The urinary toxicity was quite independent of the density, acidity, and albumin content, and the toxic principle soon disintegrated on standing. By injecting the urine into guinea pigs these could be immunized against the serum and vice versa. Even *in vitro* the serum of a healthy nonpregnant woman as well as that of a healthy gravida was able when mixed with toxic urine to disintoxicate the latter and render it powerless to poison guinea pigs. The authors do not believe, however, that eclampsia represents an anaphylactic intoxication of the pregnant woman. The clinical and autopsy finds are not of that character, which should comprise subnormal temperature, lowered blood pressure, and diminished coagulability of the blood. Some of the toxicity of puerperal urine may perhaps be attributed to involution of the uterus and other structures at the end of gestation. On the other hand, whenever the peculiar changes in the parenchyma of the liver precede eclampsia (which is the rule) the products of autolysis of the hepatic cells must load the blood with toxic principles. This has been proved in the case of one of these—lactic acid.

Diplegia Brachialis Neuritica.—Hoffmann describes three cases of this rare affection. The first case was in a boy aged nine, previously healthy, who waked one morning with both hands paralyzed. There were no sensory disturbances. Some atrophy had begun in the muscles of the hands. The patient eventually made a complete recovery. Diagnosis was made of polyneuritis of unknown origin. The second case occurred in a man of 60, alcoholic, who was similarly attacked by an apparent sleep paralysis of both arms. In this case the paralysis was painful and the nerve trunks tender to pressure. There were considerable muscular atrophy, and notable diminution of all forms of sensibility. The third patient was a man aged 25. The condition supervened in the same manner and involved both arms symmetrically. In making the diagnosis it was necessary to exclude meningeal apoplexy, lesions in or near the medulla, poliomyelitis, and Horner's nerve root neuritis.

Medicinal Ingredients of Mud.—Winckel in attempting to account for the beneficent effects of mud baths mentions the thermostatic properties, the possibility of radioactivity, the content of enzymes, nascent oxygen, mineral matter, etc. While there is abundant evidence of past enzyme action, analysis shows that ferments are no longer present. The author concludes that the therapeutic activity of mud baths rests on just two factors: The thermostatic action and certain colloidal organic matter which can determine certain reactions in the tissues by catalytic activity.

Asthma Associated with Erythematous Annular Rash.—H. Batty Shaw reports the case of a servant aged twenty-three who for five years has had attacks of asthma accompanied by the occurrence of bronchitic signs in the lungs and apparently provoked by the existence of nasal polypi; the condition is exaggerated by full meals. In each attack of asthma an annular rash appears on the body and limbs. The rash is faintly erythematous and causes considerable itching; it lasts during the attack, disappearing entirely when it passes off. Relief is given to both conditions by the use of potassium iodide. Neither the rash nor the asthma ever occurs alone. The rash has no association with the use of the various drugs employed for the relief of asthma, and was noticed in the attacks before the patient sought any relief from drugs; urticaria is not a feature of the skin eruption.—*Proceedings of the Royal Society of Medicine.*

Sclerosis of the Ovarian Vessels.—C. Decio has examined the ovaries of twenty individuals from fifteen to fifty-five years of age with reference to the presence of changes in the ovarian vessels. He finds that in infants the structure of the vessels is normal, while in adults and old women there are present extensive vascular alterations which are of three types. The first type consists of changes in the vessels of the hilum, involving the intima, and of the nature of sclerosis; also in the cortex there occur changes involving the internal coat, characterized by destruction of the muscular layer and its substitution with hyalin connective tissue and an elastoid substance similar to normal elastic tissue. The second type of change is similar to the normal involution of the corpora lutea, not pathological, and probably due to the same cause as that of involution. The third type of change is a true vascular sclerosis, not hyperplastic in character, but degenerative.—*Folia Gynecologica.*

Insurance Medicine.

PERSONAL FACTORS IN LONGEVITY.

Among the many factors which tend to prolong life, one of the most important is the knack of longevity, that is, one must be descended from ancestors whose span of existence has been beyond the ordinary. It is, however, equally important that in order to attain old age a person should conduct his life reasonably in consonance with the laws of health. Excesses in athletics, in sedentary work, and in eating or drinking are one and all antagonistic to long life. In the *Dietetic and Hygienic Gazette*, February, 1912, A. H. Stewart emphasizes the importance of family history in considering an individual's chances of becoming old and alludes to the fact that insurance companies place considerable weight upon this family history.

Sir Benjamin Richardson attempted to formulate a working hypothesis by means of which one might estimate longevity upon the basis of heredity. He was of the opinion that a fair approximation can be reached by adding together the number of years attained by the parents and grandparents of an individual and dividing the result by six. The quotient would be the approximate life expectancy of the individual. The death of a parent is considered by insurance companies to be of much greater significance than the death of a brother or sister, and consequently the endeavor is sometimes made to find out which parent an applicant resembles more closely. The age of a person's parents at the time of his birth is looked upon as a matter of considerable moment in estimating the expectation of life. Children born of fathers who are between twenty and forty years of age or mothers who are between twenty and thirty-five seem to have the best chance of survival, while children born of fathers who are past forty or mothers who are under twenty possess a poorer chance to survive.

The second, third, fourth, and fifth children are thought to have a better prospect of longevity than the firstborn or those born after the fifth child. However, according to Stewart, recent statistics seem to indicate that one's position in the numerical order of the family is not as important as the age of the parents, especially of the mother, at the time of birth. In fact, about 25 per cent. of centenarians whose family histories have been traced were firstborn children. If the children of primiparæ are smaller and less vigorous than those of multiparæ, as has been claimed, this fact is to be attributed probably more to the difference in the age, size, and physical vigor of the mothers than to the number of births. Still there appears to be a valid physiological basis for the belief that children born of mothers who mature early are larger and stronger than those who mature late, and also for the belief that the members of large families are likely to live long, since the begetting of large families indicates a special physical vigor of the parents. There appears to be no question as to the intimate relationship between the size of the mother and that of the child.

As to the comparative longevity of different races the conclusion is reached that the chief factors in longevity are an inherently strong and enduring physical organism, outdoor occupations without undue exertion or exposure, a simple and nutritious diet, temperance in all things, and a cheerful disposition. The prime personal factor is unquestionably an inborn quality of steady nutritive force, characterized by the powers of endurance, resistance, and recuperation. Excessive alimentation is responsible for the shortening of thousands of lives. The average intelligent workingman, whether in the store, the factory, or the field, is generally guided by instinct to the most wholesome and nutritious diet. This is not the case with many of those of sedentary habit, particularly among the affluent, whose instincts and appetites have been perverted by overindulgence in rich and highly seasoned food. There are those who assist with their teeth in digging an early grave, while the speed at which American business is being conducted is charged with being an important factor in shortening the span of life.

It is finally pointed out by Stewart that barring inherent weakness and unavoidable accidents, an individual's sojourn on the globe is largely within his own keeping. Although insurance companies are no less solicitous than formerly regarding the life history of one's antecedents, they are more exacting than ever with regard to an applicant's occupation and habits of life.

ACCIDENT COMPENSATION LAWS IN FRANCE.

(From a Special Correspondent.)

The laws in France regarding workingmen's compensation are well drawn up and certainly provide liberally for the workingman during his temporary or permanent disability which may ensue from any accident occurring to him while he is at work. We shall merely give a résumé or abstract of the principal points covered by the act and quote some ratings of compensation given for the enforced cessation of occupation due to accidents.

The workman must be incapacitated for four days before he comes under the Compensation Act and then he receives compensation accordingly. If his annual wages amount to 2400 francs (about $475) and he is permanently disabled and unfit to continue his work he receives an annual compensation equal to two-thirds of the amount of his former wages. Should he be permanently partially disabled so that he cannot carry on his work as he did previous to his accident and is thus forced to gain a lower wage than formerly, he receives compensation amounting to half of the difference between the wage he formerly received and the wage which he now earns. During temporary disability he receives compensation equal to half of his salary, pay being included for Sundays and holidays. If the wage is a varying one, that is, payment by hour-work or piece-work, the workman receives half of his *average* wages.

In case of death from accident the widow receives 20 per cent. of her late husband's wages and various stipulations are made for the children, but in all the compensation must not exceed 40 per cent. of his total wages.

The provisions made for medical attendance are adequate and the fees for various medical services are plainly and exactly stated and cover the different points carefully. Medicinal treatment is also covered, and there is a special fixed tariff for the drugs. We shall merely point out for comparison the different medical charges permissible under this act.

When the doctor visits the patient he receives 2 francs as a fee. In Paris the fee paid is 2.50 francs, and where the fee was 2.50 francs before the law of 1901 stipulated 2 francs per visit, 2.50 francs

can still be charged. In localities with less than 5000 inhabitants the doctor's fee is 1.50 francs per visit. If the patient visits the doctor at his office the fee is decreased 50 centimes. The visit to the doctor includes one bandage and light dressing in the fee, but the medical man has the right to charge for the *first* bandage and dressing.

Between the hours of 9 P.M. and 6 A.M. three times the ordinary fee can be charged. Each half-hour spent at the house is equal to a fee of an extra visit with maximum of five half-hours in serious cases. If a doctor is called in consultation he can charge a fee equal to four visits. Medical certificates given by the doctor are paid for at the rate of 2 francs for a short certificate and 5 francs for a complete report.

Oculists receive 3 francs per visit; 5 francs for a slight operation such as removal of a foreign body from the cornea. For a cataract extraction or for an enucleation 75 francs (about $15) is the fee. Otorhinologists receive 5 francs per visit and 10 francs for a complete examination. These notes may furnish the home practitioner with an idea of the chief points covered by accident insurance laws in France at the present day. Though the medical fees are not high, there is a good medical service with fixed tariff at hand for workmen and in the larger towns the hospitals of course are always open and ready to receive patients night and day.

Municipal Life Insurance.—A despatch to the *New York Times* from Berlin states that the City Council has referred to a special committee a project for establishing a system of municipal life insurance. The Province of Brandenburg, wherein Berlin is situated, recently introduced public life insurance, which appears to be working so satisfactorily that the Berlin City Government has now been induced to look into it. The scheme is mutual, all the profits being divided among the policy holders.

Life Expectation of Diabetics.—Feilchenfeld quotes Florschütz, who said that the presence of sugar in the urine is the most disturbing symptom in an applicant for insurance and takes rank only with hemoptysis. Yet our present authorities give a good prognosis for diabetics. V. Noorden says that change from a mild to a severe form of diabetes should not occur if the treatment is properly carried out. If the disease is recognized early no other sickness is so easily controlled. These views have completely changed the status of diabetics as risks, and the kind of diabetes is the deciding factor in judging them. Glycosuria may be artificial, that is, may occur in perfectly healthy persons; it may be alimentary; it may be due to a disturbed nervous system, etc., and it may be diabetic. Artificial or pseudoglycosuria may depend upon the reduction of the usual test solutions by such substances as creatinin, pyrocatechin, turpentine, ether, chloroform, chloral, amyl nitrite, etc., that may find their way to the urine. Alimentary glycosuria should, of course, be judged by proper test meals. Symptomatic glycosuria usually leads to rejection of the applicant because of the causal organic disease, yet such a glycosuria may disappear with the disappearance of the original illness.

Feilchenfeld has collected 122 cases of light forms of diabetes. Of these, 90 were male and 32 female patients. The majority of the patients belonged to the well-to-do classes of society and to the city population.

Feilchenfeld's figures show the great increase of diabetes among Jews, yet he thinks that social rather than racial characteristics explain this well-known fact. The Jews are frequent patients in private clinics, from which statistics have emanated. They often lead a sedentary life, consume much fat and sugar in their food, and are apt to suffer from disturbances of the nervous system.

Thirty per cent. of the patients were alive ten years after the discovery of sugar in their urine, and many physicians thought that their patients were good risks for a limited insurance. The greatest number of the patients were capable of continuing at their usual occupations. Most of them were persons of large stature and obese. As causes of the disease nervous excitement, heredity, syphilis, and infectious diseases were named in this order. Of the complications arteriosclerosis, albuminuria, neuralgia, and pruritis were the most frequent. Most of the patients showed marked improvement with treatment, as evidenced by the disappearance or diminution of sugar in the urine.

Feilchenfeld concludes that persons with light forms of diabetes are insurable for a limited number of years if certain precautions are taken. Hereditary diabetes should speak against such insurance. The age of the applicant should not be below thirty-two years. Arteriosclerosis and any other additional organic disease should be excluded. The sugar tolerance should be high, and careful tests should be made to show this. Insurance for fifteen to twenty years should be advisable in such cases.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, January 1, 1912.

Progressive Paralysis and the Reaction of the Pupils.—Freund saw twenty cases of progressive paraylsis in two hundred cases of sickness, among persons insured against total disability. This ratio is greater than the usual ratio of paresis and is explained by the greater prevalence of this disease among the intellectual classes that take advantage of such insurance. Paresis is of great importance from the standpoint of insurance because of its frequent appearance in otherwise healthy persons and the few diagnostic signs it may show in its incipiency. Care should be taken to look for a history of syphilis followed by neurasthenic symptoms. Convulsions, temporary hemiplegia, even frequent vertigo should be looked on with suspicion, once syphilis and neurasthenia coexist in an applicant. The pupillary phenomena are of the greatest importance, for they often precede other signs of disease by several years. Difference in the size of pupils is of greater importance than simply contracted pupils, for the latter occur in health. Of course, care must be taken to have equal illumination of both eyes in looking for this sign.

Still more important is the Argyll-Robertson pupil, which occurs in two-thirds of all cases of general paralysis. Several sources of error must be here estimated. The patient's eyes should not be exposed to strong light just before looking for the Argyll-Robertson phenomenon; he should stand with his back to the window or in a dark portion of the room. The difference between illuminating the pupils and leaving them in the natural light should be considerable, for miotic pupils especially may show very slight contraction only on small degree of illumination Consensual reflex must be guarded against by covering the eye that is not being tested. Sluggish reaction should call for an examination in a darkened room with artificial light and a convex lens. The patient should direct his gaze at the distance so that accommodation may not simulate contraction to light. Sluggish reaction is suspicious not because of the degree of contraction but of the promptness of its appearance and the quickness of the contraction. The Wassermann reaction should be made use of in doubtful cases, and it is to be hoped that insurance examiners will avail themselves of it to a greater degree than is done at present.—*Blätter für Vertrauensärzte der Lebensversicherung*, September and October, 1911.

Book Reviews.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By JOHN J. REESE, M.D., late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania; late President of the Medical Jurisprudence Society of Philadelphia. Eighth edition, revised by D. J. MCCARTHY, A.B., M.D., President of Medical Jurisprudence (George B. Wood Foundation) in the University of Pennsylvania; Neurologist to the Philadelphia General and St. Agnes Hospitals; Consulting Neurologist to the Henry Phipps Institute, the State Asylum for the Insane, Norristown, Pa., and the Phoenixville Hospital. Price $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1911.

THIS book has long been popular with medical students. It is probably the most serviceable of the smaller manuals on the subject; and it contains the essentials of medical jurisprudence in clear language and concise form. The last three or four editions have been under the editorship of a chemist; the present edition has been revised by a neurologist. Various alterations have been made in the text, and a few additions have been incorporated; but the general character of the volume remains as before. The chief changes are to be found in the chapter on insanity, and a short account of the method of commitment of the insane has been inserted.

THE CRIMINAL AND THE COMMUNITY. By JAMES DEVON, Medical Officer of H. M. Prison at Glasgow. With an Introduction by Professor A. F. MURISON, LL.D. Price $1.75. London: John Lane, The Boley Head; New York: John Lane Company, 1912.

A DISTINCTIVE merit characterizes this book among the many on a similar theme that have appeared within the past year. It breathes a personal note, for the author as medical officer of a large city prison speaks of what he has learned at first hand from personal observation. The social causes of crime are portrayed with a freedom of brush only possible to one who has been brought up from early childhood among the people who toil, who has seen the distress engendered by want and the baneful influences of overcrowding. It is society's responsibility in the evolution of the criminal that the author emphasizes in this work. The rôle of heredity, of insanity, and physical defects are pointed out so far as they influence the production of the criminal. The influences of drink, of poverty, immigration, social conditions, age, and sex are all graphically pictured. The rationale of punishment, the machinery of the law, the prison system, the prison and its routine, variations in routine, the prisoner on liberation, the inebriate home, the prevention of crimes act, the family as model, alternatives to imprisonment, and the better way, form the titles of most illuminating chapters. The author presents views on the subject of penology that will not fail to awaken discussion. These views are extremely original. It is pointed out that all modern systems of penology are more or less a failure. The author would substitute for confinement in many cases a system of boarding out prisoners under the supervision of responsible guardians, somewhat after the manner of boarding out the insane, as practiced in certain colonies abroad. "If we would make the best of him," says Dr. Devon, "we should restrict the liberty of the offender as little as possible consistent with the well being of the community, and enlarge it gradually as reason is shown for doing so. We cannot injure him without injuring ourselves, and we ought to set about to make the best rather than the worst of him."

MINOR SURGERY. By LEONARD A. BIDWELL, F.R.C.S., Surgeon to the West London Hospital, Dean of the Post-Graduate College, Consulting Surgeon to the Blackheath and Charlton Hospital and to the City Dispensary, and author of "Handbook of Intestinal Surgery." With eighty-eight illustrations. Price $2.00. London: University of London Press; Hodder & Stoughton & Henry Trowde, 1911.

THERE is a distinctive feature about this small manual of 265 pages, namely, its simplicity and the limitation of its subject matter to the few definite surgical procedures that should be mastered by the general practitioner no less than by the surgeon. The technique in minor surgery, the minor operations, the injections, the minor surgery of the urinary tract and of the rectum, the preparation and use of plaster-of-Paris splints, the preparation for an operation in a private house are among the subjects fully and yet succinctly described by the author. The originality of the latter's methods are perceived in the suggestions for the treatment of epistaxis, bleeding from a tooth socket, for hemorrhage after removal of the tonsil, for removal of a ring from a swollen finger, etc. The book may be recommended to the student and practitioner as a practical guide in minor surgery, that may be read at one sitting and kept for future reference.

ARZNEI UND DIÄTVERORDNUNGEN für die gynäkologische Praxis. Aus der Frauenklinik von Prof. Dr. PAUL SIRASSMANN in Berlin. Price 1.60 marks. Berlin: Verlag von August Hirschwald, 1912.

THIS pocket formulary with a marginal index has been prepared by the author with the view of giving wider circulation to the medicinal and dietetic measures that have been tried out in his clinic for many years and taught to his students. The simplicity of these measures, the wide scope of their application, and the ease with which they may be consulted render this manual one which the general practitioner no less than the gynecologist will find exceedingly useful in his daily work.

HANDBUCH DER HYGIENE. Unter Mitwirkung von R. ABEL, Berlin; J. BOETHKE, Berlin; C. FRÄNKEL, Halle; E. FRIEDBERGER, Berlin; U. FRIEDEMANN, Berlin; N. A. GINS, Frankfurt a.M.; E. GOTSCHLICH, Alexandrien; R. GRASZBERGER, Wien; O. HEUBNER, Berlin; F. HUEPPE, Prag; K. KISZKALT, Berlin; R. KOLKWITZ, Berlin; G. LANGEN, Berlin; K. B. LEHMANN, Würzburg; A. LODE, Innsbruck; O. MARCH, Charlottenburg; J. MAYRHOFER, Mainz; S. MERKEL, Nürnberg; P. T. MÜLLER, Graz; M. NEISSER, Frankfurt a.M.; W. PRAUSNITZ, Graz; H. RÄUBER, Erfurt; H. RECKNAGEL, Berlin; C. REICHLE, Berlin; A. SCHMIDTMANN, Marburg; H. SCHNEIDER, Berlin; M. SCHLOTTELIUS, Freiburg i.B.; O. SPITTA, Berlin; H. THIESING, Berlin; K. THUMM, Berlin; T. v. WASIELEWSKI, Heidelberg; W. WEDDING, Berlin. Herausgegeben von Prof. Dr. M. RUBNER, Geh. Medizinalrat, Berlin; Prof. Dr. M. v. GRUBER, Obermedizinalrat, München, and Prof. Dr. M. FICKER, Berlin. I. Band. Mit 134 Abbildungen und 1 Tafel. Price 27 marks. Leipzig: Verlag von S. Hirzel, 1911.

THE monumental character of this work, of which the title "handbook" is but the modest German substitute for the term "treatise," has already been alluded to in these columns, when the second part of the second volume was reviewed. The first volume contains the following topics: introduction, by M. v. Gruber; the history of hygiene, by M. Rubner; the science of metabolism and nutrition, by M. Rubner; foods and delicacies, by J. Mayrhofer; the atmosphere, by A. Lode; the hygiene of the oil, by W. Pransnitz; warmth, by M. Rubner; clothing, by M. Rubner; exercises, by F. Hueppe; and climate, by A. Lode. It is almost superfluous to state that each of these subjects is exhaustively treated, in the manner so characteristic of German authors. The student of preventive medicine, the sanitarian, and the public health officer cannot afford to be without this work, which treasures the latest and best in hygienic science.

SOZIALE PATHOLOGIE. Versuch einer Lehre von den sozialen Beziehungen der menschlichen Krankheiten als Grundlage der sozialen Medizin und der sozialen Hygiene. Von Dr. med. ALFRED GROTJAHN, Berlin. Price 18 marks. Berlin: August Hirschwald, 1912.

SOCIAL pathology, or the economic or sociological aspects of disease, is a subject that has awakened considerable attention within recent years, particularly in Germany. The inauguration of state insurance with the large number of *Krankenkassen* and a multitude of trained statisticians has rendered possible the accumulation of data which, in addition to those already known, have been utilized by the author in the preparation of this volume. Naturally, the discussion of tuberculosis comes in for considerable attention. The various other acute and chronic diseases are analyzed with reference to their sociological significance, and extended discussion is given to the subjects of criminal abortion, prophylactic abortion, and the restriction of offspring. Alcoholism, prostitution, infant morbidity and mortality, and the mental diseases are topics whose social significance is clearly shown. He whose medical interests are not restricted by the study of individual patients, but extend to the ever widening horizon of humanity, will find this book an excellent text upon which to base his studies. The volume is a tribute to German scholarship, with its thoroughness and utilitarian affinities. The bibliography which the author has collected and has indicated in the footnotes on almost every page is already an enormous one, and great, indeed, must have been the author's labor in picking out the kernels for our benefit.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Stated Meeting, Held February 26, 1912

THE PRESIDENT, DR. CHARLES GILMORE KERLEY, IN THE CHAIR.

Good Showing for the Year 1911.—DR. KERLEY announced that during the year 1911, 99.3 per cent. of the members had paid their dues, making the Society a banner Society with a larger paid up membership than any other county society in the State. The Medical Society of the County of New York now had a membership of about 2,400. It was 116 years old and he thought it made a remarkable showing.

Executive Session.—By-Laws, Chapter XV, Art. 1, was made to read as follows: "The Executive Session shall be limited to one-half hour. If business of sufficient importance is brought before the Society to warrant the extension of time of the Executive Session, such time limit may be extended by a majority vote of the members present." By-Laws, Chapter XV, Art. 2, was made to read as follows: "No address or paper read before the Society, except those by the president and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the house for longer than five minutes nor more than once on any subject, except by the consent of the Society."

The scientific session was devoted to a symposium on perineorrhaphy and with lantern slide demonstrations.

Etiology of Perineal Laceration: Indications and Technique of Primary Perineorraphy.—DR. J. CLIFTON EDGAR read this paper. He considered the factors which bore directly and indirectly upon the causation of pelvic floor lacerations under four major classes, namely: 1. Anomalies of the expulsive forces. 2. Anomalies of the soft parts. 3. Faulty presentations of the fetus. 4. Faulty posture of the mother. In regard to the fourth factor, he stated that long observation had convinced him that extraction of the head at the outlet with the patient in the exaggerated lithotomy position conduced to unnecessary injury of the pelvic floor. At the moment of extraction or expulsion of the head, the patient's thighs should be brought down into the ordinary dorsal or "cross bed" posture. Moreover, the delivery of the head through the pelvic outlet with the forceps still applied was usually unnecessary and favored laceration. After considering the time when it was advisable to repair these lacerations and the technique that he employed, the writer concluded as follows: 1. More attention should be given to the causes and prevention of perineal lacerations as in this way many perineorrhaphies would be avoided. 2. Broadly speaking, all lacerations were best closed at the time of labor, but in those accompanied by bruising, edema, and swelling the best results were obtained by waiting a few hours or a day or so until conditions were more favorable. Tears involving the rectum should be treated more deliberately, due time being given for the nutrition of the parts to improve, for the patient to recover from the shock of labor, and for the securing of assistance and conveniences. 3. In all cases before suturing the torn surfaces should be cleansed and the edges occupied with tenacula in order to determine their precise relationship. 4. The sutures should not be drawn too tight, as they would cut through the tissues. 5. Chemical antiseptics should be avoided. 6. An assistant should be procured to administer the anesthetic; ether should not be entrusted to a nurse unless she was trained in its use. Ether should be used and not chloroform. 7. In rectal tears, sutures substituted in the rectum gave better results, the wound being less likely to become infected than when buried sutures were knotted on the vaginal side of the laceration. 8. In primary perineorrhaphy interrupted sutures for the vaginoperineal lacerations gave better results than the buried layer suture. As to the after treatment, the knees should be loosely bound together and the use of the catheter should be avoided, if possible. Thorough cleanliness of the external genitals should be maintained, but no douche should be used unless the lochia become putrid. The bowels should be made to move after the second day by an injection of oil and an enema should be entrusted only to an experienced nurse. In the passage of a vaginal or rectal tube, the greatest care should be exercised not to disturb the sutures.

Perineorraphy in Principle and in Practice.—DR. ARNOLD STURMDORF presented this communication. After quoting from several authorities to show that there was a general acknowledgment on the part of gynecologists that the principles and practice of perineorrhaphy demanded a radical revision, he stated that the sum and substance of the whole problem was contained in the statement made by C. M. Watson that the classical operations for the secondary repair of the torn or relaxed perineum had been successful only to a degree; and that the more extensive the injury to the levator muscle, the less effective these operations. The keynote in the clinical significance and therapeutic indications of perineal lacerations was the existence of prolapse. This presented itself in two forms: first as a simple ectopia of the relaxed and redundant vaginal mucosa which was curable by any of the usual procedures; secondly as a true hernial descent of the pelvic contents which could not be permanently cured by any such procedure, substituting as it did, mechanical obstruction in the form of a cicatricial wedge at the vaginal outlet for the physiological retention exercised by the muscular contractility in the pelvic floor. The perineal musculature should not be conceived as presenting simply a sphincter at the vaginal outlet, not as a mere muscular bottom passively supporting the weight of the superimposed pelvic organs, but as an active integral part in a complicated mechanism that counteracted the expulsive force of intra-abdominal pressure by mechanically deflecting that pressure in the direction of the normal outlets. In order to elucidate this mechanism the writer applied the laws of dynamics and from a careful observation of their bearing on the problem involved he showed that the function of the levator might be summarized by saying that its contraction diminished the force of intraabdominal pressure upon the pelvic contents by directing its course, and increased the resistance to that pressure and closed the outlet against that pressure by narrowing the uterovaginal angle and compressing the vaginal canal. A study of the extrusions resulting from perineal lacerations revealed elements closely analogous to those of inguinal hernia. Both conditions resulted from muscular insufficiency over a vulnerable situation; both tunneled their outward course along potential channels in the abdominal parietes. The levator ani muscle, embracing the abdominal floor, was as much an abdominal muscle as the rectus, obliquus, or transversalis; the form and nature of the muscular arrangement controlling the inguinal openings above the pubes presented the exact counterpart of the levator arrangement beneath the pubes. The fully developed cystocele was a complete hernia, differing from inguinal hernia only in that the bladder and vaginal wall entered into the formation of its coverings. In the same manner the rectocele presented a hernia of Douglas' pouch. The radical cure of inguinal hernia became possible only with the recognition of the necessity of restoring the contractile muscular resistance to the hernial area and of obliterating its perineal funnel; in other words the muscular and serous planes involved were so constructed as to reestablish the normal deflection of intraabdominal pressure. The application of this principle to perineorrhaphy by a method of levator interposition and suture had been submitted by the

writer seven years ago and the operation might be described as comprising four essential steps: 1. Exposure of the seat of the lesion. 2. Mobilization of the levator muscles. 3. Sutural interposition of the muscle. 4 Readjustment of the superficial coverings. Preliminary to the first step the pelvic contents should be replaced into their normal position and the retractor levator bands located on each side. The vaginal mucosa was separated by hooking a tenaculum on each side of the vaginal orifice into the tissues just external to the lower caruncles and another into the center of the posterior mucocutaneous margin; by traction on these three points, a triangular flap was outlined which was elevated to the crest of the rectocele but not removed. Surgically the levator segments constituted one muscle bundle about one inch in width and three-eighths of an inch thick behind each pubic ramus. The vaginal flap being reflected upward, a finger or closed scissor was thrust into the narrow lateral chink, which was distinctly palpable on either side between the inner edges of the ramus and muscle, and the latter bluntly liberated from its fascial and cicatricial surroundings along the whole extent of its outer circumference, preserving its median coverings as far as possible. This mobilization should not split the muscles and should be sufficient in extent to permit a broad approximation of the corresponding bands without tension. Occasionally the internal pubic artery demanded ligation but otherwise the free bleeding was largely venous. From three to four interrupted chromic gut sutures coapted the muscles and closed the gap in front of the rectocele; the sutures should not be passed through but entirely around both muscles so as to secure the broadest possible surface contact under the vaginal floor. The uppermost suture was inserted just high enough to normally appose the lower to the upper vaginal wall. In readjusting the superficial coverings no vaginal mucosa was sacrificed; the transverse wound was converted into a perpendicular slit by properly applied traction and the edges united side by side by interrupted or continuous sutures. From the tip of the vaginal flap to the caruncles, the suture included the vagina mucosa only, while from this point downward each stitch gathered the skin and all the fascial layers superficial to the muscles which were drawn from under the edges of the wound toward the median line. The little comb of vaginal mucosa thus formed dropped into the vaginal canal to be converted into a rugous fold; the introduction of a narrow strip of gauze to absorb the first oozings completed the operation. Active experience covering a period of ten years with this operation had shown that a strict adherence to the technique outlined would yield results which, three months after operation, made it impossible to distinguish the previously lacerated perineum from the normal both in form and function.

The Treatment of Prolapsus of the Uterus, with Attendant Cystocele and Rectocele.—Dr. J. RIDDLE GOFFE read this paper. He stated that the results obtained by operations for this condition had not been permanent because the operations were not based upon correct dynamic principles. He contended that normally the ligaments were the supports of the uterus and bladder, being supplemented by the pelvic floor only when subjected to excessive but temporary intraabdominal pressure. In resisting this pressure these ligaments, by their reciprocal and interdependent action, tilted the uterus and its broad ligaments in such a way as to deflect intraabdominal pressure, and thus avoided its direct line of action. A nice balance existed between muscular action of the abdominal walls and the musculature of the pelvic floor together with the ligaments of the uterus which received, deflected, and distributed this force in such a way as to direct the resultant into the line of expulsion and at the same time tended to preserve visceral support and equilibrium. In the operation which he had devised for the relief of procidentia with rectocele and cystocele, it had been his design to shift some of the responsibility for success in these operations from the floor of the pelvis to the ligaments of the uterus and bladder, thereby invoking nature's plan of holding organs in place by suspension. The responsibility for supporting the rectum and assisting in its functions still rested with the levator ani muscle and its fascia. He had always laid stress upon the restoration of the levator ani muscle as the essential factor in restoring function to the floor of the pelvis and in securing permanency of results. He was convinced that these results could be best obtained by actual exposure and direct union of the limbs of the levator ani muscle, stitching them together by buried sutures in front of the rectum in accordance with the method described and practised by Dr. Sturmdorf. From the operative standpoint these cases could be divided into two classes, those in women of the child-bearing age, and those in women at or after the menopause. In the first class it was necessary to preserve the uterus. In operating on this class the first thing he did was to curette the uterus and to amputate the cervix. A transverse incision was then made through the vaginal wall in front of the cervix, and through this the bladder was dissected from the uterus up to the peritoneal reflection. The peritoneum at the line of reflection was torn across widely from side to side out onto the broad ligaments. The bladder was dissected from the vaginal wall by means of a blunt dissector, the dissection extending to the urethra and reaching out to the limits of the bladder on either side, the bladder thus being freed from all its inferior attachments. An incision was then made through the vaginal wall throughout its entire length from the middle of the transverse incision up to the urethra. With an anterior retractor the bladder and the vaginal flaps were lifted up behind the symphisis and the fundus uteri turned down into the vagina. This brought the appendages into view. The round ligaments were then shortened by doubling them on themselves and the loop made fast to the uterus at the anterior origin of the round ligaments. Three chromaticized catgut ligatures, No. 2, were passed, one through the anterior wall of the uterus at its middle point and the other two through the anterior wall of the broad ligaments just outside the lateral margins of the uterus. These were left long and protruded through the vulva. A point was now selected in the base of the bladder at such a distance from the urethra as when carried up to the point of insertion of the first three ligatures would cause the base of the bladder to make a straight line from the urethra to the uterus. Through this the suture was passed, catching up in its course the bladder attachment of the peritoneum where it was torn from the uterus. Two points in the base of the bladder were now selected at either side of the first selected point and distant from it an inch to an inch and one-half. Through these points the lateral sutures were passed respectively. The three were then tied beginning with the middle one. The first one took up all the slack in the line from the uterus to the urethra, but made a ridge in the interior of the bladder with a sulcus on either side. By tying the lateral sutures, however, these sulci were obliterated and the base of the bladder was spread out upon the anterior face of the uterus and broad ligaments. The overstretched fascia and wall in the anterior vagina was now cut away to such a degree on either side of the median line that when stitched together it would fit snugly under the base of the bladder. This relieved the hernia and restored the support which the bladder received from the fascia lata, on either side. The vagina was then stitched to the uterus at points that would smooth out the anterior vaginal wall, but would not shorten it to a degree that would cause it to pull on the cervix. The transverse suture in the

vaginal wall was closed with a running suture. The floor of the pelvis was reconstructed in accordance with the method described by Dr. Strumdorf. The cases of the second class that were found in elderly women were the most severe and unmanageable. The principles of the operation were the same as in the minor cases, but the pelvic tissues having become atrophic, thin, and friable they were useless as supports and consequently a vaginal hysterectomy was done. To provide a support for the bladder, he stitched together the broad ligaments from the round ligaments down to their bases, taking in sufficient slack to make them draw taut across the pelvis. Upon this plane of tissue the base of the bladder was spread out and fastened, following the technique already described. The anterior wall of the vagina was cut away as before, its edges stitched together, and the upper end stitched to the broad ligaments. In addition to restoration of the levator ani muscle, the rectum was plicated upon itself by inserting a line of buried sutures across the anterior wall, passing the stitches parallel to the longitudinal axis of the rectum. The floor of the pelvis was then restored and colporrhaphy done throughout the entire length of the posterior vaginal wall. Dr. Goffe said that he had been doing this operation for nine years. In two cases before he began plication of the rectum a high rectocele came down over the perineum and presented at the vulva. In no instance had the uterus or bladder failed to remain in position and in no case had there been any infection to mar the permanent healing of the tissues. It was his custom to insert a small gauze drain between the bladder and the vaginal wall in cases that bled unduly from the raw surfaces. He had used the operation of interposition of the uterus between the bladder and the vaginal wall in the early stages of prolapsus and had found it satisfactory. At a recent operation of this kind there was a constant tendency for the fundus to slip out through the vulva and the operator had difficulty to keep it in while he stitched together the vaginal wall in front of it. The question was did the uterus hold up the vaginal wall, or the vaginal wall the uterus. The only criticism that had been offered to his operation was that it was complicated and difficult, but to a skilled gynecologist an operation that promised such assured results should not be considered too difficult.

Dr. George L. Brodhead agreed with Dr. Edgar that one of the most frequent causes of laceration of the perineum was the too rapid advance of the fetal head and it was naturally a matter of judgment and experience to tell when this advance should be checked. As a rule when the perineum was about to tear it became white, or the fourchette became dry and apparently brittle. There was no doubt in his mind that the exaggerated lithotomy position was a very frequent cause of perineal lacerations. With regard to prophylaxis, in operative work the feet of the patient should be supported by stirrups rather than by the usual leg holders; the soft parts and the tissues at the outlet were then not so much on the stretch and were less liable to tear. When the head was beginning to distend the outlet, a small table should be placed at the foot of the operating table so that the patient's legs could be taken from the stirrups and allowed to rest upon the table. In this way the soft parts were relaxed and a place was provided for the child. Episiotomy was also a very important factor in prophylaxis. Dr. Brodhead said he had long since become convinced of the value of this procedure and had made use of it in many instances and he had never seen a complete laceration of the perineum in vertex cases; he attributed this to the fact of the performance of episiotomy. The complete tears which he had were all in the breech cases. The immediate repair of the perineum should not be adopted; these patients were sometimes exhausted by a long labor and, perhaps, they had lost much blood, and in many instances there was insufficient light. Better results would often be obtained if the operation was deferred until the following day when proper preparation could be made for a successful operation.

Dr. Brooks H. Wells said that in secondary repair of the perineum the methods used to-day had been evolved from the work of the older operators. The suture of the levators had been suggested by Hadra in 1884 and by many since that time. He had always taught the necessity for approximating the levator edges and restoring the central attachments to the transverse perineal muscles and had obtained clinically and anatomically very satisfactory results in the restoration of the lifting function without drawing the levators from their sheaths.

Dr. George Gray Ward said he was pleased at the beautiful description of the work done by Dr. Sturmdorf, a work that he had been doing for many years; his own method was based on the same principles and his results were about the same.

Dr. LeRoy Broun did not believe that Dr. Sturmdorf went far enough with his sutures in his attempt to repair the damaged parts. Before the American Gynecological Association many years ago, Dr. Emmett brought out the fact that in operating they did not attend to the separated fibers of the levator ani muscle on both sides and, therefore, as a rule, perineal tears occurred in subsequent labors. Dr. Emmett advised all to take up the torn ends of this muscle with its fascia and to bring them back and fasten them in their original place. This operation had stood until the present day. One should be concerned not only with the levator ani muscle, but with its fascia as well. Emmett's operation should not be entirely discarded today.

Dr. John Van Doren Young said that it seemed to him that the papers and the discussion illustrated the fact that there were a large number of men in the general profession, as well as in specialties, who could learn a great deal from what had been presented. There was one point that had not been really gotten hold of, a picture of the complex of the situation, which was the condition they were trying to relieve, and the solution of which was to be found in a study of the anatomy of the parts. It should not be forgotten that the levator ani muscle played a very important part in this work, and its proper adjustment should be attended to.

Dr. Austin Flint, Jr., said that it was his habit, when the head was about to be born, to bring the knees together. The lacerations of the perineum which occurred were due in large part to a distention of the perineum downward and this could be lessened by such a procedure. Pushing the perineum back would save many of them. With regard to episiotomy it was necessary to know just when to perform this operation. Unquestionably in his hands it had saved a great many complete tears. Dr. Flint had done the operation described by Dr. Sturmdorf many times, with certain modifications, and these consisted in adhering to the original principles of the Emmett operation, working at the upper edges of the levator ani muscle, bringing the parts together and securing them in place.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held February 20, 1912.

Dr. W. L. Niles in the Chair.

Acrocyanosis in a Case of Tricuspid Disease.—Dr. Jesse Godfrey M. Bullowa reported the case of a young man, twenty-three years old. Four years ago he began to have nocturnal attacks of indigestion and precordial pains which were thought to be due to smoker's heart. During the summer and fall he commenced to have blueness of the distal phalanges and the index and middle fingers of

the hands, which extended as far as the wrists. During the summer there was a blue mottling of the fingers when the patient exercised; during the winter, however, the circulation was restored by exercise. Three years ago, while a student at Princeton, he had an endocarditis which followed rheumatism, chiefly with pain in the shoulders. He had a very rapid pulse, 158. His temperature was 102° F. He had frequent attacks of sore throat. In January a systolic murmur was noticed over the ensiform; there was a blood pressure of 110; the specific gravity of the urine was 1014. In May there were no murmurs, the pulse was 72 and regular. A diagnosis was made of tricuspid disease. The heart was enlarged to the right by percussion, orthodiagram and teleröntgenogram. On auscultation there was found a systolic roughening, at times a presystolic murmur, and a diastolic blow which was most intense just to the right of the fourth chondrosternal junction and over the ensiform cartilage. The blowing murmur was transmitted to the liver area and to the vessels of the neck when the breath was held in inspiration, and over the lungs during apnea. A polygraphic tracing showed an auricular pulse in the jugular and in the liver. The areas of hyperalgesia were studied. The patient improved under exercise and restricted fluids.

The Use of Bouillon Cultures of Staphylococcus Pyogenes Aureus in Diphtheria Convalescents and Bacillus Carriers.—Dr. R. G. WIENER read this paper the object of which was to call the attention of the profession to this procedure, which was still in the experimental stage, in order that it might be further tested. Some years ago a Danish physician, A. Schiotz, observed that during an epidemic of diphtheria a patient with a staphylococcus throat infection who had by mistake been placed in the diphtheria ward did not contract diphtheria. He also observed that in a number of diphtheria convalescents, in whose throats the bacilli were present, intercurrence of ordinary sore throats caused a disappearance of the Klebs-Loffler bacilli. Acting upon these observations he inoculated six cases by spraying the throats with a *Staphylococcus aureus* culture, obtained from a patient who had a pure staphylococcus sore throat. In all of these cases after two days cultures from the throats became negative, though in two of the cases they had been positive for two months. Henry Page of Manila (*Archives of Internal Medicine*, Vol. 7, No. 1, p. 16-23) reported a case treated successfully in this way. He concluded that as treatment of carriers had proved useless, local measures and antitoxin having no effect, and as pure cultures of *Staphylococcus pyogenes aureus* sprayed into the throat destroyed the Klebs-Löffler bacilli in from 48 to 72 hours, this treatment being harmless and effectual, they should be used in all carriers. S. R. Catlin and D. W. Day reported an epidemic of diphtheria in which the staphylococcus spray was successfuly used in eight cases, and concluded that the results with *Staphylococcus aureus* spray were such as to warrant its further use. Dr. Wiener said that a few weeks ago a case of diphtheria came under his care. He immediately injected 500 units of antitoxin and after four days all membrane disappeared and the child was practically well, but nine cultures were taken during the following three weeks, and all were positive, though application of silver solution and various sprays and gargles had been used. On December 11, 1911, three and one half weeks after the onset of the disease, a light 24-hour bouillon culture of staphylococcus pyogenes aureus was used three times a day as a spray. On December 12, the culture was positive and a spray with twice as heavy a culture was employed. On December 13, the throat culture, though still positive, showed fewer organisms. A heavy culture was used every three hours this day. On December 14 the culture was negative and pure staphylococcus showed on the slide. No further treatment was given and, on December 18, four days after the last spraying the culture showed a staphylococcus and a Gram-negative coccus, probably *Micrococcus catarrhalis;* plating out showed no bacilli. The culture used in this case was a laboratory culture of *Staphylococcus aureus* almost a year and a half old. At no time was there any local or constitutional disturbance in this case. Dr. L. K. Neff had used the spray in two very virulent cases, and the throat cultures became negative after four days' use of the bouillon spray. It would be presumptuous to draw conclusions from such a limited experience, but the possibilities of this procedure were so great that its was worth a thorough test. The *Staphylococcus pyogenes au eus* cultures in bouillon could be procured at any bacteriological laboratory without difficulty. A fresh live culture must be used daily.

The following papers were from the service of the New York Hospital:

Four Cases of Pernicious Anemia Treated by Repeated Small Injections of Defibrinated Blood.—Dr. JAMES C. GREENWAY made these reports. He said that Parum in 1863 stated the following: I. Related blood remained intact after transfusion and even made up for the loss of the original blood. II. Foreign blood was destroyed after transfusion and in addition produced an injurious effect. III. Blood lost nothing by defibrination. The danger of using it was dismissed because of less liability to intravascular clotting. Gussereau in 1871 attempted to control the severe symptoms by transfusion of blood but without success. This was the experience of many others until Quincke in 1877 obtained great success in one case (143,000 red blood cells) by intra-arterial transfusion of 85 c.c. of defibrinated blood. Success alternated with failure in the attempts of many; one of the notable successes was made by Ewald in 1895 after intravenous transfusion of 85 c.c. of defibrinated blood. Morawitz in 1907 reported good results from this transfusion in those cases in which arsenic was of no value. He first stated that the amount of blood used was not the main thing since the effect was produced, in his opinion, by the stimulation of the bone marrow and not by the physiological effect of adding to the amount of fluid. A. Weber reported in 1909 a series of cases in which small amounts of defibrinated blood were used and some improvement was noticed in every case. His conclusions were very guarded. His statement was that mere injections of small quantities of defibrinated blood alone might not produce marked improvement, but combined with the hygienic and dietetic care of a hospital, their efforts compared favorably with those cases upon which arsenic, or a large amount of blood was used. Since this paper there had been twelve or fourteen papers published on this same subject and the results reached were practically the same as Weber's. Technique: Under strict precautions, to guard against hemolysis, agglutination, the introduction of syphilitic blood or blood from one suffering from malaria, etc., 30 or 40 c.c. of blood were removed from the median basilic or cephalic vein of the donor; the blood was received into a sterile flask containing sterile garnet beads, or a cylinder supplied with a spiral wire. This was shaken or whipped, as the case might be, for from fifteen to twenty minutes, and was then filtered through four to five layers of fine meshed sterile gauze into sterile test tubes, one to contain sufficient for one injection. The others were stoppered with cotton and kept on ice for preservation. In injecting, care must be taken to have the blood warmed to 105° F. or thereabouts; when the vein was exposed, the injection should be made slowly and the usual precautions of having no bubbles in the syringe or needle. With regard to the ill effects after the injection of from 75 to 85 c.c. practically all of the cases reported showed marked anxiety, dyspnea, chills and elevation of temperature; but all of these symptoms disappeared after a few hours. Quincke reported instances of hemo-

globinuria and nephritis which were also of short duration. Morawitz had two cases followed by cyanosis and fever, and both ended favorably. He stated that he had not known of a fatal result. Hurter had one bad reaction after the injection of whole blood, probably because of an embolus, and one death. Defibrinated blood never gave in his hands such evil symptoms. In the four cases that Greenway reported, on one occasion only, there was experienced for a period of from one to two hours faintness, chilliness, pain in the legs, with flushing of the face. There was no temperature nor increase in respirations nor in the pulse rate. Similar symptoms, but of longer duration, had been reported in a leucemic case; this patient received only one or two injections. On one occasion a patient received the blood of a patient who had a blood pressure of 225. He had a passing headache with faintness and was all right in less than an hour after the injection was given. In another case there appeared a rise of temperature which was probably not associated with the injection; in this instance the infusions were stopped. In looking at the charts one could follow the course of the number of red blood cells and the percentage of hemoglobin. In one case the patient improved sufficiently to undergo the urgent necessity of having the uterus emptied. Unfortunately she got up a streptococcic septicemia and died. In the second case in which the onset of the disease quickly followed the extraction of a tooth there followed a severe hemorrhage lasting twelve hours, and this was followed by an infection of the gums which sloughed away in great masses. It was in this condition that she entered the hospital. Her decline was a rapid one, although the condition of her mouth was soon relieved. The course of the disease in this case was too rapidly fatal to give a fair chance for the treatment reported. The third case gave a prize result which, of course, can not be directly attributed to the defibrinated blood. In the fourth case the improvement was slow but continued steady and the results are still uncertain. In connection with this report charts were shown of the changes in the hemoglobin, red blood cells, and color indices which were practically coincident with the changes in the general condition. The results of any therapeutic procedure, in this particular disease especially must be very guarded, since it was notoriously subject to rapid changes for better or worse, and marvelous results have been reported practically in connection with all therapeutic measures, in one notable case where no therapeusis was attempted. The dangers of coincidence between improvement and any therapeutic procedure were great.

Dr. Lewis A. Conner said that the case reported was one that came into the hospital in extremis, apparently progressive and a fatal case of aplastic anemia. The outlook seemed as unfavorable as could be imagined. There was, however, a startling and progressive improvement under the treatment given, but he would not say positively that it was due to the injections of the defibrinated blood. They very often saw these improvements occur in pernicious anemia and it would be foolish for him to state that it was due to these injections. For some time this patient had been upon sodium cacodylate but without any appreciable change. In four cases in which the injections were used they were up and about the wards and entirely different individuals compared to what they were when they entered the hospital. They saw from year to year many cases of pernicious anemia, but they had never seen such a group of cases which showed such a marked improvement under this method, and he thought the method advocated was well worthy of a trial.

An Analysis of the Functional Tests for Cirrhosis of the Liver.—Dr. N. B. Foster said that for two years they had been working on the functional tests and particularly those that related to the hepatic function. One point that was studied was, whether or not the liver was capable of forming urobilin or not. In cases of cardiac compensation, where this organ was not much enlarged, the presence of urobilin was indicative of an enlarged and cirrhotic liver. Urobilin was also present in a large number of conditions in which there was a blood destruction; it was also present in many infectious diseases; it was also present in many miscellaneous diseases. His results in regard to cirrhosis of the liver showed that urobilin was present in about 05 per cent. of the cases. The presence of urobilin in the urine could be taken as indicative of the presence of cirrhosis of the liver, although it was present in many other cases. The urobilin reaction was determined by a very delicate test which Dr. Foster described. But it should be remembered that the presence of urobilin in the urine, although present in the urine in cases of cirrhosis of the liver, was not distinctive of that condition, because it appeared in so many other conditions. Much experimental work had been done which Dr. Foster described in detail.

Case of Myeloid Leukemia with a Low Leucocyte Count and Peculiar Febrile Relapses.—Dr. J. C. Roper reported this case. The spleen was enlarged so that it extended to the median line. The patient was admitted to the hospital with a temperature of from 104° to 106° F. The patient had suffered from severe pain. The Wassermann reaction was negative. The leucocyte count varied from 30,000 to 15,000 and finally reached the low number of 8,000. When the patient had no fever there was no leucocytosis. Ehrlich's salvarsan was given without harm to the patient. The blood count was normal so far as the red cells were concerned. After being in the hospital four months the patient died. The various glands diminished in size during the non-febrile periods and they also became less tender. Whether the spleen was movable or not he could not tell. The autopsy revealed a very large spleen, very large peribronchial and mesenteric lymph nodes, those in the region of the liver being especially enlarged. One of them measured 3 x 2 cm.

A Case of Myeloid Leukemia with Predominance of Eosinophile Cells.—Dr. R. G. Stillman reported this case. The patient, a waiter 27 years of age and a native of Spain, gave a family history that was negative and a personal history of lues which was doubtful. He was a pronounced sexual neurasthenic. He was admitted to the New York Hospital in March, 1911, complaining of indefinite pains over the entire body, weakness and a loss of normal color. Physical examination showed a rather under-sized man with swarthy skin and pale mucous membranes. The lymph nodes in the right posterior cervical, the right epitrochlear, and both inguinal regions were enlarged. The liver and spleen were also enlarged and there was distinct tenderness in the occipital region. While in the hospital he developed a sore throat with enlargement of the submaxillary glands which lasted only a few days. After a stay at the hospital of about a month he showed no improvement and went home. An *x*-ray examination of the chest and abdomen was negative. The Wassermann reaction reported after he left was positive. His urine consistently showed a trace of albumin and a few casts. Repeated examination of the stools failed to reveal ova or parasites. The point of interest in this case was the blood picture. The leucocyte count varied from 118,000 to 165,000 and eosinophiles from 85.8 per cent. to 91 per cent. A typical differential count was made at the time when the white cells numbered 105,000 was as follows: Polymorphonuclears 3.8 per cent., or 0,270; eosinophile polymorphonuclears, 69.8 per cent., or 115,170; eosinophile metamyelocytes, 19.4 or 32,010; eosinophile melocytes, 1.8 or 2,070, making altogether 91 per cent. or 150,150 eosinophiles; mesoblasts, .2 per cent. or 330; transitionals, .8 per cent. or 1,320; lymphocytes, 4.2 per cent. or 6,930. There

were 2 normoblasts per 100 pencocytes. These polynuclear eosinophiles were rather larger than those normally found in the blood and the granules were slightly smaller. Although smears were stained with a number of different stains the granules retained their distinctive eosinophile character. The neutrophiles were atypical. The relatively small number of myelocytes were all eosinophilic and differed in no way from those found in leucemic blood. Another unusual condition was the large number of metamyelocytes, which were without exception eosinophilic. The transitionals differed from the usual type in that the nucleus was large, irregular, and with ill-defined edges. The writer had been unable in the literature to find any instance where the eosinophiles had reached the high figure that they did in this case. Unfortunately they had been unable to find the patient and to see how the blood picture had changed. During a part of his stay in the hospital he was on a purin-free diet, and as usual in cases of pronounced leucocytosis the uric acid output was increased, being about 75 per cent. greater than the average. Although the eosinophile granules were said to contain phosphorus there was no evidence of it in the urine.

Tracings Showing the Influence of Cheyne-Stokes Breathing Upon Pulsus Alternans.—Dr. H. F. B. PARDEE read this paper and exhibited tracings. Those of the respirations were made with the usual spring pneumograph. This connected with a Marey tambour recorded inspiration as a downward stroke and expiration as an upward stroke. For the pulse tracings a modified Erlanger and Ushoff sphygmomanometer was used. It consisted of an inflatable rubber arm cuff, the interior of the cuff being connected with a fairly soft rubber bulb, a T or Y connection allowing air to be pumped into the system. About the outside of the soft rubber bulb was an airtight chamber with an opening to which connection was made with a Marey tambour by means of rubber tubing. The cuff was placed about the arm above the elbow in the usual way and the pressure raised so as to obliterate the radial pulse. If the pressure in the cuff was lowered slowly, at a point above systolic pressure varying with different pulses the lever of the tambour would begin to move synchronously with the impact of the brachial pulse upon the inflated cuff. As the pressure in the cuff was lowered the movement of the lever increased in amplitude to a maximum just above the diastolic pressure, after which it decreased. In order to facilitate better comparison of the individual beats the kymograph drum had been moved very slowly as could be seen by the time recorder. The first tracing shown was taken from a normal individual in which the slight variation in the amplitude synchronous with respiration could be easily seen in the first section and in succeeding sections at greater speeds it could be seen with increasing difficulty. The second tracing was from a man who entered New York Hospital on December 18, 1911, with general arteriosclerosis, aneurysm of the ascending arch of the aorta, aortic insufficiency and probably a poor myocardium, all thought to be due to syphilis. He had had first break in compensation two months previously, but had recovered and was complaining of weakness, dyspnea and some edema of the ankles. His pulse was 120 and jugular in force but not in rate, and his respirations were of the Cheyne-Stokes type. Jugular and radial tracings showed a normal heart action and a pulsus alternans. In another tracing taken the following day the Cheyne-Stokes character of the respiration was plainly shown. The brachial tracing showed beats of alternating size, due to the alternating greater and less force of succeeding pulse beats. During the periods of dyspnea the alternating character was much more marked than during the apnea periods. This increase was of gradual onset. This patient improved after three days and no longer showed the pulsus alternans. There were two other tracings from a man who entered the New York Hospital on November 8, 1911, with chronic nephritis, general arteriosclerosis, a history of lues and a much hypertrophied heart and moderately severe decompensation. On admission his heart showed frequent extra systoles. He made an uneventful recovery. His blood pressure rose during this time from 100 to 190 mm. of mercury and on December 15 his pulse was found to be of the alternans type proven by jugular tracings not to be extrasystoles. On December 17 his respirations were of the Cheyne-Stokes type at times and the following day continuously so. Another tracing showed the same features, a pulsus alternans coincident with Cheyne-Stokes respiration, in which the alternation gradually increased during the phase of augmentation and gradually decreased during the phase of decline. A few days later the patient again showed extrasystoles, which increased in frequency. Another tracing taken December 29 showed the pulsus alternans, with greater alternation during the dyspnea periods than during the apnea. Two explanations might be offered for these variations in the alternating character of the pulse occurring synchronously with the phases of the Cheyne-Stokes respiration. It might be a result of increased vagus activity of the respiratory and vasomotor centers during the dyspnea phase of the Cheyne-Stokes breathing. If this were so they should expect a slowing of the heart rate also unless the vagus stimulation was so slight as to effect only the function of contractility of the heart. Or it might be that during the dyspnea the blood was aspirated into the thorax by the respiratory movements, thus increasing the venous return and producing a better filling of the heart. The increased demand on the heart's power might be sufficient with a weakened myocardium to bring out a latent tendency to alternation. The alternation already present might tend to increase and to produce other signs of cardiac overstrain.

Remarks Upon Certain Accidental Murmurs in the Pulmonic Area.—Dr. L. A. CONNER read this paper in which he called attention to a certain type of these murmurs which he had failed to find mentioned in the literature on the subject. In the course of the examination of diseased hearts in the wards of hospitals he had gradually become aware of the fact that in many cases in which there was a very marked accentuation of the pulmonic second sound, this accentuated sound was preceded by a short rough and usually loud systolic murmur heard best in the second left space, or wherever the accentuated sound was best heard. As mitral stenosis was the condition in which one saw the most exquisite example of accentuation of the pulmonic second sound, so it had been in this condition of mitral stenosis that he had usually found this rough systolic murmur. In mitral stenosis, as was well known, it was common not only to hear the greatly accentuated sound over the pulmonary artery but also actually to feel distinctly the shock of the closure of the pulmonic semilunar valves. In the same way it was often possible, not only to hear the rough murmur preceding the ringing second sound, but also to feel over the pulmonary artery the systolic thrill corresponding to the murmur. While mitral stenosis was the condition in which he had usually heard this murmur he had occasionally heard it in other conditions, but so far as he could recall never without its being associated with great accentuation of the pulmonic sound. The most striking instance of this that he had seen was in a young man comatose from acute uremia who, in addition to a greatly accentuated second pulmonic sound, had an extremely rough and loud systolic murmur heard best in the second left space and transmitted some distance upward and toward the left. With the murmur there was a pronounced coarse thrill over the same region. The murmur was so loud as to arouse the suspicion of a pericarditis. The autopsy showed an hypertrophied and dilated heart but absolutely nothing to explain the extraor-

dinary murmur and thrill. The features of this murmur were that it was rough and loud, while most accidental murmurs were described as soft and blowing, that it was associated with unusual accentuation of the pulmonic second sound which it immediately preceded and that it had been heard chiefly in mitral stenosis. As to the mode of origin of these murmurs there seemed to be little that was satisfactory to offer. The most satisfactory hypothesis seemed to be that of Sahli, who said that when they considered the anatomical condition within the heart, the roughened irregular walls, the narrow orifices, etc., the surprising thing was not that the movement of the blood stream through it should occasionally produce a murmur but that the blood should be able to flow through it without producing a murmur. He thought the reason for this was that the velocity of the blood current through the heart was ordinarily not sufficiently great to produce such a murmur, but that when the velocity was sufficiently increased such murmurs arose. In certain conditions in which such functional murmurs were especially common the heart seemed to contract with unusual suddenness and it seemed reasonable to suppose that in such conditions the velocity of the blood current might be considerably increased. In mitral stenosis one of the most striking and characteristic features was the sudden, sharp systolic contraction and moreover the right ventricle must often contain an abnormally large quantity of blood, so that the velocity of the blood as it passed into the narrow pulmonic orifice must often be very considerably greater than normal. It therefore, seemed not unreasonable in such cases to expect just such a murmur as they not infrequently heard. Whether this explanation was correct or not the fact remained that these murmurs were not due to any valvular or other organic disease.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

COLORADO STATE BOARD OF MEDICAL EXAMINERS

January 2, 1912

ANATOMY.

1. Describe the radius, including the attachments of muscles and ligaments.
2. Describe the bones of the carpus.
3. Describe the ankle joint.
4. Describe the shoulder joint with special reference to its surgical anatomy.
5. Give the origin, insertion, and nerve supply of the following muscles: sartorius, gastrocnemius, serratus magnus, quadratus lumborum, flexor profundus digitorum.
6. Name the triangles of the neck and the important structures contained in each.
7. What muscles supinate the forearm? Give the origin and insertion of each.
8. Describe the large intestine, including relations.
9. What muscles derive their nerve supply from the anterior primary divisions of the fifth and sixth cervical nerves?
10. Give a brief description of the ducts that carry bile from the liver to the intestine.

PHYSIOLOGY.

1. In what part of the digestive tract is the pancreatic juice mixed with the food? What is its reaction? Name its ferment and what action does it have on food?
2. Give the function of (*a*) the cerebrum, (*b*) the cerebellum, (*c*) the external ear, (*d*) the mouth, (*e*) the spleen.
3. Give in detail the function and action of the liver and gall-bladder.
4. Describe the skin and mention three of its functions.
5. Name and describe the component parts of blood and by what organs it is distributed through the body.
6. Name five ductless glands. Tell where each is located and name the secretions.
7. Name the three layers of the blastoderm and mention what parts of the adult are developed from each.
8. What does the sympathetic nervous system supply?
9. What five nerve centers are located in the lumbar enlargement of the spinal cord?
10. Name three nerves that supply motor impulses to the eye.

CHEMISTRY.

1. What is an alkaloid? Name three alkaloids used as medicines.
2. Name three of the halogen group. What are their chemical characteristics?
3. Enumerate the chemical constituents of normal urine.
4. Give the chemical formulæ of three common salts.
5. What do you understand by the term "chemical incompatibility"?
6. What is an acid salt?
7. What is neutral salt? Give two examples.
8. What is an alkaline salt?
9. What are the principal chemical constituents of normal gastric juice?
10. What is indican, and what is its significance when found in considerable quantity in the urine?

TOXICOLOGY.

1. Give symptoms of poisoning by sulphate of copper.
2. Give treatment of poisoning by sulphate of copper.
3. What are the symptoms of poisoning by tartar emetic?
4. How would you treat a case of poisoning by tartar emetic?
5. Give post-mortem appearance of poisoning by tartar emetic.
6. Give symptoms of poisoning by aqua fortis.
7. Give treatment of poisoning by aqua fortis.
8. What are the post-mortem appearances of poisoning by aqua fortis?
9. What are the symptoms of poisoning by aconite?
10. Give treatment of poisoning by aconite.

PATHOLOGY.

1. Classify tumors.
2. Discuss the gross pathology of congenital syphilis.
3. Describe the *Spirochæta pallida*.
4. What changes occur in the female genital apparatus from infection by the gonococcus?
5. Describe the Charcot joint.
6. What changes occur in the myocardium secondary to coronary disease.
7. How would you distinguish the tubercle bacillus from the smegma bacillus?
8. What changes occur when a peripheral nerve is cut?
9. Give the pathology of acute osteomyelitis.
10. Describe a peptic ulcer.

SYMPTOMATOLOGY.

1. What are the physical signs of lobar pneumonia?
2. What are the physical signs of bronchopneumonia?
3. What are the symptoms of diabetes mellitus?
4. What are the symptoms of rickets?
5. What are the symptoms of appendicitis, and what is the order of their appearance?
6. What are the physical signs of pericarditis?
7. What are the symptoms of arteriosclerosis?
8. Describe the blood picture in pernicious anemia.
9. What are the symptoms of Hodgkin's disease?
10. Name the various forms of nephritis and give the urinary findings in each.

OBSTETRICS.

1. Name indications for and give technique of the use of high forceps.
2. Mention the varieties of hemorrhage that may affect a parturient woman, and how would you treat them?
3. How would you diagnose the position of the child (outline form)?
4. What is placenta prævia, and how would you manage a case?
5. Give the (bony) measurements of the pelvis.
6. Give the average duration of labor in primiparæ and multiparæ.
7. Name the female organs of generation complete.
8. Mention some developmental abnormalities of the uterus.
9. Describe the ovum at the time of its discharge from the ovary.
10. Describe the migration of the ovum.

SURGERY.

1. Give the causes, symptoms, and diagnosis of fat-embolism.
2. What are the symptoms and complications of prostatic hypertrophy?
3. What are the causes and how would you determine the source of pus in the urine?

4. How should patients be prepared for the administration of anesthetics?

5. What complications may follow fractured ribs?

6. Give the varieties of hemorrhage and the methods of controlling it.

7. Give the causes of gangrene.

8. Describe Pott's fracture, the deformity that may follow, and the precautions to be taken in treatment.

9. Give the symptoms and prognosis of tuberculous peritonitis.

10. Describe the symptoms of a well developed tuberculous arthritis of the hip.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

COLORADO STATE BOARD OF MEDICAL EXAMINERS.

January 2, 1912.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), pages 198 and 279 to 284; or Gray's "Anatomy" (1910), pages 190, and 306 to 315.

2. See Cunningham's "Anatomy" (1909), page 201; or Gray's "Anatomy" (1910), page 195.

3. See Cunningham's "Anatomy" (1909), page 306; or Gray's "Anatomy" (1910), page 342.

4. See Cunningham's "Anatomy" (1909), pages 276 and 1291 or Gray's "Anatomy" (1910), pages 301 and 304.

5. SARTORIUS. *Origin:* Anterior superior spine of ilium. *Insertion:* Upper internal portion of shaft of tibia. *Nerve supply:* Anterior crural.

GASTROCNEMIUS. *Origin:* Condyles of the femur. *Insertion:* Os calcis (by tendo Achillis). *Nerve supply:* Internal popliteal.

SERRATUS MAGNUS. *Origin:* Eight upper ribs. *Insertion:* Inner margin of dorsal border of scapula. *Nerve supply:* Posterior thoracic.

Quadratus lumborum. Origin: Crest of ilium, transverse processes of lower three lumbar vertebræ. *Insertion:* Last rib, transverse processes of upper three lumbar vertebræ. *Nerve supply:* Twelfth thoracic and upper lumbar.

Flexor profundus digitorum. Origin: Shaft of ulna. *Insertion:* Last phalanges of fingers (by four tendons). *Nerve supply:* Ulnar, and anterior interosseous.

6. See Cunningham's "Anatomy" (1909), page 1249; or Gray's "Anatomy" (1910), page 605.

7. *Muscles that supinate the forearm:* Supinator longus, biceps, brachialis anticus, supinator brevis, extensors of thumb.

SUPINATOR LONGUS. *Origin:* External condyloid ridge of humerus. *Insertion:* Styloid process of radius.

BICEPS. *Origin:* Glenoid cavity and coracoid process of scapula. *Insertion:* Tuberosity of radius.

BRACHIALIS ANTICUS. *Origin:* Lower half of anterior surface of shaft of humerus. *Insertion:* Coracoid process of ulna.

SUPINATOR BREVIS. *Origin:* External condyle of humerus and oblique line of ulna. *Insertion:* Neck of radius and its bicipital tuberosity.

8. See Cunningham's "Anatomy" (1909), page 1076; or Gray's "Anatomy" (1910), page 1296.

9. The supra spinatus, infraspinatus, subscapularis, teres major, teres minor, and deltoid muscles derive their nerve supply from the fifth and sixth cervical nerves.

10. See Cunningham's "Anatomy" (1909), pages 1118 and 1120; or Gray's "Anatomy" (1910), page 1333.

PHYSIOLOGY.

1. The *pancreatic juice* is mixed with the food, in the duodenum. The *reaction* is alkaline. The ferments are: *Trypsin*, which changes proteids into proteoses and peptones; and afterward decomposes them into leucin and tyrosin; *Amylopsin*, which changes starches into maltose and dextrose; *Steapsin*, which emulsifies and saponifies fats.

2. *Function of the cerebrum:* It receives all the afferent impulses which enter into consciousness; the sensation of heat, cold, pain, sight, hearing, smell, taste, hunger, thirst, all arise in the cerebrum; movement is also originated in the cerebrum.

Function of the cerebellum: Coordination of muscular movements, and maintenance of equilibrium.

Function of external ear: The auricle collects the sound waves and transmits them through the external auditory meatus to the external auditory canal, and these sound waves impinge upon the membrana tympani.

Function of the mouth: Prehension and mastication of food, its insalivation and deglutition, and beginning of the digestion of starches.

Function of the spleen: This is not definitely settled; the following theories have been held: (1) It is a source of production of the white blood corpuscles; (2) it is a source of production of the red blod corpuscles during fetal life; (3) it is a place where the red blood corpuscles are destroyed; (4) uric acid is produced in the spleen; (5) an enzyme is produced in the spleen and is carried by the blood to the pancreas, where it converts the trypsinogen into trypsin.

3. The *functions of the liver* are: (1) the secretion of bile; (2) the formation and storage of glycogen; (3) the formation of urea and uric acid; (4) the manufacture of heat; (5) the formation of creatinine; (6) the production of antithrombin; (7) the conversion of poisonous and harmful into inert material; (8) it is also a reservoir for blood on its way to the heart.

The *function of the gall-bladder:* (1) To store the bile secreted in the liver; (2) to expel the bile into the duodenum.

4. See Cunningham's "Anatomy" (1909), page 772; or Gray's "Anatomy" (1910), page 1151.

Three functions of the skin: (1) Protection; (2) it is a specialized sense organ, for touch; (3) it helps in regulating the temperature of the body.

5. The *blood* is fluid, somewhat viscid, red, specific gravity from 1055 to 1062, alkaline reaction, saltish taste, characteristic odor, variable temperature (average about 100° F.). The *constituents* are plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteins, fat, and inorganic salts). The *white corpuscles* consist of water and solids (protein, leuconuclein, lecithin, histon, etc.). The *red cells* are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin. They carry oxygen from the lungs to the tissues. The white blood cells are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes; (2) large mononuclear; (3) transitional; (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen, lymphatic glands, and lymphoid tissues. Their fate is uncertain; it has been asserted that they are converted into red blood cells; they play a part in the formation of fibrin ferment; they are sometimes converted into pus cells. Their functions are (1) to serve as a protection to the body from the incursions of pathogenic microorganisms; (2) they take some part in the process of the coagulation of the blood; (3) they aid in the absorption of fats and peptones from the intestine, and (5) they help to maintain the proper proteid content of the blood plasma.

There are also *platelets*, which are very small, colorless, irregular shaped bodies; they are about one-fourth the diameter of a red corpuscle. The function is not determined; it is possible that they take some part in the coagulation of the blood. In number they vary from about 200,000 to more than 500,000 in each cubic millimeter of blood. *Plasma* conveys nutriment to the tissue; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys. *Arterial blood* is bright red in color, contains more oxygen, less carbon dioxide, more water, and is slightly warmer; *venous blood* is purple in color, contains less oxygen, more carbon dioxide, less water, and is slightly cooler (except in the hepatic vein). It is distributed through the body by the heart, arteries, capillaries, and veins. See Cunningham's "Anatomy" (1909), pages 780, etc.; or Gray's "Anatomy" (1910), pages 549, 575, and 707.

6. *Five ductless glands:* Spleen, thyroid, thymus, suprarenals, and parathyroids.

For *location*, see Cunningham's "Anatomy" (1909), pages 1210, etc.; or Gray's "Anatomy" (1910), pages 1437, etc.

For *function of spleen*, see above, QUESTION 2.

The function of the thyroid is not definitely settled; (1) it has some trophic function, regulating oxidation in the body, and it is supposed to have also a special influence

on the vasomotor nerves, the skin, the bones, and on the sexual functions; (2) it is supposed to antagonize toxic substances, and (3) it produces an internal secretion.

The *function of the thymus* is not settled; it is said: (1) To be a blood-forming organ; (2) to have influence on growth and nutrition; (3) in hibernating animals it is supposed to store up materials which can be utilized during the period of inactivity.

The *function of the suprarenals* is not definitely settled; they produce an internal secretion which is probably necessary to life; it is supposed that they are able to destroy or remove some toxic substance produced elsewhere in the body.

The function of the *other ductless* glands is unknown. They all, or nearly all, furnish an internal secretion.

7. *The three layers of the blastoderm* are: The epiblast, mesoblast, and hypoblast.

From *the epiblast* are derived: The skin, and its appendages (hair, nails), and glands (including the mammary glands); the nervous system (brain, spinal cord, ganglia and nerves); the epithelial parts of the organs of special sense.

From *the mesoblast* are derived: The skeleton; connective tissues; muscles and bones; heart, blood-vessels, lymphatics, and spleen; the urinary and generative organs. From *the hypoblast* are derived: The epithelial lining of the alimentary canal and its glands; the epithelial lining of the respiratory tract, Eustachian tube, thyroid and thymus.

8. The *functions* of the sympathetic nervous system: "It may safely be said that sympathetic system has, to a great extent, a controlling influence over the secretion of most of the glands, the lacrymal, the salivary, the sweat glands, the glands of the stomach and intestines, the liver, the kidney, etc.; that it presides over the circulation by regulating the caliber of the blood-vessels and the action of the heart; that it influences respiration; and, finally, that all involuntary muscles, those of the digestive apparatus, of the genitourinary system, of the hair follicles (pilomotor-nerves), are under its control to such extent that, for instance, in certain mammalians the bladder still continues to fulfill its function for weeks after all the cerebrospinal motor nerves leading to it have been severed. In short, we find that all vegetative life of the organism is, to a greater or lesser extent, under the control of the sympathetic system. Therefore it may properly be called the vegetative nerve system *par excellence*."—(*Reference Handbook of the Medical Sciences.*)

9. *Nerve centers located in the lumbar enlargement of the spinal cord are:* Centers for urination, defecation, parturition, erection of the penis, and ejaculation of seminal fluid.

10. *Three nerves that supply motor impulses to the eye:* (1) Motor oculi, or 3rd cranial; (2) trochlear, or 4th cranial; and (3) abducens, or 6th cranial.

CHEMISTRY.

1. An *alkaloid* is a basic, nitrogenous, organic substance, of alkaline reaction, and capable of combining with acids to form salts in the same way that ammonia does.

Three alkaloids used in medicine: Strychnine, quinine, and morphine.

2. *Three of the halgen group:* Fluorine, chlorine, and bromine.

They are all univalent elements, they all unite with hydrogen to form hydracids; their hydroxides (but fluorine does not form one) are monobasic acids; they are all extremely irritant; and they possess bleaching and disinfecting properties.

3. *Chemical constituents of normal urine:* Water; urea, uric acid, hippuric acid, creatine, creatinine, xanthine, hypoxanthine; chlorides, sulphates, and phosphates (of sodium, potassium, magnesium, and calcium), ammonia.

4. Sodium chloride, NaCl; silver nitrate, $AgNO_3$; and borax, $Na_2B_4O_7$.

5. *Chemical incompatibility* is that form of incompatibility in which chemical interaction (generally not intended by the prescriber) results; the ingredients undergo a chemical change, and a new chemical compound results.

6. An *acid salt* is one in which only part of the replaceable hydrogen of the acid has been replaced by a metal (or its equivalent), as $KHSO_4$.

7. A *neutral salt* is one in which all of the replaceable hydrogen of the acid has been replaced by a metal (or its equivalent), as K_2SO_4, $Ca_3(PO_4)_2$.

8. An *alkaline salt* is a basic salt, that is a compound of the normal salt with a hydroxide, or oxide of the metal.

9. *The principal chemical constituents of normal gastric juice* are: Water; pepsin; hydrochloric acid; chlorides (of sodium, potassium, calcium, and ammonium); and phosphates (of calcium, magnesium, and iron).

10. *Indican* is indoxyl potassium sulphate. When found in considerable quantity in the urine it may denote: Putrefactive changes in the body, or hypochlorhydria, or gastric ulcer or diminished peristalsis in the small intestine.

TOXICOLOGY.

1 and 2. COPPER SULPHATE (BLUE VITRIOL). *Symptoms:* "A 'coppery' taste, soon followed by nausea and vomiting, which becomes violent and persistent (the vomited matters being colored blue or green, according to the amount taken and the contents of the stomach), severe pain in the stomach and bowels, with flatulence and eructations. There is generally some diarrhœa, the stools black or reddish brown, and streaked with blood. The pulse is small, sharp, rapid, and sometimes irregular, the skin cold and clammy, thirst burning and persistent, great prostration, dyspnœa, urine scanty and voided with difficulty and pain. In the later stages neurotic symptoms appear, vertigo, cramps, tetanic spasms, paralysis, coma and collapse. In some cases there is salivation, and, if the case continues, jaundice appears, thus distinguishing this from mercurial or arsenical poisoning."

Treatment: "Encourage vomiting with copious draughts of warm water, or wash out stomach with solution of potassium ferrocyanide. Give albumin (eggs), milk, diluent drinks, calcined magnesia, or other alkalies, or soap. It is not best to give oils."—(Riley's *Toxicology.*)

3, 4, and 5. TARTAR EMETIC. *Symptoms:* "These are seldom delayed more than half an hour. Nausea, violent and continual vomiting, burning pain in stomach and bowels, with an acrid, burning sensation in the throat, are usually the first symptoms. Then purging, intense thirst, feeble, rapid pulse, cramps in legs, and general lowering of the temperature, with great prostration, follow. The coldness extends even to the internal organs. The bowels become tympanitic. The spinal centers are greatly depressed. The urine is generally increased, but sometimes diminished or suppressed, and may be bloody and passed with difficulty and pain. Delirium and convulsions may precede death, or the patient may sink into coma, or die from exhaustion. The progress of the case often resembles arsenical poisoning so closely that it is difficult to decide which it is without chemical analysis. Generally, however, the persistent nausea and vomiting will distinguish between them. Sometimes neither vomiting nor purging is seen. In such cases the patient is apt to collapse, with cold sweat, feeble respiration, cyanosis, delirium, irregular pulse, and lapse into unconsciousness and die in convulsions."

Treatment: "Wash out the stomach or assist vomiting by abundant warm demulcent drinks. Then give tannin in some form. As the poison is quite rapidly absorbed, promptness is important. It is well in washing out the stomach to use some form of tannin solution, as tea, infusion of oak bark, etc., if available. Borax in milk (5 per cent. solution) has been used with much apparent success. Then sustain the heart with strychnine hypodermically, digitalis or strophanthus. If nausea is persistent opiates may be necessary."

Post Mortem Appearances.—"The mucous membranes of the throat, stomach and bowels are usually red, softened, and show general signs of severe irritation or even inflammation. They (especially those of the stomach), are apt to be covered with small extravasations of blood and occasionally pustular eruptions. The mucous membrane of the bowels is frequently covered with a dark yellowish, viscid secretion. The brain and lungs are generally congested. In chronic cases the large intestine is also inflamed and the liver enlarged and softened."—(Riley's *Toxicology.*)

6, 7 and 8. AQUA FORTIS. *Symptoms:* Sudden and acute burning pain in epigastrium and extending from mouth to stomach; violent and distressing vomiting of acid and dark material. Eschars where the acid has come in contact with skin, lips or tongue; these are first white, then yellow or brown.

Treatment: Magnesia suspended in water, or a strong solution of soap. Do *not* use the stomach tube.

Post mortem appearances: "The mucous membrane of the mouth and throat is yellow. The stomach is distended with gas, if not perforated, and patches of yellow, brown or green are seen on its internal surface. Perforation is not common. The mucous membrane of the intestines is frequently grayish white or bluish. The kidneys are inflamed and swollen and the liver degenerated in protracted cases. Evidences of inflammation of the lungs are frequently found."—(Riley.)

9 and 10. "*The symptoms of poisoning by aconite* usually manifest themselves within a few minutes; sometimes are delayed for an hour. There is numbness and tingling, first of the mouth and fauces, later becoming general. There is a sense of dryness and of constriction in the throat.

Persistent vomiting usually occurs, but is absent in some cases. There is diminished sensibility, with numbness, great muscular feebleness, giddiness, loss of speech, irregularity and failure of the heart's action. Death may result from shock if a large dose of the alkaloid be taken, but more usually it is by syncope.

"The *treatment* should be directed to the removal of the unabsorbed poison by the stomach tube, and washing out of the stomach with infusion of tea holding powdered charcoal in suspension. Stimulants should be freely administered." (Witthaus' *Essentials of Chemistry.*)

PATHOLOGY.

1. A *tumor* is a pathological new growth which tends to persist independently of the structures in which it lies, and which performs no physiological function.

Tumors are classified as follows:

I. Those derived from mesoblast:
   (*a*) *Benign:* Lipoma, fibroma, chondroma, osteoma, myxoma, myoma, neuroma, glioma, angioma, lymphangioma.
   (*b*) *Malignant:* Sarcoma.
II. Those derived from epiblast or hypoblast:
   (*a*) *Benign.* Adenoma, papilloma.
   (*b*) *Malignant:* Carcinoma.
III. Cystic tumors.
IV. Teratomata.

2. See Rose and Carless' "Surgery" (1911), page 160; or Da Costa's "Surgery" (1911), page 337; or French's "Practice of Medicine" (1910), page 428; or Osler's "Practice of Medicine" (1909), pages 269, 273, and 274.

3. The *Spirochæta pallida* is a slender spirillum, with regular turns, the curves varying in number from three or four to twelve or even twenty; it is about 4 to 20 mikrons long, actively motile, with a fine flagellum at each pole; it is flexible, hard to stain, and has not been cultivated on artificial media. How it divides is not known. It stains best with Giemsa's eosin solution and azur. It is the microorganism found in syphilis.

	ACUTE NEPHRITIS.	CHRONIC NEPHRITIS.		
		Chronic parenchymatous nephritis; large white kidney.	Secondary contracted kidney; small white kidney.	Chronic interstitial nephritis; primary contracted or small red kidney; cirrhotic or granular kidney.
URINE. *Quantity.*	Scanty.	Rather less than normal...	Not less than normal; usually increased.	Very abundant.
Color.	Turbid, pale red or smoky to deep red.	Turbid, resembling meat infusion.	Fairly clear.....	*Clear*, pale.
Specific Gravity.	High....	Somewhat raised, may be normal.	A little below normal.....	Low.
Blood.	Abundant.....	Commonly present.....	In small quantity.....	Usually *absent.*
Albumin.	Abundant.....	Abundant	In moderate quantity.....	In very small quantity; may be absent for some time.
Sediment.	Abundant. White and red corpuscles; blood casts, epithelial and granular casts; urates.	Abundant. White and red corpuscles; numerous casts, especially *fatty*. .	In moderate quantity. Casts fairly numerous, granular and hyaline chiefly.	Very scanty. Casts few, chiefly hyaline.
Salts and Urea.	Marked diminution of urea, chlorides, and phosphates.	Diminution of urea, etc.....	Marked diminution of urea, etc.	Marked diminution of urea, etc.

(From Hughes' *Practice of Medicine.*)

4. See Rose and Carless' "Surgery" (1911), page 140; or Da Costa's "Surgery" (1911), page 1356.

5. See Rose and Carless' "Surgery" (1911), page 69; or Da Costa's "Surgery" (1911), page 652.

6. See French's "Practice of Medicine" (1910), page 621; or Osler's "Practice of Medicine" (1909), page 823.

7. The *smegma bacillus* is decolorized by a dilute mineral acid, also by heat and alcohol; the *tubercle bacillus* is not decolorized by either of these.

8. "When a nerve is divided the first result is a loss of its function. Inasmuch as each nerve-fiber develops from a cell which later nourishes it, if the connection between the two is severed the nerve-fiber undergoes Wallerian degeneration, and in the case of a nerve which is made up of nerve-fibers the whole nerve undergoes this change. This degeneration consists, in the case of medullated nerves, in the death of the axis-cylinder, the breaking up of the medullary sheath into drops of myelin, which are later absorbed, and the multiplication of the nuclei of the primitive sheath. In non-medullated nerves the only result is the death of the axis-cylinder. Degeneration begins very soon after the section—within a day or two—and throughout the entire severed portion of the nerve at the same time. Thus the course of a nerve, or a collection of nerves, may be traced throughout its entire extent. These changes are believed to be due to the severance of the nerve from its trophic center. If an anterior root of a spinal nerve is divided, the distal end, being separated from the gray matter of the cord which is its center of nutrition, undergoes degeneration, while the end which remains connected with the cord retains its integrity. If a posterior root is divided between the cord and the ganglion, the degeneration takes place between the cord and the ganglion; while if divided below the ganglion, the degeneration takes place in that portion separated from the ganglion, showing that the ganglion is the nutritive center for the posterior root." (Raymond's *Physiology.*)

9. See Rose and Carless' "Surgery" (1911), page 568; or Da Costa's "Surgery" (1911), page 510.

10. See Rose and Carless' "Surgery" (1911), page 699; or Da Costa's "Surgery" (1911), page 954; or French's "Practice of Medicine" (1910), page 702; or Osler's "Practice of Medicine" (1909), page 470.

SYMPTOMATOLOGY.

1. See French's "Practice of Medicine" (1910), page 158; or Osler's "Practice of Medicine" (1909), page 175.

2. See French's "Practice of Medicine" (1910), page 689; or Osler's "Practice of Medicine" (1909), page 625.

3. See French's "Practice of Medicine" (1910), page 670; or Osler's "Practice of Medicine" (1909), page 414.

4. See French's "Practice of Medicine" (1910), page 963; or Osler's "Practice of Medicine" (1909), page 428.

5. See French's "Practice of Medicine" (1910), page 800; or Osler's "Practice of Medicine" (1909), page 514.

6. See French's "Practice of Medicine" (1910), page 570; or Osler's "Practice of Medicine" (1909), pages 777, 779, and 783.

7. See French's "Practice of Medicine" (1910), page 642; or Osler's "Practice of Medicine" (1909), page 851.

8. See French's "Practice of Medicine" (1910), page 519; or Osler's "Practice of Medicine" (1909), page 727.

9. See French's "Practice of Medicine" (1910), page 534; or Osler's "Practice of Medicine" (1909), page 740.

10.

OBSTETRICS.

1. See Jellett's "Midwifery" (1910), pages 1031, etc.; or Hirst's "Obstetrics" (1909), pages 809, etc.

2. The hemorrhages that may affect a parturient woman are those caused by: (1) Placenta prævia; (2) premature separation of a normally situated placenta; (3) relaxation of the uterus; (4) laceration of the cervix; (5) rupture or inversion of the uterus; (5) retained secundines; (6) displaced uterus; (7) displaced thrombi; (8) fibroid tumors; (9) hypertrophied decidua; (10) carcinoma.

And see Jellett's "Midwifery" (1910), pages 702 and 884, etc.; or Hirst's "Obstetrics" (1909), pages 572, 585, and 649, etc.

3. See Jellett's "Midwifery" (1910), pages 307, 369, 393, 409, and 434; or Hirst's "Obstetrics" (1909), page 389.

4. See Jellett's "Midwifery" (1910), pages 711 and 716; or Hirst's "Obstetrics" (1909), pages 572 and 577.

5. See Jellett's "Midwifery" (1910), page 11; or Hirst's "Obstetrics" (1909), page 22.

6. See Jellett's "Midwifery" (1910), page 291; or Hirst's "Obstetrics" (1909), page 317.

7. See Jellett's "Midwifery" (1910), page 30; or Hirst's "Obstetrics" (1909), page 43.

8. See Jellett's "Midwifery" (1910), page 554; or Hirst's "Obstetrics" (1909), page 50.

9 and 10. See Jellett's "Midwifery" (1910), pages 97 and 60; or Hirst's "Obstetrics" (1909), pages 62 and 64.

SURGERY.

1. *Fat embolism:* "After various injuries and operations, but especially such as implicate the marrow of long bones—for example, comminuted fractures, osteotomies, resections of joints, or the forcible correction of deformities—fluid fat may enter the circulation in variable quantity. In the vast majority of cases no ill effects follow, but when the quantity is large or when the absorption is long continued certain symptoms ensue, either immediately, or more frequently not for two or three days. These are mostly referable to the lungs and brain.

"In the lung the fat collects in the minute blood-vessels and produces venous congestion and edema, and sometimes pneumonia. Dyspnea, with cyanosis, a persistent cough and frothy or blood-stained sputum, a feeble pulse and low temperature, are the chief symptoms.

"When the fat lodges in the capillaries of the brain, the pulse becomes small, rapid, and irregular, delirium followed by coma ensues, and the condition is usually rapidly fatal.

"Fat is usually to be detected in the urine, even in mild cases." (Thomson and Miles' *Surgery.*)

And see Da Costa's "Surgery" (1911), page 205.

2. See Rose and Carless' "Surgery" (1911), pages 1248 and 1251; or Da Costa's "Surgery" (1911), page 1374.

3. *Pus in the urine.* "The presence of pus in the urine is termed *pyuria* and usually indicates suppuration along the genitourinary tract. Its source may be detected to a great extent by the time of its appearance (as with blood) in the urine. When present in the early part of micturition the urethra is usually diseased, if at the end and in alkaline urine the trouble is in the bladder, but if it is freely admixed with an acid or neutral urine, the probabilities are that the kidneys are at fault. The addition of an equal quantity of a solution of potassium hydroxid to urine containing pus gives rise to the formation of a viscid gelatinous mass. The microscope may also be employed to detect pus."

(Hughes' *Practice of Medicine.*)

4. See Rose and Carless' "Surgery" (1911), page 1353; or Da Costa's "Surgery" (1911), page 1187.

5. *The complications that may follow fractured ribs* are: "Additional injury, making the fracture externally or internally compound; laceration of the pleura, pericardium, heart, lung, diaphragm, liver, spleen, or colon; rupture of an intercostal artery; hemothorax; cellular emphysema; pulmonary emphysema; pneumothorax; pyothorax; traumatic pleurisy; pneumonia; bronchitis; congestion or edema of the lungs." (Da Costa's *Surgery.*)

6. See Rose and Carless' "Surgery" (1911), pages 276, etc.; or Da Costa's "Surgery" (1911), pages 434, etc.

7. See Rose and Carless's "Surgery" (1911), page 103; or Da Costa's "Surgery" (1911), page 179.

8. See Rose and Carless' "Surgery" (1911), page 556; or Da Costa's "Surgery" (1911), page 620.

9. See Rose and Carless's "Surgery" (1911), page 988; or Da Costa's "Surgery" (1911), page 1009.

10. See Rose and Carless's "Surgery" (1911), page 679; or Da Costa's "Surgery" (1911), page 633.

The Pathogenesis of Icterus.—E. Leuret and H. Gauvenet believe that the true question with regard to this subject is whether there are two different kinds of jaundice, one due to resorption into the blood of hepatic pigments and the other due to retention of pigments in the blood elaborated elsewhere than in the liver. The authors have devised a method for the study of icterus for which they claim some originality. They have compared with the aid of a color scale the blood serum, urine, and feces of icteric patients with reference to this pigmentary content. They conclude that all icterus by hemolysis is acholuric and all acholuric icterus is the result of hemolysis. Reciprocally choluric icterus is not hemolytic and is caused by a retention of pigments elaborated by the liver. The authors note the importance of the elimination of bile by the intestine. They have shown that there is a variety of icterus resulting from the formation by hemolysis of pigments which differ from bilirubin elaborated by the liver cells. This icterus is acholuric on account of the quality of the pigments, which are not eliminated by the urine. Other types of icterus arise from the retention of bile derived from the liver cells.—*Gazette Hebdomadaire des Sciences Médicales.*

Medical Items.

The Suprarenal Capsules in Erysipelas.—Lesne, Gérard, and Françon cite the histories of seven cases of erysipelas to show that suprarenal insufficiency is present with fatal results in some cases. A résumé of these cases shows that this condition of insufficiency is present after convalescence has been established. The general condition becomes worse, with manifest asthenia and lowered arterial tension, and death rapidly ensues. The cardiac dullness is found to be increased; the liver is increased in volume; there may be vomiting or diarrhea, and pronounced dyspnea. The condition is analgous to what occurs in severe cases of diphtheria. The hypotension is due to suprarenal insufficiency, the tone of the blood-vessels being no longer maintained. The end occurs with cardiac collapse. At autopsy the following changes are found in the suprarenal capsules: these are infiltration with uninuclear leucocytes; microscopic hemorrhages in the reticulum of the gland, with a dissociation of the cellular masses; there is an almost complete destruction of the medullary layer with cellular pycnosis.—*La Presse Medicale.*

Intratracheal Insufflation After Meltzer.—R. Falcone has employed a modification of Meltzer's method of intratracheal insufflation of oxygen and other gases. This apparatus is designed to produce artificially the natural rhythm of respiration. Introducing a tube through a tracheotomy wound down to the bifurcation of the trachea, and pumping in air at a certain rapidity and pressure, there is caused an interchange of gases in the pulmonary blood stream with the effect of artificial respiration without movements of the chest. This method may be utilized in cases of accident during narcosis, in cases of sudden death from asphyxia, and in the administration of anesthetics. It is a valuable resource in rapid operations on the thorax, but should be reserved for urgent cases.—*La Riforma Medica.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 15, 1912:

Places	Date	Cases	Deaths
CHOLERA			
India: Bassein	Jan 14–20	8	6
Madras	Jan 29–Feb. 5	19	18
Negapatam	Jan. 14–20		23
Indo-China Saigon	Jan. 16–29	291	196
Turkey in Asia and Europe			
Provinces	Jan. 6–21	53	50
Aleppo	Feb 4–10	10	7
YELLOW FEVER			
Brazil Ceará	Jan. 1–31.		1
Manaos	Feb 4–10	5	
Mexico. Kambul, hacienda	Feb. 21–27		7
Merida	Feb. 21–27.	3	
PLAGUE			
Brazil Para	Feb. 11–17		2
Egypt: Provinces	Jan. 20–Feb 15		
Assouan	Jan. 29–Feb. 15	13	7
Garbieh	Feb. 9–12	3	
Kena	Feb. 15	3	1
India. Bombay	Jan. 29–Feb 3.	16	11
Karachi	Jan 29–Feb 3	15	15
Indo-China Saigon	Jan 16–22	2	2
Java Pasoeroean Residency	Jan. 21–27	5	4
Mauritius	Dec. 15–21	5	3
Peru Trujillo	Feb. 21	34	
In the lazaretto.			
SMALLPOX			
Canada Fernie	Feb. 26–Mar 2	2	
Montreal	Feb. 26–Mar 2	1	
Ottawa	Feb. 26–Mar 2	9	
Quebec	Feb. 26–Mar 2	7	1
China Chienghai	Jan. 29–Feb 3		
Present			
Hankow	Jan. 21–27	1	
Hongkong	Jan. 21–27	40	28
Kityang	Jan. 21–27		
Present			
Shanghai	Jan. 31–Feb 4	1	2
Deaths among natives			
France Paris	Feb 4–10.	5	
Great Britain West Hartlepool	Feb. 18–24	1	
Hungary: Budapest	Feb. 4–10	25	
India: Bombay	Jan. 29–Feb. 3.	11	6
Italy: Leghorn	Feb. 18–24.	1	
Naples	Feb. 11–17.	6	
Palermo	Feb. 11–17.	97	31
Turin	Feb. 12–18	2	
Japan. Kobe	Jan. 22–28	1	
From S S. *Shingo Maru.*			
Java: Batavia	Jan. 21–27	3	1
Mexico Juarez	Feb. 18–24	3	1
Magdalena	Feb. 11–24	94	2
Mazatlan	Feb 21–27		1
Mexico	Jan. 14–20	15	8
Salina Cruz	Feb. 11–17.	2	1
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THE GENERAL PRACTITIONER IN THE DEVELOPMENT OF APPENDICITIS MANAGEMENT.*

By SIMON BARUCH, M.D.,

NEW YORK.

"IT were bringing owls to Athens" to say aught about appendicitis before a Brooklyn audience, for right here has been done yeoman work in appendix surgery. Your invitation to discuss this subject is accepted because in the glamour of surgical achievement the humble but not less important share of the general practitioner has been lost sight of. Inasmuch as the family physician, a class to which I formerly belonged, is now relegated to the position of distributing agent, you may not regard me as wanting in modesty when I raise a feeble voice in advocacy of our kind. Only those who were in active practice during the seventies of the last century are in a position to appreciate the enormous gain which the evolution from the medical to the surgical view of appendicitis has bestowed upon suffering humanity. Many cases of "idiopathic peritonitis" were encountered and treated with poultices, leeching blisters, morphine, etc. The patients frequently succumbed as is shown in the following outline histories. During the early eighties of the last century I find recorded in my note book seven severe cases of perityphlitis, a disease which had but recently been recognized as a pathological entity. Four of these patients recovered and three died. The first fatal case was in a young man seventeen years old who limped into my office because of pain in the hip. His temperature was 102° F. I ordered him to bed and after a careful examination the diagnosis of acute perityphlitis was made. Dr. Francis Delafield saw him in consultation; he succumbed on the following day with all those manifestations which are now known as the result of perforation.

The second case occurred on June 7, 1883. G., a fine boy of eleven, complained of pain over the anterior spinous process on the right side; temperature 101°, pulse 120; taken sick on previous day, no tenderness in right iliac region until following day. Dr. Alfred Loomis was called in. Diagnosis: Perforating typhlitis; operation proposed by Dr. Leonard Weber five hours before death was not accepted by Dr. Loomis and myself. Patient died in forty-eight hours.

The third fatal case was in S. W., a boy of ten. He had vomited at stool on the previous night. Pulse 130, temperature 101.5°; intense pain on pressure over right iliac region, knees elevated for relief; turpentine enema and morphine made him comfortable. On following morning there was general peritonitis; temperature 102°, pulse 135. I urged immediate consultation which was delayed on account of inconvenience to the family until 8 P.M. Patient was comfortable and asked for food an hour before consultation with Dr. A. Jacobi. When we entered the sick room the patient was in collapse; he died three hours later with vomiting and great abdominal distention. I was so shocked by this sad case that I reviewed all the recent cases, entered them in my note book, and wrote the following:

"March 30, 1884. Conclusions from these cases are as follows: Diagnosis should be established with sufficient positiveness that perforation is threatening, laparatomy would be indicated because such cases are invariably fatal in my experience. But here is the difficulty. Is it advisable to open the peritoneum when local or perhaps diffuse peritonitis is evident? My three fatal cases would indicate an affirmative answer. The disease goes rapidly to a fatal issue; the usual treatment is unavailing. Another point presenting itself is the utter inutility of feeding the patient. Here we have a traumatic inflammation whose course is brief and which does not kill by asthenia. If vomiting threatens food should be withheld entirely and drink given in very small quantities. *The case should be treated as an ovariotomist treats his cases.* Dr. Jacobi makes a distinction between perityphlitis and paratyphlitis which has certain advantages, the latter being curable even if it forms an abscess, the former being mostly fatal." This is an abbreviated copy from my notebook.

Just at this point may be mentioned the remarkable fact referred to in Dr. Kelly's great work that "Dr. Samuel Fenwick, physician to the London Hospital, wrote in 1884 (Lecture, *London Lancet*, page 988): 'It seems to me it would be much better if one could cut down directly upon the appendix as soon as the diagnosis was tolerably certain, tie it above the seat of perforation, and remove any material that might be the cause of irritation.' Thus another general practitioner reached a similar conclusion to mine."

Kelly says on page 39, "I have emphasized the words of Dr. Fenwick because they represent the conclusion of the preceliotomy period in the history of the appendix when small incisions for the evacuation of pus were recognized as the proper surgical treatment."

While Dr. Fenwick's words conclude the "preceliotomy period" my notes, which you may see in the original, may claim to open "the surgical period," for *I acted* upon the conclusion recorded on March 30, 1884, on the first opportunity,* as follows:

*Discussion, by invitation, of a paper by Dr. Cruikshank, read at a meeting of the Medical Society of the County of Kings.

*See Wyeth Transact., N. Y. Acad. Med., 1884, and *Journal of American Medical Association*, June 13, 1907, p. 121.

On December 29, 1887, I was called to a boy of eight living in a fashionable boarding house on East Forty-second street. G. W. presented pain in the right iliac region, exquisite tenderness distinctly localized at the point now known as McBurney's; he lay with his legs elevated to relieve pain. Pulse 120, temperature 102.4°, respiration 36. I gave an unfavorable prognosis and informed the mother that if no improvement occurred in twenty-four hours I should call a surgeon to operate. The mother did not share my alarm, since she had seen him in similar attacks of "stomachache." His condition did not materially change during the day. Quoting from the notes I gave to Dr. Sands on the following morning) "his pulse was 130 and respiration 36" (*New York Medical Journal*, February 25, 1888). Although there had been no pain, no vomiting, and the patient was decidedly more comfortable, the continuance of exquisite tenderness together with dullness over the right iliac region, and the example of three fatal cases induced me to believe that the time for action had arrived. I requested to have Dr. Sands in consultation, deeming an operation necessary. The doctor saw the patient at noon and gave a very unfavorable prognosis of septic peritonitis with "belly full of pus." Having my three fatal cases in mind I insisted on surgical interference, whereupon Dr. Sands said that the only procedure he could adopt was a long vertical incision for the purpose of cleansing the peritoneal cavity. I objected to so heroic a treatment because it seemed impossible for the boy to have his "belly full of pus" when he had been in perfect health thirty-six hours previously. With consent of Dr. Sands I went for Dr. W. T. Bull and brought him to the patient. Dr. Bull agreed with me as to the pus. After some discussion a compromise was reached. Only a small quantity of pus, about half an ounce, was found, also a small concretion in the abdominal cavity, another in the slit of a perforation, and another escaped from the appendix. Dr. Sands cleansed the parts thoroughly, pared the margins of the aperture with scissors, and brought them together with interrupted sutures. These facts are corroborated in a letter from the late Dr. William T. Bull which I have here. I also have a photograph of the cicatrix which you may examine. You note that in this case the appendix was not removed and that, therefore, the history given in Dr. Howard Kelly's monumental work is correct in that Dr. Morton's case was the first in which the appendix was successfully removed for perityphlitis.

In the history of the case as given by Dr. Woodbury in the transactions of the Philadelphia County Society for 1887, it is designated as "Specimens removed by laparotomy in a case of the perityphlitis abscess in which the tumor was decidedly large, of potato shape, and suggesting intussusception." And in the *Journal of the American Medical Association*, June 16, 1888, Dr. Morton mentions this case among others as "pericecal abscess." There *is no mention made in either of these histories that a diagnosis of "perforative appendicitis" was made before operation.* On the contrary the whole history of the case shows that Dr. Woodbury had adopted for three days the same practice I had followed in three fatal cases—leeches and morphine. Intussusception is the only "probable diagnosis" mentioned. When Dr. Morton saw the case "the patient appeared to be dying." There was no alternative but to cut down upon the tumors.

Contrasting this case with my own operated upon by Sands, as reported at that time, it is clear that *mine was the first case of perityphlitis in which the family physician called a surgeon for the purpose of operating despite the fact that there was no swelling or other surgical indication.* I declined the heroic procedure proposed and accentuated this view by calling another surgeon and insisting upon an operation at a point over the appendix. There was no general peritonitis, only an ounce of pus, no abscess cavity. In fact, "my conclusion in 1884 demanded that an operation must be done to prevent patients dying from perforation" or lingering until an abscess has been formed by efforts of nature, and *this was the consummation achieved in the case operated upon by Sands.* I am sure that when Dr. Kelly reviews the data here briefly furnished by following them up to their source he will do historic justice to both Dr. Sands and myself by stating that this was the first case successfully operated on before an abscess formed or fatal peritonitis ensued. That is the chief point at issue.

So firmly impressed did I become by the result of insistence on operative procedure in this case that I took occasion to promulgate the surgical view of every case of appendicitis in our societies. To-day this is an accepted view, but it was not so twenty-five years ago. Brief outlines of some cases in my private practice demonstrate this fact. I should not occupy your time to mention them did they not also illustrate the fact that insistence on the surgical aspect and necessity for operative procedure probably saved the lives of patients when eminent surgeons who had been called into consultation deemed operation premature or avoidable. The general practitioner bears the brunt of responsibility in these cases. It is he who must make the first diagnosis at a stage of the malady when diagnosis is difficult and when he would lay himself open to the charge of being an alarmist, which is regarded a crime by many families. Doubtless many of you have passed through experiences similar to those I shall relate. It would serve a useful purpose if you would relate them to-night as a lesson to the rising generation and as an encouragement to be cautious but bold who always give the benefit of the doubt to the surgical aspect of the case.

Case I.—Mr. D., a strong young man of thirty-five, presented positive evidence of appendicitis. I applied ice as an anesthetic. This has become my practice because thereby morphine is avoided, the effect of which handicaps the surgeon in his diagnosis when called in later. Dr. W. T. Bull was called in at my request. I favored an operation but he twitted me with a penchant for seeing appendices removed. Yielding to his advice the treatment was expectant and the patient recovered.

Case II.—R., a boy of thirteen, fat and unwieldy, was attacked by general abdominal pains, which could be, on careful test, traced to the left hypogastric region as a radiating center. His temperature was 101° F. He had vomited and bowels had not moved in thirty-six hours. The case presented the aspect of an intestinal obstruction. I ordered calomel, which failed to act, then called in the late Dr. W. T. Bull. In the meantime a large turpentine enema was administered. This had just operated when Dr. Bull arrived. I greeted him with the jest that the trouble was over but asked him to examine the patient. After going over the case with his customary care, he surprised me by the statement that we had a case of acute appen-

dicitis, with the tenderness unusually in the left side. I could not agree and said that if he was correct I would not let him leave the house without a promise to return at once prepared to operate. Dr. Bull said there was no hurry and that we might treat the case expectantly for several days; that he had no doubt I would agree to the diagnosis in the morning. On the next day I saw the patient early and found Dr. Bull's view justified. There was decided tenderness on pressure in the right iliac region but very little pain without pressure. Dr. Bull was called immediately and I urged an operation, to which he assented if the consent of the family could be obtained. I decided to withdraw from the case if the family objected. The case was stated to the guardian of the boy and we suggested that anyone she desired might be called. There was no doubt that our view would be sustained. In the meantime Dr. Bull promised to do the operation at 2 P. M. A large hall-room was cleaned and thoroughly prepared, and when I returned at 1 P.M. an eminent physician had been called and had opposed the operation, saying that he might be called over at 2 o'clock from the Presbyterian Hospital where he would be lecturing at that time. The decision now being left with the aunt of the boy she reluctantly consented by reason of "two to one." The patient was on the table when our colleague arrived. He gave as his reason for objecting to the operation the recent case of his sister who had presented a similar condition and in whose case he had persuaded the surgeons who had prepared for operation to desist with the result that she recovered. Convinced that operative procedure was imperative I suggested to Dr. Bull to begin, the patient being already anesthetized, and I invited the colleague to see the result, which he declined because of his lecture, though positive of the necessity of immediate operation. I had no suspicion of the condition of the appendix until it was reached; certainly Dr. Bull had no idea that the appendix would be found gangrenous, barely allowing a ligature at its infiltrated base. Patient made a good recovery. What would have been the result if even a single day had been wasted on expectant treatment is obvious. What is the lesson? Here were besides myself one of the most skillful surgeons and one of the best physicians entirely oblivious of the fact that the patient's life hung by a thread by reason of gangrene and that the delay would have caused his life.

Case III.—Mrs. D., about fifty years of age, was seen in a second attack, the first having occurred at Bay Shore four months previously. I called Dr. McBurney who declined to operate until after the acute attack had subsided. I agreed to wait if he would guarantee recovery from the present attack. Naturally declining this responsibility, he agreed to return after dinner prepared to operate if there were no change for the better. Insisting on the operation, in the evening the appendix was laid bare, and we were both surprised to find perforation imminent. The patient recovered.

Case IV.—Mrs. H., at the Juvenile Asylum, West 176th street, presented all symptoms of acute appendicitis. I telephoned Dr. Lucius Hotchkiss to come immediately prepared to operate. He replied that he could not do so, but when informed that the case was urgent he arrived two hours later. This was long before the day of subways. He proposed temporizing, but when I transferred the responsibility to him he operated and congratulated me and himself on just preventing a perforation. Recovered.

Case V.—Mr. L. was seen also by Dr. Hotchkiss, who proposed to await developments. Not being able to attend the second consultation I sent him a message to operate. He preferred waiting until morning, when he and I were astonished to find three large concretions which were covered by appendical tissue of extreme tenuity. Recovered.

Case VI.—Mrs. B., married, two children, was attacked during the night by violent pain in the right iliac region which did not yield to morphine and demanded chloroform for several hours. The severity of the pain and absence of tenderness caused me to examine *per vaginam* and a small fluctuating round mass was discovered. Her gynecologist called at my suggestion and pronounced the case appendicitis, stating that he did not feel the tumor. I then sent for Dr. McBurney who, depending on the history of the case, pain having ceased, advised waiting. Three months later, at Long Branch, N. J., I was again called during the night and found her with agonizing pains demanding chloroform. Having dismissed the suspicion of ovarian trouble by reason of its non-acceptance of two specialists, I telephoned for an eminent surgeon who brought his assistants out on a special train at 3 A.M. He made a diagnosis of appendicitis. While cutting cautiously towards the peritoneum a sudden gush of yellow limpid fluid caused him to utter an emphatic note of surprise. This flow issued from a cyst of the broad ligament; the appendix was elongated and slightly red at its tip; it was removed; the surgeon who left for Europe saw her only once more, as she recovered in ten days.

Case VII.—Mrs. R., married, the mother of two children, was attacked with severe pains in the right iliac region for which she was seen by an eminent New York physician who resided in Long Branch. The diagnosis he made was ovarian trouble supplementing it with the statement that such symptoms in a man might arouse suspicion of appendicitis. This physician being compelled to leave, the mother of the patient telephoned me the above facts, urging me to come down. A diagnosis of acute appendicitis, probably perforative, was clear and a surgeon was asked for. The trains having stopped for the night, Dr. John A. Wyeth came on a special. The patient having suffered greatly she was under mild chloroform anesthetic when Dr. Wyeth arrived. The doctor was willing to accept my diagnosis and the patient was placed on the table; a perforated appendix and localized peritonitis were found. The patient was not aware of having been operated on until she discovered the bandages after recovery from the anesthetic. She made a good recovery.

Case VIII.—A boy of seven was ill for three days at the Scarboro Hotel in Long Branch with "inflammation of the bowels." He suddenly grew worse while his physician was absent in the city. I was sent for but also was absent in the city. My son, Dr. H. B. Baruch, elicited from the intelligent aunt of the child a clear history of acute appendicitis and offered to telephone for me, knowing that I would at once bring a surgeon down. They preferred to wait. When I arrived the case was hopeless, the abdominal cavity filled with pus. Reports of a few operations in such cases having at that time been favorable, I suggested a surgeon. This was refused until the attending physician's arrival. On my urgent suggestion a surgeon

was engaged tentatively. When the young doctor met me he could not agree to my prognosis, but "in deference to my age and experience," as he expressed it, he consented to a surgical consultant. An eminent surgeon came down on a special engine; he thought that if he had such a case under observation in his hospital he would wait, because there was evidence of the formation of a limiting exudation. This latter having escaped my tactus eruditus, I put the responsibility of leaving the patient upon him. The little fellow was taken to the Long Branch Hospital, where Drs. Woolley and Slocum assisted. The abdomen was found filled with pus —patient was in collapse, and died in twenty hours. Fifteen hours had been lost in delaying operation. This is the only death I have to record from appendicitis since I adopted the plan of advising operation in most of my own acute cases.

These brief histories clearly demonstrate the difficulty if not the impossibility of forming an exact diagnosis of the condition of the appendix, for the most eminent men were deceived on this point. I am convinced that in only a few cases a normal appendix has ever been found. When there is distinct tenderness over the region of the appendix, similar tenderness not being complained of when the skin in the region is gently pinched, the patient not having taken morphine, and there is ever so small a rise of temperature in the rectum, the case does not brook delay.

My fellow general practitioners present here tonight may sympathize with the gratification I felt in getting even with the surgeons by being called as a medical consultant in the following cases:

Dr. Dawbarn had a case of acute appendicitis suddenly arising in which he urged immediate operation; the family wanted a medical consultant. When I saw the case an immediate operation was advised. I was present and astonished to find in this very recent case complete gangrene of the appendix so that Dr. Dawbarn had difficulty in applying the purse-string suture ligature which he has contributed to the technique of appendicitis.

In another case that came from Texas to Dr. Wyeth, the latter called Dr. Janeway and myself to assist in the obscure diagnosis. His judgment that surgical procedure was not necessary was verified by our examination. Several years later this gentleman was introduced to me in Houston, Texas, as the man "I had helped to save from being butchered by the surgeons."

In conclusion I would express the result of my observation to be that the number of cases that have been sacrificed by timid procrastination outweigh far the cases in which a fatal issue may result from premature or unnecessary operation. Personal knowledge I have of only one operation in which the appendix was found normal and from which the patient recovered without difficulty. When in doubt, "operate" is a safe decision in acute appendicitis.

51 West Seventieth Street.

Neurotomy for Obliterating Endarteritis.—Marquis describes the operation done in a case of obliterating endarteritis of the hand to relieve the intense pain of the gangrene. The resections necessary for the hand are of the cubital and median nerves in the upper third of the forearm; of the radial before it gives off the external cutaneous; of the musculospiral before it traverses the superficial aponeurosis; and of the cutaneous internal brachial before its bifurcation.—*Archives Générales de Chirurgie.*

NOTES UPON A SO-CALLED PARASITE OF YELLOW FEVER (SEIDELIN).

By ARISTIDES AGRAMONTE, A.B., M.D.,

HAVANA, CUBA.

PROFESSOR OF BACTERIOLOGY AND EXPERIMENTAL PATHOLOGY, UNIVERSITY OF HAVANA; PRESIDENT, BOARD OF INFECTIOUS DISEASES, SANITARY DEPARTMENT, CUBA, ETC.

My absence in Europe until a very recent date kept me from coming across an article published by Dr. Harald Seidelin in the Bulletin of the Yellow Fever Bureau, Liverpool School of Tropical Medicine, Vol. 1, No. 7, November, 1911, pp. 229-258. It becomes my duty to take exception to several statements made by Dr. Seidelin in this paper, entitled "The Etiology of Yellow Fever," since the notoriety which its writer has recently acquired through his claim of having discovered the causative agent of the disease may to a certain extent incline other investigators in this field to accord more credit than is actually due to his opinion.

In order to bring more clearly before the reader the salient defects of the structure built by Dr. Seidelin for the purpose of pushing his claims, it may be allowed me to refer to them seriatim, as they appear in the above mentioned paper. In attempting to trace for us the "lines upon which further researches ought to proceed," Dr. Seidelin launches himself upon a most surprising and unjustifiable criticism of the experiments as performed by the U. S. Army Board (1900-01), of which I had the honor to be a member and am to-day the sole survivor:[1] experiments regarding which Professor Welch has said that they will always remain as models in the annals of scientific research. This attitude on the part of Dr. Seidelin is most remarkable when the consensus of opinion, both at home and abroad, is unanimous in that the demonstration of Finlay's theory by the U. S. Army Board, by the manner of its accomplishment and the results of its application, has been the greatest medical achievement of the Twentieth Century, of the greatest importance to the countries interested, from a financial and political standpoint, and conducive to the greatest saving of human life since the introduction of anti-diphtheritic serum.

Dr. Seidelin goes to the extent of misquoting several authors; for instance, when he states, referring to a paper by my co-worker, Carroll, that "fourteen results were obtained out of a total of twenty-three inoculations which were believed to fulfill the conditions necessary for successful experiments." The fact is that Dr. Carroll, to make matters clear, in the article referred to,[2] introduces two tables, one in which twenty-two negative inoculations are shown, under conditions plainly adverse to infection, and another in which fourteen positive results are recorded, where conditions of mosquito maturity and personal receptivity on the part of the subjects were favorable.

In appearing to defend us from the objections which he claims have been made to our experiments in that, as he says, "symptoms produced in the individuals submitted to inoculation were not characteristic of yellow fever," he makes the remark that "at least some of the cases presented evidently quite typical symptoms." As we reported at that time, all the experiments were submitted for diagnosis to a board of experts (Drs. Finlay, Guiteras, Gorgas, Albertini) and not one of them caused the least discussion.

We had eight severe and moderate cases, with black vomit, icterus, albuminuria, etc., out of fourteen, and Guiteras had three *fatal* cases and three severe ones out of eight positive inoculations. This hardly supports Seidelin's statement that "all the cases were remarkably light."

But his simulated defence of the Army Board is most effective when he writes "Now, taking for granted that the ailment produced was really yellow fever, the whole value of the experiment depends on the question whether it can safely be asserted that the infection could have been contracted in no other way than through the experimental inoculations." . . . "Nor is the importance very great of the negative experiments made with fomites, bed clothes, etc., used by yellow fever patients and soiled with their blood and discharges. The real point at issue is whether there existed any possibility of infection through water or air, the two media which were at that particular time considered most likely to convey infection." A very cursory reading of our original papers, in which the experiments are carefully detailed, will reveal to the least fair minded the fallacy of these suppositions, the absolute lack of reason for such doubts. In the first place, the infection could have been contracted in no other way, as the men lived, ate, and slept in the company of other equally non-immunes for a period, in no case less than nine days before being experimented upon, their attack promptly following their inoculation.

The value of the negative experiments with fomites, on the other hand, is certainly enhanced when we consider that an average period of twenty-four days under such circumstances failed to infect men who were afterwards experimentally infected thus proving their evident susceptibility to the disease.

As to the possibility of air or water infection in yellow fever, I think everyone will agree with me that it is, too late now, after the prophylactic results which stare the least observing in the face, to go back half a century and begin the discussion of what we know to-day are perfect absurdities. More than fourteen hundred non-immune men drank the same water and breathed the same air as our experimental cases of yellow fever at Camps Lazear and Columbia, and no other but our own occurred in the vicinity.

Dr. Seidelin stands alone, so far as I know, in believing that our experiments "can never be considered absolutely conclusive" because they have not been repeated in a country free from yellow fever, as has been done with malaria and papataci fever, and because the development of the parasite during its life in mosquitos has not been followed. Here I would like to say that, as far as yellow fever is concerned, the difficulty of transporting infected mosquitos, but above all the evident danger to life which the infection carries, should be to a right-minded man reasons sufficient to restrain the experimentation within certain limits and never beyond the sphere of its real usefulness, and this has fortunately been obtained. As regards the parasite itself, not only with reference to the mosquito is it impossible to discuss it in yellow fever, but even in man, in spite of Dr. Seidelin's contention, the organism is as yet an unknown entity and as far as ever beyond the reach of man.

Although allowing that "the evidence brought forward is very strong," Seidelin further says that "no absolute proof exists of the mosquito transmission of yellow fever," and after acknowledging the undisputed evidence of the various campaigns against yellow fever, he repeats "we are compelled to conclude that the transmission of yellow fever by means of mosquitos has never been proved beyond discussion, but that there are exceedingly strong arguments in favor of the theory." Coming at a time when the recent International Sanitary Conference (November, 1911) at Paris has passed a resolution that yellow fever can be transmitted only by means of the *Stegomyia calopus*, Seidelin's remarks sound empty of sense and devoid of reason. In his apparent desire to stimulate research he goes so far as to cast serious doubts upon the exclusiveness of the species stegomyia as the yellow fever transmitter, and also upon what we might call the antevenomous period of the infected mosquito.

Of course, further investigation in these lines can be of comparative advantage only, since the fundamental facts have already been laid down in such a decided and clear manner, but it may be well to consider whether the results to be derived from such research would warrant the exposure of individuals to this end.

The next point in Seidelin's brief summary is one which deals so intimately with the subject nearest his heart that we are tempted almost to forgive him for the subtle and careful manner in which he pretends to overthrow the hypothesis that the yellow fever parasite does not exist in the blood after the third day of the disease, a hypothesis which rests principally upon the experimental fact that said blood is not infective either to the mosquito or when inoculated directly in man. The very necessity for the elimination of this proven fact lies in that the bodies which Dr. Seidelin claims are the parasites of yellow fever, have so far been found in peripheral blood when taken from the fourth to the eighth day of the disease.

The sources of error which he suggests as capable of having misled the various investigators are, as may be seen, essentially imaginary: First, he supposes that the parasite may have two stages, one in which it can pass through a porcelain filter and another in which this is not possible; second, that the amount of 0.5 c.c. was too small in the undiluted blood experiments; but this is not the case, inasmuch as we caused a severe case of yellow fever with this amount, taken before the third day; third, that injection of blood, instead of serum, was not made; this is true regarding the work of Marchoux and Salimbeni, but in our writings we have carefully detailed results of injection of blood, serum and filtered serum;[3] fourth, Seidelin discusses the question of antibodies brought forth by Marchoux; fifth, he objects to the fact that all the negative cases were not subjected to inoculation in order to test their immunity, as though one test were not sufficient for such dangerous a demonstration; sixth, he attributes little value to the direct blood inoculation experiments made by the French investigators as in his opinion "they prove nothing with regard to mosquito transmission," after the third day. Dr. Seidelin here forgets that we had previously demonstrated the same fact in so far as when mosquitos were applied to yellow fever cases, after the fourth day they did not become infected, and only one of the several treated failed to do so when allowed to take blood before that period.[4]

Hereditary transmission of the infection from the mosquito to its offspring Dr. Seidelin is ready

to accept, forgetting to mention the negative experiments of the Marine Hospital Service Working Party (1904), in which more than ten attempts were fruitless. He further doubts of the care with which Marchoux made his experiments with the triturated bodies of stegomyias, very unfairly suggesting the possibility that the result obtained was caused by a mosquito infected by heredity.

Dr. Seidelin summarises the discussion as follows: "The transmission of yellow fever by means of the *Stegomyia fasciata* has not been proved according to scientific principles, but has been made probable to such a degree that it can be taken for granted for all practical purposes." Once having in his own mind sufficiently demolished the experimental work which has made the transmission of yellow fever by means of *Stegomyia fasciata* so probable, Dr. Seidelin in the second part of his paper endeavors to clear the field for the presentation of his own parasite—I mean the one he claims as the real and only parasite of yellow fever. He follows the same methods of discrediting the work of his predecessors, from Sanarelli through Thayer, Stimson, Beyer, Pothier, *et al.*, and then starts upon the narration of his own story.

He says, "already, in the first few cases which I examined I had the good fortune to find a few elements which appeared to be of a protozoal nature, and which belonged, as it resulted afterwards, to the largest forms observed." It is remarkable, to say the least, that from the first few cases which he examined Seidelin could already find bodies which attracted his attention, but certainly unbelievable that they presented such characteristics as to lead him to think they were of a protozoal nature. His good fortune will be fully appreciated by those who after hours of tireless observation, through the best microscopes, of hundreds of specimens of blood, from hundreds of cases, at a time when the parasite was known to be in the blood, have failed to see any of the wonderful bodies which Seidelin so easily and so readily found and so willingly accused of being responsible for the infection.

In most cases in which he claims to have missed the parasite, six cases, he blames it to a defective technique. His statistics are very interesting, but beyond belief to any one conversant with laboratory methods and results. If his claims were true it would be easier to diagnose yellow fever from the blood examination than diphtheria from cultures made of the exudates in the throat. The author himself is struck by the results which he gives as facts. He reports as follows: Positive cases, "about" 50; later, 25 positive and 2 negative; 6 negative cases due to defective technique; then 12 positive results and one negative, which add 07 positive and 9 negative. Seidelin states, "We have about ninety cases with positive findings out of a total slightly above one hundred."

After presenting us with this astounding resumé of his "findings" he says, "The essential question is whether sufficient evidence exists to prove the parasitic nature of the bodies described," and again I must differ with Seidelin very materially, for I believe that the essential question is whether all the bodies which he claims to have seen were really there in as great a number of cases as he claims. For if they were and as he says he believes, they constitute the causative agent of yellow fever, how to explain that so many investigators failed to see them? The fact is that Seidelin has been in Havana; he has tried to show us the parasite of yellow fever without success, and hence this paper prepared in a spirit of honest criticism, first, of his unjustified onslaught upon the work that has been accomplished, and secondly, of his unsupported claims to having discovered an organism which is not beyond the speculative stage even in his own mind.

I do not care to go minutely into an analysis of Dr. Seidelin's article, as this would require the repeated quoting of paragraphs which would make this paper unnecessarily extensive, but will only refer to a few points which clearly indicate the weakness of his stand, and shall briefly describe the stained blood smears which he was good enough to show me.

In the endeavor to establish specificity for the bodies found in his stained preparations Dr. Seidelin has to attribute biological characters to his parasite different from those of all known protozoa. A very curious fact is that there are no two "parasites" alike in the same slide. These strange bodies (which may well be foreign bodies in the strictest sense) seem therefore to be in all stages of their evolution, if they are animal parasites, and in the same blood drop one may see a body about three microns in diameter with another which is like a small pin point of chromatin (?) on top of a red cell.

It is interesting to note what flights of fancy a cold, reasoning, scientific mind may be put to by the goading stimulus of a supposed discovery. The unwonted scarcity of the bodies fathered by Dr. Seidelin is explained by him by calling attention to "what little we know about the relationship between the number of microbes in a given infection and the intensity of the intoxication produced." The examples which he presents to illustrate his doubt are most unfortunately selected. Tetanus is a bacterial disease, a localized infection of a severely intoxicating type, because of the poisons which the bacilli produce, and are absorbed into the system, while yellow fever is certainly not a local bacterial disease, but a generalized blood infection, more allied to malarial or other protozoal infections; in malaria or trypanosomiasis we find few or no parasites only at stated periods, but in the acme of the fever or in prolonged cases the protozoa can always be demonstrated by a careful observer.

In the same manner Dr. Seidelin would have us believe that his bodies, the nature of which is as yet unknown even to himself, differ materially from other pathogenic protozoa in that they are not infective late in the disease, preferring to think that the third day limit established by the U. S. Army Board and corroborated by later investigators, is incorrect. Such a line of reasoning cannot but lead to failure in the end.

In the chart which accompanies the article under discussion the author, as he candidly confesses, has "endeavored to arrange the figures in such a way as to convey a general impression of what appears to be at least a part of its evolution, although all these stages have never been observed in one and the same case." I do not think it is very needful that I should add one word of comment on such an evident cause of error; such a misconception would be directly conducive to fatal misinterpretation. After this declaration several pages of the original paper are devoted to building up an identity for the supposed parasite, a new genus is created, Dr. Seidelin acknowedging that "it would not be justifiable to include it in any of the established genera."

Not wishing to make this paper extensive beyond the reader's endurance, I will bring the subject to a close by noting down my personal opinion, based upon the specimens shown me by Dr. Seidelin last Christmas Day.

As typical examples of his parasite, he showed me four preparations, three of them stained blood smears and one liver section. Two of the blood smears contained one parasite (?) each (Nos. 5 and 11 of the chart), another one had two Seidelin bodies (Nos. 16 and 18 of the chart), a large one and a small one, and in the liver section was to be found a group of four bodies within a liver cell (No. 39 of the chart), and another presumably free and isolated in the interstitial substance.

The slides containing bodies like Nos. 30 and 37, which really look like some form of blood parasite, Dr. Seidelin said had been left in Liverpool and thus could not be shown.

The reasons why these bodies were not at all convincing to me of their parasitic nature are, concisely stated, as follows:

(1) The preparations, stained by the Giemsa stain, had been very poorly treated. So much so, that the leucocytes had not taken their due coloring, many eosinophilic cells remaining unstained while others were intensely so, showing evidently a faulty technique and therefore unreliable results.

(2) Dr. Seidelin's supposed parasite is present in very limited numbers in each blood drop, not more than three or four, all unlike, in each preparation, and we know that infective blood, in yellow fever, must contain a great number of parasites if the amount necessary for infection is to be a criterion.

(3) Experiments have demonstrated that yellow fever blood is not infective after the third or fourth day, while Dr. Seidelin's bodies have not been observed by him except from the fourth to the eighth.

(4) There is no reason to believe that the parasite of any infectious disease may be demonstrated in the blood at any period when this blood is not infective.

(5) If the bodies shown by Dr. Seidelin were evolution forms of an animal parasite, as he claims, we would find several of them at least in the same period of their evolution in the same smear, and they would therefore present the same morphological characters; while as it is, it is not possible to find two bodies alike in the same preparation, except in the liver section, in which they are all four inside a cell.

(6) There is no analogy, as Dr. Seidelin admits, between the supposed parasites and other organisms found in the blood of man or animals.

(7) Finally, it is impossible to form an opinion that will carry weight founded upon smears stained in such imperfect manner and with such an unstable reagent as the Giemsa stain, and less so when the various characters of form and size presented by the Seidelin bodies are such that they ought to be readily observed in fresh preparations of blood in which it would be easier to differentiate them from platelets and protoplasmic and nuclear cell fragments.

REFERENCES.

1. Reed, Carroll, Agramonte, and Lazear: "The Etiology of Yellow Fever," (Preliminary Note) Proceedings 28th annual meeting Am. Pub. Health Ass'n, Indianapolis, October, 1900. Also the Additional Note.

2. Carroll: "The Transmission of Yellow Fever." *Jour. Am. Med. Ass'n.*, Vol. XL, No. 21, pp. 1429-1433.

3. Reed, Carroll, Agramonte, and Lazear: *Loc. cit.*

Reed, Carroll, and Agramonte: "The Etiology of Yellow Fever" (Additional Note), Transactions of the Pan American Med. Congr., Havana, February, 1901.

Agramonte: "Supuesto Parásito de la Fiebre Amarilla," *Revista de Medicina Tropical*, Havana, 1902.

4. Reed, Carroll, and Agramonte: "Experimental Yellow Fever," Ass'n of American Physicians, Washington, April, 1901.

K STREET, VEDADO.

THE "KARELL KUR."

By FREEMAN FORD WARD, M.D.,

NEW YORK

Of the great men that northern Germany has given to the world one of the most brilliant was Professor Lenhartz. The originality of his ideas and his skill as an internist attracted attention from many lands. The Hamburger-Eppendorfer Hospital, almost a village in itself, owed everything to his presiding genius. His special forte was the resection of diseased portions of tuberculous lungs, but although this part of his work was marked by great boldness, and issued in excellent results well worthy the study of any practitioner desiring to be abreast of the times, I was more particularly interested in his so-called "Karell Kur" for diseases of the heart and disturbances of the circulation.

It was my privilege to visit his hospital some two years ago. Seventy-five physicians were working under him, exploiting his various theories, particularly with reference to this plan of treatment. He does not claim to be the originator of this method, but he has been so identified with its advocacy and extensive practice that it might well bear his name.

What most impressed me was the simplicity and rationality of the cure. I was astonished that it had not been more universally adopted and practiced by the profession for, notwithstanding Professor Lenhartz's eminence, and his identification with the cure, one hears little or nothing of it, even in Germany. I can attribute this only to the fact of its extreme simplicity, for had I not seen the cases in all their stages, and had I not witnessed the wonderful results obtained, I could not have believed that so much could be accomplished with such simple means.

We have all realized our helplessness in dealing with severe disturbances of the circulation—disturbances which the usual remedies fail to affect. When nitroglycerine, strychnine, cactin, digitalis, and its derivatives fail, on account of edema, dyspnea, or faulty absorption and elimination, the physician must scan the lists for help. If the usual and unusual drugs fail, he must resort to narcotics, and the final result of that course we all know too well. It is in such extreme cases that the physician welcomes the new, effective, and powerful remedy. As far back as 1866 Karell had originated the system now under discussion, but Professor Lenhartz was the first to exploit it and the very first to use it as a treatment for obesity. (This is disputed by Hirschfield, but the point may be left to those who are interested in chronology.)

In my visit to the Hamburger-Eppendorfer Hospital I was permitted to see a large number of cases in all stages of the cure, from their entrance to the hospital to their leaving it, and the observation gave me such a strong impression of its value that I have not failed to use it in my own practice, in suitable cases, ever since; and not only in the two classes of cases mentioned, but also in certain cases of indigestion and disturbances of metabolism which had failed to respond to older methods. I will

describe briefly the exact method followed by Professor Lenhartz in the Hamburger-Eppendorfer Hospital, and also, by permission, cite two or three of his cases, adding some of the modifications and changes, seemingly necessary in this country, together with the reasons therefor, and two or three cases taken at random.

The patient admitted to the hospital, suffering from severe circulatory disturbance, characterized by a rapid and irregular heart, dyspnea, edema, caused by incompetent valves and thickened artery walls, with high blood pressure and irregular and interrupted pulse wave, is at once put to bed, and for one or more weeks everything in the way of diet or drink is excluded except milk, which is given in the following manner: For the first six or eight days, 200 c.c. of milk four times a day at four-hour intervals. Occasionally this is continued for fourteen days, and in rare cases, for three weeks. The first question which may be asked is: "Will the patient submit to so strict a cure"? As a matter of fact, many do object at first and many questions are raised, but the patient will soon become reconciled. After the third or fourth day of treatment the patient feels so much better, lighter, and more comfortable that he is even averse to going back to the old diet.

The reduction in body weight depends upon the degree of edema and the length of time that the treatment is continued. This is seldom more than six or eight days, at the end of which time certain foodstuffs are added, so that by the third or fourth week the normal diet, with certain restrictions, is again established, but the liquids are never increased above 800 c.c. in twenty-four hours. The requirement for normal metabolism, for an adult at rest, is about 2000 calories, while the 800 c.c. of milk, with which the strict cure is begun, represent only 560 calories; therefore, it is evident that the difference between the intake and the requirement of normal metabolism is compensated for by the burning up and absorption of the surplus fat and water. The loss of weight, especially in cases of severe edema, is often astounding, and for the first six or eight days will often amount to two pounds, and seldom is less than one pound daily. Of course, a large part of this is due to the loss of water in the tissues as the edema rapidly disappears, to the consequent greater comfort of the patient. It is not difficult to understand that the tired and overworked heart is essentially strengthened and given fresh powers of endurance by this loss of weight which, as a rule, occurs in all forms of hydrops. Patients to whom it was necessary to give morphine or other narcotics to induce sleep and quiet, were able, after three or four days of the treatment, to remain quietly in bed, with a great accession of sleep and restfulness. Soon all narcotics could be abandoned, and no other remedies were used, except a wineglass or two of bitter laxative water in the morning to promote the intestinal functions.

One point deserving of emphasis was observed; namely, that cases which had been most rationally treated with digitalis and its derivatives without appreciable results, and who suffered severely with shortness of breath, again responded well to digitalis preparations, after six to ten days of the Karell cure. Not only did the edema disappear, but the natural power of the heart muscle, itself, seemed to be restored. In certain cases, therefore, it is advisable to combine these heart tonics with the cure treatment, always postponing the time of beginning them until after the latter alone does not accomplish the desired effect. Just here I would like to call attention to the fact that the new preparations of digitalis are used almost exclusively in the German hospitals, seemingly with good results.

Another beneficial factor during the first days of the treatment is the very marked increase in the quantity of urine. This was particularly well illustrated in the case of a young woman with renal insufficiency who came into the hospital with the loss of compensation and general anasarca. She was put on the strict Karell cure, *i.e.* 200 c.c. of milk four times a day, all other food and drink being absolutely excluded. During the first twenty-four hours she voided 2 liters of urine, and on the third day 4 liters. On the fourth day she had lost 9 kilos, or about 18 pounds in weight. On the ninth day she was able to sit up and was discharged from the hospital on the thirty-third day with compensation practically restored. A still more marked case, illustrating the value of the treatment, was one of both aortic and mitral insufficiency, with very small and irregular pulse, and heart extremely dilated. In this case the quantity of urine was 5200 c.c., or over 5 liters on the fifth day of the cure. The edema rapidly disappeared, and at the same time the body weight was reduced 16 kilos, or about 32 pounds, in six days; there followed also a strong, regular pulse. After sitting up, the patient developed a swelling of the liver with ascites, which, responding to agurin, the patient left the hospital with good compensation. In the first case the quanitity of urine fell to 800 c.c. with a specific gravity of 1006 on the sixth day; and in the second case the quantity fell to 850 c.c. on the ninth day, and to 450 c.c. on the fourteenth day of treatment.

Another case of severe myocarditis, general hydrops with angina pectoris, arteriosclerosis, and hepatic cirrhosis, also improved while the effects of digitalis were markedly increased, while before the cure all the digitalis preparations had signally failed. There were two cases of an extreme grade of hydrops with fatty hearts, and with very weak pulse and heart action. One, after thirty-eight days lost 25.5 kilos, with heart improved in strength and pulse in volume. The other with only a moderate edema, but very irregular heart action and cramp-like pains in the cardiac region, simulating angina, was entirely relieved of these distressing symptoms. Another brilliant result was shown in the case of a man forty-two years old with very severe disturbance of heart action. He drank 8 liters of beer and smoked twelve to fifteen strong cigars daily. After a course of four weeks' treatment he left the hospital in almost perfect condition. On entrance to the hospital he weighed 91 kilos and voided 1700 c.c. urine in twenty-four hours; specific gravity 1015. On the second and third days he voided 2300 c.c. and 2500 c.c., respectively; specific gravity 1010, and lost 5 kilos in weight. On the tenth day he had lost 16.3 kilos, and then practically held this weight of 74.7 kilos. On the sixth day of the cure, in addition to his 200 c.c. of milk four times per day, 50 grams of meat and 30 grams of bread were added; and from the seventh to the tenth day these were given twice a day; after the tenth day a gradual increase to a normal diet. Another case in which a most happy result was seen was a man sixty-five years of

age, with myocarditis, extreme edema, arteriosclerosis and emphysema. He had received digitalis preparations to the physiological limit. He had also been to Nauheim, but returned much worse. Notwithstanding all this the edema gradually increased until he was so large that he had to lie immovable in bed, and was almost moribund. The edema had extended over the sternum and under the arms. Cyanosis was marked, and orthopnea accompanied the bronchitis. Under the treatment there was in this case a particular increase in the urine, the edema, and particularly the dyspnea rapidly disappeared, so that on the tenth day he had lost 18 kilos. After twenty-six days of treatment he had almost a normal flow of urine, with good pulse, and was in a very good and comfortable condition. The urine, which was 600 c.c. on the first day, rose to 1200 on the second day; fell to 400 on the fourth day; shot up to 3000 on the sixth day, and then gradually fell to from 800 to 1200 per day. The albumin, which was 1½ per cent. on entrance, held to about that amount to the seventh day of treatment, then gradually diminished to only a slight trace on the tenth day and thereafter.

Obesity: I now wish to show how this treatment has wrought equally effective results in the treatment of obesity. We all know that there are many who carry an overabundance of fat and yet are capable of a great amount of mental and physical work. There are many, however, who as early as thirty or forty years of age begin to show the effects of obesity of even moderate degree, who feel dull, have dyspnea, who perspire on the slightest exertion or without any apparent cause, and in whom a progressive weakening of mental and physical power and the desire for work can be observed; with the appearance of insufficiency of the heart, it is time to take matters in hand. For a long time both the laity and the profession have been busy seeking the best and least dangerous reduction cure, and this condition has furnished to the quack a rich field. That all of the quick cures are in bad repute is well recognized by the profession, and only too often have the fears of the unwary on this point been confirmed. All cures more or less aim to prevent the body taking on more fat by underfeeding (restricting the diet) through mechanical work, massage, exercise, etc., to unload the system of water and to increase the oxidation of its own fat; therefore, it is easy to understand that all such cures must be under the physician's directions. This is necessary so that he may guard against all unfavorable conditions, and especially for the observation of the action and condition of the heart. Coordinately with the reduction, the amount of physical exercise and work must be regulated to the patient's condition, and only very gradually increased. The ability to spare, guard, and exercise the patient, in conjunction with the reduction, will reveal the art of the physician, for a process to be productive of the best results must leave the patient not weakened, but with progressively increased ability for the performance of his duties, to say nothing of the cosmetic effect.

I believe, though, it is possible with this method to rapidly reduce the patient with perfect safety, more than with any other; this claim is best sustained by proofs, when case after case, without any true edema can be reduced in the first six to ten days, from 10 to 15 pounds, and that without any distress to the patient. If concurrent with the falling weight, the secretion of urine is increased, one can feel that the prognosis is particularly good, especially so with patients who can be trusted to carry out the details as prescribed. Following, however, a considerable reduction in weight, we have a lowering of diuresis which day after day scarcely equals the intake of liquid. But we must consider that we have to do with a melting down or destruction of proteids and fat, though in the experience of Professor Lenhartz, who had, perhaps, to deal with more extreme cases than myself, and likewise in no case of my own, has there been exhibited any unfavorable or alarming symptoms. As a general resultant, the patient feels stronger and lighter and has more endurance; he can walk and breathe better and the heart action is stronger. Of course, there are patients with whom this treatment does not agree; others who wish to compromise or have not the faith and will power to carry out the directions, and still others who improve at first, and then for some reason fail to progress further. However, these cases are a small percentage. On the whole, this treatment, modified to suit each particular case, when properly carried out by physician and patient, has been most satisfactory to both. Moreover, it has been unattended by danger, nor is there any disturbance or any disagreeable symptom not easily corrected.

Many patients will offer the objection that milk always constipates them. To overcome this objection, I advise an India biscuit with each glass of milk, and that the patient should masticate it thoroughly, sipping the milk at intervals. This biscuit furnishes no nourishment whatever, but it breaks up the milk into finer flakes in coagulating in the stomach, produces more saliva, causes the patient to take the milk more slowly, serves to promote peristalsis, and also prevents the empty feeling in the stomach which occurs in some cases before the expiration of the four hours' period. Seldom will one need to resort to any other aid to the bowels, and often patients who have been chronically constipated all their lives will begin to have regular daily movement of the bowels on this treatment. Occasionally, one will have to resort to a mild aperient in the morning. The first case that I will cite is illustrative of this point and of what nature will do for one if she is properly treated and not overloaded each day with more work than she is capable of doing. This patient's bowels, you will notice, became regular from the first day of treatment, whereas she had previously been accustomed to taking a stronger laxative every night. And when I increased her diet which, in this case, I did a little too soon, she became constipated, but regular when put back at her own request on the strict régime. It also frequently happens that a man cannot give up business or a woman her social engagements without great inconvenience. In such cases we can modify the cure in one way and another and get most satisfactory results, but the treatment naturally would extend over a longer period; also the patient must be honest and faithful to this regimen, changing nothing without consulting his or her physician. As an illustration of the importance of the patient's fidelity to details, one patient started out nobly with a strict regimen and by the second day had lost 2 pounds, the urine had increased 50 per cent. in quantity, with a sediment of urates and uric acid. On the third day she was invited to luncheon and thought it would make no difference in the cure. She returned to

me on the fourth day and confessed, but with this little break in the cure the urine went down to 755 c.c., and she gained back the 2 pounds that she had lost.

Now the question that naturally arises is: Do not the patients immediately put on weight when they return to their regular diet? If the patients returned to their former diet, no doubt they would, but at the end of their cure, as a rule, it has been so thoroughly demonstrated to them just how much and what kind of food they need, and how much better they feel, that they almost invariably hold their weight and often go on gradually decreasing if they are still above the normal weight.

To sum up, as I stated in the treatment of the disturbances of the circulation, so I here repeat as applying this treatment to adiposity, that there will be cases of the latter which do not respond, or for some reason cannot or will not carry out this regimen, which cases might be put down as failures, but taken on the whole, it is a most satisfactory treatment and attended with the least or, in fact, no dangers. Before closing, I will give a few cases which will serve as an illustration of the treatment for adipositas without any special heart trouble, and of the modifications which sometimes aid in the cure and prove more satisfactory to the patient.

A lady, thirty-eight years of age, came to me, whose only complaint was that of overweight. Her weight was 222½ pounds, and as she was only 5 feet 6 inches in height, one could easily believe that she was very uncomfortable. She had taken several so-called cures, including a restricted diet, but very soon she regained what little weight she had lost, when she returned to her normal diet. I put her on a regimen of 200 c.c. of milk to be taken at 8, 12, 4 and 8 o'clock, with one India biscuit with each glass of milk. She was to take no other food or drink, and as it was impossible for her to keep perfectly quiet, and her heart action being rather weak, I gave, in this case, a mild heart tonic of digitalis, strychnine, and nitroglycerine in extremely small doses. On the third day she reported to me, when she weighed 217¼ pounds, a reduction of 5¼ pounds. She felt very much better, her breathing was easier, and her heart action was stronger. On the fifth day she weighed 214¾ pounds, a loss of nearly 8 pounds in less than five days. I increased her milk to 1200 c.c. per diem, and as she had to return to her home in Buffalo, I advised a gradual return to a modified general diet. After one week I received a letter from her, saying that she had increased her diet but did not feel as well as when she was taking only 200 c.c. of milk four times a day, and asked permission to return to that regimen until she could see me again. Another point in her case well worth noting is that when she resumed her regular diet she again became constipated, and that as soon as she returned to the restricted milk diet her bowels became quite regular. Ten days later she reported at my office, prepared to sail for Europe, weighing 208 pounds, and feeling better than she had felt for years. I advised her not to continue this diet longer than her trip on the steamer, and to return gradually to a restricted diet, which she did, and sent me a fine report of herself on her arrival.

Another case was that of a lady of forty-two, who notwithstanding exceptionally good habits as to eating and drinking and exercise, had gradually gained in weight until she reached 180 pounds. Her flesh was solid and firm and she had no organic disease nor any other trouble but that of adipositas. I put her on the strict regime of the Karell cure, and saw her about twice a week, and at the end of two months she left town in perfect health, weighing 164½ pounds.

I can mention many other cases, but these serve to show the process and the efficiency with very few exceptions of this method of treatment.

616 Madison Ave.

GONORRHEA: ITS PREVENTION AND CURE BY AUTOTHERAPY.*

By CHARLES H. DUNCAN, M.D.,

New York,

Attending Surgeon to the Volunteer Hospital.

In former papers the writer cited many diseases cured and prevented by placing the natural vaccines together with a portion of all the toxic products of tissue changes in healthy tissues. It was recommended in these papers for the first time the advantage of sucking all fresh wounds where possible when there was even a remote probability of the wounds being septic, or placing the discharge from all accidental wounds on the tongue (a lesson we learn from the dog that licks and cures his wounds) as the safest and best means of preventing sepsis. It was pointed out that when the crude pus from a septic wound is placed on the patient's tongue it would tend to cure the infection in the quickest and best manner possible (*Lancet-Clinic*, November 4, 1911). The writer has cured many of the most pronounced cases of sepsis by this method (Medical Record, September 16, 1911), by giving the crude autogenous pus by the mouth. He has cured puerperal sepsis, septic abortions, septic endometritis, furuncles, abscesses, postular acne, some forms of eczema, etc., and sees no reason why a skilled autotherapeutist may not cure very many extraalimentary and extrapulmonary diseases in a similar manner. It was also pointed out that many diseases may be cured by filtering the pathological excretion or discharge of the disease with a Berkfeld filter and injecting the filtrate hypodermically. In the present paper the writer will discuss a new method of preventing and curing gonorrhea.

In every scientific discussion we should be guided by facts and not by sentiment. There is no room in medicine for the physician who would refrain from giving his patient curative medicine on account of its not being pretty, or of associations in his own mind that make it abhorrent. A physician is justified in giving his patient anything that will cure him. But we do not have to search for a remedy that will cure and prevent gonorrhea. Provident nature places the prevention and cure within easy reach of the physician in the very form adapted by nature to be taken, and the only wonder is that this simple treatment was not discovered long ago. Every patient suffering with

*The writer is well aware that this paper contradicts much that is held to be true by those best qualified to judge in such matters. It is based on clinical experience, the court of last resort in determining questions relative to the therapeutic value of any medical preparation. It is not within the powers of any physician to investigate thoroughly all the avenues of thought opened up in enumerating the principles of autotherapy. The best the writer can do is to point out the way that others who have more opportunity may take up the work along their various specialties and work out each disease by itself along the lines suggested.

gonorrheal urethritis carries the cure for it with him in the discharge. The writer is well aware that exceptions may be taken to the method of treating gonorrhea he suggests, but let us stop right here and have a mutual understanding lest anyone should utterly forget the scientific nature of the principle involved in this discussion and thereby suffer his sensibilities to be shocked. If men and women will expose themselves to gonorrhea they are not in a position to object to a cure that may be suggested. This treatment is no worse than the disease itself. The writer is seeking the truth (as abhorrent as it may appear at times) in whatever highway and byway it may be. Any scientific investigation or deduction not founded on truth fails utterly in its purpose.

This method of treating gonorrhea is being developed by following the principles of autotherapy. This consists in placing the natural vaccines together with a portion of all the toxic products of tissue changes contained in the pathological excretions or discharge of the disease (or in other words toxic tissue poisons) in healthy tissues. Briefly stated, autotherapy cures many localized, loosely localized and possibly nonlocalized diseases with their own poisons. When a patient suffering from one of this class of diseases recovers without any external medication we believe he is cured by autoinoculation, that is the power of the serum is raised, the activity of the leucocytes is increased, the invaders are overcome, and the patient recovers. Autotherapy cures disease with the same weapons nature uses. It is the method the physician employs in assisting in arousing the natural forces within the body; they alone can bring about a perfect cure. The new method of preventing and curing gonorrheal urethritis is similar in its application to the method of preventing and curing sepsis previously reported. It consists in placing the crude autogenous discharge of the disease on the patient's tongue. This method of treating gonorrhea has a strong curative tendency in any stage of the disease. If given early enough it will abort gonorrhea.

Another method the writer suggests as possibly efficacious is filtering out the bacteria with a Berkefeld filter from the discharge or a solution of the discharge of the disease and injecting the filtrate hypodermically. This method of curing disease has a wide applicability. The writer has proved that many diseases that are now cured by opsonotherapy may be cured more quickly and often prevented by either one or the other of the two principles enumerated above. The first question that would naturally arise in considering the first method of treating gonorrhea is: Is there not danger of autoinfection, by placing the crude gonorrheal pus on the tongue? The next question is: Will it cure? Till we can satisfactorily settle in our minds the question of danger, we are not in a position to discuss the therapeutic effect. The question of beauty or homeliness of a method of carrying out a treatment has nothing to do with the subject from a scientific point of view, so we will dismiss this phase of the discussion at once. Anyone who has practised medicine for even a few years has seen or heard personally of a number of cases of gonorrheal ophthalmia. The oculist has seen many cases. If gonorrhea is infectious through or by the mouth, we would have seen more infected mouth cases than eye cases, for the hands go to the mouth many times when they go to the eye but seldom. Especially is this true if the patient is warned to keep the hands away from the eyes. We never warn them to keep them away from the mouth, and we rarely see gonorrhea of the mouth. Gonorrhea of the urethra often causes frequent micturition, and in the various toilets visited during the day for that purpose there is often no means for washing or cleansing the hands after the cotton or bag has been removed and replaced. Truck drivers, laborers, and those of the lower classes are not overcautious in this particular. They do not know the meaning of asepsis, they more frequently take a chew, or light their pipe, or even eat their meals after perhaps merely wiping their hands on their overalls. Yet we rarely see gonorrhea of the mouth in these individuals. Gonorrhea is highly infectious to the eye, but the writer has yet to hear of a case of infection of the mouth and throat following an infection of the eye. The tear duct drains the infected eye into the nose. The gonococci hence must come in contact with the nose, posterior nares, pharynx, mouth, larynx, and stomach, and in some few cases these regions would have become infected if gonorrhea is infectious to these membranes. Now the fact that we rarely ever see or hear of infections by the latter leads one to believe that gonorrhea is not infectious to the unbroken mucous membrane of the mouth, throat, and alimentary canal. Whether the nasal secretions or the saliva or the inhibitory action of the mucosa of the nose and throat is the cause of the immunity from infection of these cavities is a subject that will bear investigation. It is the ratio of infections after exposure to the escape that is our best guide in determining the relative chances of an infection taking place. If this ratio is very small, or fractional, or scarcely heard of, it may be considered as negligible, and need not be taken into consideration. Gonorrhea appears to be no more infectious on the unbroken mucous membrane of the mouth than the staphylococcus and streptococcus.

In looking up the subject further to discover whether gonorrhea is infectious by the mouth or not, the writer was surprised upon reflection to find that he did not recall a single case of gonorrhea of the mouth in a hospital practice in a district where if it were prevalent he would see it. He then made it a point to go with a company of physicians into the darker section of New York for the purpose of obtaining knowledge of it first-hand from the very people who are exposed to gonorrhea of the mouth many times during a single night. The writer made as careful an examination of the mouth as was possible under the circumstances of the ones he interviewed and saw no evidence of it. However, he did observe that nearly all had a mouth full of bad teeth, or few teeth or no teeth. Whether this had any connection with the gonococcus or not he does not know; it is a subject that will bear investigation.

Abundant observations conclusively prove that about all prostitutes are gonorrheal carriers, but we rarely see this disease to recognize it in the mouth. It may be, and it appears reasonable to assume, in the light of these investigations, that having the gonococcus in the mouth renders them more or less immune to vaginal infections even with the multitudes of gonococci in the vagina. There is no doubt that many of these women have at times gonococci in the mouth as well as in the vagina. Men at times kiss these gonorrheal carriers, and if the disease were infectious by the mouth

our young men and boys would have become infected in the mouth at least occasionally, but here again we rarely see the disease. The only conclusions that can possibly be drawn from the above observations is that the possibility of gonorrheal infection of the mouth is so slight as to be practically disregarded.

The next question to be answered is: Will there be a curative reaction in the tissues if the autogenous gonorrheal pus is placed on the tongue? The microorganism of gonorrhea is of the coccus family. Now the writer has proved that two members of the coccus family, namely, the staphylococcus and streptococcus, are curative in extraalimentary and extrapulmonary diseases caused by the organisms if the live autogenous microorganism is taken by the mouth. That is, the healthy tissues with which the microorganisms come in contact by way of the mouth, being remote from the seat of the disease, develop specific antibodies to the disease.

If autogenous gonorrheal pus tends to be curative by way of the mouth, we would expect its action to be similar to that of other autogenous products, that is, it would tend to act in a preventive manner as well (see MEDICAL RECORD, September 16, 1911). We would expect that if the physician gave it early enough he would be able to abort gonorrhea. If the above observations are correct, the application of the specific could be employed in a slightly different manner, more to the advantage of the patient and success of the physician than the treatment of sepsis. For on rare occasions in the male we could obtain the causative microorganisms from the infecting female genitalia. If the physician could do this we should expect that he would be able to abort the disease in the male. The reverse would also appear to be true, that is, he would tend to abort it in the female by administering to her by the mouth the identical causative microorganism from the urethra of the infecting male. Granting the above observations are true, it is readily understood that this should be done as soon after coitus as possible, both from a prophylactic and curative point of view.

This is in strict accordance with the writer's experiment in the prevention of sepsis and other diseases, and with the experience of Lux in the treatment of anthrax (1822) and with the experience of Wright and Douglass with autogenous vaccines, that is, so far as giving the vaccines early is concerned. Practically all authorities agree that the vaccine to be most efficacious must be administered early; stress is always laid on this point. So then we would expect that the administration of the gonorrheal excretion would be no exception to the general rule that governs the administration of other autogenous products.

This method of preventing gonorrhea would at times be helpful in preventing those fearful family tragedies we all have seen in general and hospital practice where the husband or wife infects the consort. Believing in the light of the above observations that there was sufficient ground to cautiously experiment, and realizing at the same time the possibilities of doing good, the writer decided to try it on selected cases. About this time there came to him for treatment a semi-prostitute. She had marked evidence of clinical gonorrhea; both Bartholinian glands were swollen to the size of the thumb. There was an extensive excoriation of both thighs. The whole vulva was swollen and pouty. The labia majora and minora were inflamed and rigid. From the majora the inflammation had extended to the cuticle on the mons veneris and the crease of the groin. The discharge was thick, yellow, copious, and came from the urethra. About half a teaspoonful was collected from the cervex and vaginal walls. Upon being told she had gonorrhea, she said she had two male friends whom she had exposed to infection a few days before. One of these was her employer, a married man. Could the writer give him some medicine that would prevent his having it? I told her I could if she sent him to me immediately. The next day he made his appearance. He had noticed that morning an uneasiness or a tickling of the urethra, and having previously had gonorrhea several times he knew the symptoms, and was under the impression he had the disease this time. He said he noticed a small morning drop. I told him if he would follow my instructions I would do what I could to stop it, and that I believed I could. This was the fourth day after exposure. I mixed the discharge with about half an ounce of powdered sugar as a menstruum. It made a thick paste. Of this I gave about one cubic centimeter by the mouth and told him to hold it there for five minutes before swallowing it. In half an hour I gave him a second dose, and in half an hour I gave him the third and last dose. I cautioned him against getting it in the eye, but told him to place any and all discharge he was able to obtain from his urethra on his tongue, and to return the next day. He reported the next day the tickling in the urethra did not stop; there was just barely a morning drop; there was no staining of clothes or other evidence of discomfort. On the tenth day he told me there was no tickling or abnormal sensation or evidence of the disease in any way, in fact there was no evidence of gonorrhea that the writer could in any way discover except a few shreds in the urine. In other words, the disease appeared to have been aborted. The writer upon close questioning obtained the bit of interesting information that the patient had been drinking on an average of three glasses of whisky and beer daily. Eighteen days afterwards the patient was enthusiastic over the treatment; he did not mind the treatment. "Would it cure?" was all he wanted to know. Satisfied in this, he was anxious to go the limit. Four weeks afterwards, when there was no apparent evidence of the disease, when he said he had entirely recovered, I gave him three more pills in a manner similar to the first three. The next day he said the disease was coming back, the irritation and moisture had returned. He said he had gonorrhea again, but he did not; it was the aggravation or the negative phase resulting from the medication. It cleared up in a few days. The writer believes this is proof that this medication taken by the mouth has a direct action on the urethra. He bases his conclusion of cure of this patient on the lack of demonstrable lesions in this patient, the history of the case, and the pronounced characteristic and other toxic manifestations of the disease both in the female and in the other male consort. A second case was that of a man, L. T. R., who appeared for treatment February 15, 1912. Exposed nine days previous. The first indication of gonorrhea was on the sixth day. There was a free discharge, the meatus was pouty and red, tingling on urination. Gonorrhea pronounced positive by Dr. Harlow Brooks of New York City. The patient was instructed to place the discharge

on the tongue. February 10 no change. He took the discharge several times. February 17, very much less discharge, inflammation subsiding, patient better in every way. February 18, a clean bag was put in place at 9 o'clock in the morning, and there was but a small amount of staining at 6 o'clock at night. No tingling on urination or other discomfort. February 22, the bag was just barely stained after twenty-four hours. This is a typical case and illustrates what can be expected of this treatment. In two weeks the discharge had stopped altogether.

The third case was in a married man aged forty years, who appeared at the clinic December 5, 1911. He had practically all of the symptoms of acute gonorrhea, following an exposure ten days before. Microscopical examination was positive. He had exposed his wife and was anxious that the writer should treat her also. I told him to send her to me as soon as possible. She came the next day. I placed some of the discharge in an ounce of water and shook it up well. She was given this to drink. I saw her at the end of one, two, and three weeks, and could discover no lesion or evidence of the disease in any way that could lead to even a suspicion of gonorrhea. A number of experiments of similar nature were performed in which the gonococcus was identified by the microscope. The result of all my observations of these cases indicates that when the crude gonorrheal pus from an infected urethra is placed on the patient's tongue it will tend to act in a curative manner. If the identical microorganisms be given early enough it will abort gonorrhea. If it is given two days after the discharge first makes its appearance, the microorganisms will disappear from the discharge in from twenty-four to forty-eight hours, the discharge itself will lessen, and usually disappear in from seven to ten days. When acute gonorrhea is treated by this simple method there is less chance of sequelæ in the shape of strictures, buboes, etc., than by any other form of medication, for the inflammatory stage is aborted or stopped early. Experiments in treating gleet by this method have not been very successful, although there have been no bad results.

A treatment so contrary to established precedents and a treatment that is so new and radical is bound to create more or less adverse criticism, and yet as we consider it in its various aspects the rational basis of this method appeals to the medical mind as agreeing with practically all we know of biological therapeutics. The writer would suggest to those who are disposed to criticise this method adversely that they withhold giving expression to their opinion until after they have given this method of treating gonorrhea a fair trial. Surely its simplicity must appeal to every one and it is within the power of practically every physician to test it for himself. If there is danger in placing the crude gonorrheal pus on the patient's tongue the writer has never seen it. He courts investigation of this method of treatment by anyone who will give it a thorough trial. The clinical symptoms are a good guide in determining whether the medication should be pushed or withheld. During the middle stage the indications are very similar to the indications for administering the vaccines, although the promptness in which its curative action is manifested and the good results following indicate at least to the writer that here at last is a true specific for acute gonorrhea. The writer believes that when the remarkable curative effect of this exceedingly simple therapeutic measure becomes widely known gonorrhea will be in a fair way to become exterminated. In looking further into the subject, the question presents itself: Will gonorrhea of the eye be aborted if the identical microorganisms are placed in the mouth at or about the same time the eye infection takes places? The writer does not know. It is evident the antibodies of this and many other infections develop faster than the infection, and the question to be solved is whether they will be developed when given by the mouth fast enough to overcome the eye infection or before they are washed down the tear duct into the mouth, and *thus keep up the negative phase of the disease*. If gonorrhea of the eye may be aborted in the same way as gonorrhea of the urethra, we have clearly at our command a new and effective weapon of combating ophthalmia neonatorum. The writer would suggest that this be thoroughly tested in the laboratory on animals. Let the microorganisms be placed in the eye and mouth of the animal simultaneously and the results carefully watched. If it is proved that gonorrhea of the eye can be aborted in this way the application to the mouth of the newborn child of the discharge from the mother could be easily carried out. After an eye infection is once established the patient in all probability will not be benefited by placing the discharge from the eye in the mouth. In gonorrheal ophthalmia of the adult the writer would suggest that a solution of the discharge be filtered and injected hypodermically in the manner to be described later.

If anything can be done that will help to lessen or wipe out the "social scourge," even to taking gonorrheal pus by the mouth, it will be a blessing for which humanity has long waited. Now let us see what other deductions can be made, what inferences can be drawn, what refinement of technique and administration may be introduced, and what grounds there are for these procedures. The first deduction is based on the prevailing opinion that the cocci are solely endotoxic in character. I wish to make a protest against this misleading textbook teaching. The dead bodies of the cocci are undoubtedly toxic, in fact there is more endocellular toxin than extracellular toxin in the staphylococcus and streptococcus, yet the writer has proved that sufficient extracellular toxins may be washed out of them with a small quantity of distilled water or when they are passed through a Berkfeld filter. These toxins may be injected hypodermically and will manifest a curative and abortive tendency. The writer has cured severe cases of sepsis in this manner, and sees no reason why all other diseases of the so-called furuncle group, that is, the large number of diseases caused by these microorganisms, may not be cured in the same way.

The following technique in treating sepsis was employed. From five to ten drops of the patient's own pus was placed in half an ounce of distilled water. This was shaken up well and allowed to stand at the temperature of the room for about six hours, when it was again well shaken up and filtered with a Berkefeld filter, and a few drops were injected hypodermically. The results proved that there is sufficient extracellular toxins or toxins developed by autolysis to act in a curative manner.

The writer was the first to filter out the bacteria from the pathological discharge of a disease and to employ the autogenous filtrate for therapeutic purposes. I would recommend that tests be performed in treating gonorrhea by employing this filter in a

similar manner. There is no danger of gonorrhea from an infective point of view if proper care be exercised during the filtration. No physician should hesitate in using this filter, for the act of filtering is simplicity itself. The filter used may be practically of any size. The one with which the writer has performed all his experiments is about the size of the thumb. It is possible that some bacteria may be strictly endotoxic in character. If this be so, we would not expect the filter to be curative in diseases caused by them. However, the writer does not know of any microorganisms that are strictly endotoxic or that will not develop toxins by autolysis. On the other hand, there are good reasons to believe that there are few if any bacteria that have not enough extracellular toxic substance to act in a curative manner. If this be so, the use of this filter in infectious diseases appears to be almost limitless. This filter appears to be applicable to practically all localized, loosely localized, and possibly nonlocalized infectious diseases. The use of the filter is limited to diseases whose causative bacteria do not go through the filter. Here the limitations are very few, for we know of no diseases of the group above mentioned whose causative bacteria would not be filtered out of the discharge of the disease and there are but comparatively few pathological microorganisms of other infectious diseases that will not be caught in the filter. A filter of this kind will last for years if it is properly taken care of, although it should be tested from time to time by making a culture from the filtrate. The porcelain is practically the only part that needs attention, and if it is thought necessary a new one may be purchased for every patient, as the cost of this part is only $1.25. The filters are all tested and guaranteed before they are sent out. In using this filter almost the very last drop may be utilized. The pores are cleansed by reversing the filter and running distilled water through it. It should be properly boiled before and after using. The writer uses a small electric burner for this purpose. The range of application of this filter appears to be very great; to just how many diseases it will eventually be proved to be applicable, clinical experience and laboratory experiments alone will tell. Autotherapy is not a cureall. The natural defenses of the human body include an attempt to throw off the toxic substances developed during the course of the disease. It is for this reason that the poisons of the disease are found in the discharges. When they escape into healthy tissues the power of the serum is raised, the activity of the leucocytes is increased, and the patient tends to recover. This is called autoinoculation and is nature's method of curing the disease. Riviere (*Proceedings of the Royal Society of Medicine*, February, 1911) states that when nature cures a severe infection it is on account of the toxic substances radiating or escaping from the inflamed area into healthy tissues. When the toxic substances are placed in healthy tissues by the physician the development of the same antibodies takes place as when they escape in healthy tissues by autoinoculation, the toxic substances in each instance tending to bring about a natural cure. For this reason this writer calls this treatment autotherapy. The healthy tissues resist or build up antibodies to these toxic substances, which antibodies are specific to the disease. Both autoinoculation (nature's method of curing disease) and autotherapy (the physician's method of assisting nature in curing disease) tend to bring about a natural cure, with the difference that the advantage is in favor of autotherapy, for it develops resistance to the disease earlier than the slower natural method. Autotherapy tends to shorten the course of or aborts the disease. The system is not then so charged or taxed with toxic substances. It is not reduced by prolonged fever. In other words, the powerful secondary defenses, the antibodies, developed by the healthy tissues, are brought into action early, and the time of the sickness is shortened. The question may be asked: "What are the toxic substances in the focus of infectious against which the healthy tissues react in a curative manner? Bail developed the doctrine of aggressins. He showed that the tissue toxins greatly intensified the pathogenic action of bacteria. He found in the focus of an infection (1) the toxic substance derived from the causative microorganisms, and (2) many enzymes, ferments, and toxic results of chemical changes in the protoplasmic molecule. The healthy tissues react against these tissue poisons, as well as against the toxic product of the bacteria. These are the substances the tissues use in bringing about a natural cure. These are the substances the tissues need in order that they may develop specific antibodies and abort or cure the disease. These observers claim that it is the latter toxins that cause wound fever in clean wounds. Their work was a scientific investigation and was not utilized (if I am correctly informed) from a therapeutic point of view until the writer began this work. The bacterial toxins or vaccines to be most efficacious must be used in conjunction with these tissue toxins. The writer was the first to place autotherapy on a firm and scientific basis.

Before closing we will take up some of the points of superiority which autotherapy offers over opsonotherapy.

The immortal work of Wright and Douglas in the treatment of infectious diseases has been welcomed by the medical profession as being one of the greatest therapeutic advances in the history of medicine. The writer believes the greatest thing they discovered is the fact that the vaccine to be most curative must be autogenous. The autotherapeutic method of curing disease is more curative, less dangerous, better, cheaper, and more convenient than opsonotherapy or the method of Wright and Douglas developed for the following ten reasons: (1) We are warned by many high authorities of the danger of anaphylaxis by giving repeated injections of the dead body of the bacteria hypodermically. Anaphylaxis enters into their hypodermic method of administration. The body of the dead bacteria are foreign proteid. Beef serum or whites of egg repeatedly injected at stated intervals will kill the patient by anaphylaxis. Yet these two are stable articles of food and there is no anaphylaxis when taken by the mouth. The dead bodies of the bacteria are not injected hypodermically by the writer's method. He utilizes the poisons of the bacteria injected hypodermically. Anaphylaxis does not occur in the autotherapeutic method of cure. If there were no other advantage of the direct, or the writer's method, over the indirect, or the Wright and Douglas method, eliminating the danger of anaphylaxis is sufficient to warrant its selection. (2) Vaccines lose in therapeutic value by heat. This does not hold true in giving the natural vaccines or the autotherapeutic toxins. (3) Vaccines lose in therapeutic value by being grown in foreign culture media and by being grown

outside of the body tissues. This does not hold true by giving the living virus by the mouth or by injecting the filtered toxins of the disease hypodermically. If a culture medium is necessary, one may use the patient's own blood, which is usually an ideal culture medium. The power of the serum is usually low, and the only wonder is that it has never been employed before for autogenous vaccination. Using the patient's own blood as a culture medium is distinctly an autotherapeutic procedure. (4) Vaccines lose in therapeutic value by time. By the direct method it is not necessary to wait from one to three days in sepsis, or five or six days in gonorrhea, until the pus has made its appearance, and then wait from one to three days while the vaccine is being prepared at the same time that the patient is growing worse. But the patient may be given the natural vaccine earlier than it can possibly be done by the autogenous method of vaccination now in vogue. By the direct method the different stages or phases of the disease may be met with the corresponding vaccine. This cannot be done so accurately by the indirect method or any other method of administering vaccines. (5) In the indirect method, or the Wright and Douglas method, the therapeutic value of the vaccine may be lessened by extraneous matter or foreign bacteria. This danger is a live one and great care must be exercised that it does not occur. Any one who has attempted to prepare a vaccine by the Wright and Douglas method knows this danger. Again in growing the single microorganisms in culture media we never know whether we have the one that is doing the most damage or not. There may be two or three at work at the same time. There is practically no danger from this error by my method. (6) The method of preparing and administering vaccines by the method now in vogue is not always within the power of the patient to purchase. This is especially true of poor people and people living outside of the cities. The cheapness of the writer's method places the already prepared natural vaccine in the hands of every one, however poor he may be; at most it takes but a few minutes to filter it. The merest waif of the city streets is as rich in curative medicine when he has a localized infectious disease as the most aristocratic millionaire or king. There is no money distinction here. (7) The method now in vogue of preparing vaccines is not always convenient. By the method the writer is developing we find that nature places the specific for the infection in the infected area in the very form nature intended it should be taken. Wherever there is an infection there in the infected area is the cure always at hand ready for use. This cannot be said of the Wright and Douglas method or any other method. (8) The Wright and Douglas method demands a skilled pathologist, one on whose report absolute dependence can be placed. He is not always easy to find. The direct method requires no pathologist. (9) The Wright and Douglas method requires a well-equipped laboratory. The direct or the autotherapeutic method requires nothing but our fingers or the simple Berkfeld filter. This is nature's method of curing infectious diseases to which the Wright and Douglas method is but an approximation. (10) But the greatest reason autotherapy is superior to opsonotherapy is that autotherapy employs the natural vaccines and a portion of all the toxic products of tissue changes against which the tissues react in a curative manner. Opsonotherapy does not do this. Autotherapy uses nature's weapons in fighting disease. By using nature's weapons we but assist in arousing the natural forces within the body. These forces alone can bring about a natural cure.

[The writer is indebted to a number of his confreres and co-workers for able and friendly criticism of this paper, for which he wishes here to express his thanks and appreciation for the time consumed and interest manifested in the work he is developing: Dr. Brooks, pathologist, New York Post-Graduate Medical College; Dr. James Ewing, pathologist of Cornell University Medical College; Dr. George Laidlaw, professor of diagnosis and internal medicine, and Dr. Wm. H. Freeman.]

233 Lexington Avenue.

SOME INDIVIDUALIZED ASPECTS OF PREVENTIVE MEDICINE.

By HAROLD W. WRIGHT, M. D.,

NEW YORK.

This being the age, pre-eminently, of the prevention of disease, physical, mental, moral, and sociological, we are all concerned in the campaign, whether we like it or no. In our zeal to do something great, to take part in some big movement, to prevent trouble wholesale, we are quite apt to overlook the little things that count for much, to forget the individual because of our concern for society as a whole. Even physicians are prone to this error.

But society is made up of individuals; society is, like the human body, an organism; if one member suffers, all, or at least some other members, suffer with it. What are the most important and most frequent individual problems confronting the general medical practitioner which have a direct bearing on the prevention of future disease and misery? Naturally, the answer is those which are seen in connection with infancy and childhood.

Who is confronted with them most often and in their incipiency? The obstetrician and the pediatrist, whose specialties are also the busiest fields in the work of the general practitioner, who alone has the best opportunity for prolonged observation and the drawing of conclusions from adequate experience. He it is who can follow a patient from the cradle to the grave, if given the chance.

In these days of specialties there is apt to be a great deal too much shifting of responsibility from one specialist to another and a disregard of anything outside one's particular field, and consequently an overlooking of many important conditions occurring in early life which have much to do with a child's future from every point of view.

To come down to specific matters, since the individual aspect of the subject is the one we are to consider, let us look at the period of earliest infancy.

1. How many congenital deformities are treated as soon as they can be and should be; and, if treatment is delayed, how much following up or supervision of them until treatment can be procured? How many are forgotten until irremediable or much more difficult to remedy? (Congenital clubfoot is an example.)

2. Are cases of congenital syphilis always recognized early, and if so, is treatment always persisted in until cure is certain? Think of the future consequences of neglect of this disease!

3. Nutrition of infants: What effort does the private physician make to secure breast feeding of every infant he sees? Or rather let the primary responsibility be put up to the obstetrician who delivers the mother, who may have seen her several weeks before labor, and almost always sees her for two weeks afterward. What effort does he make be-

fore the labor to have her in a condition to make nursing possible and how much supervision and encouragement does he give with this end in view for the few weeks after? When the woman leaves his care how often the problem of the child's nutrition is left to anyone who happens along, usually the neighbor who thinks all children are like her own or who feels quite competent to advise the young mother because she has "had twelve young ones and buried ten of them!"

Many children can be breast-fed who are not so blessed. Many bottle-fed babies get their feedings on a haphazard, guess-work, ill-advised plan and so never grow up vigorous, for it is in the period of infancy, when the growth of all the tissues and organs is most rapid, that the danger of improper food is the greatest. It is in this period of life that the foundation for chronic indigestion, a delicate stomach, and generally poor resistance to all the infectious diseases is laid, because nutrition is below par.

We can never hope, or at least not for many generations, to wipe out all the pathogenic bacteria in this world, but we can fortify people against them if we begin early enough. There is no greater or more interesting problem in preventive medicine than that of the nutrition of infants and young children. If their nutrition has been all that it should be during these periods little fear need arise for their physical welfare—gastric, pulmonary, or cerebral—in the years to follow; providing, of course, that they are free from inherited defects of structure, but many things called "hereditary" are really only things *very early acquired.*

Surely the subject is important enough to warrant the present status of infant feeding as a special study but not one to be neglected by the general practitioner because it requires some special study and attention to detail. It is not such a profound or intricate subject that only peculiar minds can grasp it. On the contrary, I venture to state that the subject could be so taught in our public schools to the young girl who will before long be deeply concerned about it that every high school girl graduate would be prepared to see her children safely through their early years of life when the food question is of so much importance, without the aid of a physician, nine times out of ten.

To leave the subject of nutrition of infants—we come to another condition often overlooked because so irregular in its manifestations—that protean disease, *rachitis.*

This disease is readily recognized after most of the damage has occurred, when several of its characteristic signs are present. But this disease has many latent symptoms in its earliest stages which can easily be overlooked. If the disease is recognized then, much future distress to the mother and many operative procedures or prolonged courses of orthopedic treatment upon the child may be avoided. To be recognized so early the disease must be borne in the physician's mind whenever he has the opportunity to visit any infant, for its frequency in all classes of society is much greater than is commonly supposed. One of its earliest symptoms is constipation, and many such cases are treated with cathartics or other local measures when a proper dietary would not only cure the constipation but prevent later manifestations of rickets of more pronounced degree. Indeed, may not much of the chronic constipation and generally feeble musculature of young adults, including those cases of myocardial insufficiency observed in children when they begin to attempt indulgence in school athletics, be due to this disease, present in a latent form in infancy? For rachitis is not, as so often incorrectly supposed, a disease of the bones only, but a disease of the entire connective tissue system, bones, muscles, blood vessels, lymph channels, and white matter of the central nervous system (hence convulsions and spasm of the glottis so often observed in rachitic infants). Small hearts and flabby hearts, small blood vessels and feeble circulation, and hence defective growth of the entire body, may be traced to this disease or an allied condition of defective nutrition and find frequent illustration in the numbers of under-sized, anemic, round-shouldered, and scoliotic children which one may see in every school room if he keeps his eyes open.

The remedy, or rather the preventive for such conditions, is a dietary suited to the individual child during its most rapid periods of growth, which shall contain all the protein and mineral matter necessary for that child. Such food constituents are not present in every mother's milk, after the sixth month in few, nor can they be utilized from average formulas of cow's milk by every infant. Each child must be studied individually and intensely if best results are to be obtained.

Some of the conditions enumerated above, such as the cardiovascular anomalies and the defects of stature, are often called "congenital." A more correct designation would often be "early acquired."

Another condition seen later on in childhood, but apt to be overlooked, is secondary anemia due to intestinal parasites or more often still to chronic intestinal indigestion. Such cases are observed soon after the age when the child's diet is considered no longer a specialty, and the age of 5 to 12 years is one in which the majority of parents let children eat what they want and whenever they want it. This is the age of appendicitis, acute and chronic, but pre-eminently the age of chronic indigestion of the intestinal type, victims of which are illustrated by the pale, sallow, peevish child with capricious appetite, constipated at times, at times having diarrhea, generally suffering from headache, lassitude, cold extremities, and disturbances of sleep (nightmare, grinding of teeth), even convulsions and incorrigible traits in behavior, facial tic, habit spasms, and general unhappiness.

It is from such children that, if the dietetic mismanagement is uncorrected, the neurasthenic, psychosthenic, querulous, and sexually abnormal young adult is produced.

What are we doing for such conditions? Mothers of all classes, but perhaps especially the busy mothers of the working class, need instruction in what foods should be given and how they should be prepared for children between the ages of 5 and 15 years. It is not always or usually a question of cost but a question of knowledge, for the faulty method is the more expensive. Dietetics has not yet invaded the school curriculum—it ought to. It has not yet become a popular subject for popular lectures, but why shouldn't it be?

We are teaching physical culture in the public school by practical methods, but of what use is physical training to those who have no foundational material for it because they are badly fed? I wonder how much of the mental retardation of school children could be traced to this cause. I do know that many a child comes to school on a breakfast of coffee and a bun and rushes home to partake hur-

riedly of a lunch of similar value, or else gets it at a bakery whose wares are produced on the "get-rich-quick" principle.

Children who are adequately fed as to time of meals and quantity and quality of food do not have capricious appetites, are not nervous or anemic, and the dietetic habits formed in childhood persist into adult life, so tending to prevent excesses and perversions in meat and drink later on. It is the badly fed person who has to resort to artificial and dangerous forms of stimulants in which he is necessarily prone to excess.

Our schools teach many things of more or less value. Is it more valuable to a child to know the apothecaries' table, the history of Rome, the number of our deceased Presidents, how to measure the wall paper of a room, and of less importance that he know the laws of health? Hygiene is taught in a measure, so is physiology, but I fear more emphasis is given to theoretical considerations of physiology and hygiene as related to disease than to practical instruction with actual demonstrations in the physiology of health, of which dietetics is the most important branch.

What are we as physicians doing to bring about a more efficient method of instruction in these matters? What are we doing with the children of our families in private practice?

Before closing let us consider briefly some conditions involving the central nervous system, and among those of chief importance are the deformities following meningoencephalitis and anterior poliomyelitis. These deformities are very frequently encountered. Let us hope that they will be less often seen in the near future not only because our laboratory workers will have found sera for inoculating children against these diseases, but also because the family doctor will have taken the trouble to learn how to prevent the deformities resulting from them, and will have sufficient interest and patience to see that such preventive measures are carried out.

In regard to poliomyelitis, deforming contractures are *always* preventable. There is no question about this. It is possible to prevent them if treated consistently from the outset of the disease. There should be no occasion for the operation of tenotomy following months or years after the outset of poliomyelitis. If the paralyzed and the opposing strong muscles are treated early and for a long enough time, deformity can be prevented. We may still have to resort to apparatus or tendon transplantations for the permanently paralyzed muscle groups, but we can prevent the deformities, and it is the deformity which causes most of the defect in function of the part concerned. Occasional massage or electrical treatment will not accomplish this, but persistent muscle training will, combined with the former measures, or even without any electrical treatment. The best authorities agree that concentration of the patient's attention upon attempts at voluntary muscular action and coordinate motions will accomplish far more than electricity. This should be combined with passive motion and massage and simple apparatus to prevent the pull of stronger muscles during sleep, and apparatus to enable the patient to get upon his feet and use what muscular power he has. But such treatment must be given daily and for months or even years, just as we must give thyroid constantly in cases of cretinism. Of course few patients' families will be able to afford such long treatment at the hand of trained attendants, but there is no reason why the parents of a child so afflicted cannot be instructed in the method.

In regard to the deformities resulting from meningoencephalitis, the results cannot be as good as in poliomyelitis because of the location of the lesions, but much can be done nevertheless to reduce deformity and incapacity by special training, in orthopedic schools preferably. The writer has seen in a young girl a spastic hand made capable of using needle and thread, and together with improvement in the use of the hand has come improvement in the mental condition, as could be expected because of the close relation between the use of the hand and the development of intelligence. Such patients are very often neglected and so become chronic invalids, defective in interests and capacity for enjoyment just because they are regarded as hopeless cases. We see the same results of neglect in the congenitally deaf or blind child, for whom a great deal can be done and has been done under specially skilled training. Visit some of our schools for the deaf-mute or the blind and you will be rewarded.

Organic lateral curvature of the spine is as distressing a condition in its last stages as could be imagined, but this, too, is preventable by early treatment.

We also want more information about and study of the abnormalities of the thyroid gland and the pituitary gland, and their relations to obscure metabolism and bodily structure, to defects of the brain and the vascular systems.

But before leaving the subject of neurological disease and its results it is in order to point out the need for more early and more accurate diagnosis by the general practitioner of diseases of the nervous system, and consequently earlier and more successful treatment of them. In this connection I would mention particularly the early diagnosis and early treatment of locomotor-ataxia, general paresis, and cerebral syphilis. Where seen in their advanced stages these diseases are not benefited by any treatment; but many cases ought not to reach the advanced stage. Some will reach it in spite of the most skilled attention. There are other cases, however, in which the most distressing and incapacitating effects of these diseases can be arrested.

It is surprising how few general practitioners think of making a systematic neurological examination as a routine procedure in every patient presenting obscure symptoms of pain, neurasthenia, vertigo, and general lowering of physical and mental efficiency. Many a case of incipient tabes or paresis has been treated for months as a case of "neurasthenia" or "neuritis" or "rheumatic neuralgia," or, if in the female sex, as a "disorder of the climacteric period." A careful examination of the pupils, tendon reflexes, and cerebrospinal fluid would have prevented such errors and also have allowed the patient the benefit of early treatment by medicine, hydrotherapy, and change of occupation. Vigorous mercurial and especially iodide medication, combined with general hygienic measures and a relief from the customary responsibilities of the patient's daily work, will avert indefinitely the dementia and physical disability seen in advanced and neglected cases of dementia paralytica and cerebral syphilis. The writer recalls a patient who when first seen was unable to do his day's work as a bricklayer because of the vertigo, irritability, and general nervous weakness accompanying diffuse cerebral syph-

lis. The man was given large doses of potassium iodide and moderate doses of mercury, both of which have been continued, the former gradually increased in amount, and today he is earning the usual wage of his trade without complaint although he is over 65 years of age. His mental condition has improved most noticeably and the physical signs are less pronounced.

While such results could not be hoped for in many cases of general paralysis or in all cases of cerebral syphilis, yet we can do much for the former class by early treatment, for this disease has a natural tendency toward remissions and the occurrence of unfavorable symptoms can be delayed by antisyphilitic and tonic treatment.

With regard to other forms of mental disease there opens a large field not only for the psychologist, especially the student of the psychology of childhood and adolescence, but also a field well worth the interest and study of the family physician. There are always causes for mental breakdown other than hereditary defect; this latter is undoubtedly present in almost every case, but only as a predisposing cause. The more we learn about the exciting causes the more we can do to prevent mental disease from progressing to the dangerous phase known as "legally insane." The problem is one involving child study and individualized education, vocational training, and an environment in which the individual is understood and has the benefit of intelligent sympathy and help which are as often lacking toward those who are at all peculiar in their mental makeup. "First aid" to the mentally unbalanced is of more importance than first aid to the physically injured. Too often the first treatment of these unfortunates is the worst possible, consisting in thoughtless cruelty and aggravation of symptoms by those whom they come in contact with in their daily life. Why is it that less sympathy is shown for and less shame felt in tormenting the mentally peculiar than would be given to some trivial physical complaint or injury? Such will nowhere be true when the facts about insanity, its causation, and treatment are as widely understood as the facts about tuberculosis have already been made known and appreciated.

The prevention of both the neuroses and the psychoses, the lighter and the more serious forms of mental disorder, is closely connected with the education of the child from the age when self-consciousness begins to the age of maturity, and the connection is especially related to the moral and religious education. It is well that theoretical instruction be delayed as long as possible, that the period of infancy and immaturity be prolonged as much as possible, for that is the natural order of development, as we can see in the evolution of our species. But there must be religious or ethical training of some sort from the age of self-consciousness onward through life if men are to be whole men and not merely higher animals. Such training for young children is better by example than by precept; later, when precept must also have a place, the emphasis should be much more upon righteousness than upon sin. It is always better to teach the love of what is good than to arouse curiosity and fear about the evil. Love will always conquer—it is constructive; but fear and hate are disintegrating and destructive of peace of mind. Many a case of adolescent insanity can be traced to morbid religious fears and doubts which the child has acquired from a distorted moral education; the very acts and utterances and delusions of the patient show this. To be sure, many children happily outgrow the fears inspired by morbid religious education, but alas! at the cost of cynicism for anything spiritual and the loss of faith in a higher power, of which they will surely stand in need in days of suffering and despair. But many more have a predisposition to mental unbalance inherited from ancestors, and this predisposition is increased by an early education which has laid the emphasis upon fear, punishment, and repression of activity instead of upon love and its expression in every healthful channel; such natures have become all too soon mentally and morally warped and denatured, so that only some physical illness such as influenza, typhoid, or in the case of young girls the disturbance of the menstrual function during its establishment, or even a normal childbirth is sufficient to suddenly bring about catatonia, acute melancholia, or mania. Sometimes there are other causes, such as sexual indiscretions, but it is the lack of trust, the fear of punishment, and the seclusive nature of the patients fostered by their early training which is really responsible for the mental symptoms.

To the question, "What is to be done about it?" the only answer is to say that the family physician, the clergyman, and the teacher must inform themselves adequately in the subject of psychology in order that each may in his place be competent advisors to parents and children at times of special stress and danger."

126 East Fifty-ninth Street.

WHEN CYSTITIS IS NOT CYSTITIS.*

By J. BAYARD CLARK, M.D.,

NEW YORK,

ASSISTANT GENITOURINARY SURGEON TO BELLEVUE HOSPITAL.

Whatever else we may wish to call cystitis we may start by calling it a borderline disease, somewhere between twose two illy defined territories occupied on the one hand by the endeavors of the general practitioner and on the other by the special worker in the field of genitourinary diseases. This classification of the disease, however erroneous it may be, should at least serve as a starting point of mutual interest in its consideration. Cystitis, like everything else, changes with the times. It was not so very long ago when cystitis was a very common disease. I will not go so far as to say nearly everybody had it; but I think it is safe to state that every individual suffering from painful and frequent micturition, and having pus in the urine, was put down as having cystitis. That remnants of this view of urinary ailments still exist, and in no small measure, has been my experience to observe. This then is my excuse for asking your attention to this subject, if indeed an excuse be necessary for discoursing on so misjudged an organ as the urinary bladder.

In the light of our present knowledge we may give a definition of cystitis somewhat as follows: an inflammation of the bladder, generally its mucous membrane, arising *in* the bladder and not extending *to* the bladder from other organs or structures. In the latter case it would be an extension of inflammation from some other region and have to be considered as such. The etiology of cystitis is first and foremost a lowering of the vitality of that

*Read before the Union County Medical Society of New Jersey, January 10, 1912.

viscus; exposure to cold, especially in the female, seems to effect that result. Tumors, adhesions, or abnormal positions of the pelvic organs which pull or press upon the bladder, resulting in constant congestion, stones, spinal cord lesions, and sustained distention, all weaken the resisting power of the bladder to a greater or lesser degree. A gouty or rheumatic tendency may be manifested in the mucous membrane of the bladder as in the case of any other mucous membrane. Under these or any conditions of weakened resistance, the invasion of the bladder by bacteria from whatever direction, whether through the wall of the bladder or through the urinary entrances or exit, may find a suitable soil and result in a cystitis. The *Bacillus coli* causes the largest proportion of urinary infections. The streptococcus, *Bacillus proteus Hauser*, *Bacillus tuberculosis*, *Diplococcus ureæ liquefacions*, *Streptococcus ureæ liquefacions*, *Streptobacillus anthracoides*, *gonococcus* and *Bacillus typhosus* are given as the cause of cystitis in the order named. The infection may be a mixed one. It is well always to bear in mind that the presence of bacteria alone is less likely to result in an infection of the bladder when that organ has not been previously weakened, than perhaps any other mucous membrane of the urinary tract. Its resisting power is by nature unusually fortified by its vascularity, by its activity, by scarcity of mucus glands, and by the quality of its epithelium.

Having, to the best of our present knowledge, the normal disposition of the bladder and the etiology of cystitis clearly in mind, we are in a position to consider the question of diagnosis. We may first speak of and analyze those hoary symptoms our forefathers have handed down to us as a guide to the recognition of cystitis: painful and frequent micturition and pyuria, the symptom-complex which is still a stumbling block within our midst. How easy it is when a patient with these symptoms of frequent and perhaps painful micturition and pus in the urine falls to our care to say, "here is a case of cystitis." Some of the other conditions of the urinary tract which give rise to precisely the same or modifications of the same symptoms are the following: inflammations of the male and female urethra; infections of the prostate gland; calculous disease of the urinary tract with infection; pyelitis, pyelonephritis, pyonephrosis, and renal tuberculosis. Although the bladder may participate in any extravesical process, such participation will never justify a diagnosis of cystitis, as treatment aimed at the bladder in these cases most solemnly attests. This brings one a step nearer to the diagnosis of true cystitis, by showing some of the conditions to be excluded when these time-honored symptoms are met with. This again brings one to the appreciation of another point; that when a "cystititis is not a cystitis" the diagnosis is none the less important. One step forward and one realizes that the urinary system, along with the genitalia, must be looked upon in its entirety, and that one cannot learn an easy method of diagnosis for one organ to the exclusion of the rest. When we are prepared to say the condition is a cystitis, we must be equally prepared to pass judgment upon the condition of its allied organs, otherwise the purposes of diagnosis will meet defeat in the treatment.

There is a form of cystitis quite familiar to the general practitioner. It occurs in females, old and young, with apparently normal pelvic organs, generally after a chilling. There is an abrupt onset with frequent micturition, tenesmus, and perhaps dysuria. The acid urine contains the infecting organism, usually a colon bacillus, pus, and often blood. Rest in bed, local warmth, light diet, free catharsis and some urinary sedative and antiseptic are the measures employed, and in a few days the severity of the attack subsides, and generally in two or three weeks the patients are as well as ever. Of this variety we need not deeply concern ourselves here, except so far as not to confuse it with the other and larger class of bladder infections depending on some underlying and generally chronic cause. The most important factor then in the diagnosis is seeking out this underlying cause; for, as we have mentioned, the otherwise normal bladder is not prone to entertain infecting organisms.

The routine of procedure that is essential, if we are to hope for a correct diagnosis in cystitis, is as follows:

To start with, it is necessary to obtain an hereditary and personal history, including a record of environment, habits, and metabolic tendencies; a careful estimate of the general physical condition, including the nervous system; a visual and digital examination of the external and internal genito-urinary organs, as far as this can be carried out by palpation and inspection of the abdomen and external genitalia and by digital examination per rectum and vagina. When these simple and preliminary steps have been conscientiously carried out and recorded, a vast amount of information will already have been collected. After the history and physical examination are completed, the next important thing is the study of the urinary output. Twenty-four-hour specimens and single specimens are put to the test, chemically, microscopically, and bacteriologically. Following this the more recent and refined methods of examination are employed; the catheter is used to collect urine uncontaminated by the urethra, to ascertain the presence and amount of residual urine, and to measure the bladder capacity. Then come the urethroscope, the cysto-urethroscope or the cystoscope, in case one or the other of these instruments is called upon for use. It is of some importance to know when not to use these instruments. It is more important to know what is seen when they are used. Next upon the list comes the separately collected urine by means of the ureteral catheters or bladder partition, for oftentimes it is impossible otherwise to exclude the upper urinary tract from suspicion. The estimation of renal efficiency, pyelography and the like, luckily do not concern us in our quest after a correct diagnosis of cystitis. Of the radiograph we must be ever mindful, for many a case of cystitis has lain long hidden under a stone, and that not always in the bladder. These then are the means which must be held in readiness to meet the problems of the urinary tract.

Until a shorter way is cut, this must remain the accepted road to the accurate diagnosis of cystitis. Once the diagnosis is assured, the subject of treatment holds out much promise; for with the removal of the underlying cause, which in most cases is fortunately possible, the bladder usually rights itself with an ease which is truly gratifying to see.

In closing this paper there are three points regarding cystitis which I hope to emphasize:

First: Do not depend on frequency, pain, and pyuria in making a diagnosis of cystitis, especially

if the condition shows any inclination to be a chronic one.

Second: Never be surprised when irrigations of the bladder do not cure the trouble, whatever it is.

Third: When one has reasons for believing that there is a cystitis, one should make sure of the underlying cause before thinking further of treatment.

616 Madison Avenue.

ABORTIVE TYPHOID FEVER WITH REPORT OF A CASE.

By HARRY W. LINCOLN, M.D.,

Brooklyn, N. Y.

Gastrologist to the Kings County, Swedish, and Eastern District Hospitals, Chief of Clinic Department of Diseases of the Stomach at the Polhemus Memorial Clinic.

Instances of the abortive form of typhoid fever may perhaps be sufficiently uncommon to permit of a few remarks upon the subject, with also the report of a case in which there was little doubt as to the correctness of the diagnosis. As early as 1841 Louis described a case of abortive typhoid which came to autopsy. In the Nothnagel Encyclopedia for 1901, in the classical article on typhoid fever by Heinrich Curschmann, the observations are made that splenic enlargement is quite as common as in the ordinary type of the disease, while the roseola and diarrhea are less frequently present, and meteorism is often absent. Cases with intestinal hemorrhage are mentioned. Complications and sequelæ are found as often as in cases that run their full time; and the mild cases are perhaps more often the victims of relapse than those of six or more weeks' duration. The duration of high temperature is given as not more than twelve days, and often from three to six days only. Convalescence may take place in three weeks, and periods of convalescence lasting but fourteen days occur.

Chantemesse* "found on puncture of the spleen that the splenic juice was free from the Eberth bacilli, and he explains this by assuming that in the abortive form the bacilli penetrate less deeply into the tissues."

In *American Medicine*, October 8, 1904, the following points are made in a paper upon this subject by J. B. Briggs: "The more sharp the onset, the more likely is the case to be abortive. Headache and constipation are nearly constant features. The pulse is not much disturbed. The temperature rise is sudden. The eruption is as frequent as in the ordinary type. The spleen is enlarged with ordinary frequency. The Widal reaction has been found on the third day. Complications and sequelæ are rare. Relapses are more liable to occur." Of three cases reported in the *Practitioner* of July, 1906, by Parkinson, two of the patients were constipated, and in the third patient the bowels were normal.

In an article written later, *American Journal of the Medical Sciences*, June, 1909, Warren Coleman includes under this class of cases: ambulatory; abortive; mild; typhus lævis, and typhus lævissimus. "All typhoid does not run the classical twenty-day course. The disease is of the short term variety when it lasts under three weeks. Every year patients enter Bellevue Hospital whose disease terminates in from one to three weeks. Claim was made about 1901 that paratyphoid could be differentiated by its milder and shorter course. Wunderlich stated in 1868 that no case was typhoid unless the temperature reached 103.2 F. between the fourth and sixth days. This was referred to as possessing diagnostic weight as late as 1897.* Exact methods of diagnosis have been neglected in this form of fever.

J. P. Bates cites 68 cases occurring in Panama, 21 or 32 per cent. of which were of the short duration variety. In the shortest case, lasting but eight days, the paracolon bacillus was found. Even as late as 1908 an article appeared under the title, 'Is There Such a Disease as Abortive Typhoid?' and no proof was given. Typhoid bacilli are not found in the blood as often as in ordinary typhoid."

While the above authorities agree in the main that this condition is of more frequent occurrence than is generally believed, and as is well known, that it passes often without mention or diagnosis, yet there are some points of divergence as to symptomatology and findings. It seems to be generally agreed that splenic enlargement is as frequent as in ordinary typhoid. As to the occurrence or not of the roseola, authorities whose opinions are of equal value differ. Unanimity as to the prevalence of a constipated condition of the bowels is present. On the one hand, Curschmann states that meteorism is often absent, also that complications are as likely to follow as after typhoid of the usual type, while on the other hand, Briggs thinks complications are less to be expected in the shortened form. Both, however, coincide in the belief that relapses are more prone to follow abortive than full term typhoid.

The duration of this disease as generally given is from one to three weeks. The sudden onset as above alluded to is a good point to be borne in mind. Could the Widal reaction be obtained in all cases on the third day, it would certainly be of inestimable value. As a matter of fact the average case might prove to be typhoid or any one of several diseases, as far as clinical manifestations show for the first few days. These first few days are, however, of great importance from a nursing and dietetic standpoint at least, for an extra meal or two of heavy solid food may bring about serious results even in the early stages of enteric fever. The medicinal consideration is to my mind very much a secondary one.

The reason for reporting the following case is partially at least owing to the fact that from the beginning one reaction for typhoid, namely, the Russo reaction, was always positive. This test is made by simply adding to 4 or 5 c.c. of the patient's urine 2 or 3 drops of a ½ per cent. alkaline solution of methylene blue, when, if typhoid be present, there will appear a most beautiful emerald green color of the contents of the test tube.

The patient was a male, aged 27 years, married, a man of exceptionally good physique, never having had any serious illness, and whose family history was negative as to syphilis, tuberculosis, carcinoma, etc. His occupation was an indoor one in a banking house. His temperament was perhaps a trifle nervous. He ate rapidly and in goodly amount, and slept well, and the bowels were regular. On December 19, 1911, there came on a feeling of slight malaise, with some dull headache, of which little was thought for the reason that there had been for some time periodic headache due to eyestrain.

*"Traité de Médecine," page 771. *Semaine Médicale*, November, 1889.

*Dreschfeld, Allbutt and Rolleston, "System of Medicine," article typhoid fever.

On December 20 I was called and at 4 P.M. found the temperature 103°, and the patient complaining of having had creeping chills, headache, thirst, aches in the back and legs, occasional cough without expectoration, symptoms of a coryza, etc., and a tentative diagnosis of grippe was made. December 21, in the morning, the temperature was 101°, headache was the same, the other symptoms were greatly diminished, the tongue was clean and fairly moist, the chest negative, and the abdomen was also negative as to anything which might suggest typhoid fever. There was never any roseola at any time, and it was most diligently looked for. That evening the temperature again rose to 103°, but no further discomfort developed. There was a good appetite, and no distress of any sort after taking nourishment. In fact, at any time after the first twenty-four hours the patient would have gotten up had permission been given. A rigid liquid diet given in small quantities was prescribed from the first. December 22, in the morning, the temperature was 101°, nothing of moment occurring, and in the evening it was 102.4°. The spleen was not palpable, there was no meteorism, and no diarrhea, constipation being markedly present from the beginning. The temperature record was as follows: December 23, A.M., 101°; P.M., 102°. December 24, A.M., 101°; P.M., 102.4°. December 25, A.M., 100°; P.M., 101.6°; midnight, 101.4°. December 26, A.M., 99.8°; P.M., 100.8°. December 27, the eighth day, A.M., 99.2°, and at 11 A.M., same day, the temperature struck normal and never again rose even to 99°. The pulse was at no time above 88 and most of the time was from 72 to 80. The respirations never exceeded 28, and most of the time were at 20.

From the first the Russo test was positive. A diazo test made on the 25th was negative, and a Widal made on the 26th was "incomplete." Dr. Henry Fisher, pathologist to the Norwegian Hospital, who was kind enough to make the diazo and Widal tests, took the trouble to make a culture from the urine, with the result that we were rewarded by finding numerous and active typhoid bacilli. December 28, a second diazo and also a second Widal were done, the report coming back that there were still present a few very much less active bacilli, and that the Widal was negative. This, as will be seen, was at the time when the temperature began to come down. There was for a day or so following the temperature drop a subnormal temperature of 1/5 of a degree.

The points of interest in this case may be summarized as follows: (1) the sudden onset; (2) absolute absence of all symptoms except slight headache (frontal and occipital), after the first 24 hours; (3) no spleen palpable, no meteorism, no abdominal tenderness or discomfort; (4) bowels constipated throughout; (5) no roseola; (6) no nose bleed; (7) no prostration; (8) good appetite and clear tongue at all times; (9) December 19, 1911, first complaint by the patient; January 8, 1912, patient back at his office in New York; (10) during the entire illness there was not a single gastro-intestinal symptom to be elicited from the patient. Without the positive "Russo" reaction to suggest further investigation, and the urine culture which rewarded such investigation, the case would perhaps have gone on to recovery without diagnosis. Up to the date of preparation of this report the patient has had no relapse.

113 Hancock Street.

Chronic Mediastinitis Inferior in Children.—Hutinel states that in a case of circulatory disturbance involving the vena cava, one should study the heart of the patient, make use of radiography, and notice whether the apex of the heart retracts with the systole or remains motionless. In case of immobility one should search for a mediastinitis inferior. In the latter there are various gradations from slight adhesions to adhesions so dense and so extended that heart, lungs, and liver are all involved and rendered inactive. These cases are generally due to tuberculosis, syphilis, or a combination of both. They may begin with a pericarditis, followed by a pleurisy, or the pleurisy may be the first factor. When the formation of fibrous tissue extends downward into the abdomen the liver is involved and the portal circulation is interfered with. Inferior mediastinitis is more frequent and more interesting than the superior variety. In the most marked forms there is a voluminous mass of connective tissue involving the thoracic and also the abdominal organs, including the stomach, liver, and spleen. Mediastinitis may begin with inflammation of the glands, pleurisy, or pericarditis. It comes on insidiously: the symptoms are dyspnea, circulatory disturbances, cyanosis of the lips, coldness of the extremities from compression of the abdominal aorta, edema of the legs, tachycardia, and finally asystole. The urine is small in amount, highly colored, rich in uric acid, and urobilin and contains a variable quantity of albumin or sugar, showing involvement of the pancreas. The veins of the abdomen are enlarged and there are ascites, hemorrhages from the nose and intestines, and purpura. Auscultation shows tachycardia, fetal rhythm, gallop rhythm, etc., in pronounced cases. There is an undulation of the chest walls with every beat. The lungs are congested and there are pleural adhesions. Radioscopy shows the heart increased in size and surrounded by an obscure band of connective tissue. The treatment of these cases is not simply symptomatic, but should include the treatment of the underlying disease, tuberculosis or syphilis.—*Le Bulletin Médical.*

Treatment of Suppurating Adenitis with Resorcin.—G. Fionito states that in army and navy work it is very frequent to find cases of suppurating glands, especially in the groin. In these cases it is not desirable to operate in such a way as to place the patient in the hospital with a long period of absence from duty, while a tedious granulation goes on. Most of these suppurations are due to gonorrhea or syphilis. In seeking a means of treatment which allows the patient to remain about, the author tried the use of resorcin, swabbed into the cavity of the abscess after removal of the pus through a small incision. The advantages of this method of treatment are these: the treatment lasts from six to ten days only; the esthetic results are excellent, there being little scarring; the results are of the best in streptococcic infections; the temperature rapidly falls; a large collection of pus does not contraindicate this method of treatment.—*Annali di Medicine Navale e Coloniale.*

Forms of Vertebral Rheumatism.—F. Regnault describes two forms of rheumatic disease of the spine, the osteophytic and the rheumatoid. In the first form there is an overgrowth of bony osteophytes which causes ankylosis of the bones of the spinal column, since the osteophytes overlap the intervertebral cartilages. The articular apophyses are deformed and bony growths cause intense pain through pressure on the spinal nerves. This condition is common in adult and advanced life. Deforming rheumatism causes a kyphosis of a uniform but irregular arc. The articular ankylosis comes from ossification of the interspinous and supraspinous ligaments. The articular ligaments of the apophyses especially are ossified. Horses have the same forms of rheumatism that are seen in man. —*Progrès Médical.*

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New York, March 30, 1912.

MODERN VIEWS ON THE FREQUENCY AND MANIFESTATIONS OF TUBERCULOSIS IN CHILDHOOD.

ONE of the most important conclusions reached at the sixth International Tuberculosis Congress was that the campaign for the prevention of tuberculosis should begin with the earliest years of childhood. The autopsy room has shown that tuberculous lesions are present in a large proportion of children dying from various causes. Cautley of London notes the presence of these lesions in 14 per cent. of 127 autopsies on children under one year, which percentage is identical with that observed by Holt in 319 autopsies. The largest series of cases was that reported by Froebelius of St. Petersburg, who found tuberculosis in 4 per cent. of 18,540 infants dying between one and four months of age.

Recent clinical experience has shown that tuberculous infection when it occurs in the nursling is more intense though not so common as in later childhood. According to Römer (*Beiträge zur klinik der Tuberkulose*, Vol. 17, No. 3) this greater virulence of early infection is to be attributed to the fact that the young organism has not yet acquired a resistance sufficient to enable it to cope with the disease, and not so much to the fact that the "virginal" cells have an innate susceptibility to tuberculosis. Preisich, in the *Wiener medizinische Wochenschrift*, 1911, Nos. 4 and 5, points out that the varying behavior of tuberculosis during the different periods of childhood is to be explained on the basis of the mode of infection.

Thus in the nursling the infection is a massive one, occurring by ingestion and inhalation from close contact with the tuberculous parent or nurse. In later childhood and up to the school age the contact is not so intimate, and the infection in this instance comes rather from the dirt which the child takes up from the floor; this filth contains fewer microorganisms, but these are more widely distributed. This fact closely fits in with the observation made by Cautley ("The Diseases of Infants and Children," 1910) that in children tuberculosis increases in frequency but diminishes in severity as age advances. Preisich notes that from the second to the seventh year of life there is an increasing frequency of bone and gland tuberculosis, which is a more benign form of the disease. This observer also refers to a third period of tuberculosis incidence during childhood, namely, the school age. During this period the infection is mainly one by inhalation.

The frequency of tuberculosis among school children is a subject about which there has been considerable difference of opinion. F. Steinhaus (*Centralblatt für allgemeine Gesundheitspflege*, Vol. 29, Nos. 1 and 2) found evidences of tuberculous infection in 50 per cent. of these children, while F. Hamburger (*Wiener medizinische Wochenschrift*, Vol. 50, No. 25) found this percentage as high as 90 per cent. in children between from twelve to thirteen years of age in the Vienna schools. These, of course, were almost exclusively cases of latent infection as revealed by the various tuberculin reactions, and were cited as furnishing adequate support to Behring's striking hypothesis that the tuberculosis of adult life is but the recurrence of an infection acquired during childhood and remaining latent chiefly in the tracheobronchial lymph nodes.

That this latent infection gradually increases with the advancing school age is shown by the investigations of H. Nothmann (*Berliner klinische Wochenschrift*, Vol. 47, No. 9) who found that of children between the ages of three and seventeen years there were 77 per cent. who gave evidence of latent infection, but that between the ages of fifteen and seventeen years 100 per cent. gave a positive reaction. In opposition to these findings may be mentioned the views of E. Squire (*Lancet*, August 6, 1910), who, on the basis of the physical examination of school children and of clinical observations, as well as of his belief that the tuberculin reactions are unreliable, doubted that tuberculosis is common among school children. At any rate, J. Hawes (*Boston Medical and Surgical Journal*, Vol. 163, No. 24) has pointed out that there are in the schools a great many poorly nourished, anemic children who later become victims of tuberculosis.

In a most illuminating paper on intrathoracic tuberculosis in infancy L. C. Ager (*American Journal of Obstetrics and Diseases of Women and Children*, February, 1912) emphasizes the importance of making a diagnosis of tuberculosis of the various lymph nodes, which infection almost always precedes the advent of pulmonary involvement. During the prepulmonary stage of the disease, provided proper treatment is carried out, the prognosis is excellent. When manifest pulmonary lesions are present the prognosis depends upon the age of the child: during the first three years of life the prognosis is bad, but from the fourth to the tenth year, according to Ager, the prognosis, even in moderately advanced cases is more favorable than at any other time of life, provided, however, that the treatment is properly carried out. From the tenth to the fourteenth year there is a higher mortality, more pronounced in girls than in boys, which is attributed to the stress of development at the time of puberty. During this period the mortality among girls is three times as great as it is among boys.

PATHOLOGICAL HEREDITY

The past lies upon the present like a dead giant's body, so that it is as if a young giant were compelled to waste all his strength in carrying about the corpse of an old, an atavistic giant. We sleep in dead men's houses; we are sick of dead men's diseases; we live in dead men's lives. "The House of the Seven Gables," from which the above ideas are transcribed, was the product of Hawthorne's day and generation, when heredity was held more than it is now to determine human destinies. We, in the present, are apt to underrate the influence of heredity and to lay more stress upon environment and post-natal functioning, in the evolution of pathological conditions. Yet no one among us would deny a vicious heredity at least some baneful influence.

J. Grasset of Montpellier, who wrote the important work on the Half-Mad (*Les demi fous*), has in Part III of "Traité Élementaire de Physiopathologie Clinique," presented an excellent summary of the most recent ideas regarding pathological heredity. In normal life heredity is the transmission of the type of the species, the organs, temperament, physical characteristics, and analogies of family and race. In its pathological aspect heredity is the transmission of certain maladies, of predisposition to them, of refractory conditions, of malformations, and functional weaknesses; the transmission, however, being not always of the precise entities in the transmutations. Variations are introduced according to family and individual propensities; previous generations intervene also (atavism).

Heredity is not fatal or unavoidable, and its effects may be corrected, first of all by crossing. The mother's heredity and that of her family can in one way and another modify that of the father; and there can be conjoined the advantages of scientific selection, and the avoidance of the dangers of consanguinity and of the superposition of wrong heredities. Parents transmit certain acquired characters, physiological or pathological, under one form or another; thus rests upon them, therefore, the responsibility of the heredity that they transmit to their children; their vices and self-poisonings (as by alcohol) are not baneful to themselves alone. Here general hygienic deduction should have at least some deterrent effect. Yet even in children handicapped by heredity, much can be done by instruction, hygienic measures, and the inculcation of morals. The physician who must advise in such matters should be intimate with the laws of heredity, from the viewpoints both of prophylaxis and of therapy, as well as from those of pathology and pathogeny.

What is transmitted in the egg and the spermatozoön are the force, the energy, and the vitality, together with the directive idea of the species. The continuity of the individual is not incompatible with the continued renewal (birth and death) of the matter of which he is composed; nor is the continuance of the species incompatible with the birth and death of individuals. The matter transmitted by heredity serves as the vehicle of the force and energy. "The phylogenic energy that is transmitted by heredity from one individual to another, like the ontogenic energy within the individual himself, is a cellular element." Heredity is the agent of defense of the species, and within the latter are transmitted the means of this defense, whether natural or acquired. These means, like the functions of individual defense, are not the result of a preestablished finality, but are the consequence of conditions arising in the struggle for existence, realized in previous generations. The surviving species are victorious and well armed, and transmit to their descendants these antixenic properties. For the individual and species alike the outcome of the struggle is not always fortunate. Heredity transmits maladies, malformations, infirmities; if such alteration is pronounced enough to menace the persistence of the type or to modify it seriously, heredity will in the end obliterate the type.

Life in its essence is not characterized by birth, evolution, and death; the problems of the beginning and the end of life are inaccessible to the biologist. Life, to the student of biology, "continues itself indefinitely by reproduction through successive individuals despite the death of these individuals, always comparable to itself in the same species, defending itself against the enemy and against the movement of change or destruction by means of heredity, which is the great antixenic function of the species."

NATURE OF HYSTERIA.

Despite the uniform advance of medicine during the more recent decades we seem to be as far as ever from a satisfactory conception of hysteria so called. Not only do affect syndromes common to hysterics occur at times in sound objects, but even the stigmata believed to characterize the disease are sometimes seen in subjects who never develop hysterical outbreaks even under due provocation. Moreover, all kinds of static and dynamic expressions of hysteria may be encountered in psychoses and psychoneuroses, so that they seem bound up, not with hysteria *per se*, but with the degenerative neuropathic substratum in general.

At a recent session of the Gesellschaft fur Natur- und Heilkunde zu Dresden (*Münchener medizinische Wochenschrift*, January 2) there was a sort of symposium on this subject. Ganser came out strongly against the conception that hysteria is a disease *per se*. For him it represents a substratum which is widely present but usually latent until placed in evidence by an aggregation of factors in which age, race, sex, and temperament play a rôle, along with special predisposing and exciting causes. Stegmann reviewed the teachings of Freud, which he stated to be insusceptible of demonstration in a short compass. This is the commonest objection on the part of physicians, who must always ask if the results to be obtained justify the unwieldy technique and prolonged application required. No one denies that Freud's work has indirectly proved of great benefit by arousing attention and provoking discussion.

Weisswange covered the subject of the relation of hysteria to the female generative organs, which involves perplexing and complicated problems. Dis-

eased adnexa and uteri are often responsible for general nervousness, which is by no means to be carelessly called hysteria. That the closest relations exist between the female psyche and the sexual organs must be admitted. The latter should by all means receive proper treatment, but so far is surgical intervention from being specially indicated that the danger of a malpractice suit must always be borne in mind; it being well known that, for whatever reason, suits of this kind are frequently instituted by hysterical women who have submitted to operation. Haenel, who covered traumatic hysteria, describes no less than five categories under which victims of this affection fall, depending on the nature of the injury, time intervening, presence of predisposition, influence of suggestion, motive for simulation, etc. An immediate causal connection between an accident and hysterical developments of a permanent character without the intervention of some other element is doubtless rare.

FRESH AIR IN SCHOOLS AND HOSPITALS.

The subject of ventilation is very much in the scientific and public mind at the present time, though there is by no means unanimity as to the best way of effecting it. Leonard Hill has recently advanced certain iconoclastic views on ventilation, boldly holding that the chemical purity of the air in a room or building is of minor consequence and that the main factors in ventilation are the movement of the air and the maintenance of a sufficient degree of humidity. The reason why a current of air coming through an open window has so refreshing an effect is because of stimulation of the cutaneous nerves. Probably this opinion unduly depreciates the healthfulness of chemically or relatively pure air and exaggerates the good effects of air in motion, but undoubtedly both are important factors in the maintenance of health.

At the meeting of the American Climatological Association held in Montreal, June, 1911, Brannan stated that for the past two years the artificial system of ventilation has been abandoned at Bellevue and its three allied hospitals, and that the air in the wards has been kept sweet and pure by means of open transoms and windows. There is but little complaint of draughts, though the patients are all accustomed to the stuffy air of their tenement homes. The temperature of the wards is kept below 65° F. in the winter, varying from 62° to 65° F. during the day and in the neighborhood of 60° F. or below at night. In the new Bellevue Hospital every ward is provided with a commodious balcony, and all the buildings have roof gardens.

The inauguration and extension of open-air schools have already conclusively demonstrated their value in the case of anemic and tuberculous children and of those predisposed to tuberculosis. In order to preach successfully the gospel of health in cities too great stress cannot be laid on the absolute need of abundant fresh air for children. The custom of overheating buildings, offices, and homes is an important factor in increasing susceptibilty to colds and may possibly partly account for the prevalence of pneumonia in the colder countries.

THE TRIUMPH OF AMERICAN MEDICINE IN THE CONSTRUCTION OF THE PANAMA CANAL.

The Panama Canal when completed bids fair to prove a triumph from several points of view. The greatest triumph, however, in connection with its construction is that it was rendered possible to construct it at all. The French endeavors in this direction were made futile by climatic conditions. The region in and about Panama was a perfect pest hole, reeking with tropical diseases, over which the ubiquitous mosquito reigned supreme. It was freely predicted that the obstacles raised by tropical conditions in their most accentuated stage of development would be hard to overcome, if not insuperable. If Colonel Gorgas and his staff had not been able to banish disease from the Canal Zone the making of the canal would doubtless have been again abandoned. As it is, a complete and signal victory has been gained by medical sanitary science, and the canal has been built under more healthy conditions than usually prevail in temperate climes. Indeed the Canal Zone is in process of developing into a health resort. All this has recently been again well set down (it cannot be done too often) in a small book written by Dr. J. Ewing Mears of Philadelphia entitled "The Triumph of American Medicine in the Construction of the Panama Canal."

News of the Week.

Health of the Canal Zone.—For the month of January, 1912, the Department of Sanitation of the Isthmian Canal Commission reports among employees, 21 deaths from disease and 14 from violence, a total of 35, giving an annual average death rate for the month of 8.10, as compared with 10.14 and 10.57 for the same month in 1911 and 1910. The deaths from the principal diseases were as follows: Chronic nephritis, 3; hemoglobinuric fever, 1; lobar pneumonia, 3; malaria, 1; tuberculosis, 3; typhoid fever, 1. Including both employees and civil population, the death rate for the month was 17.67, as compared to 21.05 for 1911 and 21.26 for 1910. No cases of yellow fever, smallpox or plague originated on the Isthmus during the month. One case of yellow fever was removed from a vessel arriving from Guayaquil and isolated at Culebra Island quarantine station.

Home Tuberculosis Hospital.—In the attempt to wipe out centers of tuberculosis infection in tenement districts, the New York Association for Improving the Condition of the Poor is trying the experiment of leasing a section of the East River homes, or Vanderbilt tenements, which will be converted into a home hospital. Into each of the twenty-four apartments will be moved a family which has been dependent upon the association because of tuberculosis, and an effort will be made to determine whether the spread of the disease can be checked and cures effected under medical direction, aided by good nursing, adequate relief, freedom from worry, fresh air, and sunshine. A hospital and sanatorium régime will be strictly enforced. After dismissal each family will be moved into a suitable home and supervision continued. Of 3,500 families now under the care of the association, there are 284 in which there are one or more cases of tuberculosis. In fifteen of these both parents and one or more of the children are diseased.

Course in Surgery.—A practical course in the progress of general surgery will be given in the

Academy for Practical Medicine at Dusseldorf, Germany, from April 15 to 27, 1912, by Prof. Dr. Witzel, Prof. Dr. Lmiger, Dr. Janssen, and Dr. Graf, with a number of clinical demonstrations by well-known surgeons on a variety of subjects, including the treatment of fractures, of hernia, of surgical tuberculosis, of liver abscess, of spinal disease in children, and of appendicitis and colitis. Complete programs can be obtained from the secretary of the Academy. No charge is made for attendance.

Dr. Dexter D. Ashley of New York lectured before the Waterbury, Conn., Medical Association on March 11, on "The Abbott Treatment of Fixed Lateral Curvature."

Dr. J. Whitridge Williams of Baltimore will read a paper entitled, "What can be done to improve the teaching of obstetrics in this country?" at a meeting of the Section of Obstetrics and Gynecology of the New York Academy of Medicine on Thursday evening, April 12. Dr. W. M. Polk, Dr. E. B. Cragin, Dr. J. C. Edgar, Dr. J. W. Markoe, and Dr. Austin Flint, Jr., will participate in the discussion.

The City's Health.—For the week ending March 23, the death rate in New York was 10.15, or almost one point lower than the same week in 1911. The total number of deaths was 1,602, the principal causes being heart disease, 215; pulmonary tuberculosis, 208; lobar pneumonia, 162; bronchopneumonia, 135; diarrheal diseases, 105; diphtheria and croup, 30; scarlet fever, 22, and measles, 14. For the first eleven weeks of 1912 the death rate was 15.63 per 1,000, as against 16.67 for the corresponding weeks of 1911.

The Warren Triennial Prize was founded by the late Dr. J. Mason Warren in memory of his father, and his will provides that the accumulated interest of the fund shall be awarded every three years to the best dissertation considered worthy of a premium, on some subject in Physiology, Surgery, or Pathological Anatomy; the arbitrators being the physicians and surgeons of the Massachusetts General Hospital. The subject for competition for the year 1913 is on "Some Special Subject in Physiology, Surgery, or Pathology." The dissertation must be in either the English, French, or German language, and must be typewritten and suitably bound, so as to be easily handled. Work that has been published previously will not be considered in competition. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation. The amount of the prize for the year 1913 will be $500. In case no dissertation is considered sufficiently meritorious, no award will be made. Dissertations addressed to the Resident Physician, Massachusetts General Hospital, Boston, will be received until April 14, 1913. A high value will be placed on original work.

New Beth Israel Hospital.—The directors of the hospital have voted to acquire a new site for the hospital and to proceed as rapidly as possible with the erection of the building, for all of which it is estimated that an expenditure of one million dollars will be required. The present hospital quarters are quite inadequate for the accommodation of all those applying for treatment.

Quarantined for Beriberi.—With two members of its crew dead from beriberi, and six others ill with the disease, the British bark *Brilliant*, which sailed from Bombay three months ago, reached the Philadelphia quarantine station on March 17, and for some unexplained reason was detained there. The sick men were removed to a hospital for treatment.

Dr. George A. Soper, head of the Metropolitan Sewerage Commission, told a large audience at Columbia University on March 18 of the dangers resulting from the contamination of the Hudson and East Rivers with the sewerage from New York and adjacent towns.

Charitable Gifts.—The Presbyterian Hospital, New York, receives $15,000 by the will of the late Mrs. Cornelia Eaton, to be used in establishing three free beds to be known as the Dr. Reuben S. Carpentier Memorial. St. Vincent's Hospital, New York, is also remembered, receiving a portion of the residuary estate on the death of the testatrix's husband. By the will of the late Mrs. Mary L. Laurence, Seton Hospital receives $10,000. The Tuberculosis Preventorium has recently received a gift of $5,000 from Mr. J. P. Morgan. By the will of the late Rear Admiral George W. Melville, of Philadelphia, the sum of $5,000 is bequeathed to the Mt. Sinai Hospital and the Presbyterian Hospital, each for the endowment of free beds in memory of his wife, and to be known as the Esther Polis Melville beds.

Centenary of the Academy of the Natural Sciences of Philadelphia.—The hundredth anniversary of the founding of the Academy of the Natural Sciences was celebrated formally at Philadelphia by a three days' session from March 19 to 21, under the presidency of Dr. Samuel G. Dixon, Commissioner of Public Health of the State of Pennsylvania. There were present as delegates representatives of leading colleges and universities and of many foreign and American learned societies. The session was opened on the evening of March 19 when, after an address of welcome by Mayor Blankenburg, Dr. Dixon delivered the Annual Address of the President. A number of interesting papers were read on March 20 and 21, and on the evening of the 20th a reception was tendered the members and visiting guests by Dr. and Mrs. Dixon and Miss Dixon. A banquet was held on the evening of the 21st, and it was attended by many distinguished persons in public and scientific life.

Dr. Wiley Says Drug Manufacturers Are "Dopers."—In a speech before the Pure Food Board, Dr. Harvey W. Wiley, formerly chief chemist of the Department of Agriculture, bitterly opposed the removal of the skull and cross-bone sign from packages containing poison and urged the adoption of a proposed new regulation covering the sale of poisonous drugs, providing for keeping a record of them from their manufacture or importation until they are finally used. Dr. Wiley aroused the ire of the representatives of the drug associations by referring to the drug interests as "dopers."

Famine in Russia and China.—Recent reports from Russia indicate that the famine in the eastern portions is of serious proportions, some thirty millions of people being affected. In China conditions have also grown worse instead of better, and the New York China Famine Relief Committee estimates that one million dollars will be needed to extend relief over the whole famine area.

To Head State Institutions.—Gov. Dix of New York sent to the Senate on March 22, for confirmation, the following nominations of managers and trustees of State institutions: *Craig Colony for Epileptics.*—Dr. Frederick Peterson, New York; Mr.

A. I. Dow, New York. *Buffalo Hospital.* William A. Douglas, Buffalo. *Hospital for Crippled and Deformed Children.* Mr. Frank M. McMurry, Yonkers. *Hudson River Hospital.* Mr. W. B. Dinsmore, Staatsburg. *St. Lawrence Hospital.* Mr. M. C. Ransome, Malone. *Binghamton Hospital.* Mr. H. A. Stephens, Binghamton. *Raybrook Sanatorium for Incipient Tuberculosis.* Dr. Charles Stover of Amsterdam.

Health Board and Building Inspection. In Sacramento, Cal., the Health Board has been given authority over the building inspectors and the electric light inspectors, who will now report directly to the Board. The Health Department of Sacramento is responsible for the sanitary condition and safe construction of buildings so far as concerns the public safety, and the recent passage of a tenement house law has thrown upon the department a large amount of work which it was unable to perform without expert assistance. The entire construction of a building will now be under the supervision of one responsible bureau.

Class Reunion.—The Class of 1892, of the Medical Department of the University of the City of New York, will hold a reunion and banquet at the Hotel Martinique on Wednesday evening, April 3, 1912. All members of the class are invited to attend. The committee in charge include Dr. J. Emmet Tower, Dr. John F. Hagerty, Dr. John S. Stetson, Dr. George B. Campbell, and Dr. Robert E. Coughlin.

Model Tenements in Rochester.—Plans are being prepared for the erection of a block of model tenement buildings in Rochester, N. Y., similar to those already open in New York. Mr. George Eastman of the Eastman Kodak Company is financing the enterprise, which it is estimated will require an investment of about one million dollars.

Health Officers to Meet.—The sixth sanitary conference of the health officers of Connecticut will be held at Hartford on April 3. Dr. H. O. Averill, State commissioner on domestic animals, and Professor H. W. Conn, State bacteriologist, will discuss the subject, "Co-operation between health officers and the commissioner on domestic animals for the suppression of glanders and rabies." The medical inspection of schools, the protection of water supplies, and other public questions of interest will also be discussed.

Ellis Island Inspected.—Surgeon-General Blue of the United States Public Health and Marine Hospital Service, paid an official visit to Ellis Island, New York, on March 22, and again on March 26, for purposes of inspection. He was accompanied by the Commissioner of Immigration, and commented on the improvements during the last decade in the manner of handling immigrants, but thought an increase in the medical staff desirable.

Smallpox Scare.—An outbreak of smallpox in Willimantic, Conn., has caused general alarm throughout the town and neighboring places. The city officials are active in attempting to control the situation, and the closing of the mills has been suggested. The health authorities of the city of New London have ordered the railroad companies not to carry passengers through from Willimantic to New London, and similar steps may be taken by other adjacent towns.

Insane Aliens.—The New York State Lunacy Commission in a recent report to Governor Dix urges the desirability of a change in the immigration laws so that the deportation of insane aliens may be easier, and the overcrowding in the State hospitals reduced. The insane population is steadily increasing, and it is estimated that there are at least 8,000 insane aliens now being cared for in State institutions at great cost, and to the detriment of the native born.

Civil Service Examination.—On April 20, 1912, the New York State Civil Service Commission will hold an examination for the purpose of filling a vacancy in the position of optical surgeon at the State Agricultural School, Industry. The employment is for only one day a week, and the salary $480 a year.

Tricounty (Mississippi) Medical Association.—Under this name the physicians of George, Green, and Perry Counties, Mississippi, organized recently. Officers were elected as follows: *President*, Dr. W. D. Ralliff, Lucedale; *Secretary-Treasurer*, Dr. J. E. Green, McLain. Meetings will be held at Lucedale on the second Tuesday of each month.

Medical Library Club.—The physicians of Kansas City, Mo., have recently formed an organization to be known as the Kansas City Medical Library Club, its object being to obtain for its members an extensive library of medical books and periodicals. Dr. R. M. Schauffler is the president of the club, and Dr. Rush E. Castelaw the secretary and treasurer.

The Florida State Medical Association will meet in Tampa on May 8.

The Alabama State Medical Association will hold its annual convention in Birmingham on April 16-19. The annual address by the monitor of the association, Dr. S. W. Welsh of Talladega, will be delivered on the evening of April 17.

Health Conferences.—Dr. E. Dana Durand, director of the census, will address the health conference which will be held in Nashville, Tenn., in connection with the Southern Commercial Congress, April 8 to 10, on the importance of vital statistics. Dr. Oscar Dowling of Louisiana will serve as presiding officer of the conference. The State directors of sanitation will also hold a conference in Nashville on April 2, 3, and 4, as a part of the Southern Educational Conference.

The Medical College of Georgia, at Augusta, has become the medical department of the University of Georgia. The act of the Legislature authorizing this move was passed last summer, and the formal transfer of the property of the medical school to the University trustees was made on March 6.

The Committee on Public Instruction in Medical Matters of the Medical Society of the District of Columbia, recently appointed, is fulfilling its function by publishing in the Sunday papers a short statement on personal hygiene, in which novelty is subordinated to accuracy, and sensationalism to practicalness. When opportunity offers a word is said regarding the functions and aims of the medical profession. In addition, a public lecture is being given every two weeks at present with the same object.

The Galesburg, Ill., Medical Society, at a meeting held March 7, elected the following officers: *President*, Dr. C. E. Quaife; *Secretary*, Dr. E. N. Nash.

Obituary Notes.—Rear-Admiral James Rufus Tryon, ex-medical director of the United States Navy, a graduate of Union College and of the University of Pennsylvania, Department of Medicine, in 1861, died at the United States Naval Hospital

in Brooklyn, New York, on March 20, aged 74 years. Admiral Tryon entered the navy as an assistant surgeon in 1863, and served in the West Gulf Squadron through the war, being present at the battle of Mobile Bay. After some years of shore duty he was in 1870 assigned to the Atlantic Fleet and worked in Yokohama during the smallpox epidemic of 1871. In 1893 he became Surgeon-General of the Navy, and in 1899 retired from active service. He was for six years in charge of the hospital at Sailors' Snug Harbor.

Dr. Thomas H. Montgomery died at Philadelphia on March 20 at the age of 30 years. He was a member of the class of 1893 College of the University of Pennsylvania, but he received his Ph.D. degree from the University of Berlin in 1894 after three years' study in zoology. On returning to this country he held a research position in the Wistar Institute of Anatomy for several years. He was also professor of biology and Director of the Museum of the Wagner Institute. In 1898 he was made instructor and at a later date assistant professor of zoology in the University of Pennsylvania. From 1903 to 1908 he was professor of zoology in the University of Texas. Subsequently he became professor of zoology in the University of Pennsylvania. Dr. Montgomery was an investigator of the first rank and he was the author of numerous treatises on the anatomy of certain worms, rotifers and insects, on the classification and habits of birds and spiders, on comparative studies of cells, on the maturation of germ-cells, and on the principles of phylogeny. He was the author of "The Analysis of Racial Descent in Animals." He contributed many and notable discoveries as to the structure and history of germ-cells.

Dr. Julius Lincoln Salinger died suddenly on March 25 at Philadelphia while giving testimony as a witness in court, at the age of 45 years. He was graduated from Jefferson Medical College in the class of 1886 and he was at one time assistant professor of clinical medicine in his alma mater and chief clinical assistant in the medical dispensary of Jefferson Hospital and visiting physician to the Philadelphia General Hospital. He was a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, and the American Medical Association. He was editor of the American translation of Modern Clinical Medicine.

Dr. Edmund K. Goldsborough of Washington, D. C., died on March 14 at the age of 69 years. He was a graduate of the Medical College of Virginia, at Richmond, and served as surgeon in the Confederate Army during the Civil War.

Dr. William Rouse died at McKinley, Pa., on March 11, at the age of 27 years. He was graduated from Jefferson Medical College in the class of 1909.

Dr. A. H. R. Guiley died at Easton, Pa., on March 11, at the age of 56 years. He was graduated from Jefferson Medical College in the class of 1877, and was a member of the Easton Board of Health.

Dr. Frederick Castalucci died at Rosetto, Pa., on March 11, while on a visit, at the age of 29 years. He was graduated from the medical department of the University of Colorado.

Dr. A. M. Headley of Rio Grande City, Texas, died February 27, at the age of 76 years. He was born in England and after receiving his medical education entered the British navy as surgeon. When the Civil War broke out he came to this country and became a surgeon in the Confederate Army. At the close of the war he went with a number of ex-Confederate officers to Mexico to join the army of Maximilian. He did not join that army but began the practice of medicine in Vera Cruz, later going to Tampico. After some years he crossed the border and settled in Rio Grande City, which he made his home until his death.

Dr. Francis J. Stevens of Haverhill, Mass., died March 8, at the age of 88 years. He was born in Gilford, N. H., and was graduated from the Albany Medical College in 1855. He was the oldest Odd Fellow in the State and was also the only surviving charter member of the Pentucket chapter of Masons.

Dr. M. L. Shine of Winthrop, Iowa, died on March 4, of septic poisoning following a small cut received during an operation. He was a graduate of the College of Medicine of the State University of Iowa in 1887.

Dr. George W. Miller of Des Moines, Iowa, died of disease of the heart on March 6, at the age of 55 years. He was one of the oldest practitioners in that city, having settled there in 1880.

Dr. Thomas Gilully of Union Center, Wis., a graduate of the Rush Medical College of Chicago in 1871, and a member of the Wisconsin State and Juneau County Medical Societies, died suddenly on March 12, aged 72 years.

Dr. William Vincent Dee of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1893, and a member of the New York State and Kings County Medical Societies and of the Brooklyn Pathological Society, died at his home suddenly on March 18, aged 46 years.

Dr. David Thomas Bowden of Paterson, N. J., a graduate of the University of Maryland in 1889, and a member of the American Medical Association, and the New Jersey State and Passaic County Medical Societies, died at his home on March 19.

Dr. Daniel A. La Force of Ottumwa, Ia., a graduate of the College of Physicians and Surgeons of Keokuk, Iowa, in 1863, a surgeon in the United States Army during the Civil War, and a member of the Iowa State and Wapello County Medical Societies, died at his home on March 10, aged 75 years.

Dr. Hannah T. Croasdale of Philadelphia died at the home of her daughter at Syracuse, N. Y., on March 15 at the age of 77 years. She was graduated from the Woman's Medical College of Pennsylvania in the class of 1880 and was for many years professor of gynecology in her alma mater.

Dr. Edward H. Kelly of Ironwood, Mich., a graduate of the University of Michigan, Department of Medicine and Surgery, in 1869, and a member of the American Medical Association and the Michigan State and Gogebic County Medical Societies, died suddenly at his home on March 8, aged 69 years.

Dr. Meredith Walton Henry of Waelder, Tex., a graduate of the Eclectic College of Medicine of Cincinnati, Ohio, in 1857, died at his home on March 12, aged 81 years.

Dr. Frank Linsley Ives of New York, a graduate of the College of Physicians and Surgeons, New York, in 1871, and a member of the New York Academy of Medicine, the New York State and County Medical Societies, and the American Laryngological Association, died at his home on March 22, after a short illness, aged 62 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

INJECTION FEVER—SALVARSAN—ALCOHOL AND MENTAL CAPACITY—CONCLUSION OF DEBATE ON EXOPHTHALMIC GOITER—OBITUARY.

LONDON, March 8, 1912.

It has long been recognized that medication by the injection method is apt to set up febrile action; so often is this the case that some practitioners speak of "injection fevers" as a group so extensive that we might in turn name it drug fever, but substances we should scarcely include as drugs are equally pyretogenic. Among them protein, sugar, salt, and even water may be named, and we accordingly hear of protein fever, salt fever, ferment fever, and tissue fever when those interested in the subject meet. Drs. E. C. Hort and W. J. Penfold propose to add salvarsan fever and have submitted a paper to that effect to the Pathological Section of the R. S. M. At first the cases in which this drug had been injected and followed by fever were looked upon as salt fever, but soon were regarded as due to bacterial infection of the solutions, and in numerous instances such infection had been proved to have been present. Further, if solutions were made with perfectly pure distilled water pyretogenic effects did not follow—a fact which seems to show that at any rate water fever has not a good claim to a place in the group. Drs. Hort and Penfold report control experiments showing that dead organisms do not cause fever but heated water or solutions containing very few will do so and this effect they attribute to a heat-stable, filter-passing molecule which may or may not be of bacterial origin. Water, bacteria-free, which had been distilled in the ordinary metal still was pyretogenic but water which had only come in contact with glass was not. They concluded that salvarsan fever was not necessarily due to micro-organisms or to unbroken bacterial protein; that the heat-stable filtrable substance was an important factor; that the sterility of a watery solution of salvarsan was no guarantee of the absence of this pyretogenic substance; the only certain method of preventing salvarsan fever was to use water freshly distilled in glass and to inject immediately. If storage was necessary for a time it must be collected in sterile glass and hermetically sealed.

In his Annual Report of the Royal Edinburgh Asylum, issued on the 27th ult., Dr. George M. Robertson says the admissions numbered 179, the exciting cause being alcoholic indulgence in 17.8 per cent. In the males 28.9 per cent., more than double the proportion in the previous year. Over 43 per cent. had had previous attacks of insanity. Influenza was absent as a cause for the first time for twenty-one years. He suggests that we may be developing an immunity, for it is prevalent if less virulent than at one time and young people are susceptible. The recovery rate for 1911 was 30 per cent. of admissions. Dr. Robertson attributes great efficacy to fresh air treatment of all mental disorders. He deprecates the too common postponement of treatment after premonitory symptoms have set in. Half the insanity that occurs between the ages of twenty and thirty, Dr. Robertson estimates as hereditary; between forty and fifty as acquired. Of the latter the majority are due to alcoholism or to general paralysis.

A different story comes from Ireland where Dr. Dawson has been studying the relations of insanity to some circumstances of life as pauperism, emigration, mortality, or criminality. In a paper at the Royal Academy of Medicine he gives his results. As to alcoholism he found there was no correspondence between the distribution of insanity and drunkenness; and in general it appeared that alcohol was of comparatively small importance as a cause of insanity in Ireland. Drunkenness, he said, was in greater excess in rural districts than in larger towns, just the opposite of what was found in England or Wales.

Extreme alcoholism was the subject of a lecture delivered at University College on February 27 by Dr. David Heron. He dealt with data as to 1,000 inebriates collected by the Inspector under the Acts (Dr. Branthwaite). He found mental defect the most important condition on admission to the Reformatory. Out of 865 females admitted only 36 per cent. were of average mental capacity when sober; 54 per cent. were defective, and 2 per cent. were certified as insane during detention. The evidence indicated that to a great extent the defective state preceded and was only very slightly increased by the alcoholism. As to the result of reformatory treatment out of 1,800 inebriates whose conduct could be traced for a limited time after discharge only 380 were doing well, less than 21 per cent. A striking feature of the investigation showed that the 865 female inebriates had 2,589 children. The 389 defectives had had 1,672. Dr. Heron said the vast bulk of cases of mental defect being inherited, the high fertility of these women was a serious social problem. The real remedy for two-thirds of existing alcoholism he held was the permanent segregation from school age of the feeble-minded child. By thus cutting off the supply of defectives at the source, the problem of extreme alcoholism, at least to the extent of two-thirds, could be solved in a generation.

The debate I have reported on exophthalmic goiter was resumed on Tuesday evening for the third time, the question of anesthesia being chiefly considered. Mr. Barker was well satisfied with local analgesia, though in certain cases he had used general anesthetics, with scopolamine and morphine in addition. Mr. C. Symonds dwelt on the differentiation of Graves' disease from cases of simple goiter in nervous patients. Mr. Armour had operated on twenty-six cases, and all but one under general anesthesia, and that one died. Mr. Walter Edmunds maintained that the mode of anesthesia should be decided on general grounds. Dr. Scharlieb held that cloroform and ether were quite safe in these cases and the liability to psychic shock was rather against the local method. Mr. Page fully agreed with this. Dr. Barton had also found general anesthesia safe, and considering the type of patients the balance of advantage was with it. Mr. R. Farrant considered that in Graves' disease there was a cycle from thyroid excess to deficiency. At the beginning he looked for excess, though often it might be slight, but it went on to insufficiency. If the hyperthyroidism were detected two or three years earlier than usual Graves' disease would soon cease to exist. Dr. Paterson held that general anesthesia was not devoid of risk. Chloroform, whether by the open method or with apparatus for measuring the dosage, he considered unjustifiable, and hospital records supported this view. Mr. B. Robinson spoke well of the intravenous method of administration. Mr. James Berry's operations num-

bered 670 for removing goiter of various forms. But he had only eleven cases of true Graves' disease in which he felt justified in operating. He had collected statistics from hospitals of ninety-seven cases and the deaths were sixteen, twelve of them within forty-eight hours. Of the survivors most were called benefited but little was known of the ultimate results. Perhaps the poor results were to be attributed to the fact that in this country the operations were not performed early enough. The condition was so distressing that the mortality was not the sole question. In true Graves' disease the operation was serious, even dangerous, most so in acute and in advanced cases in which there was degeneration of muscle, especially of the heart. Local anesthesia had the advantage that the patient could drink at once, and large quantities of fluid were most important. He objected to chloroform.

Lieut.-Col. George W. McNalty, C.B., died on March 1 in his seventy-fifth year. He qualified at the Dublin College of Surgeons in 1857 and took his Fellowship in 1868, having in the meantime graduated M.D. at St. Andrews (1862). He joined the army medical staff in 1863. During the Franco-German War he had charge of the British military ambulance at the siege of Paris and was present in several engagements for which he was awarded the German war medal and the French bronze cross. He served in the Ashanti War (1873-74) where he was in several battles and the capture of Coomassie, was mentioned in dispatches, awarded the medal and clasp, and promoted surgeon-major. In the Russo-Turkish War (1876-77) he was chief surgeon and commissioner of the National Aid Society, present at the siege of Plevna. In the Afghan War (1878-80) had part in the march from Cabul to relieve Candahar and was again mentioned in dispatches and given the medal with clasp and the bronze star. In the Egyptian expedition was in Tel-el-Kebir and again received medal with clasp and bronze star, as well as the order of Osmanieh. He retired as Brigadier Surgeon Lieut.-Col. in 1892. He was for some time honorary surgeon to the Viceroy of India and made C.B. in 1807.

Inspector-General Mahon, C.B., died on the 26th ult. after a distinguished career. Born in 1851 he qualified and entered the navy in 1878 and the next year was in the Zulu War as surgeon to the Boadicea and received the medal. In 1881, as surgeon to the Flora, he landed with the naval brigade and was in the actions of Laing's Nek and Majub Hill, and was promoted to staff surgeon for his gallant conduct. In Egypt (1882) and in Burma (1885-87) he again served with distinction. He was afterwards Deputy-Inspector General at the Royal Naval Hospital, Haslar, until 1903, when he became Inspector-General of Hospitals and Fleets. He received his C.B. in 1892.

Deputy-Surgeon-General John Sparrow, formerly of the Irish Fusiliers, died on the 1st inst. aged eighty-two. He took the M.R.C.S. in 1854 and obtained his first commission that year. Much of his time of service was spent in India. He was in the N. W. Frontier Campaign (1858) and accompanied the Peshawur expedition for which he was awarded the medal and clasp.

Dr. R. Dill, who practised many years in Brighton but had long retired, died at Burgess Hill on February 24 in his ninetieth year. He qualified M.D. and L.R.C.S., Edin., where he had been one of the students under Sir James Simpson. Dr. Stanley Elliott, late Medical Superintendent of Caterham Asylum, died on the 3d inst. at the age of sixty-eight. He was M.R.C.P. and F.R.C.S. Edin. Surgeon Major Heffernan, I.M.S., retired, died February 20 at the age of eighty-one. Surg.-Major Frank Simpson, R.A.M.C., retired, died on February 28.

THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

(From Our Manila Correspondent.)

HONGKONG, January 27, 1912.

THE Second Biennial Congress of the Far Eastern Association of Tropical Medicine began its sessions at Hongkong on January 20, and met daily thereafter until January 27. The Congress was unusually well attended, delegates being present from Japan, German China, Shanghai, Hongkong, Macao, Canton, Indo-China, the Straits Settlements, the Federated Malay States, India, Ceylon, Java, and the Philippine Islands. The United States Army was represented by Major Chamberlain, Major Ashburn, and Captain Vedder, the United States Navy by Surgeon Butler, and the Philippine Civil Government by Drs. Paul C. Freer, and Victor G. Heiser.

First Day.

The opening session of the Congress was held in the city hall at 11 A.M., January 20. An address of welcome was delivered by His Excellency, Sir Frederick Lugard, G.C.M.G., C.B., D.S.O., Governor of the Colony. His Excellency dealt, in a most entertaining and instructive manner, with the various phases of tropical medicine, and mentioned the experiences he had had in his many years of tropical service in Africa. He spoke in a most appreciative manner of the great work which the medical profession had rendered to assist in making the tropics healthful; not only was it possible for the white man to reside there with as much assurance against contracting disease as in the temperate zone, but the native as well had been freed from many of the diseases which heretofore had shackled him, and comforts had been made his which might never have been but for the white man's presence. He called attention to the fact that 44 per cent. of the foreign trade of the United States and the United Kingdom was with the people of the tropics, but that sanitation and medical relief had gone hand in hand with these trade relations. The delegates were most warmly welcomed, and every assurance given, so far as the Government, at least, was concerned, that all doors in the Colony for the gaining of medical knowledge would be freely open to them.

The next address was that by the president of the association, Dr. J. Mitford Atkinson, who took as his subject, "The Progress of Tropical Medicine During the Past Twenty-five Years." He dealt with the historical aspect of tropical medicine, and more especially with the wonderful change which had been made in the Colony of Hongkong by the control of malaria. At one time the abandonment of the island, on account of the ravages of malaria, had been considered seriously a number of times.

At the close of Dr. Atkinson's address the delegates were formally presented to His Excellency, the Governor. In the afternoon a garden party at the Government House was given by His Excellency, in which a large percentage of the leading citizens of Hongkong took part and extended a most cordial welcome to the delegates.

Second Day.

The first paper read was entitled, "The Substance in Rice Polishings Which Prevents Polyneuritis Gallinarum and Beriberi," by Major Chamberlain and Captain Vedder of the United States Army Board for the Study of Tropical Diseases, was ready by Dr. Vedder. This paper dealt with a large series of experiments which had been made with a view of determining the exact nature of the substance which is contained in the outer portion of the rice grain, which is capable of preventing beriberi in man, and polyneuritis in fowls. These officers have carried the work somewhat further than was done by Frazer and Stanton, and by the means of alcohol were able to extract from rice polishings a substance which, in definite and measurable amounts, is capable of curing polyneuritis in fowls. So far analysis has not revealed the exact nature of this substance. The extract has, however, been used in the treatment of fifteen undoubted cases of so-called infantile beriberi, in Manila, with complete success. Further experiments are being made.

The next paper was entitled "Beriberi," by Dr. C. Noel Davis of Shanghai. In this the author related a series of instances in connection with prisoners at the municipal jail in Shanghai, in which the diet factor was of undoubted importance in outbreaks of beriberi, but he felt that the so-called rice theory, as now understood, did not explain all cases, and for this reason he made further experiments. His review of the literature convinced him that beriberi was associated with insanitary habitations, which caused him to think that the disease must be of an infectious nature, and that bedbugs might be concerned in its transmission. He reported a number of cases in which bedbugs were permitted to feed upon patients who were ill with beriberi, and then to bite persons who were free from this disease. After making a number of experiements in which the time of placing the bug upon the well persons varied from a few hours to several days, he claims that he was finally able to induce the disease in two cases.

In the discussion which followed the fact was brought out that not sufficient evidence was adduced to show that the dietary factor in these cases had been entirely eliminated.

The next paper, entitled "Beriberi, with a Suggestion for Governmental Aid in Its Eradication," was read by Dr. Victor G. Heiser. In this paper the author stated that, for practical purposes, he considered it as proven that beriberi undoubtedly occurred in individuals whose staple article of diet was white, or polished rice, and strongly urged that international action be taken among the governments of the Far East looking toward reducing the consumption of polished rice and replacing it with unpolished rice. After outlining various measures by which this might be accomplished, he was of the opinion that its quick accomplishment could most certainly be brought about by placing a tax upon the white rice, and permitting unpolished rice to be sold under terms and conditions as existed at the time the tax on white rice went into operation. In this way, on account of the small extra cost entailed upon Europeans and others who eat small quantities of white rice, no opposition would be encountered, and the masses would probably be willing to use slightly polished rice if no change was made in the price. He also stated that in order to put the question of rice polishing upon a uniform basis, a standard would have to be adopted. He suggested that the amount of phosphorous pentoxide present be used as an index of the degree to which polishing had been done. A safe rice would be one that contained 0.4 per cent. or more of phosphorous pentoxide, and an unsafe rice one that contained less. (See MEDICAL RECORD, March 16, 1912, p. 516.)

This paper precipitated considerable discussion and differences of opinion as to whether it was advisable for a medical congress to advocate a fiscal measure, even though this was done with a sanitary instead of a fiscal end in view. Some of the delegates went so far as to state that they were of the opinion that no recommendation should be made to the various governments until it was known in advance that such recommendation would be acceptable to them. The discussion finally resulted in the passage of the following resolution: "*Resolved*, That the results of the work submitted to this meeting of the Far Eastern Association of Tropical Medicine have been to confirm the accuracy of the resolution adopted at the meeting in 1910, and it is resolved to adopt as a standard that a harmless rice shall contain not less than 0.4 per cent. of phosphorus pentoxide. It is further *Resolved*: (1) That efforts of an educational nature for the suppression of beriberi should be generally adopted; (2) that in view of the varying economic conditions obtaining in the different countries concerned, uniformity of legislation appears impracticable, but any action taken should be based on the work done, and the above standard of phosphorus content is recommended for adoption; (3) it is suggested that legislation which is directed either to the taxation of polished rice or of the dealers in polished rice will be the most effective."

The following is the resolution which was adopted in 1910: "*Resolved*, That in the opinion of this Association sufficient evidence has now been produced in support of the view that beriberi is associated with the continuous consumption of white (polished) rice, as the staple article of diet, and the Association accordingly desires to bring this matter to the notice of the various Governments concerned."

The next paper was entitled "Beriberi," and read by Dr. H. Fraser of Kuala Lampor. This paper dealt with beriberi in practically the same manner as that of the preceding speaker.

The next paper was entitled "Beriberi at Saigon," by Dr. M. L. R. Montel. Dr. Montel stated that the experiences in connection wth epidemics of beriberi coincided very largely with the so-called rice origin of the disease, but that some experiences were had near Saigon which could not be entirely explained on this hypothesis. He related an instance in a monastery and a convent, where the conditions were more or less the same, and yet, in one, beriberi frequently occurred, while in the other beriberi outbreaks were never known. The monastery and convent were located in the same area of the town, and only separated by a small stream. In the monastery rice was consumed a few days after it was hulled, and no beriberi cases occurred. In the convent much the same rice was used, but large quantities were hulled at a time and stored, and in this institution beriberi outbreaks were quite common. From this fact Dr. Montel inferred that outbreaks of beriberi must in some way be connected with conditions which are caused by its being stored over a longer period of time.

The next paper was entitled "Beriberi in Japan, and was read by Professor Y. Fenchi. In this connection it may be remembered that at the meeting of the Far Eastern Medical Association which was held two years ago in Manila, the Japanese delegates who were present had disagreed entirely with the prevailing opinion at the congress that beriberi was connected with the continuous consumption of polished rice. However, the professor stated that since that time they had made extensive experiments with the white, or polished rice, and they were satisfied that it was an important factor in beriberi. He showed charts on which were recorded an interesting series of the varying proportions in the eosinophiles in oncoming beriberi, and their disappearance as the patient convalesced. He also made a series of experiments with an extract of spleens, and with this substance he was able to obtain almost the same curative properties which were reported by Chamberlain and Vedder with their rice extract.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

SMALLPOX IN THE PROVINCE OF QUEBEC—ASSOCIATION OF MEDICAL OFFICERS OF CANADIAN MILITIA—MEETING OF ONTARIO MEDICAL ASSOCIATION IN TORONTO—DEATHS FROM TUBERCULOSIS IN ONTARIO—MEDICAL RECIPROCITY IN CANADA—NOVA SCOTIAN HOSPITAL FOR THE INSANE—MEETING OF CANADIAN HOSPITAL ASSOCIATION—SANATORIA FOR TUBERCULOSIS IN NEWFOUNDLAND—REGULATIONS GOVERNING THE PRACTICE OF MEDICINE IN ALBERTA—OPEN FELLOWSHIP AT McGILL UNIVERSITY—DEATH RATE OF MONTREAL IN 1911.

MONTREAL, March 19, 1912.

FROM public health and medical standpoints the most important problem in Canada is how to deal with the smallpox situation in the Province of Quebec. The disease has been simmering with an occasional explosion in the province for a considerable time. There are no signs that the epidemic, which is now recognized as widespread, is abating. During the month of February the disease has been reported from eighty-one municipalities. Dr. Beaudry, the Chief Inspector of the Provincial Board of Health, has estimated recently that there are more than 75,000 cases in the province, besides many cases which are kept secret. The contagion is distributed all over the province, but is especially rife in the north from Ottawa to the Lake St. John district, as much of it originates in the lumber camps. Since the beginning of the epidemic the Provincial authorities have found smallpox not reported to the proper authorities. No fewer than five convents and two colleges have been found guilty of not fulfilling this obvious duty to the public. In fact, the situation is very complicated and extremely difficult. Dr. Elzear Pelletier, who uses the iron hand in the velvet glove with great discretion in conjunction with his able coadjutor, Dr. Beaudry, has been employing his utmost endeavors to check and stamp out the epidemic by advice and recommendations, but has discovered that more vigorous measures must be put into force before a successful issue can be reached. Last spring the Provincial Board of Health issued an order requiring municipalities to pass and carry out a vaccination by law. The order in so far as it was executed, did a great deal of good but, unfortunately, antivaccinationists created an agitation and to some extent paralyzed these efforts. In only one municipality, however, was it necessary to obtain a judgment to cause its members to pass the required law. Thus, so far as the passing of the law has been concerned, success has attended the efforts of the board. One of the main arguments which the authorities have had to meet has been the English "conscientious" objection clause. As Dr. Pelletier wisely remarked, how can a man ignorant of medicine have a conscientious objection to vaccination? A better name for it would be an "ignorant objection." The truth seems to be that the disease being in a mild form, it is lightly regarded in Quebec. Further, the leading people of the province do not seem to appreciate the gravity of the situation. The public disregard is said to be extraordinary. A school-mistress in one place was found teaching in school scarcely recovered from the complaint. Persons suffering from the malady go to stores and postoffices and mix with their fellows as if they were in ordinary health. Familiarity has bred contempt and it is even hinted that to be picoté is looked upon in the Province of Quebec as to some extent a mark of distinction. Nevertheless, although the great majority of the cases have been of the varioloid type, a few cases of the hemorrhagic form have been reported. Several medical writers have pointed out this is of sinister augury, as before the awful epidemic of smallpox which swept the Province of Quebec some twenty years ago, the cases had been of a mild type. During that epidemic no less than 6,000 fatalities from the disease occurred in one year in the city of Montreal alone. Dr. Elzear Pelletier and his colleagues have fought and are fighting hard to overcome prejudice and ignorance, and it is to be hoped in the interests of the community at large that they will gain the victory.

The annual meeting of the Association of Medical Officers of the Canadian Militia was held in Ottawa under the presidency of Major Le Bel, A. M. C., Quebec, on February 28 and 29. The attendance was the largest since the formation of the society. A number of most interesting and important papers were read. Sir James Grant's paper on the condition of the hospitals in the Northern Army in 1861 and again in 1864, he having been sent by the Government of Canada to report upon them, was an interesting and valuable piece of medico-literary history. Colonel Jones, Director General, in his paper showed how much work would necessarily be thrown on the regimental service in battle, under modern tactics, taking into consideration modern arms and modern surgery. Dental Surgeon Lantier, A. M. C., brought out in his paper many important points regarding the dental sanitation of an army. An excellent paper was presented by Staff Surgeon Digby Bell of the Canadian Navy, on Physical Training. The greatest interest of the meeting centered in the discussion on the "Clearing Hospital"; its organization, equipment and functions, as well as its tactical use, were carefully gone into by the various speakers.

On Wednesday evening the members dined at the Russell House, where a very pleasant time was spent, speeches being made by the Minister of Militia Colonel Hughes, Surgeon-General Sir F. W. Borden, K. C. M. G., Colonel Jones, D. G. M. C., and Lieut-Colonel Shillington. On Thursday evening Major Le Bel, the retiring president, enter-

tained the members and a large number of guests at a smoking concert. The following officers were elected for the ensuing year: *President*, Lieut-Colonel A. T. Shillington, A. M. C., Ottawa. *Secretary*, Captain T. H. Leggett, A. M. C., Ottawa. *Treasurer*, Captain McKelvey Bell, A. M. C., Ottawa. The next meeting will be held in Ottawa in February, 1913.

Dr. W. J. Dobbie in his annual report of the Toronto Free Hospital for Consumptives shows that there has been a notable decrease in the death rate from this cause during the past decade. In the ten years up to 1899 the death rate from tuberculosis in Ontario was increasing. In that year the figures amounted to 3,405, or 11.8 per cent. of the total deaths. In 1908 the deaths from tuberculosis were 2,511, or 7.6 per cent. of the total deaths. Up to the year 1899 there were no institutions for the treatment or care of tuberculosis in the province. There were no dispensaries. Now there are twelve sanatoriums and hospitals and others projected, four dispensaries, and so on. Dr. Dobbie argues with seeming justification that the decline from 11.8 per cent. to 0.8, the percentage of deaths from tuberculosis to total deaths given in the 1910 report, is due at least in some measure to the efforts already put forth to stamp out the disease. Eighty-three cases of tuberculosis were reported in Toronto in February as against 45 for the previous month. Dr. Hastings, the Medical Officer of Health for the city, attributes this increase to a large extent to the fact that such cases are better reported. It is stated that the local Boards of Health in Ontario are to give place to experienced medical officers. In order to carry out this scheme, the province will be divided into several districts.

Medical reciprocity between the different provinces of Canada was approved recently by the Legislature of the Legislative Assembly of the Province of Quebec. The Nova Scotian Hospital for the Insane is erecting a new building. It will accommodate about seventy patients. The Canadian Hospital Association will hold its next meeting in the Parliament Building, Toronto, on April 4, 5, and 6. Messrs. Reid Bros. and the Reid Newfoundland Co. have made the offer to erect and equip sixteen tuberculosis sanatoria as a gift to the Government of Newfoundland. The Government, by Premier E. P. Morris, has accepted the offer. There is to be one large central sanatorium at St. John's with a smaller institution in each of the sixteen electoral districts.

The Medical Council of Alberta has been enjoined to admit upon the register the name of any person who can produce a certificate from the registrar of the University of Alberta that he is qualified to practise osteopathy or homeopathy and the examination of candidates is to be undertaken by the university. It is expressly provided that the approval of the College of Physicians and Surgeons shall not apply to the subjects in which osteopaths and homeopaths shall be examined. Section nine provides that any person who has practised osteopathy in Alberta for at least four months previous to the passing of the act shall be granted a certificate without examination. The person, however, must have the approval of the American Osteopathic Association.

Applications were invited by the Medical Faculty of McGill University for the Douglas Medical Research Fellowship of the value of $1,000, tenable for one year with possibility of reelection for the second year. The holder of the fellowship will be required to undertake such investigations as shall demand a combination of study in hospital wards with research in the pathological department of the university. Candidates, who must be graduates of a recognized medical school, are requested to indicate the line of work they propose to undertake and to afford evidence of original research already accomplished.

Montreal had 9,974 deaths in 1911, 5,110 males and 4,864 females, giving a death rate of 21.30 per 1,000. The deaths of children under five years of age numbered 5,355, being 53.69 per cent. of the general mortality.

Progress of Medical Science.

Boston Medical and Surgical Journal.

March 14, 1912.

Continuous Versus Interrupted Hospital Service. R. H. Fitz.
Nursing and Public Health. A. Nutting.
The Outdoor Treatment of Puerperal Infection. E. B. Young.
Tuberculous Epididymitis; End Results of Seventy-One Cases. J. D. Barney.
The Bone Lesions Accompany Chronic Leg Ulcers. W. P. Coues.
The Disappearance of Ovarian Tumor After Vesicular Mole. S. Rushmore.

Outdoor Treatment of Puerperal Infection.—E. B. Young and J. T. Williams state that the outdoor treatment has reduced the mortality of severe puerperal infections by nearly 20 per cent. (2) This treatment probably exerts its action chiefly by increasing the amount of hemoglobin in the blood. (3) Sunlight is probably quite as important as fresh air. (4) Curettage is contraindicated in puerperal infection, because it increases the mortality nearly 10 per cent. (5) A single intrauterine douche of sterile salt solution should be the only local treatment, and some writers deny the value of even this. (6) Antistreptococcic serum and vaccines have not proved of much value. (7) The outdoor treatment is the most effective known at present for puerperal infections, but the search for new methods should be continued.

Tuberculous Epididymitis.—J. D. Barney, from an analysis of the end results of seventy-one cases of tuberculosis of the epididymis draws the following conclusions: 1. After the removal of one or both epididymes the large majority of patients are found to be in good condition and to have gained weight. 2. In two-thirds of the cases there is no demonstrable evidence of tuberculosis elsewhere than in the genitourinary tract. When present it is most commonly found in the lungs or bones, but any organ may be attacked. 3. Renal tuberculosis rarely follows an infection of the epididymis. 4. Tubercle bacilli were present in eight out of ten urines as shown by the guinea-pig test. These urines also contained blood and pus, while those giving a negative reaction were normal. 5. A small majority of cases have a normal urine, and no urinary disturbances either before or after operation. 6. Postoperative sinuses are found in 25 per cent. of cases, but as about two-thirds of the patients were seen during the first year after operation, and as many sinuses remain open for several months, this figure would be ultimately much reduced. The use of tuberculin after operation hastens convalescence and the closure of sinuses more than any other measure. 7. No case on whom epididymectomy was performed is known to have had a recurrence in the corresponding testicle. 8. Tuberculosis of prostate and vesicles is found in more than half of the cases. 9. In a very large majority the sexual function is undisturbed, but the semen is found to be sterile in 85 per cent. 10. A comparison of many orchidectomies with a few epididymectomies shows the latter to have resulted more favorably. It is a fact, however, that infection of the second epididymis is to be expected, with or without opera-

tion on the first epididymis, and whether that operation be epididymectomy or orchidectomy. II. The mortality of operations, for tuberculosis of the epididymis is 5.47 per cent., the cause of death being a general miliary tuberculosis.

Bone Lesions Accompanying Chronic Leg Ulcers.—W. P. Coues states that: 1. Long-continued ulceration of the leg, whether varicose, specific, or undetermined, is often accompanied by extensive changes in the underlying long bones, often only demonstrable by radiographs. These changes may be specific or non-specific. A careful examination and thoughtful interpretation of the radiographs will differentiate the specific from the non-specific bone lesions. 2. These underlying lesions of bone are of great importance as regards treatment, as they occur too commonly to be ignored or passed over as occasional. 3. Do the ulcers of the soft parts cause the bone condition or do the bone lesions cause the ulceration of the soft parts? The author believes that in the long-continued ulceration this finally has its effect on the periosteum. In the specific cases the bone process is not by direct extension in the majority of cases, but the bone lesions are an index of the probable character of the ulceration of the soft parts. Some cases, however, undoubtedly arise from direct extension of a specific process in the periosteum, extending outward to the soft tissues and forming an ulcer. 4. Iodide of potassium helps both kinds of cases, specific or non-specific, many of these cases having a high blood pressure. 5. All cases of leg ulcers should have radiographs taken of the underlying bones, and be carefully tested for tabes. Many of them, which are supposed to be varicose on account of accompanying varicose veins, are really specific.

New York Medical Journal.

March 16, 1912.

Colds.—A. Jacobi quotes the fanciful notions of ancient and modern writers with respect to the supposed relationship between cold air and water and various pathological conditions. The mechanism of "catching cold" depends upon disturbances of the surface circulation, which cause internal congestions. Bacterial infection is not a prerequisite in this process. The prevention of colds requires the maintenance of general health, and exercising by means of cold sponging or cold baths the reactive power of the skin.

The Cause of Myopia.—By W. H. Bates. (See MEDICAL RECORD, February 7, 1912, page 338.)

The Circulation of the Cerebrospinal Fluid.—S. P. Kramer has studied this subject by means of injecting methylene blue into various parts of the cerebrospinal axis in dogs, then killing the animals shortly afterwards, and noting the distribution of the dye. When the methylene blue was injected into the lumbar portion of the subarachnoid space it was noted that the outer surface of the spinal cord was stained for a varying distance up; at times all the way to the medulla oblongata, at other times not so far. The floor of the fourth ventricle, however, was stained, as were the cerebellum, the aqueduct, the entire ventricular system of the brain, the subarachnoid space at the base, as well as the sheaths of the cranial nerves. This is due to the fact that the central canal of the cord is lined with ciliated epithelium, and ciliated epithelium in canals wash toward the orifices of outlet, and these are for the cerebrospinal fluid, the lymph spaces in the sheaths of the cranial nerves at the top of the neural tube. This finding is suggestive as a possible explanation of the pathogenesis of poliomyelitic disease. It shows how it is possible for a poison to reach the meningeal surface of the cord and the central gray matter, and leave the rest of the cord unaffected. Acute poliomyelitis is a disease of childhood and is also an ascending paralysis. An ascending poliomyelitis also occurs in adults, though more rarely than in children. It is possible that this is due to the fact that in but a fraction of adults the central canal exists as an open tube.

Home Operations.—W. F. Burrows states that in view of the ease with which the home may be prepared for operative work; the slight trouble entailed upon the family, and the comfort of having the patient, especially during convalescence, near them; the attainment of the Trendelenburg position upon any table by means of a suitable device; the lack of danger in most instances of proper surgical procedures; the modified postoperative treatment, whereby discomfort is at a minimum; the probability of a rapid recovery; and the risk that many cases run in transportation; the majority of operative procedures, other things being equal, should be performed at the home. The room selected is but for a short time transformed and, with pleasing surroundings, recovery is hastened and the outcome is more to be commended on account of the close relationship held throughout by the general practitioner, who not only directly follows his case, increasing his diagnostic ability, but also retains the confidence and highest esteem of his patient.

Contracted Pelvis and Induction of Labor.—E. MacDonald states that the induction of labor is the suitable treatment in contracted pelves of moderate degree, provided the size of the baby is estimated by measurements of the uterine fundus and fetal head and by the relation of the fetal head to the pelvis. Labor may then be induced at the most suitable moment, so as to get the largest sized baby that will pass the pelvic strait and avoid unnecessary prematurity. It is essential that mothers be examined at least four weeks before the expected labor in order to estimate the proper time for induction. The lowest limit of pelvic contraction, suitable for treatment by induction of labor, is 8 centimeters true conjugate, as this will permit the birth of a 2,500 gram (five and three-quarter pounds) baby, with an average 8 centimeter biparrietal diameter. This weight of baby avoids the dangers of unnecessary prematurity and has a mortality but little more than the average. Better results are obtained with pelves larger than this, but this is the lowest limit. If the child is measured in all cases the dangers of prolonged pregnancy and overweight babies will be avoided, because they will be recognized and treated. Cesarean section has a mortality in 3000 cases of 7 per cent. and should be reserved for cases with pelvic contraction through which it is not advisable to have a baby pass (below 8 centimeters), or for cases in which the child has already grown too large to pass through the moderately contracted pelvis. In these cases it may be done as a primary operation.

Bacteriology of Trachoma.—A. W. Williams reports the work that has been accomplished at the Research Laboratory of the New York City Department of Health in the study of the bacteriology of trachoma. From cases of this disease there were isolated gonococcus-like colonies of a small bacillus, which was Gram negative and strictly hemoglobinophilic, with a morphology and staining characteristic very similar to those of some of the trachoma inclusions. It is concluded that bacillus and inclusion are probably identical in papillary trachoma, and that the bacillus is probably the cause of the disease. The hypothesis that one or more of the group of hemoglobinophilic bacilli is the cause of trachoma explains many other hitherto unex-

plainable phenomena of this disease, its irregular onset; its insidious course; its variable contagiousness with its exacerbations of secretion, and the continued presence of trachoma in certain districts where helping causes are present.

Transduodenal Lavage.—M. E. Jutte recommends in various conditions the use of this procedure which may be carried out by means of introducing a duodenal tube and using various fluids for irrigating purposes. It is suggested that the cause of some of the obscure chronic ailments may be traced to the intestine, that the removal by transduodenal irrigation of the toxins produced in the course of fermentation and putrefaction will aid digestion and assimilation and will bring about improvement or recovery in such diseases as bronchial asthma, primary and secondary anemia, gout, rheumatism, arthritis deformans, toxic albuminuria, so-called biliousness, chronic constipation, and other intestinal disorders.

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Oppenheim's Myatonia. J. M. Snow.
Supernumerary Axillary Mammary Glands. J. D. Cantwell.
Lactation from the Mammary Gland in the Male. R. C. Creasy.
X-Ray Findings in the Differential Diagnosis of Early and Late Pregnancies. P. S. O'Donnell.
X-Ray Diagnosis of Pregnancy. A. McLean and P. M. Hickey.
Malt Soup in Nutritional Disturbances of Infants. J. M. Brady.
A New Test-Meal. D. Roberts.
The Frequency of Surgical Lesions of the Kidney and Ureter as Estimated from Autopsy and Hospital Records. E. M. Stanton.
The Definition of Normal Urine. J. H. Long.
The Organization and the System of Examinations of the Conjoint Examining Board of the Royal College of Physicians of London and the Royal College of Surgeons of England. F. G. Hallett.
Paretic Patients Sent to Prison. P. E. Bowers.
An Epidemic of Sore Throat Due to a Peculiar Streptococcus. D. J. Davis and E. C. Rosenow.
The Clinical Use of Carbon Dioxide with Oxygen. E. Levi.
Maternal Nursing. The Return of Milk After the Discontinuance of Nursing. L. S. Wile.
Atropine Therapy in Diabetes Mellitus. H. D. Rosenthal.
Wright's Solution with Bier's Hyperemia in Infections of the Extremities. P. G. Skillern.
Gunshot Wound of the Pregnant Uterus. H. W. Fudge.
A New Device for Hypodermic Medication. L. T. Gretchy.

X-ray Diagnosis of Pregnancy.—P. S. O'Donnell states that he has developed a technique in the use of the *x*-rays which not only shows clearly the fetus in the uterus, but also is capable of showing many abnormalities. The position of the fetus can be clearly determined after the fourth month. The exposure is less than one-fifth of a second with a medium tube. In the diagnosis of pregnancy the *x*-ray has a limited field, as the usual methods are generally sufficient, but in fat women or when there is need of differentiation between pregnancy and a large fibroid, it may be helpful.

Malt Soup in Nutritional Disturbances of Infants.—J. M. Brady states that malt soup is prepared as follows: Two ounces of wheat flour are mixed with 11 ounces of whole milk and then passed through a sieve. In a second vessel 3 ounces of extract of malt are mixed with 20 ounces of warm water. The two mixtures are then poured into a porcelain vessel, 2½ drams of 11 per cent. carbonate of potassium are added, and the whole is cooked with constant stirring for twenty minutes and then brought to a momentary boil; any loss through heat is made up by the addition of boiled water. This mixture has a formula of fat 1.20, protein 2.00, carbohydrates 12.00, and has a caloric value of 800 to the liter. The above is designed for infants with a body weight of from 6½ to 10 pounds from the third to the ninth month. For infants under 3 months of age the flour is reduced to 1 ounce and the malt-extract to 2 ounces. According to Keller and Czerny, there is a definite indication for the employment of this food, *i.e.* in the milk nutritional disorder described by them. It begins insidiously with irregular gain or loss in weight, and increase of food does not mend matters. The baby becomes pale and the skin loses its elasticity. The muscles are flabby. Restlessness, peevishness, and inability to sleep are common. Abdominal distention is often present, and sometimes vomiting. The stools are grey or whitish and very dry, frequently foul smelling. Their reaction is markedly alkaline. They may become loose and acid in case of complicating dyspepsia or intestinal infection. Lacking proper treatment many of these cases develop marasmus. The disease is a severe metabolic condition and non-bacterial. It is caused by a high percentage of fat in the food, and owing to the recent popularity of top mixtures it has become frequent. The therapeutic test, diminution of the fat percentage, reveals the condition. The author has used malt soup in this condition with advantage and states that even if marasmus has appeared the treatment is sometimes successful. It is not adapted to infants under 3 months of age in whom albumin milk is more apt to be of service. In diarrheas it is frequently of inestimable value.

A New Test-Meal.—By D. Roberts. (See MEDICAL RECORD, Vol. 70, page 1025.)

Frequency of Surgical Lesions of Kidney and Ureter.—E. M. Stanton notes that surgical lesions of the kidney or ureter of at least practical diagnostic interest are found in approximately from 4 to 6 per cent. of patients coming to autopsy and that the great majority of these could have been at some time cured or greatly helped by timely, accurate diagnosis and surgical treatment. With very few exceptions in these cases the renal lesions were the chief cause of death, and they constitute a group that are particularly fatal, sometimes killing quickly but more often adding to the handicap which determines the fatal outcome whenever the bodily resistance is diminished by intercurrent disease. In the table showing the frequency as shown clinically in hospital practice, compiled from statistics from ten representative American hospitals during the years 1908 to 1910 inclusive, about 1 per cent. of the patients suffered from surgical kidney disorders, which the author thinks probably represents a fair average of these conditions as recognized by the average standards of diagnosis. In 25,243 surgical cases treated in three American hospitals where cystoscopic and *x*-ray examinations are made in all suspicious cases there are 527 operations on the kidney and ureter, or nearly 2 per cent. of the whole, as compared with about 1 per cent. in seven hospitals in which the *x*-ray and cystoscope are used to only a limited extent.

Normal Urine.—J. H. Long emphasizes the practical difficulty in giving a concise answer to the question, what is normal urine. Normal urine is not only a function of the diet, and this is quantitatively the main factor, but it is a function also of certain idiosyncrasies in each individual. It is this factor which makes the greatest difficulty in coming to a conclusion in many a doubtful case, and which suggests the necessity of admitting a much wider range in certain factors than is usually the case. Our more modern quantitative methods for the urine should permit a closer relation between clinical observations and chemical findings in those cases in which the question of normal limits may assume considerable practical importance.

Epidemic Sore Throat.—D. J. Davis and E. C. Rosenow report an epidemic of severe sore throat that has prevailed in Chicago for the past three months. The infection was characterized by a sudden onset with severe prostration, by glandular enlargement, and frequently by serious complications. The organism isolated was an encapsulated hemolytic streptococcus of high virulence. It appeared to occupy a position between the ordinary hemolytic streptococcus and the *Streptococcus mucosus*. It was not a pneumococcus. The increase of the capsular substance on animal passage and its loss on artificial media suggested that the capsule and high virulence were the result of frequent human passage and might serve to explain the unusual tendency to complications and the general severity of the disease.

Clinical Use of Carbon Dioxide with Oxygen.—E. Levi states that it has been shown that carbon dioxide

is one of the most important of the body hormones, exercising a regulative influence on the action of the heart, on the tonus of the blood-vessels, and especially on the respiration. This has been largely due to the Italian school of physiologists, but the author specially mentions the investigations of Yandell Henderson on acapnia as a factor in shock. From these he was himself led to consider the practicability of utilizing mixtures of carbon dioxide with oxygen for the purpose of stimulating the bulbar centers in those cases in surgical practice in which they are temporarily paralyzed by the anesthetic or trauma. His experiments, first tried on animals, have shown that this mixture of gases, when properly diluted, is a therapeutic agency of extraordinary potency. His experiments were first tried on animals and his success with these led him to employ it on human beings. The method has been employed, with at times brilliant success, particularly in cases in which the breathing had become shallow, irregular, or of the Cheyne-Stokes type. For nearly two years the method has been employed by Professor Burci, the head of the surgical clinic in Florence, who has such faith in the method that he has made a standing order to have the carbon dioxide oxygen mixture always at hand for immediate use in case of need. The best results are obtained with a mixture containing 15 per cent. of carbon dioxide, and it is not their custom to wait until complete respiratory paralysis or profound shock has been produced, but to give inhalations of the mixture on the appearance of the slightest tendency to failure of respiration or cardiac function. Even in profound shock the results are beneficial, and in no case have they observed any ill effects from the treatment. The method has been found serviceable in cases of profound toxemic asthenia as a substitute for the peripheral stimulation ordinarily used. The observations of the Florentine surgical clinic seem to explain to some extent the good effects of artificially reduced circulation in narcosis. It seems probable that the remarkable rapidity of recovery in such cases is due to the sudden return to the general circulation of a large amount of blood rich in carbon dioxide when the lower limbs are unbandaged. Following up this suggestion they found that the use of a mixture containing 10 to 15 per cent. of carbon dioxide was very effective in awakening the patient after anesthesia. It also decreases the tendency to postanesthetic vomiting.

Atropine Therapy in Diabetes.—H. O. Mosenthal reports two cases of diabetes in which he tested the atropine treatment advised by Rudisch and by Forchheimer. The drug was used in doses of from 1/100 to 1/25 of a grain daily, until toxic effects were observed. The glucose was determined by Benedict's method, the ammonia by that of Folin and the nitrogen by the Kjeldahl process. The results give no indication that atropine sulphate causes any change in the carbohydrate tolerance of sufficient importance to make it of clinical value in the treatment of diabetes.

The Lancet.

March 9, 1912.

Glycosuria. A. E. Garrod.
On Malignant Disease of the Testicle, and the Operation for Removal of the Iliolumbar Lymph Glands When Secondarily Affected, or as a Precautionary Measure at the Time of Excision of the Organ Primarily Diseased. Sir Henry Morris.
The Causation and Prevention of Certain Toxic Symptoms Following the Administration of Salvarsan. J. McIntosh, P. Fildes and H. Dearden.
The Operative Treatment of Graves' Disease. W. Trotter.
"Aching Throat." W. H. Kelson.
Further Experiments on the Treatment of Inoculated Rat Sarcoma and Observations on Certain Accompanying Blood Changes. H. G. Grünbaum and A. S. Grünbaum.
The Treatment of Talipes Equinovarus. E. M. Corner.
The Value of Pneumococcus Vaccine in the Treatment of Pneumonia. N. Raw.
The Problem of After-Care of Sanatorium Patients. T. D. Lister.
Crawford Williamson Long, the Pioneer of Anesthesia. D. W. Buxton.

Glycosuria.—A. E. Garrod, in concluding his series of articles on this subject describes the forms of glycosuria associated with disturbances of the thyroid gland, the pituitary body, and the adrenals. An excess of thyroid or of pituitary secretion tends to induce glycosuria. The author emphasizes the fact that many morbid different conditions bring about disturbances of the metabolism of carbohydrates and that such disturbances manifest themselves in several different ways: now by a lowering of glucose tolerance without actual excretion of sugar in the urine; now by a spontaneous excretion of sugar in smaller or larger amount during limited periods of days, weeks, or months; and now by a persistent glycosuria, accompanied in its higher grades by the associated symptoms which go to make up the clinical picture of diabetes. Moreover, disturbances of these several grades may be induced in different cases by one and the same cause, or in the same case at different times. The effect of this is to obliterate in one's mind the conception of diabetes as a sharply defined disease, and to present the malady as merely the maximal phase of a series, rising by gradual steps from the normal of metabolism, just as myxedema is the culminating point of the almost insensible grades of hypothyroidism. Between the sufferer from grave diabetes and the potential glycosuric there is a striking contrast, but the gulf which separates them is bridged over by intermediate cases of all degrees of severirty. While it is true that in some cases of diabetes the nervous system is evidently at fault, and that in others the thyroid, the pituitary, or the pancreas is the seat of disease, in the great majority of cases which are encountered in practice one can find no indications of the underlying lesion upon which the metabolic derangement depends. The various tests of pancreatic efficiency give uncertain or negative replies; no ductless gland is evidently the seat of disease; no intestinal disturbances point to an origin in the alimentary tract, and no cardiovascular changes help one to classify the case. There is, to all appearance, a sheer, wanton, metabolic insanity. Nevertheless, one can hardly doubt that in such cases there is an underlying morbid cause at work.

Malignant Disease of the Testicle.—Sir Henry Morris reports the histories of two cases which show that columnar carcinoma of the testicle may remain quiescent, or the patient may be absolutely free of recurrence for many years; but the expectation is always that the disease will ultimately recur, though it may be only after a long time. When, therefore, this fact is taken into account, together with two others—namely, (1) that it is impossible to detect the early secondary infection of the iliolumbar lymph-glands; and (2) that the extirpation of these glands, when obviously enlarged subsequent to removal of the testis, is an operation of magnitude and severity, and has been very discouraging hitherto in its results—when these facts are taken into consideration, one may well be led to hope that the practice of the "radical" or "improved" method of excision of the testis may prove to be successful. So far, however, in the 17 cases reported of this "improved" operation, there is little, if any, foundation for such hope. In some of the operations the affected glands could not be removed, or, in other words, the "improved" method was found to be impracticable; in other cases in which the glands were successfully removed at the time, the disease soon returned; while in the rest insufficient time has elapsed since the operation to permit of any conclusion being drawn as to the ultimate result. Still, hope need not necessarily perish because as yet little, if any, encouragement can be derived from the very limited existing experience. Meanwhile the low malignancy of carcinoma testis, and the long histories of such cases as the author has recorded will often afford a prospect to any given patient of prolonged or entire immunity after the testis and cord have been excised by the old method.

Toxic Symptoms Following Administration of Salvarsan.—J. McIntosh, P. Fildes and H. Dearden conclude that the phenomena of rigors in syphilis treated by salvarsan dissolved in toxic saline solution and rigors occurring in secondary syphilis after the use of non-toxic saline solution are due to two entirely different factors. In the first case they are due to the dead bacteria in the water acting as a foreign protcid, while in the second they are due to bodies liberated from the spirochetes after their destruction. The elimination of the more excessive toxic symptoms by the use of bacterium-free saline solution is a matter of some value; so much so that Ehrlich urges that everyone who makes use of these injections should distil his own water. Commercial distilled water is often grossly contaminated with bacteria, and the difficulties in the preparation of a pure saline solution are considerable. It is suggested that in the absence of toxic symptoms due to the water the slight toxicity due to the salvarsan as such will be more easily borne, and larger doses may therefore be used. For the last six months the authors have never given an adult less than the maximum (0.6 gram) at one time.

"Aching Throat."—W. H. Kelson states that this condition is not synonymous with sore throat. In the former there may be no evidence of disease in the pharynx. The patients who come complaining of this trouble have generally arrived at, or are approaching, middle life, and the aching may vary very considerably in degree and somewhat in character. On examination they may be found to have the signs of chronic pharyngitis, with swelling, congestion, and catarrh; hypertrophy of the pharyngeal bands and granular patches, associated with coughing, hawking, and other efforts, varied and anomalous, some voluntary, others reflex, to clear the throat. Also there may be associated with it enlargement of the postnasal, faucial, and lingual tonsils; the first least, the last most commonly, or nasal obstruction and discharge, also enlarged veins, bad teeth, and enlarged glands. Experience has shown that aching throat is more commonly associated with flatulent dyspepsia than anything else, and this seems to act either by the formation of toxins; or possibly the aching may be a referred pain, such as that which occurs in the ear so commonly in disease of the larynx and upper part of the esophagus. There may also, however, be local conditions which, if they do not actually cause, certainly accentuate, aching throat; these must be sought out and dealt with in obstinate cases, not forgetting, Kelson says, that the condition of the nose and accessory sinuses has a very direct and positive bearing on the state of the pharynx, as also have the teeth.

Treatment of Inoculated Rat Sarcoma.—H. G. Grünbaum and A. S. Grünbaum state that in a previous communication they published the results of some experiments on the treatment of malignant disease in rats and mice, showing that by the injection of antivenom (horse) serum it was possible to effect regression of inoculated tumors in rats provided they did not exceed 1.5 centimeters in diameter. The authors have found since that by the simultaneous administration of adrenalin with the antivenom serum (Pasteur Institute) yet larger growths can be made to disappear in these animals.

Vaccine Treatment of Pneumonia.—N. Raw reports the results he has obtained with the use of stock vaccines of pneumococci in the treatment of 207 cases of pneumonia. The mortality was a little over 16 per cent. The vaccines did not seem to have any appreciable effect in hastening the crisis. The effect, however, on the pulse is always good, and there is a very decided diminution of delirium. There is also a notable absence of complications in cases so treated. The author is convinced that pneumococcus vaccine is a valuable aid in the treatment of pneumonia.

British Medical Journal.

March 9, 1912.

Auricular Fibrillation.—J. G. Emanuel states that there are practically no symptoms that are peculiar to continuous irregularity of the pulse—that is, to auricular fibrillation—apart, of course, from the symptoms due to the accompanying valvular disease or dilatation that may be present. In other words, a patient with a continuously irregular pulse may be no more conscious of the irregularity than is another patient of the regularity of his pulse. There may be no symptoms at all, and the patient may be able to perform arduous labor, physical or mental, for many years though the heart remain permanently irregular. The irregularity, however, hampers the heart's action, and, though the favorable condition may persist for years, symptoms of heart failure arise sooner or later, insidiously or rapidly, the symptoms being dyspnea on exertion, edema, cyanosis, etc. The cases fall into two groups: (1) A rheumatic group. The patients are young; the average of 45 cases with a history of rheumatism was 34. (2) A non-rheumatic group. The patients are past middle age; the average of 22 cases was 58. In the rheumatic group valvular disease may or may not be present, but if present, mitral stenosis is by far the most common form. The non-rheumatic group includes that form of heart disease generally known as myocardial degeneration, cardiosclerosis, or the senile heart. It may be associated with arteriosclerosis, granular kidney, aneurysm, etc.

The Management of Cardiac Failure in Diphtheria.—E. F. Coghlan states that the treatment of cardiac failure accompanied by persistent vomiting and occurring in the course of or after diphtheria should be conducted on the following lines: The head should be low to prevent cerebral anemia, while the foot of the bed should be elevated. Patients during the stage of cardiac depression become restless and throw off the bedclothes. They should therefore be warmly clad, and for the same reason hot-water bottles should be placed in the bed. All food by the mouth should be stopped and nutrient enemata administered. The rectum should be irrigated twice daily with warm boracic acid solution, otherwise irritation may be set up, and retention of nutrients become impossible. Cardiac depression must be combated by the administration of medicines. Various drugs have been used for this purpose, chief among them being strychnine, belladonna, and adrenalin. Since administering them in combination hypodermically the author has had four successful cases, though, of course, he has also had failures. The formula used is as follows: Atropine sulphate, 1/100 grain; strychnine hydrochloride, 1/100 grain; adrenalin chloride solution (1 in 1,000), 5 minims; water, 5 minims. This is to be administered hypodermically every four hours. Thirst is first met by the administration twice daily of small enemata of normal saline solution, while teaspoonful doses of iced water may be allowed as soon as the vomiting ceases. Dryness of the mouth may be alleviated by the application of such remedies as glycerine and boracic acid, half strength. Pain is most rapidly relieved by the frequent application of hot fomentations to the precordium. Constipation is to be combated by small enemata of glycerine and water.

Adrenalin in Cardiac Dyspnea and Dropsy.—J. C. Voigt has had under his care several cardiac cases in which dyspnea and dropsy were prominent symptoms, and in which suprarenal gland was administered. More or less severe dyspnea was relieved, sometimes by the hypodermic injection of from 5 to 15 minims of the 1 in 1,000 adrenalin solution, at other times by a 5-grain tablet of the suprarenal gland substance administered by the mouth. When the dyspnea was not very severe, the dose of adrenalin solution injected hypodermically was from 5 to 10 minims and the 5-grain tablet of the gland substance was halved for each dose by the mouth.

Wassermann Reaction on Post-Morten Serums and Cerebrospinal Fluids.—J. P. Candler and S. A. Mann conclude that while their observations lead them to consider that the reactions on the blood and cerebrospinal fluid removed from the cadaver before decomposition has commenced will give reliable results, they agree with Luksch that decomposition is liable to alter the reaction, as may also a terminal microbial infection. This change, however, is not confined to the alteration of a negative to a positive result, but may alter a positive into a negative: and the authors point out that decomposition may similarly influence the result of the test on fluids and serums removed during life. To ensure satisfactory results on post-mortem material it is, therefore, necessary to remove the cerebrospinal fluid and blood as soon as possible after death. The serum should be separated and inactivated at once, and the cerebrospinal fluid should be carbolized, unless the test can be applied the same day.

Statistics of Blindness.—W. C. Rockliffe presents an analysis of 590 cases of blindness that have come under his observation during the past 28 years at the Hull Blind Institution. He believes that ophthalmia neonatorum is generally considered to be the primary cause of blindness. Doubtless in years gone by this was so, but from the author's figures it is clear that to-day atrophy of the optic nerve ranks first, and that much has yet to be discovered in the preventive and therapeutic treatment of these cases. Further, atrophy occurs in the middle decades of life, especially between the ages of 40 and 50, and another point of interest is that death usually follows spinal atrophy in four or five years, while those with cerebral atrophy live to a much longer period.

Berliner klinische Wochenschrift.

March 4, 1912.

Altruistic Diseases.—Von Hansemann revives this expression in connection with diseases due to affections of the hormone secreting organs such as diabetes, myxedema, Basedow's disease, acromegaly, Addison's disease, parathyroid tetany, etc. These are only highly concrete examples due to serious lesions of the organs in question. In a larger sense habitual secretory anomalies of the latter stand in causal relation to the so-called dyscrasias. It is probable that all organs have internal secretions for with the exception of the spleen, each one is indispensable to life. The isolation of the spleen in this respect is doubtless due to the fact that it does not constitute a complete system in itself, but is merely a part of a system. The position of the pancreas is somewhat anomalous, for it has a highly elaborate external secretion together with an important but somewhat problematic internal secretion. In lesions of this organ only one secretion may be compromised or both may be simultaneously affected. The view that the pancreas is a complex structure, a gland within a gland, will probably be found erroneous; for it is to be doubted that the Langerhan's islets possess the function at present attributed to them. As yet an affection characterized by increased hormone production by the pancreas exists in theory only. Since other structures having internal secretions all give rise to syndromes due to hyperfunctioning, we assume that an analogous affection should proceed from the pancreas. If there is diminished hormone production, inability to oxidize carbohydrates results. In the opposite state there should be increased carbohydrate tolerance, but we do not know in what clinical form this would be manifested. The genital glands are not known to give rise to altruistic diseases in the strict sense of the term, but when they are removed or destroyed the so-called secondary sexual characters suffer changes. Those which serve to characterize the former sex suffer atrophy, while those characteristic of the opposite sex may become evident. At the climacteric in the female there is also a notable predisposition to certain affections, but these are in no sense specific. The physiology of the future will doubtless pay attention to certain functions of the lungs, liver, kidneys, etc., from the viewpoint of possible internal secretions concerning which we at present know but little. The changes caused by great destruction of the lung parenchyma, for example, are exactly those which would be due purely to defective oxygenation. The author goes so far as to claim that the oxygen which reaches the blood from the lungs represents the internal secretion of the latter, while the expelled CO_2 is the external secretion.

Septic Endocarditis.—Jochmann has analyzed twenty-eight cases of this affection, as a result of which labor he is able to corroborate fully Lenhartz's conclusions based on thirty-seven cases. The affection is that once known as ulcerous or malignant endocarditis, and since the pathogenic germ is practically always present in the circulating blood, the term septic has succeeded the older adjectives. The most frequent cause is the streptococcus, and next in order of frequency come respectively the staphylococcus, pneumococcus and gonococcus. Isolated cases have been traced to other infectious organisms. There is an acute and a chronic type, and the latter has almost always been found due to a streptococcus and chiefly to one particular variety, the S. *viridans*. The acute form occurs more frequently than the chronic, and leads to death in a few days. The clinical expression is that of a profound septic infection. Individual cases vary largely with the kind of pathogenic germ and of the parent lesion. Staphylococcus cases follow felons and boils, a urinary infection, an angina, etc. Pneumococcus cases complicate croupous pneumonia. Gonococcus cases usually proceed from a gonarthritis. Streptococcus cases are preceded by streptococcic angina, otitis, infected wounds, erysipelas, etc. Endocarditis develops in about 20 per cent. of all sepsis and a marked almost constant, predisposition is furnished by old valvular heart disease, whether from acute rheumatism in youth or arteriosclerosis in later years. Naturally there may be complications due to coincident implication of other organs from the primary focus, as well as others resulting directly from the endocarditis itself, to say nothing of a generalized septicopyemia.

Münchener medizinische Wochenschrift.

March 5, 1912.

Action of Organ Extracts and the Hormone Theory.—Popielski has shown that all organ extracts, whether made with water, alkalies, or acids, cause complicated syndromes which may comprise nervous excitation, convulsions, vomiting, spontaneous expulsion of feces and urine, salivation, lacrymation and other examples of hypersecretion, lowered blood pressure, diminished coagulability of blood, etc. This appears to show that extracts from all organs have in common a vasodilating principle, which is not cholin. The author terms it provisionally vasodilation. The same substance is formed in proteolytic digestion and occurs in peptones. It is overantagonized by adrenalin in

its action on the blood pressure. Like secretion, vasodilation stimulates the pancreatic secretion, but in the former this activity is specific. Because of the universal presence of vasodilation in the tissues the author inclines to the belief that the hormone theory is untenable. The same idea may be seen in connection with the so-called peristaltic hormone of Zuelaer. This is present in a variety of tissues, perhaps in all of them. Its peristaltic action is due to its property of lowering the blood pressure. Therefore the peristaltic hormone and vasodilation must represent a single principle, the former containing some of the latter. Organ extracts also contain a principle having the property of raising the blood pressure, which the author terms hypertension. This he regards as being identical with pituitrin, but not with adrenalin. Therefore in place of a large and indeterminate number of specific principles known as hormones we should have a few elementary principles combined in the organs in varying proportions.

Etiology of Metasyphilis.—Villinger relates a history which he thinks is able to throw light on this obscure subject. A man of sound stock and health contracted syphilis at 24, and was properly treated. The disease had one period of relapse during the first year. He did not marry until five years after infection, but nevertheless begot a syphilitic child which infected the mother. Eight years after the chancre vague symptoms began to appear which suggested a possible tabes. Within a period of three years these had vanished. These symptoms came on in certain periods with intervals of apparent health. They comprised lightning pains and paresthesiæ on the perineum and genitals; a mild grade of weakness of the urinary bladder; loss of sexual desire, and slight difficulty in articulating. The remissions and final disappearance of the symptoms could hardly have been due to the mercurials and iodides which were given the patient, for these had no immediate influence on their severity. During the entire period of pretabes, there was one other symptom constantly present just before the exacerbations. This was a sense of tension and tenderness in the groins, due apparently to swelling of the already enlarged lymphnodes. The state of the latter had gradually improved when the attacks ceased. The author sees here a possibility that spirochetes latent in the glands had perished and at the same time liberated a highly neurotoxic substance. Virchow used to attribute tertiary lesions to a similar causation. The spirochetes did not proliferate and reach the blood, for had this been the case we should have had ordinary syphilis, not metasyphilis. That the latter was in this instance abortive should be due to the small quantities of toxin liberated. If the author is right, all belated enlarged lymphnodes should be extirpated.

Results of Extirpation of the Hypophysis.—Ascoli and Legnani have been at work on this subject for three years. In growing animals growth was promptly arrested, ossification and dentition were delayed. The nutrition of the bones also suffered so that fragility resulted. The animals as a rule became corpulent and sexual maturity was delayed. The endocrin glands all appeared to suffer, notably the spleen, thymus, thyroid, and suprarenals. They exhibited arrested development and retrograde changes. These symptoms agree with the picture of hypopituitarism in man—dwarfing, adiposogenital dystrophy. So thyroidectomy and thymectomy by causing an arrested development of the hypophysis similarly give rise to symptoms akin to hypopituitarism.

Deutsche medizinische Wochenschrift.

March 7, 1912.

Disorders of Gastric Motility.—Borgbjarg states that disorders of motility exceed in importance those of secretion. To study these he prefers Faber's modification of Bourget's test meal which consists of 250 cubic centimeters oatmeal soup, 50 grams minced boiled meat, 50 grams white bread and butter, eight boiled plums and one dessertspoonful of cranberry preserve. If a minimum of 10 cubic centimeters residue of this meal is found in the stomach after a given period, say eight hours, one speaks of an eight-hour retention. A twelve-hour retention is synonymous with persistent retention, and is due to organic obstruction at the pylorus or pylorospasm, the latter due usually to the presence of an ulcer. A five or six-hour retention usually means cancer, ulcer, or gastritis, but sometimes has a functional cause which can be determined by chemical analysis. This degree of retention, however, may be due purely to atony, gastroptosis, or even an intestinal anomaly. In some instances prolonged retention does not mean persistent retention. The presence in the stomach merely of the indigestible residue of the plums, berries, meat, etc., usually means an organic stomach lesion. If nothing serious is found and constipation coexists, a five or six-hour retention indicates a well-ballasted diet. A bland diet often cures motor insufficiency from weakness of the gastroenteric tract. In poorly nourished patients an overfeeding diet often overcomes this weakness.

Determination of the Resistance of the Erythrocytes.—Von Liebermann and von Fillinger describe a technical procedure and the results obtained therewith from which they conclude that a ½ per cent. solution of sodium chloride does not cause hemolysis in the blood of a healthy subject or does so in traces only. There are, however, certain diseases and states of weakness in which the normal resistance of the cells is not weakened, so that no criterion of health or ill-health is forthcoming here while conversely there is sometimes found a diminished resistance where there has been no reason to suspect such. The resistance is also reduced in various morbid conditions, but not in such a manner as to throw light on the nature of the underlying cause. Generally speaking, the more protracted the disease, the greater the elements of anemia and debility, the more constant and pronounced the lowering of the erythrocytic resistance. The reaction is a debility reaction. Certain poisons produce the same effect and may produce it rapidly. Alcohol is such a poison. The method consists in taking a drop of the suspected blood and exposing it for two minutes to 5 cubic centimeters of a ½ per cent. solution of NaCl, shaking gently, and then using the centrifuge. If the supernatant fluid is clear resistance is normal.

Success of Antiserum Treatment of Dysentery.—According to Krause the results recently obtained with serotherapy in the Shiga type of dysentery in Eastern Austria are fully on a par with those of the antitoxin treatment of diphtheria. He has recently controlled a material of over 2,000 cases during the past year. This could also be contrasted with a large material of cases otherwise treated. The mortality of the cases treated with antiserum was between 9 and 10 per cent., while that of the material otherwise treated was between 19 and 20 per cent. One condition of success was that the serum must be given as early as possible, when its beneficent action was at once evident in the abortive course of the disease. The serum is essentially antitoxic, as it possesses only weak antibacterial powers.

The Specificity of the von Pirquet Reaction.—E. Tezner has found that children who react positively to the cutaneous inoculation with old tuberculin also react in a similar manner to the toxin obtained from the colon bacillus. In these cases there is a negative reaction to the cholera toxin or to peptone. These phenomena are explained as follows. An individual who has been infected with tuberculosis is also hypersusceptible to toxins of bacteria that accompanied the original infecting microorganism.—*Monatsschrift für Kinderheilkunde.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

Height, Measurements and Weight.—The measurements and weight should never be regarded lightly as, in many cases, they hold a very important place in the list of facts and conditions which must be considered in the selection of risks. Accuracy is imperative in order to avoid an injustice to the company or the applicant, as the case may be. Every examiner should, therefore, provide himself with a good tape measure and he should never fail to resort to the scales when meeting the conditions described further on. The best tape measures are those made of steel and the task of measuring the height will be facilitated if they are six feet in length.

A great many faulty measurements are reported to the home offices. Errors will not occur in the findings of this purely mechanical procedure if the following suggestions, which are definite and observed by most examiners of wide experience, are adopted.

Measuring the Height.—The height of the applicant should be determined accurately by measurement and *never estimated*. Many of the scales made for physicians' offices are provided with a device for ascertaining the height, but when this is not available the good old custom will answer of having the subject stand with his back to the wall, preferably on a wooden floor rather than a carpeted one, with some straight object, such as a book or ruler, reaching horizontally from the top of the head to the wall to indicate the proper spot to mark for the height. The height should be taken with the shoes on, as the tables of comparative height and weight are compiled with this addition to the height in mind.

If the applicant is near or beyond the upper limit of normal weight, care should be taken to have him stand erect so that he may be credited with every inch or part thereof he is entitled to. Undue straining or standing upon the balls of the feet should not be allowed; but, on the other hand, some stout individual who has the habit of carrying himself in a more or less stooped position, might jeopardize his chances for obtaining insurance on the plan applied for or even on any plan whatever if the examiner did not prompt him to stand firmly and fairly erect.

Measurements of the Chest and Abdomen.—Accuracy in these measurements is of special importance in the examination of overweights, as so much depends in these cases upon the measurements of the chest compared with those of the abdomen. The frequent discrepancies between the measurements by different examiners of the same subject is a matter of comment at the home offices as indicating a lack of care and uniformity; they may easily be avoided if all examiners adopt a common and approved method.

Always take the measurements on the bare skin. This procedure is easily accomplished if the trunk of the applicant is exposed in the manner described in a preceding chapter, for the examiner may then eliminate the errors arising from including more or less of the clothing. If this precaution is not observed, the measurements of the chest may be made over a thin shirt while that of the abdomen includes a part of the thick trousers and underclothing.

The Chest.—The chest should be measured at the nipple line, the tape measure being carried horizontally around the body.

When the applicant is a woman a measurement at the level of the nipples will not ordinarily be a fair one for two reasons, the thickness of the breast at that point and the lower position on the chest wall occupied by the nipples when the breasts are pendulous. The proper course to pursue in such an instance is to carry the tape measure around the body just high enough to avoid the thick part of the breasts.

Even in the case of a woman it would be better to measure the chest and abdomen next to the bare skin if the applicant is a heavy weight. When, however, there is a woman with a pendulous abdomen to contend with, the examiner may find it impracticable to secure sufficient exposure of the body for him to carry the tape line over the umbilicus next to the bare skin. Therefore, if clothing must be worn, and as both the chest and abdominal measurement should be taken over the same amount of clothing, the applicant should properly prepare herself for the examination by wearing a loose flowing gown of thin, light material.

Examiners will not infrequently meet large, lusty fellows who are unable to show an expansion of more than half an inch or an inch notwithstanding strong but futile efforts. The same individuals will usually gain an inch or more of expansion without undue exertion after a bit of coaching. It is especially desirable to get all the expansion the applicant is capable of in overweights, as the comparison of the measurement of the expanded chest with that of the abdomen may exert a strong influence on the final action at the home office. Examiners are often asked to remeasure the applicant and it is a common experience for them to find that they did not succeed in getting a full expansion the first time. The significance of these measurements will be more fully discussed later under the subject of "overweights" as a class.

The Abdomen.—More errors take place in measurements of the abdomen than in any of the others. This lack of accuracy, while of little consequence in the case of normal abdomens, gives rise to much trouble and extra correspondence when the applications of overweights are under consideration. Special attention is directed to the following suggestions:

First—The abdominal measurement should always include the umbilicus. The application blanks should call for this, and in the few which only mention the waist line it is probably assumed that the instructions apply only when the navel is in its proper location. As a matter of fact, the abdomens so unpopular at the home offices are those loaded with an accumulation of fat as a result of which they are apt to be pendulous with the umbilicus well below the waist line and on a level with the upper part of the buttocks.

Second—The buttocks and the crests of the ilia should *never* be included in the abdominal measurement. Failure to observe this precaution is a too frequent occurrence and leads to the reporting of a measurement far in excess of the true one, even in fat subjects.

Third—The rule for measuring in a horizontal line will have to be departed from when dealing with a pendulous abdomen which has carried the umbilicus below the level of the crests of the ilia. In these cases the tape line should be carried obliquely

from a point on the back just high enough to escape the crests and low enough in front to reach the navel. In other words, the fat applicant with a pendulous belly must quite properly pay a penalty by having his abdominal measurement taken in an oblique line. When it is necessary to resort to this plan of measurement the examiner should mention it in his report.

Fourth—All chest and abdominal measurements of heavy weights should be taken next to the bare skin in order that the comparison in these cases may be based on accurate figures.

Fifth—Women are apt to have pendulous abdomens after pregnancy. In such cases two measurements should be taken; one horizontally at the waist line, and the other in an oblique direction from a point on the back high enough for the tape-line to escape the iliac crests and low enough in front to include the umbilicus. Both measurements and the reason for taking them should be clearly described in the report, as a penalty is not exacted from a woman for having a pendulous abdomen as a result of labor unless there is also an excessive accumulation of fat. If, however, the woman is over the normal limit of weight and the measurement over the umbilicus is partly increased on account of adiposity, this fact should be invariably stated in the report.

It may be difficult to obtain a measurement next to the bare skin when the woman's abdomen is very pendulous on account of the great amount of exposure demanded. In the event of such an applicant being an overweight, she should be previously requested to limit her clothing to a gown of light material, and to especially exclude the many articles of underwear which extend downwards from the waist. Very few women will refuse to prepare themselves properly for the examination if the matter is tactfully and courteously explained to them.

Sixth—When drawing the tape together, use the same degree of tension in taking the chest and abdominal measurements.

Seventh—Some agents will train an applicant to draw in his abdomen while the examiner is trying to measure him. This trick is easily detected and must never be permitted.

Eighth—The possibility of an abdominal tumor or ascites should be kept in mind when an excessive abdominal measurement is encountered. A definite statement as to whether or not one of these conditions exists, or whether the measurement is due to adiposity should be included in the report.

Weight.—The weight should be taken with the ordinary clothing on, including coat and vest, as the figures given in the tables are computed with this extra weight in mind.

The weight should be ascertained by scales whenever possible. Oftentimes, however, no scales will be at hand and under such circumstances the weight must be estimated. When the weight is near the standard the need of actual weighing is not so great; but there should be no doubt in the examiner's mind as to the importance of resorting to the scales when it approaches the neighborhood of or exceeds the limit under or above the standard. It is no easy matter to estimate the weight of heavy people correctly as so much depends on the quality of the tissues, and it is not uncommon for the examiner, who has subsequently been requested to weigh the applicant, to find a weight twenty to fifty pounds more than that given in his estimate in the original report.

An examiner will invariably be requested by the home office to weigh applicants who are near or beyond the limits set forth in the tables, if he has not already done so. It will, therefore, save time and correspondence if he attends to this requirement in the first place.

Wassermann Reaction in Judging a Claim for Indemnity.—Hoffman tells of an applicant for indemnity who claimed to have developed tabes dorsalis in consequence of a severe accident. He denied luetic infection absolutely and showed no physical signs of the disease; his wife, however, has had several miscarriages. He was examined several years ago and at the time indemnity was granted as the rôle of trauma in the development of tabes could not be denied. In 1910 the patient was reexamined and this time a Wassermann reaction was done and proved to be positive. Physical signs of syphilis were, however, still absent. It was the opinion of the expert examiner that this reaction spoke very strongly for syphilis, yet it alone could not be used as an argument for stopping the payment of indemnity. In the present state of our knowledge it was doubtful whether the reaction alone could be depended upon in a case where blind faith in it could work an injustice to the applicant. Moreover, accident may have been the exciting cause of tabes dorsalis in a man with latent syphilis, and his present helpless state may never have occurred without the trauma. The payments were therefore continued.—*Zeitschrift für Medizinalbeamte*, Vol. 24, No. 17.

A Case of Multiple Sclerosis from Chronic Gas Poisoning?—Dr. Walter Stempel gives a detailed history of a patient who met with an accident resulting in fracture of the leg, and several years later claimed indemnity because of various nervous symptoms, which he referred to the accident. The patient spent these years as a laborer in a gas plant. He showed moderate ataxia, spoke in a monotone, and frequently laughed without cause. His hands trembled markedly especially in reaching for objects and in writing. The deep tendon reflexes were exaggerated. Pupils and eyegrounds were normal. The diagnosis of multiple sclerosis was made on these findings, and the relation between the previous accident and the nervous symptoms were not interpreted as at all causal. Later, the applicant told of having been at one time poisoned with illuminating gas, and this story was corroborated by his fellow workers. He therefore claimed that this accident may have been the cause of the nervous disease he developed, for previous to it he was normal and an ablebodied worker. Finally Dr. Lewin, a noted authority on toxicology in Berin, was asked for an expert opinion on the case. His analysis, which is printed in full by Stempel, shows the possibility of great injury to the nervous system from poisoning with illuminating gas, several such cases having come under his observation. Dr. Lewin's conclusion was that the applicant was entitled to the indemnity claimed. The fact that other laborers employed with the applicant and doing similar work were not affected by the gas was not at all proof positive that they would not have been affected had they been in the same physical circumstances as the patient on the day of the accident. Moreover, it is a well-known fact that a great many workers escape poisoning in some dangerous trade, while fellow workers are affected. Individuality plays a most important rôle in industrial accidents of this nature. —*Zeitschrift für Versicherungsmedizin*, January, 1912.

Book Reviews.

La Responsabilité Atténuée. Lois faites dans les divers pays, lois à faire concernant les criminels à responsabilité atténuée. Par le Docteur L. Mathieu, Rapporteur au III. Congrès International de Médecine Légale (Bruxelles, 1910), Inspecteur des Écoles, etc. Préface de M. Joseph Reinach, député. Price 2 francs. Paris: Vigot Frères, 1911.

In this monograph of 128 pages the author analyzes the doctrine of attentuated responsibility in criminals, traces its historical development, and reviews the attitude with regard to this doctrine of the legal systems of different countries. To the alienist, the medical expert, and the jurist this volume should prove an invaluable contribution on a subject about which very little has been written.

A Handbook of Medical Diagnosis. In Four Parts. I. Medical Diagnosis in General. II. The Methods and Their Immediate Results. III. The Symptoms and Signs. IV. The Clinical Applications. For the Use of Students and Practitioners. By J. C. Wilson, A.M., M.D., Professor of the Practice of Medicine and Clinical Medicine in Jefferson Medical College, and Physician to its Hospital, Physician to the Pennsylvania Hospital, Physician-in-Chief to the German Hospital, Philadelphia. With 418 text illustrations and 14 full-page plates. Third Edition, Thoroughly Revised. "The Whole Art of Medicine is in Observation." Price $6.00. Philadelphia and London: J. B. Lippincott Company, 1911.

That three editions of this work have appeared within a period of less than two years is alone evidence of the fact that it has been well received. The vigilance of the author in seizing upon every new and substantial contribution to medical science is manifested in the present edition by the inclusion of such topics as Brill's disease, which is designated as pseudotyphus. An unusually large amount of material is crowded within the ample 1,438 pages of this book, the preparation of which must have involved considerable labor. Fortunately, an excellent index enables one to make this material available for quick reference, and therefore adapted both for the desk and the laboratory table. Among the alterations in and additions to this edition may be mentioned the rewriting of articles on typhus fever and relapsing fever, on poliomyelitis, beriberi, and pellagara, and the addition of a section on the electrocardiograph. The work is well written and handsomely illustrated, and may be safely recommended as a reliable guide in diagnosis.

Case Histories in Medicine. Illustrating the Diagnosis, Prognosis, and Treatment of Disease. By Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second Edition, Revised and Enlarged. Price $3.00. Boston: W. M. Leonard, 1911.

This volume contains one hundred case histories classified under the following headings: infectious diseases, diseases of the gastrointestinal and biliary tract, diseases of the urinary tract, diseases of the circulation, the respiratory system, the nervous system, diseases of lymphatic and ductless glands, and diseases of unknown origin. The fourth in the case history series, this work, together with its predecessors, amply demonstrates the didactic value of the case history method. The originality and charm which pervade all of Dr. Cabot's writings are strikingly manifested in the present work. The plan pursued is "to make the reader work, to present puzzles like those which confront us at the bedside, and then to offer at the end of each case a solution of these puzzles." The introduction of questions and answers relating to important points in the various cases makes this work a valuable one, not only to undergraduate and postgraduate students, but also to the practitioner. It will undoubtedly continue its wide popularity.

La Fatigue et le Repos. La Fatigue. La Conservation des Forces. Le Médication par le Repos. Par le Dr. Fernand Lagrange, Lauréat de l'Institut. Publié avec le concours de Dr. F. de Grandmaison. Price 6 francs. Paris: Félix Alcan, 1912.

This is a posthumous work of Fernand Lagrange, who for thirty years devoted his attention to the physiology and hygiene of exercise and to the study of the various forms of mechanical movements. The author discusses the physiology and psychology of fatigue, its severe forms, morbid fatigue, the conservation of strength, the precautions to avoid fatigue, relaxation through movement and physical agents, moral recreation, the remedies for fatigue repair through proper regimen, the psychology of training, the conditions of rest and its psychology, the rest suitable for the organs, the rest of the mind, and the rôle of rest in various diseases. The work is a most practical treatise on an important subject.

Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege. Herausgegeben von Dr. L. Katz, Spezialarzt für Ohren-Nasen-, und Halskrankheiten in Kaiserslautern; Dr. H. Preysing, Prof. der Ohren-Nasen-, Kehlkopfheilkunde, Ord. Mitglied der Akad. für prakt. Medizin zu Cöln a. Rh.; und Dr. F. Blumenfeld, Spezialarzt für Nasen-, Hals-, und Lungenkrankheiten in Wiesbaden. 1 Bd., 1 Hälfte, Lief. 6. Price 3 marks. 1 Bd., 2 Hälfte, Lief. 2/3. Price 9 marks.

The concluding instalment of the first half of the first volume of this monumental work concludes the subject of general anesthesia in the surgery of the upper air passages. Local anesthesia in the surgery of the nose and throat is discussed by P. Heymann, and local anesthesia in aural surgery by O. Voss. Isemer deals with the subject of hyperemia therapy. Life, accident, and health insurance in relation to the surgical conditions of the upper air passages is dealt with by F. Ropke. An index concludes this part of the work. The second and third instalments of the second half of the first volume contain the subject of prothesis, by G. Port. Corrective plastic surgery of the nose and ear is presented by J. Joseph, and paraffin therapy is dealt with by A. E. Stein. P. Bockenheimer takes up the subject of plastic operations. In the thoroughness of the text and in the extraordinary profusion of illustration the two parts that have just been issued maintain the standard that has been set in the earlier issues.

The Practical Medicine Series. Volume X. Nervous and Mental Diseases. Edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Policlinic, Clinical Professor of Nervous Diseases in the Northwestern University Medical School, ex-President Chicago Neurological Society; and Peter Bassoe, M.D., Assistant Professor of Nervous and Mental Diseases, Rush Medical College. Series 1911. Price $1.25. Chicago: The Year Book Publishers.

Four-fifths of this volume are given up to the consideration of nervous diseases and the remaining one fifth to mental diseases. As the title implies, the book covers the literature of the past year on the subjects, and the matter presented is both interesting and valuable.

A Compend of Genito-Urinary Diseases and Syphilis, Including their Surgery and Treatment, by Charles S. Hirsch, M.D. Formerly Assistant in the Genito-Urinary Surgical Department, Jefferson Medical College Hospital; Consulting Physician, Social Service Hospital and Juvenile Protective Association, Philadelphia. Second edition with 74 illustrations. Price $1.25 net. Philadelphia: P. Blakiston's Son & Co., 1912.

In the preface to this edition the author claims that he "has carefully revised the entire work." But it seems to us that this is exactly what he has not done; and, further, we have never seen a book which needed such revision more than this work does. Printers' errors, slipshod statements, misspelled proper names, sentences that defy analysis can be found on almost any and every page. The prescriptions are, of course, loaded with mixtures of English and barbarous Latin; in most instances the author has not even taken the trouble to correct the errors which were in the first edition. From preface to index the book should be thoroughly overhauled before medical students and practitioners are invited to purchase it.

Sight Testing for the General Practitioner. A Manual by which he can acquire the knowledge necessary to determine all errors of refraction and to prescribe spectacles. By F. Davidson. Price 2/6 net. London: F. Davidson, 29 Gt. Portland Street W., 1912.

This little volume of 82 pages purports to give all that is necessary to enable the student to obtain a working knowledge of refraction. It begins with the consideration of the principles of optics; a few pages are then devoted to the consideration of hypermetropia, myopia, accommodation, presbyopia and astigmatism as regards the anatomical conditions necessary for the production of these errors of refraction. The rest of the volume is devoted to the consideration of the tests necessary for determining the correction of these conditions and the consideration of the anomalies of the muscles. It is a useful book for one who wishes to obtain merely a working knowledge of the subject.

Periodizität und periodische Geistesstörungen. Von Dr. Franz Mugdan, Freiburg i. B. Price 0.75 mark. Halle a. S.: Carl Marhold Verlagsbuchhandlung, 1911.

In this essay of eighteen pages there is presented a philosophical analysis of periodicity and periodic insanities. The author defines periodicity as follows: "It is a property of a series of logically related phenomena that recur at definite intervals as the result of causes that are inherent in the individual affected, and that are dependent for their production on no outside factors or influences."

The Practical Medicine Series. Volume IX. Skin and Venereal Diseases, Miscellaneous Topics. Edited by W. L. Baum, M.D., and Harold N. Moyer, M.D. Series 1911. Price $1.25. Chicago: The Year Book Publishers.

This volume is divided into two sections. The first deals with skin and venereal diseases, the second with miscellaneous subjects, such as History of Medicine, Insurance, Medicolegal Questions, and Sociology. The publication maintains the standard established by the previous volumes of the series.

Principles and Practice of Physical Diagnosis. By John C. DaCosta, Jr., M.D., Assistant Professor of Clinical Medicine, Jefferson Medical College; Assistant Visiting Physician, Jefferson Hospital; Hematologist, German Hospital; Fellow of the College of Physicians of Philadelphia; Associate Member of the Association of American Physicians, etc., etc. With 225 Original Illustrations. Second Edition, thoroughly revised. Price $3.50. Philadelphia and London: W. B. Saunders Company, 1911.

This volume is a well-written book of over five hundred pages, in which the methods and scope of physical diagnosis are considered under five sub-headings, namely, methods and technique of physical examination, examination of the thorax, examination of the bronchopulmonary system, diseases of the bronchopulmonary system and mediastinum, examination of the cardiovascular system, diseases of the cardiovascular system and examination of the abdomen and the abdominal viscera. Normal physical signs are thoroughly discussed, so as to adapt the work to the needs of even junior students; on the other hand, diagnostic points are entered into with a completeness that should satisfy senior students and practitioners of medicine. The new edition shows much new matter, especially in the subjects of sphygmomanometry, pleurisy, etc. The volume is primarily a textbook, and, compared to others on the same subject, is a good one.

The Accessory Sinuses of the Nose in Children. One Hundred and two specimens reproduced in natural size from photographs. By Prof. A. Onodi, Director of the University Clinic for Diseases of the Nose and Throat in Budapest, with a Preface by Prof. W. Waldeyer, Director of the Anatomical Institute of the University of Berlin. Translated by Dr. Carl Pransnitz, Hygienic Institute, University of Breslau. Price $7.00. New York: William Wood & Co., 1911.

This is truly a classical atlas. Commenting on the incompleteness of our knowledge of the nasal sinuses in children the author has presented a series of beautifully executed plates of specimens cut with a fret-saw in coronal, longitudinal, and horizontal planes, and then accurately photographed. The specimens are from the fetus and from children of various ages up to nineteen years. Accompanying each plate is a description in German, French, and English. Preceding the plates is a brief description of the various sinuses from their first appearance until after the beginning of puberty. This section of the work occupies twenty-three pages, and then follow the plates. Professor Onodi displays a most intimate acquaintance with the literature of sinus diseases and writes with the modest confidence of the true scholar. No rhinologist can afford to omit this book from the shelves of his library.

The Treatment of Fractures by Mobilization and Massage. By James B. Mennell, M.D., B.C., Cantab, etc. Late Resident Medical Officer of St. Thomas's House; House Surgeon, Casualty Assistant and Clinical Assistant to Physical Exercise Department, St. Thomas' Hospital. With an introduction by Dr. J. Lucas-Championnière, Chirurgien Honoraire de L'Hôtel Dieu, Membre de l'Académie de Médecine, Président de la Société Internationale de Chirurgie, etc. Price, $4.00. London: Macmillan & Co., 1911.

The book is an exposition of Lucas-Championnière's principles of treating fracture by massage and mobilization. He contends that the surgeon can and should obtain better results than by immobilization. The author, who is an enthusiastic supporter of this treatment, calls our attention to the pessimistic feeling regarding the current methods of treating fractures, as evidenced by Lane's expression: "The treatment of fractures, as it exists at the present, is a disgrace to surgical practice." Mennell feels that many of the failures can be avoided by the proper use of massage and mobilization. The reason that this method has not advanced in England is due to the fact that the nature of the massage and the regulation of the mobilization is not understood. It is not the massage of the professional masseur, but a slow, gentle, rhythmical repetition of a single movement, performed with a uniform speed and monotonous regularity; any movements across the axis of the muscle are useless and dangerous; the cessation of the pain indicates that the massage has been correctly applied. The author explains what is meant by mobilization, thus removing many common misapprehensions concerning the method. The treatment of the individual fractures is clearly described, and with the aid of the accompanying illustration, no difficulty should be experienced in carrying it out. The following is a summary of the treatment advocated: Restore the fragments to their original positions; the most efficient means, short of an open operation, are massage and mobilization; the long axis of the fragments must remain parallel; perfect reduction, short of an operation, is rare; complete restoration of function is the criterion of treatment rather than perfect structural restoration. Operation is indicated in the following conditions: Gross deformity, deformity interfering with the function of the limb, persistent deviation of the axis, and when shortening is a disadvantage to the patient. The work is the most satisfactory exposition of the Lucas-Championnière methods in English.

Meine Blutuntersuchungen. Von E. v. Behring, Marburg. Price 6 marks. Berlin: Verlag von August Hirschwald, 1912.

This is a small monograph on the technical subject of estimating the total quantity of blood in an animal by means of injecting a toxin, and then calculating the amount of antitoxin produced. It contains accounts of numerous experiments with the method, complete data being given, so that the volume should prove useful to other workers in the field. The reviewer is inclined to quarrel with the title, which is indefinite enough to suggest that the monograph deals with more general laboratory hematology and not with the very special subject above indicated.

Étude sur les Fractures de l'Extrémité Inférieure de l'Humérus chez l'Enfant. (Résultats Éloignés.) Par le Docteur André Trèves, Ancien Interne des Hôpitaux de Paris et de la Clinique Chirurgicale Infantile de la Faculté; Assistant de Chirurgie Orthopédique à l'Hôpital des Enfants-Malades, Membre Adjoint de la Société Anatomique. Price 10 frs. Paris: G. Steinheil, 1911.

This monograph is a contribution to the literature of the surgery of children. It is a study of the late anatomical and clinical results in fractures of the lower extremity of the humerus. The book is divided into three parts: Supracondyloid fractures; fractures of the external condyle; and epitrochlear fractures. Each section contains chapters devoted to the pathology, the treatment, and the end results of these fractures; accompanying the numerous case reports are drawings made from the radiographs. The author states that in children the most fractures occur between the ages of 5 and 10; the commonest fracture is the supracondylar; in 325 elbow injuries 153 were supracondylar. Immobilization in flexion (Jones' position) is advocated for this fracture, the position being retained by means of a circular plaster bandage, or after the manner of Scudder and Lusk. Trèves considers passive mobilization and massage impracticable; reduction by extension complicated, and operative interference rarely necessary. The treatment of the epicondylar fractures is as a rule very simple, on the other hand treatment of fractures of the internal condyle presents greater difficulties than supracondylar fractures. The increased difficulty of reduction may call for operative interference. From a clinical and anatomical study Trèves concludes that fractures of the elbow have a better prognosis than has been attributed to them; in 163 cases of fractures of the lower end of humerus 4 presented a bad result, 12 a passable result, and the remainder were almost perfect cures. He is strongly opposed to operative interference, and holds that early operation should be reserved for irreducible luxations and compound fractures accompanied by certain nervous lesions. In the later operations for vicious callus, nervous lesions, etc., the simplest and least mutilating operations are the best.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held March 7, 1912.

THE PRESIDENT, DR. WM. M. POLK, IN THE CHAIR.

The Accomplishments and Possibilities of Medicine in China.—Dr. EDWARD H. HUME, Field Secretary of the Yale College in China, made this address, which was accompanied with an interesting lantern slide demonstration. The conditions attending medical practice in China were very similar in many respects to those in Asia Minor and other non-Christian countries.

Medical Missionary Work in Asia Minor.—DR. WILFRED M. POST, of the American Hospital, Konia, Turkey, read this paper, in which he showed the need of medical missionary work in Turkey, illustrating his remarks by lantern slides. He reviewed the political events that had transpired during the past four years and summed up the present condition of Turkey in the remark of Riza Nour Bey, a deputy of the Turkish Parliament, "Our country has long been suffering from latent tuberculosis, and now it has reached the stage of galloping consumption." In the extremity of the empire lay the supreme opportunity of foreign missions. In Asia Minor most of the missionary work was being done by Americans, and it included printing and distributing the scriptures and other literature in the various languages of the empire, education, both lower and higher, Y. M. C. A. work, industrial training, and medical work. The ministry of healing in Asia Minor had its beginning with the work of Florence Nightingale, who went to Crimea in 1853 and took charge of the hospital at Scutari. The first regular medical missionary work was begun in 1859, when Dr. Henry West went to Sivas. In addition to practising among the people he trained a class of native students who went into practice and became known as the most reliable medical men in their generation in Asia Minor. In 1867 the medical department of the Syrian Protestant College, an American missionary institution, was established in Beirut, Syria, and Dr. Post's father, the son of Dr. Alfred C. Post, who was president of the New York Academy of Medicine in 1867 and 1868, was called to it. The influence of this growing medical school had been felt all over the Turkish Empire. Later the French Jesuits established a medical school at Beirut and there was also a government medical school in Scutari. These were the only regular institutions for training physicians for the whole empire of thirty or forty million inhabitants. In Smyrna and Constantinople there were, of course, several hospitals and the government had established a hospital in Broussa and another in Afion Kara Hissar. There was a large uncared for region, larger than New York State, in which there was no hospital or no medical work of any kind, either governmental or missionary. In some of the larger towns of the eastern part of Asia Minor there were centers of medical missionary work and a few local government hospitals scarcely worthy of the name, being merely khans or inns where a few of the city poor were housed, and in which little or nothing of modern surgical methods was known or practised. In most of these centers there were but one American physician and one or two trained nurses. Dr. Post said that he had gone to Turkey in 1904, and for six years had worked in Cesarea; last spring they had opened a new work in the large region which had been referred to. The medical missionary was not allowed to enter Turkey until he had passed an examination in Constantinople before the government medical authorities, either in French or in Turkish. Dr. Post described his trip from Constantinople to the interior and exhibited pictures showing the poverty and need of the country. They saw almost all of the diseases of the United States in Asia Minor, but often greatly aggravated, and with others superadded. Eye diseases were very common, especially trachoma, and keratitis and entropion resulting from it. Many cases of cataract came to them, and in a village near the Turco-Persian border the art of operating on these cataracts had been handed down from father to son. Their method of operating was to have the patient held on the ground and then to hold the eye open and plunge a long, sharp thorn into the corneoscleral juncture so as to catch the edge of the lens and depress it downward and away from the pupil into the vitreous. The patient usually saw for an instant and then his eyes were bandaged and he was put on a strict diet for forty days. Of course the vast majority of eyes were destroyed by this procedure. Hernia was extremely common and was treated by applying poultices and buffalo manure to the top of the head. A black chicken with yellow legs was hung about the neck for the cure of jaundice until the [illegible] softened." Suppurative adenitis of the neck was called "mole," and was treated by feeding the patient cooked mole. Fractures were frequently bound up so tightly that gangrene and death ensued. The burden of the suffering fell most heavily on the women, who came in the most pitiful condition to the missionaries. The native midwives used the knife recklessly in difficult labor and the practise gave rise to enormous fistulæ. Syphilis was common in the interior of Turkey, and there were towns where perhaps 50 per cent. of the population were infected. Leprosy was also common, but was seldom seen in the aggravated tropical forms. Malaria was everywhere, and epidemics of cholera, typhus fever, typhoid fever, and smallpox appeared from time to time. The ignorance and fatalism of the people made it difficult to cope with these epidemics. Patients came to them from great distances—four, six, eight, or even ten days' journey—in carriages, on horseback, in ox carts, and sometimes a man would even carry his wife to the clinic on his back. Their hospital workers were both native and foreign. Nurses were given a course of training as full as they could make it and most of the native ones were recruited from the missions. Dr. Post described their temporary quarters in Konia, a city of 70,000 inhabitants, the center of the vast district before spoken of as destitute of medical work. They had now planned a hospital which would accommodate 100 patients, which was a comparatively small number when one thought of the great field to be covered. Speaking of the financial side of the work Dr. Post said that for the year 1908-1909 the total budget for running their hospital of forty beds at Cesarea was about $12,000; this covering the salaries of medical missionaries, trained nurses, native physician, druggist, druggist's assistant, native nurses, helpers, and servants, together with the outlay for drugs, surgical instruments, etc. During that time they had 410 patients in the hospital, 6,206 out-patients, and performed 708 operations. They made patients pay when they could, and from this source they took in $7,000, which went toward defraying the expenses of the hospital, leaving $5,000 to be paid from American funds. Their work was by no means confined to the hospital and dispensary, for they were often called to make tours lasting weeks or months. They endeavored to make some medical missionary tours every year, staying in towns a month or six weeks and practising among the people. Dr. Post described a visit to one of these towns never before visited by a missionary and told of the difficulties encountered among a people taught from infancy to despise a Christian, and how these people eventually came to them and when they went away gave them an invitation to return again. Great was the need, the speaker said, and great also was the opportunity which confronted the medical missionary in Turkey today.

Untouched Fields in the Medical Profession.—MR. ROBERT E. SPEER delivered an address on this subject. He laid emphasis upon the fact that there should be no racial division. In the first place, there was the great mass of people who were suffering and who lived outside the western civilization. For instance, in Persia, where there were 9,000,000 people, there were but thirty doctors who had skilled training; in Korea, with a population of 12,000,000 people, there were only thirty-six doctors who had skilled training; in China there were something like 350,000,000 people, and they had but 365 medical missionaries. In India 80 per cent. of the population lived in villages and 85 per cent. of the doctors lived in the cities. In Chili 80 per cent. of the children died before they reached the age of two years, and here they had one physician to every 3,225 of the population. In Bolivia there was one physician to every 10,000 of the population. In South America there was not a competent physician to attend a 5,000,000 Indian population. In the United States there was about one qualified physician to 600 population. In the second place was to be considered preventive medicine, and here they had to contend with ignorance and superstition. He called attention to the great epidemics of diseases that had occurred in Asia, and especially to the fact that 80 per cent. of the children born in the province of Chili, in Northern China, died before arriving at the age of two years, an awful and frightful waste of life. There was an immense field in Asia, as well, for men who wished to go and help in the prevention of this frightful mortality. In the third place there was that apparently hopeless class of cases, the insane, the blind, the mute and the deaf, as well as the tuberculous. In the fourth place there was a call for medical men of the western civilization. There was no medical school in the Chinese empire except those that the medical missionaries had established.

SECTION ON SURGERY.

Stated Meeting, Held March 1, 1912.

DR. FRED. H. ALBEE, CHAIRMAN PRO TEM.

Chronic Empyema (Delorme).—Dr. CHARLES E. FARR presented two patients. The first was a child two and a quarter years of age whom he had seen first last June. She was very anemic and had a discharging sinus which had persisted for fifteen months. There was no chest deformity. He resected the sixth and seventh ribs and found a cavity of considerable size. The child only remained in the hospital two weeks and made a perfect recovery. The second patient was a lady who had a streptococcus infection following childbirth some two years ago. It was thought at first that she had tuberculosis. Signs of empyema on the left side soon appeared. She was operated upon and the sixth, seventh, and eighth ribs were removed. There was found a very large cavity which was partly empty. The resulting sinus healed within one month and now she was in splendid condition. He was able to decorticate the ribs without any trouble. She was now in absolutely perfect health.

A Case of Bone Transplantation for Pseudoarthritis of the Tibia and Fibula.—Dr. FRED H. ALBEE presented a man who had been in an automobile accident in April last in Scotland. He was unconscious for one hour after receiving a bad injury which resulted in deformity to his foot. The metatarsal bones were dislocated outward. For ten months he was unable to use the foot. He was given the Bier hyperemia treatment at the Royal Infirmary at Edinburgh. The *x*-ray plates were shown. In these cases the intermedullary splint of Elsberg should be used, and often the results were very satisfactory. Dr. Albee gave a blackboard demonstration of the work that was done in this bone transplantation. There followed firm union.

Total Extirpation of the Tongue for Carcinoma.—Dr. CHARLES A. ELSBERG presented this patient. The patient could now talk coherently and had almost completely the normal sense of taste.

Laminectomy for Spinal Tumors.—Dr. CHARLES A. ELSBERG presented two patients to illustrate the subject of his paper which followed.

Traumatic Cyst of the Pancreas.—Dr. ARCHIBALD E. ISAACS reported this case. The patient, a boy seventeen years of age, was admitted to the Beth Israel Hospital with the diagnosis of empyema of the gall-bladder. He had been well up to six weeks before his admission. At that time he received a severe injury by running against the side of a horizontal bar while exercising in a gymnasium. He lost his breath for a few minutes, broke into a profuse sweat, and vomited for about twenty minutes after the accident. He was then taken to Roosevelt Hospital, where he suffered severe abdominal pains for several days; these gradually left him and he was soon discharged feeling comparatively well after a stay there of ten days. During the five weeks after leaving the hospital he had had three attacks of severe pain, which was referred to the right hypochondrium and to the back in the region of the right scapula. There was nausea, but no vomiting, chills, fever, or jaundice. There was tenderness and rigidity in the right upper quadrant of the abdomen. The temperature was 100.5° F. and the pulse ranged between 80 and 90. Through a right rectus incision the transverse colon presented and a large, hard mass would be felt posterior to it. On raising the colon an area of adhesions was found between the under surface of the mesocolon and this retroperitoneal mass. There was then exposed an angry and almost gangrenous looking surface with areas of fat necrosis in it. An incision into this mass opened into a cavity from which large quantities of clear fluid discharged. About four ounces of a clear fluid were discharged which left a deposit of crystals on the surface of the gauze pads into which it soaked. By a mishap the specimen of fluid was lost. There was a normal gall-bladder, and the foramen of Winslow was open. The duodenum was pulled down and partially kinked by some well-organized bands stretching from it to the transverse colon. The appendix was also kinked by bands and the distal portion was so distended and adherent that decapsulation was required to remove it. While there was no probable connection between the duodenal and appendiceal conditions and the pancreatitis, it was interesting to note that the former must have existed for some time without causing symptoms. A cigarette drain was passed into the cyst cavity; the patient left the hospital, with the sinus closed, twenty-four days after the operation, and has been well since.

Experiences with Laminectomy.—Dr. CHARLES A. ELSBERG read this paper, which was based on his experience with fifty spinal operations performed in two years. He said that it was surprising that so little had been done in spinal surgery, in which the field was very promising, and a much larger number of good results could be obtained than in brain surgery. The dangers from the operation were not great, and after some experience the mortality would be very low. It was a mistake, however, to operate for extensive malignant disease of the arches of the vertebræ, and the spinal muscles usually contraindicated a laminectomy no matter how marked the symptoms of pressure on the cord. Recent fractures of the spine with signs of serious injury to the spinal cord, resulting in complete muscular and sensory paraplegia, especially in the cervical and upper dorsal region, should rarely be subjected to operation. In arriving at the real mortality of the operation of laminectomy cases of this kind should be excluded from the statistics. In forty-four successive operations which the writer had done he had lost but two patients, a mortality of 4½ per cent. Both of these patients were in a hopeless condition, as was shown by the autopsies. In a number of cases in which a tumor was suspected, but none was found at operation, remarkable changes occurred in the symptoms and signs after the operation, giving the distinct impression that the free removal of spinous processes and laminæ with opening of the dura had a very pronounced effect upon the spinal cord. In a paper on this subject by the writer and Dr. Bailey they had reported seven cases in which the patients were markedly improved for a time or entirely freed from their symptoms by the wide removal of spines and laminæ and opening of the dura. There seemed to be no satisfactory explanation for this effect. He had operated upon five patients who had very large tumors of the conus and roots of the cauda equina. Their symptoms were very similar. For several years they had had pain in the small of the back, later absence of knee jerk, the drop-foot, absence of ankle-jerk, pain and stiffness in the lower extremities, slight bladder disturbances, slight and irregular sensory disturbances in the lower extremities. The lower part of the spinal column was held rigid. At operation the lower part of the spinal canal was found to be filled with a brownish-red tumor mass which enveloped the roots of the cauda equina. These tumors were often so large that six or seven spines had to be removed. These growths were reported by the pathologist as being endothelioma or endothelial sarcoma. Their removal was more or less satisfactorily accomplished in two stages. All of the patients recovered from the operation. There was no more satisfactory operation from the standpoint of therapeutic results than the removal of an extramedullary tumor of the cord. Cases of localized intramedullary tumors were more interesting and more rare, and the author expressed the belief that the removal of these tumors from within the substance of the spinal cord was perfectly possible and that satisfactory results could be obtained in this new field. He had operated upon a number of patients with intramedullary disease of the spinal cord, four cases of tumor in the cord, and two of cysts within the substance of the cord, one case of syringomyelia, and one of large cavity formation. In all of these cases, by a special technique and in carefully selected situations, he had made a shorter or longer incision in the posterior median fissure of the posterior column, and in several of the patients the results had been very striking, if not remarkable. The cases of intramedullary tumor had been treated by the method of extrusion. This field of intramedullary spinal surgery was a new one, and there was a great future for this branch of surgery. Among the most satisfactory spinal operations were those for old fracture or injury of the spine. He had operated upon four patients each of whom had had, many years before, an injury to the spine which eventually produced signs of compression of the cord, in some of the patients going on to more or less complete paraplegia. *X*-ray plates showed marked deformities of the vertebræ. The operation consisted of the wide removal of the spinous processes and laminæ over the affected region, with opening of the dura. In all of the patients there was considerable angulation of the cord. The improvement which occurred in all of the patients was very rapid, sensory disturbances diminished, motor power soon returned, and the patients were able to leave their beds and walk again. Among the very rare conditions which the author had encountered was that found in a boy who fell from a scaffolding but who felt no ill effects from the fall until a year later, when he began to have pain with increasing weakness in the lower extremities. When admitted to Dr. Bailey's service he had a complete spastic paraplegia with marked loss of sensa-

tion of touch and temperature in both extremities. He also had considerable bladder disturbance. The peculiarity in his case was the great variability in the amount and degree of his symptoms. The operation revealed the cause of this variability, for he had a varicose aneurysm of the posterior spinal vessels. The main vessels which supplied the aneurysm were ligated and a part of the aneurysm was removed. The boy was making a rapid recovery, the lower limbs improving steadily, and the sensation returning. This operation was done less than six weeks before. The author had been unable to find the report of a similar case in the literature. The operation of laminectomy was preferable to hemilaminectomy; the latter operation required a longer time and was not nearly so satisfactory. It made no appreciable difference to the future function of the spinal column that a number of spinous processes and laminæ had been removed, as the main support came from the bodies of the vertebræ. If the proper instruments were used the exposure and removal of three or four of the spinous processes and the laminæ should rarely take more than ten or fifteen minutes. The skin incision in the mid-line was rapidly made, and the muscles were separated from the spinous processes and laminæ with knife and straight elevator with a sharp edge, bleeding being easily controlled with hot gauze packings wrung out of hot saline solution. With one bite of a large Horsley spine forceps or a giant rongeur the spinous processes were bitten away at their bases. Then with a few bites of a curved rongeur forceps the laminæ were removed on each side and the wound thoroughly dried with sponges over the area of the exposed dura.

Injuries of the Pancreas and Their Surgical Treatment.—Dr. H. FISCHER read this paper. He first related the history of a patient, a girl six years of age, who was struck by an automobile in the left hypochondrium and lumbar region. She was brought to the German Hospital on the day following the accident and upon examination the abdomen was found markedly distended, especially in the region of the epigastrium, less so in the lower parts. The abdominal muscles were rigid, especially in the epigastrium. The greatest point of tenderness was toward the left and a little above the umbilicus. There was some dullness in the dependent parts of the abdomen which disappeared on changing the position of the patient. On the left side, between the lower border of the ribs and the anterior superior spine there was a bloody discoloration of the skin. The pulse was 132, respiration 40, and temperature 99.6°. The urine showed a faint trace of albumin and a few hyaline casts, but no blood, either macroscopically or microscopically. The child had vomited clear yellow fluid. A diagnosis of probable internal hemorrhage was made and a laparotomy was advised; the operation was performed about twenty-four hours after the injury. On opening the abdomen a considerable quantity of dark fluid escaped. The organs all seemed normal, but the omentum showed a multitude of small yellowish-white spots of fat necrosis. The omentum with the transverse colon were turned up to expose the pancreas. The retroperitoneal fatty tissue in the neighborhood of the pancreas showed quite extensive fat necrosis. After the pancreas was fully exposed it was found that the tail of the pancreas was crushed. It was infiltrated with dark blood and softened. The head of the gland was found uninjured. The abdominal cavity was carefully washed out with a large amount of saline solution and a tampon, adjusted around the injured portion of the pancreas, led out through the abdominal incision and the latter was partly closed. The condition of the patient was rather poor until the third day, when she began to improve, and from that time she made a good recovery. A search of the literature revealed only forty-one cases of injury to the pancreas without involvement of any other organ. This was readily explained by the well-protected situation of the gland. Only two cases of injury to the pancreas by bullet or knife had been reported, but injuries caused by blunt force had occurred more frequently. The injuries thus inflicted showed either a complete tear of the gland or a bruising and crushing. Injuries of the head and body were more serious than those of the tail. In injuries of the head the common bile duct might be lacerated, and if the omentum and the gastro-colic ligament were torn the pancreatic secretions had access to the general peritoneal cavity acting injuriously on the tissues; when this happened widespread fat necrosis was seen over the upper part of the abdomen, in the greater and lesser omentum, the mesentery, and the retroperitoneal fatty tissue. This might be so extensive as to cause the patient to succumb. If the patient withstood this first onslaught he might still die of sepsis following the development of retroperitoneal abscess. The recognition of this fat necrosis was of great importance, as it was always present if from twelve to twenty-four hours had elapsed since the injury. If the patient came to operation immediately this symptom might be missing. When no other reason was found for the presence of hemorrhagic fluid it became imperative to inspect the pancreas. The hemorrhage was not usually marked, but it was imperative to protect the peritoneum from the pancreatic ferments. If the injuries were not severe a large hemorrhagic cyst sometimes developed behind the stomach; these cases usually ran a milder clinical course and gave a more favorable prognosis than the former ones. The diagnosis of injury to the pancreas was extremely difficult and in the majority of cases was made only on the operating table. The symptoms were those of peritonitis, which might have been caused by injury of almost any organ in the upper part of the abdomen. There was usually loss of consciousness, with some vomiting of bloody fluid right after the accident. There was then frequently an interval free from pain or distress, followed a few hours later by recurrence of the pain and vomiting. This free interval had been pointed to by Kaerte and Garre as a possible means of differential diagnosis, but the same symptom might be found in rupture of the stomach or gall-bladder. One condition only made the diagnosis fairly certain, and that was the presence of a cystic mass in the upper part of the abdomen, which could be recognized by its relation to surrounding structures. The leucocyte count was usually high. This was true in the case reported. It was incumbent upon the careful surgeon to exclude the possibility of dangerous injury by means of an early exploratory laparotomy. He who waited for clinical symptoms would come too late in a good many cases. The treatment, therefore, was early operation. As long as the splenic artery had not been torn, the blood supply of the tail of the gland was not seriously interfered with, but if the splenic artery had been injured and it was necessary to tie it the separated piece of the gland had better be excised. In cases where the pancreas was crushed and bruised the simplest and best method was the careful adjustment of a tampon around the wounded part, in order to establish free exit for the pancreatic secretions. The pancreas was best reached either by tearing through the loose omentum and entering the lesser sac of the peritoneum or by making one's way through layers of the gastrocolic ligament. Hadra recommended closing the hole in the gastrocolic ligament and making a counter incision in the back. The first method could be effected more quickly and had given good results. If the gland was sutured drainage should always be used. Where there was a complete tear or extensive crushing of the pancreas the secretion of pancreatic ferments might be very abundant—and cause extensive and annoying eczema of the skin around the abdominal wound. Wohlgemuth advised a strict antidiabetic diet which had given very gratifying results in a number of cases. The prognosis of injuries to the pancreas was always grave, and patients who had not been operated on had all died of peritonitis. In cases operated on within the first twenty-four hours the prognosis was much better. In the 42 cases collected five were not operated on, and died. Of 31 which came to operation, 21 were cured and 10 died shortly after the operation; this gave about 60 per cent. of recoveries.

Dr. WILLIAM HENRY LUCKETT said that there was one thing that had not been mentioned, namely, the proneness of all the wounds breaking down after an injury to the pancreas, for catgut and even cromacized catgut would disappear in these cases absolutely within twenty-four hours. This was without doubt due to the action of the secretions from the pancreas.

Dr. ARTHUR S. VOSBURGH reported a case of acute pancreatitis in a woman who gave a history of symptoms of only three days' duration. She was in the childbearing period and had gone six weeks without having menstruated. A diagnosis of ectopic gestation was made. When he first saw her she was lying with her knees drawn up and she complained of pain in the lower part of her abdomen. There was rigidity of the abdominal wall, apparently due to a beginning peritonitis. The diagnosis, in fact, was not made until the abdomen was opened. There was present a fat necrosis which they were unable to recognize under electric light. However, there were soon discovered white spots, which pointed to a pancreatitis. Most of the members of the house staff thought they were dealing with a tuberculous peritonitis until the pathologist's report was sent in. The gall-bladder was carefully explored, as well as the foramen of Winslow, for stones, but none were found. In the absence of gross lesions it did not seem wise to institute any drainage. It was at present eight days since the operation, and the subsequent course of the case should be very instructive.

The pulse ranged from 150 to 160 and the respirations about 55, and she certainly looked like a very sick woman.

Dr. MARTIN W. WARE said that it was difficult to make a positive diagnosis in these cases and referred to Dr. F. Tilden Brown's statement, made many years ago, in which he stated the difficulties encountered. This statement was made at the time he presented to the society a case of fat necrosis. However, one should not throw up his hands and say he was not able to make a diagnosis of these cases.

Dr. CHARLES A. ELSBERG said that two years ago he twice made a diagnosis of acute pancreatitis. There were present symptoms of an acute cholecystitis with an obstruction of the ducts of the liver, a definite area of tenderness, with pain on the left side. Operation proved that his diagnosis in both the cases was correct.

Specimen from Old Ununited Fracture of the Neck of the Femur.—Dr. CHARLES E. FARR presented this specimen. The patient from whom it was removed was at the time seventy-nine years old when he fell on the ice and sustained this injury. He was kept in bed for some time and sand bags were used. He lived four years. There was a shortening of three and a half inches. It was remarkable how he got along with this condition.

Symphanometry.—Dr. P. H. EYKMAN of the Hague, Holland, demonstrated this apparatus. He said that in making a stereoscopic picture with *x*-rays he placed the body upon the plate and the *x*-ray tube at some distance, and so took one picture, for instance, to the left. The other was taken after changing the plate and moving the *x*-ray tube to the right. Since, for the mathematical reconstruction, the anticathodes must be replaced by the eyes, the distance between the anticathodes (base of exposure) must be equal to the distance of the optical centers of the two eyes (visual base) of the operator. In the mathematical reconstruction by a mirror stereoscope the virtual images must coincide with the original position of the negatives. The stereoimage appeared on the exact spot where the object lay, exactly the same size, and exactly the same shape, so that one might say that the stereoimage was congruent with the original object. It could be very easily proved that the operator had an exact reconstruction in using, instead of the ordinary opaque mirrors, transparent mirrors, and the *x*-ray image was to be seen exactly coinciding with the body itself. In the human body one would thus see the bones through the skin in their exact relative positions. This might serve as a guide to the surgeon during an operation, since he was able to apply his scalpel to the desired spot with mathematical accuracy. This method, *i.e.* the contemporaneous presence of the object itself, together with its Röntgen image, might be termed *symphany*. He then removed the object; then he only could see the Röntgen image as a nebula of a distinct form. With a white piece of paper he could touch every point in order to indicate exactly where it lay. They might hold a divided rule across this virtual stereoimage in any direction, and thus obtain the exact distance between two points. This method, which he called *symphanometry*, should prove of use for scientific measurement. They thus possessed in the stereogram not only a means of giving a general psychical impression, but also a register of the actual mathematical proportions. Perhaps this method could be of value in obstetrics for giving an exact notion of the shape of the pelvis. In certain cases it might be of advantage in making a record, when they combined *x*-ray with the ordinary photographic stereogram. To do this effectually the center of projection of the *x*-ray must coincide exactly with the optical center of the lens systems of the camera, and also the displacement must be the same in both cases. With the same camera they reduced the *x*-ray pictures to the same size as the photographic pictures, and they used a lens stereoscope with a transparent mirror at 45 degrees, so that they could view the two pictures at one time, and they would be seen to be quite congruent. It looked rather difficult for a physician to trouble himself so much with mathematics. Therefore he tried to make an instrument that did the work quite automatically. In the proceedings of the Royal Academy of Sciences of Amsterdam, March 17, 1909, one could find a full description of the theory. It was reprinted in the *Archives of the Röntgen Rays*, June, 1909.

Demonstration.—Under the aluminum sheet was a double plate holder, which only was to be turned for changing the plate. The plate was automatically numbered, the exposure base registered and marked with L or R for the left and the right plate respectively. The operator had only to adjust the instrument for his viewing base by turning a screw. The anticathode of the *x*-ray tube was adjusted by a special instrument in the dark room. The tube was easily connected with the instrument. By only turning the wheel to the right one brought the tube from the left into the right position. If he wanted also a photographic stereogram one replaced the tube by the camera and the exposures were made in the same way. Now the *x*-ray plates being developed, one changed the camera for the special mirror stereoscope called the symphanor. They were made in two shapes, one for the light coming from above, as in an operating room, the other for the light coming from the side. For reducing the Röntgen plates one also had an automatically working reducing instrument, so that the physician would have no trouble, as all the exact work was done mechanically.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Stated Meeting Held March 19, 1912.

THE PRESIDENT, DR. ELIAS H. BARTLEY, IN THE CHAIR.

Postoperative Gastroenteric Paresis.—Dr. JAMES TAFT PILCHER of Brooklyn read this paper. He said that this condition was more frequent than was supposed, as in his hospital experience he had seen over sixty cases. Up to five years ago the mortality, which had been between 65 and 70 per cent., had diminished to below 5 per cent., and in the last ten cases there had been no fatalities. Gastroenteric paresis was observed during the course of the debilitating diseases, in the acute infectious diseases, as a result of brain and spinal injuries, and after operation. He believed that the dilatation of the stomach was due to a reflex inhibition of peristalsis and vomiting. The symptoms of the condition described were regurgitation of food, bile and fecal material, which simply welled up into the mouth; distention, which in none of his cases was limited to the stomach and which in some cases was absent because of the use of enemata; collapse, which was pathognomonic and usually developed within 24 hours; a feeling of distress, fulness, or pressure in the abdomen; intense thirst; and absolute obstipation. The conditions which simulated gastroenteric paresis were acute pancreatitis, acute intestinal obstruction, and acute perforative peritonitis, and these were easy of differentiation. The treatment was divided into prophylactic and active. By the former was meant thorough evacuation of the bowels before operation; the intravenous administration of 20 to 40 cubic centimeters of a hormone stimulating the peristaltic action of the intestine; minimum manipulation of the intraabdominal structures; a saline enema at 110° F.; a minimum use of ether by the open method; and the introduction of two ounces of olive oil into the mouth shortly after the patient's reflexes had become reestablished. The active treatment consisted of immediate lavage of the stomach, early, repeated, and prolonged; the use of stimulating enemata of turpentine, milk, or molasses in the place of eserin salicylate, which the speaker formerly used. He had since employed the hormone stimulating peristalsis. The speaker warned against the use of cathartics until after the stomach had been thoroughly evacuated. Installation of saline solution into the rectum by the drip method was used in some cases with good results. The treatment by posture was discouraged, as was operative interference.

Dr. ALGERNON T. BRISTOW in opening the discussion said that he had often met with the perplexing and disastrous condition described by the reader of the paper, and fully agreed in all that he had said. He emphasized the necessity of lavage. The stomach tube was to be introduced into the stomach as often as indicated, as it was the cornerstone of the treatment. Paralytic ileus was not always a preventable condition, as illustrated by the following case: Two years ago the speaker operated upon a man for the relief of an ileovesical fistula. The appendix was adherent to the bladder, and as the patient had a cardiac lesion one opening of the fistula was closed and no more openings were looked for. It was afterward found that another opening, which had not been discovered at the first operation, had not been repaired. After the operation the patient developed a severe attack of ileus with a distention so enormous that the sutures in the fascia gave way. But in spite of this the patient recovered, though he still had fecal evacuation through the urethra. Before his second operation elaborate steps for the prevention of a postoperative ileus were taken. He received castor oil and salol for one week previous to the operation and immediately after the operation, before the development of ileus, the administration of eserin salicylate every four hours was begun. The ileus that again developed was not as severe as after the first operation, but it was bad enough. The patient's stomach became dilated and there was regurgitant vomiting first of bile and later of fecal matter. The eserin was

discontinued on the third day. On the fourth day Dr J. T. Pilcher injected peristaltic hormone intravenously after which the patient vomited but once. Within four hours after its administration the patient began to pass gas per rectum and soon afterward he had a stool. Since then he had had regular bowel movements daily.

Dr. Joseph Merzbach considered the subject from the medical viewpoint and divided these cases into three groups: First, the cases of chronic dilatation which were rare and were found in beer drinkers. Second, the subacute types in which the dilatation was due to an obstruction of the pylorus. Of this type the speaker mentioned two cases: one of gastric ulcer with regurgitant vomiting and cure after operation, and the other a case of pyloric adhesions. In this case lavage was used and no food per os was permitted. The dilatation of the stomach in the infectious diseases belonged to the third group. The speaker had seen four cases following pneumonia occurring just before the crisis. The diagnostic signs were either a globular prominence in the epigastrium, which Dr Pilcher said was very rare, or a disturbance of the typical pneumonia temperature-pulse ratio. This disturbance was always due either to a myocarditis or to a mechanical interference with the heart. The speaker finally emphasized the importance of using the stomach tube in dilatation no matter how ill the patient might be, because without this treatment the patient would die.

Dr. William J. Cruikshank recollected his first case of appendicitis which was operated upon by McBurney and which developed ileus. McBurney at that time remarked that all these cases were fatal. The speaker believed that many of the vasomotor paralyses complicating pneumonia were really fatal cases of intestinal paresis.

Dr. John C. MacEvitt remarked that the symptoms of gastroenteric paresis were plain. The vomiting was not continuous, but ceased for hours at a time and then was propulsive in character. The speaker insisted on the repetition of gastric lavage until the fluid returned clear and it was remarkable how great a quantity had at times to be used. The pain was not continuous and pressure could be made on the abdomen without evoking tenderness as in peritonitis. The latter symptom he regarded as of great value.

Dr. James T. Pilcher in closing remarked that the case described by Dr. Bristow did not come under the heading of the paper, but was really a case of retrograde peristalsis due to a misapplication of the normal stimulus to the bowel.

On the Problem of the Prevention of Insanity.—Dr. August Hoch of Ward's Island read a paper with the above title. He commented on the present status of prevention in general medicine, dwelling at length on its relation to the prevention of insanity. He stated that there existed a belief that insanity was increasing, but personally he did not think this was so as no proof of progressive mental degeneration had been shown. He said that the hospitals for the insane were overcrowded and that the increase in demands for admission to these hospitals was greater than a proportionate increase in population. He believed that this state of affairs was due to the earlier recognition of the disease, to the better facilities for treatment in the hospitals, and to other factors too numerous to mention. Even if there was an increase in mental degeneracy and insanity the outlook was not gloomy and there was no reason why insanity should not enter the field of preventive medicine. The speaker classified cases of insanity under three heads: First, those suffering from organic mental diseases, as general paresis, brain syphilis, arteriosclerotic dementia, alcoholism, Korsakoff's psychosis, delirium tremens, and the toxic insanities. These cases had a chronic and progressive course with defective memory and organic cerebral changes. To the second group belonged mania, melancholia, and the manic depressive type of insanities, and the speaker defined these as deviations of the emotions. In the third group he included hysteria, paranoia, and dementia præcox, terming them disorders of adjustment. In order that he could outline the means of prevention of these diseases the speaker first discussed the causes. The latter were exogenous as in the first group of the above, and endogenous as in the other two groups. In every case of general paresis syphilis was the causative factor, but there were contributory factors. Twelve per cent. of all admissions to the New York hospitals for the insane were general paretics and of the males 20 per cent. suffered from this disease. The mortality in New York for 1910 from this cause was one-half as great as that from typhoid fever. Syphilis was also the etiological factor in many cases of meningitis and endarteritis, as well as in many congenital brain affections. Many organic brain defects could be prevented by instituting a general campaign against syphilis. It was more difficult to estimate the number of cases of insanity traceable to alcohol. Experiments had tended to prove that alcohol led to mental degeneration in the offspring. A conservative estimate showed that about 12 per cent. of all admissions were due to alcohol primarily. A campaign against alcohol addiction was also necessary. At least one-quarter of all cases admitted to the hospitals for the insane for organic diseases were preventable by simple, clear-cut means. The endogenous causes were more difficult to control as it was of greatest importance to know the personal life of the individual. Usually these patients were less resistant mentally, not being able to withstand stress and strain, and they always showed danger signs. The prevention of hereditary weak-mindedness by controlling marriage or by vasectomy was of questionable value, as the true indications for these procedures were not clear. The speaker emphasized the importance of close observation of the individual during childhood, especially regarding the sexuality. Tendencies to day-dreaming, depression, and brooding were to be guarded against. Many cases of insanity could have been avoided by gaining the child's confidence or by having more attention paid to slight mental abnormalities. Comment was made on the lack of alertness in detecting early signs of mental breakdown. Finally, the speaker insisted that there was a field for preventive psychiatry by means of treatment. Medical schools gave instruction in the recognition of well developed cases of insanity, but more attention ought to be paid in teaching the early signs of mental impairment.

Dr. W. L. Russel of the Bloomingdale Asylum said that he was gratified in that he had observed the closer relation of general medicine to practical psychiatry. The general practitioner dealt with more mental cases than he realized. The speaker based this statement on the fact that most of the cases admitted to the hospital gave a previous history of about eleven months' duration and many of the discharged patients received further treatment. Fully 25 per cent. of court and jail cases included individuals who were more or less insane. All these cases had been seen originally by the general practitioner. Considering the fact that there were only fifteen public and twenty private asylums in New York State with facilities for caring for 30,000 patients, he thought it was the duty of the medical profession to urge the provision of more adequate facilities for the care of these unfortunates. Stress was laid on the importance of arousing public interest in the prevention of insanity.

Dr. Salmon referred to the work of the National Society of Mental Hygiene. Its main object was the improvement of the condition of the insane and for this object greater uniformity in the commitment and treatment of these cases in the various States was necessary.

Pathological Society of Philadelphia.

At a stated meeting held March 14 Dr. Kenneth M. Lynch exhibited a specimen of "Congenital Constriction of the Bowel." The patient was an infant, six weeks old, born by cesarean section. During life it exhibited great distention of the abdomen, with vomiting and evidences of inanition. On post-mortem examination the stomach, as well as the first part of the small intestine, was found greatly distended, while the jejunum was the seat of a valve-like fold, with a small opening, preventing the onward passage of the intestinal contents. Dr. Lynch presented also "Specimens from a Case of Congenital Syphilis Dying Shortly After Administration of Salvarsan." The patient was a girl, nine years old, with evident symptoms of congenital syphilis and who following a second intravenous injection of salvarsan developed vomiting, diarrhea, and collapse, followed by death. On post-mortem examination degenerative changes were found in the kidneys, the liver, and the heart. Dr. Daniel J. McCarthy presented a communication describing "Sections of Brain-tissue Showing the Reaction of the Cerebral Tissues in Syphilitic Perivasculitis to Salvarsan." The patient was a man who had presented delusions of persecution followed by progressive dementia, together with a positive Wassermann reaction. Injection of salvarsan was followed by coma and death. On post-mortem examination evidences of syphilis were found in brain and cord, but no changes that could be referred to the effects of the therapeutic agent. Drs. B. A. Thomas and R. H. Ivy exhibited a patient presenting "Hyphomycosis." The patient was a young colored man employed as an embalmer who presented a circumscribed lesion rather larger than a silver dollar on the dorsal aspect of the left wrist. The base and margins were reddened, while the affected area was cov-

ered by a crust honeycombed with innumerable small openings from which pus could be readily expressed. Examination of smears and cultures from the discharge disclosed the presence of a fungus of the hyphomyces group, but whose precise identity had not been established. Noteworthy improvement followed upon applications of mercuric chloride and carbolic acid. Drs. JOHN A. KOLMER and JAY F. SCHAMBERG presented a communication, "A Study of Experimental Histological Changes Following the Administration of Sarvarsan." The object of the investigation was to determine whether the remedy could be administered safely and effectively by the mouth. Accordingly, doses exceeding physiological limits were given to cats and dogs and rabbits in the form of capsule, pill, and with food, without causing more disagreeable symptoms than vomiting and diarrhea. Within 24 hours and up to 72 hours arsenic could be found in the urine, the bile, the bowel, and the stomach, while the bacterial flora of the intestine exhibited a quantitative diminution. No noteworthy histological alterations were discovered in any of the viscera examined. The remedy was administered also to several patients suffering from syphilis and it exhibited therapeutic activity, but less marked than when administered into a vein or into a muscle. Dr. JOHN H. MUSSER, JR., presented a communication entitled "Experimental Study of the Changes in the Blood Following Splenectomy." Observations in cases of splenectomy in human beings, a case of which had been under Dr. Musser's care, showed that removal of the spleen is followed by a reduction in hemoglobin and in the number of red corpuscles and an increase in the number of leucocytes, lasting for a considerable period of time. Similar changes were observed in animals from whom the spleen was removed experimentally. Drs. R. M. PEARCE, J. H. AUSTIN, and E. B. KRUMBHAAR presented a communication entitled "Experimental Study of the Influences of Splenectomy on the Production of Hemolytic Jaundice." Dr. ALFRED STENGEL presented a communication entitled "Pneumococcus Infection with Hemolytic Jaundice." He reported the case of a man, 54 years old, who complained of pain at the base of each chest, with elevation of temperature and leucocytosis. Physical signs of pneumonia could not be detected. In the course of a few days a striking orange-tinted jaundice developed, while the leucocyte count rose progressively and the patient's condition was obviously becoming increasingly grave. Pneumococcemia was suspected, but the patient died before the results of culture, showing the presence of pneumococci in the blood, could be reported. At autopsy pneumonic consolidation of the upper lobe of the left lung was found, with degenerative changes in the liver. Dr. A. P. HITCHENS presented a communication entitled "Contribution to the Study of Passive Immunity to Tetanus," as a result of which he was able to show that the immunity induced in horses by the administration of antitoxin was temporary, lasting about one month in experimenal animals.

Books Received.

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PRACTICAL GYNECOLOGY. By E. E. MONTGOMERY, M.D., LL.D. 4th Edition. 857 pages; with 589 illustrations; cloth; price $6.00 net. P. Blakiston's Son & Company, Publishers, Philadelphia.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., AT MERCY HOSPITAL, CHICAGO. Vol. I, No. 1; 133 pages; illustrated; price per year; paper, $8.00. Cloth, $12.00. W. B. Saunders Company, Publishers, Philadelphia.

A COMPEND OF GENITO-URINARY DISEASES AND SYPHILIS. By CHARLES S. HIRSCH, M.D. 359 pages; illustrated; price, cloth, $1.25 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

ARZNEI UND DIÄT-VERORDNUNGEN FÜR DIE GYNÄKOLOGISCHE PRAXIS. By Prof. Dr. PAUL STRASSMAN. 192 pages; paper; price 1.60 M. August Hirschwald, Publisher, Berlin.

BEITERÄGE ZUR EXPERIMENTELLEN THERAPIE. By Prof. Dr. E. v. Behring. 114 pages; paper; price 6 M. August Hirschwald, Publisher, Berlin.

MODERN THEORIES OF DIET. By Alexander Bryce, M.D., D.P.H. 368 pages; cloth. Longmans, Green & Co., Publishers, New York.

Medicolegal Notes.

Malpractice—Responsibility for Operation Conducted by Another.—There is no rule of responsibility which requires of a physician or surgeon infallibility in the diagnosis or treatment of diseases. The plaintiff in an action for malpractice had for some years been treated by the defendant and other medical men for tic douloureux, for which medicaments had been of no avail. The defendant, who kept a hospital, advised an operation, and after consulting with the plaintiff procured his brother, who made a specialty of surgical cases, to perform the operation. It was not successful in relieving the plaintiff's sufferings, and it left him with some disfigurement, and without the protection afforded to the brain by the hard plate of his skull over an area of 2½ by 1½ inches. The plaintiff recovered a verdict and judgment for a substantial sum and the defendant appealed.

In one aspect of the case the plaintiff claimed that the defendant caused a dangerous operation to be performed upon him after assuring him that the operation to be performed would be a mere trifle, as operations go, and would involve no serious consequences. If that contention were true defendant's conduct would be indefensible. But the Alabama Supreme Court held that, on the evidence, the verdict, if based on that aspect of the case, ought not to be allowed to stand. The defendant was a reputable physician, having the plaintiff's confidence, and had treated the plaintiff at intervals since childhood and during many months for the specific disease. The operation was performed in the presence of three other physicians, nurses and three brothers of the plaintiff. It was dangerous, difficult, and of doubtful result at the best. The defendant and two of the other physicians swore that the plaintiff was specifically informed of the nature of the operation. Nearly a year elapsed after the operation before the plaintiff intimated that he had a grievance, and within that period he had returned to the defendant for treatment and consulted with him about having the operation repeated. It was also complained that the defendant had unskilfully or negligently diagnosed or treated the plaintiff's case. There was no evidence of error in diagnosis. As for any unskillfulness or negligence in the operation, assuming that the jury were authorized to find that there was such, the operation was not performed by the defendant, but by another surgeon under the circumstances above stated. The defendant took part to the extent only of administering the anesthetic and advising that the effort to complete the operation be abandoned on account of the patient's ebbing vitality. There was no suggestion that in these things he showed any lack of skill or committed any error. Nor was there any suggestion in pleading or in proof that the defendant negligently advised the employment of an unskillful or incompetent surgeon to perform the operation. Under these circumstances the defendant was not responsible for any default on the part of the operating surgeon, who was practising his profession as an independent agent. It was also argued that the defendant contributed to the result of the operating surgeon's alleged negligence by furnishing an inadequately equipped place in which to perform the operation. That, however, it was held, left the question at issue to depend upon the defendant's responsibility for the operating surgeon, for if, it was said, the condition of the hospital and its equipment was such as, in itself, to impart an element of negligence or unskillfulness into an operation performed there, the responsibility for that element of the operation rested upon the surgeon, who determined upon and directed the operation. Moreover, the medical men, including one of the plaintiff's witnesses, gave their approval to the hospital. The judgment for the plaintiff was therefore reversed and the case remanded.

Various instructions to the jury on the liability of physicians were considered and approved. An instruction that no matter how skillful a physician may be he is responsible for his negligence, if any, was held not objectionable as holding a physician responsible for his negligence without limiting the responsibility to the proximate results of his negligence. Although the plaintiff had a temperamental or physical weakness which could not be foreseen, and which contributed to the failure of the operation, the defendant would nevertheless be liable, if he contributed to the plaintiff's injury by a failure to exercise due care and skill or by performing upon the plaintiff a serious operation without his consent, express or implied. Although there might arise emergencies in which a surgeon might operate upon his patient without his knowledge and consent, this was not a case of that character.—Robinson *v.* Crotwell, Alabama Supreme Court, 57 So. 23.

Finger Print Impressions as Evidence.—On a trial for murder objection was taken, in the Illinois Supreme Court, to the admission in evidence of enlarged photographs of impressions of the accused's finger marks upon a railing, on the ground that this class of testimony is not admissible under the common law rules of evidence, and as there is no statute in the State of Illinois authorizing it the court should have refused to permit its introduction. The court said that it had found no statutes or decisions touching the point in this country. This class of evidence has been admitted in Great Britain, and the standard authorities on scientific subjects discuss the use of finger prints as a system of identification, concluding that experience has shown it to be reliable. These authorities state that this system of identification is of very ancient origin, having been used in Egypt, when the impression of the monarch's thumb was used as his sign manual; that it has been used in the courts of India for many years and more recently in the courts of several European countries; that in recent years its use has become very general by the police departments of the large cities of this country and Europe; and that the great success of the system in England, where it has been used since 1891, in thousands of cases without error, caused the sending of an investigating commission from the United States, on whose favorable report a bureau was established by the United States government in the war and other departments. From the evidence of expert witnesses who testified in the case and from the writings referred to, the court held that there is a scientific basis for the system of finger print identification, and that the courts are justified in admitting this class of evidence; that this method of identification is in such general and common use that the courts cannot refuse to take judicial cognizance of it. The evidence may or may not be of independent strength, but it is admissible, the same as other proof, as tending to make out a case. It was also held that expert evidence is admissible on the subject, the classification of finger print impressions and their method of identification being a science requiring study. The evidence on the subject did not come within the common experience of all men of common education in the ordinary walks of life, and therefore the court and jury were properly aided by witnesses of peculiar and special experience on the subject.—People *v.* Jennings, Illinois Supreme Court, 96 N. E. 1077.

Testamentary Capacity—Effect of Disease.—In an action to set aside a will the theory of the contestant was that the disease from which the testator suffered, cancer of the tongue, broke him down so physically and mentally that he was incapable of making a will. Some of the witnesses testified that they had seen the testator, who was a man of 76 years of age at the time of execution of the will, cry, and it was urged that this was a sign of mental unsoundness in a man. It was held that, while that was true when it was the result of little or no provocation or cause, it would be unreasonable to say that, because the deceased, who sometimes suffered intense pain, gave voice to his sufferings by crying out and shedding tears that he was mentally unsound.—Beemer *v.* Beemer, Illinois Supreme Court, 96 N. E. 1058.

Dentist Not a Surgeon Within Statute on Privileged Communications.—In an action by a duly licensed dentist to recover the agreed price of professional services rendered to the defendant's testator it was urged by the defendants that the plaintiff's testimony relating to the work which he did for the testator was objectionable under the provision of Section 834 of the New York Code of Civil Procedure that "a person duly authorized to practise physic or surgery or a professional or registered nurse, shall not be allowed to disclose any information which he acquired in attending a patient, in a professional capacity, and which was necessary to enable him to act in that capacity," etc. Assuming the section to be applicable to a dentist, the court did not think it clear that the testimony of the plaintiff as to the number of visits and the work which he did, not in the presence of the deceased, would be within its prohibition. It thought, however, that it was clear that the Legislature did not intend to include a dentist within the provisions of that section of the code. Strictly speaking, a dentist might be included within the description relating to those who practise "surgery," but as the term "surgery" is employed in the statute it does not include one engaged in the practice of dentistry.

At common law, communications between physician and patient were not legally privileged. The legal privilege seems first to have been recognized in New York in 1828. To the extent, therefore, to which the privilege can now be said to exist, it must find its support in some statutory enactment. In early days in England the province of the dentist was not recognized, except as it fell within the scope of the "barber surgeon," whose multitudinous duties often included those, not only of the barber and surgeon, but the physician and dentist as well. Within quite recent times it was customary for barbers and blacksmiths to extract teeth. Formerly the work of filling and plating teeth was frequently performed by the jeweler. A process of integration and differentiation has taken place, and the separate and distinct profession of dentistry has come into existence. That this specialization has resulted beneficially to the community, and that dentistry has now become a highly developed science, requiring of its practitioners advanced knowledge and skill is doubtless true; but this fact does not militate against the construction of Section 834 of the New York Code of Civil Procedure excluding a dentist from the operation of its provisions. There is clear evidence in the statutes of the State of a legislative intent to regard the two professions of medicine and dentistry as separate and distinct. Thus the practice of medicine is governed by article 8 of chapter 49 of the Laws of 1909 (Consol. Laws, c. 45), while the practice of dentistry is regulated by a different law, and applicants for admission to practise dentistry are admitted by different boards of examiners and registry (article 9, c. 49, of the Laws of 1909). There is also another statute of the State which, while not strictly *in pari materia*, deals with a cognate subject, and should therefore be considered in interpreting the statute under consideration. It is not without significance that the statute, which provides for exemption from jury duty mentions not only a physician and surgeon but provides that the exemption shall apply to "a practicing physician, surgeon, or surgeon dentist." Section 635 of the Judiciary Law (Consol. Laws, c. 30).

The question has also been considered by the Michigan Supreme Court, which, construing a similar statute, said that "the purpose of the act is to be considered in determining whether the dentist was intended to be included within its terms. Certainly the terms 'dentist' and 'surgeon' are not interchangeable, and if a dentist is to be held a surgeon, within the meaning of this act, it must be because his business as a dentist is a branch of surgery. It is apparent that the act relates to general practitioners and to those whose business as a whole comes within the definitions of 'physician' or 'surgeon.' A dentist is one whose profession is to clean and extract teeth, repair them when diseased, and replace them, when necessary, by artificial ones."—People *v.* De France, 104 Mich. 563.

While considering the definition of a dentist here given rather restricted, the New York court approved of this interpretation of the statute and held that the plaintiff was not precluded from testifying within the provisions of Section 834 of the Code.—Howe *v.* Regensburg, 132 N. Y. Supp. 837.

Scope of Privileged Communications.—The provision of the Indiana statute providing that physicians shall not be competent witnesses as to matters communicated to them by patients in the course of their professional business is broadly construed by the Indiana courts to include not only communication and advice but all information acquired by the physician while treating or attending the patient in his professional capacity. And this has been applied to include as privileged a patient's communication of her financial condition made to her physician, who, in the course of a consultation, was urging her to take a vacation.—Hays *v.* Hays, Indiana Appellate Court, 97 N. E. 108.

Municipality's Power to Contract for Medical Services.—In an action by a physician for the balance of salary alleged to be due to him under his appointment as city physician it was held that as the city charter did not provide for any such office as city physician it was beyond the power of the common council to create an office which the statute made no provision for. Nor had the city, under its general power, "to enter into contracts for services or supplies and order payment of the same, and to provide generally for the welfare of the city" power to enter into a contract with the plaintiff to give medical treatment to the members of the various city departments, including fire and police, and to attend upon the indigent poor of the city. As the city had no power to employ the plaintiff for a definite term as it attempted to do, it could therefore terminate his employment at a fixed compensation at its pleasure.—Jacobs *v.* City of Elmira, New York Appellate Division, 132 N. Y. Supp. 54.

Expert Evidence in Murder Case.—A doctor who was shown to have the necessary qualification was held in a murder case in which the defense was self-defense to be properly allowed to testify, over objections, as to what were the indications as to the weapon being close to the body when the shot was fired.—State *v.* Johns, Iowa Supreme Court, 132 N. W. 833.

Medical Items.

Renal Therapeutics in Some Obstetrical Cases.—V. Cova has experimented on six cases of nephritis at the Obstetrical Institute of Milan by using the serum drawn from the renal vein of the goat and injecting it into the patients' veins. He finds that the remedy is harmless and produces beneficial effects on the kidney disease. The cases included two of albuminuria of pregnancy; two of chronic nephritis; one of chronic nephritis and uræmia, and one of poisoning with corrosive sublimate, affecting the kidney. The author found that there was an increased diuresis, a lessened albuminuria, and an increased permeability of the kidneys for chlorides. The clinical results were improvement in the general condition, in the feeling of well-being, and in the rhythm and fulness of the pulse, diminution in the headache, dyspnea, and arterial tension, and an improved gastric condition. If the remedy is stopped the improvement of the symptoms passes away. The author advocates further tests of the therapeutic value of goat serum in the renal diseases of pregnancy.—*Annali di Ostetricia e Ginecologia.*

Prevention of Deafness Among School Children.—P. Jacques states that the deaf child gains little in school, because he hears so little of what is said. He learns only by the eyes. In the great majority of cases the alterations which cause deafness are slow and progressive and are not noticed by the parents. It is only by careful and systematic tests of the hearing of school children that we are able to note the beginning of the deafness, and by treatment to prevent its increase. The damage to the ear occurs generally during the first few years of life. Frequent inflammatory disturbances of the nasopharynx have a bad effect on the hearing and result later in sclerosis and loss of hearing. It is in the primary school that these examinations should be made and treatment of the adenoids and tonsils should be undertaken as a preventive. Most cases of deafness begin early in life from nasopharyngeal inflammations.—*Journal de Médecine de Paris.*

Myxedematous Coma.—E. Hertoghe states that in myxedema there occurs in the brain and in the rest of the nervous system an infiltration with myxedematous tissue, with resulting mental torpor, headache, vertigo, slowness of speech, and tinnitus. In some cases this condition goes on to a true coma of dysthyroidean origin, which condition may terminate fatally. It is generally mistaken for nephritic or diabetic coma, particularly when a small amount of sugar or albumin is found in the urine. When there is a coma that is referable to neither nephritis, diabetes, traumatism, nor hemorrhage, one should always think of myxedema and dysthyroidea. The treatment by means of thyroidin is successful. The substance may be injected, or introduced by way of the stomach or rectum. In cases of extreme urgency a lumbar puncture may be made for the purpose of introducing the substance in solution.—*Société Medico-Chirurgicale d'Anvers.*

Epidemic of Icterus in Soriano and Cimino and Its Relation to Pregnancy.—E. Cova describes an epidemic of 145 cases of icterus in a town with 6000 inhabitants at a high altitude. This epidemic began with a puerperal patient who soon died with symptoms of acute yellow atrophy of the liver. From this case the epidemic spread until many of the inhabitants were attacked. In general the cases were benign and without fever. There were malaise, loss of appetite, and weakness, followed by a moderate degree of icterus. The disease lasted about three weeks. Most of the cases that were fatal were among pregnant women, of whom 23 were attacked. In general there were no bile pigment in the urine and no albumin. The liver was enlarged. Ten pregnant patients died. Abortion resulted in only 1 case. There were 5 primiparæ, of whom 4 died; of 13 multiparæ only 3 died; thus the disease was more fatal among primiparæ. During pregnancy there are in the liver changes which are aggravated by this condition. Such epidemics are not rare, and are shown by published accounts to be especially fatal among pregnant women. The other fatal cases are generally those of individuals who have already poisoned their livers with alcohol or syphilis. This epidemic was probably of bacterial origin, but the germs could not be isolated. The evidence of contagion from one case to another is conclusive.—*Folia Gynecologica.*

Treatment of Graves' Disease with Pituitary Extract.—A. Salmon finds that in cases of exophthalmic goiter the use of pituitary extract soon relieves the sleeplessness, tremor, disturbances of digestion, painful sensations of heat, and tachycardia. Arterial tension increases, exophthalmos decreases, and the goiter becomes smaller or remains stationary. When the extract is stopped the symptoms again increase. The author reports the results in two cases of exophthalmic goiter treated in this way. It has been found that hypophyseal extract causes vasoconstriction in the thyroid vessels and hypertrophy of the thyroid. The vesicles become full of colloid substance such as is seen in hypofunction of the gland. There is an intimate relation between the action of the thyroid and hypophysis; when one of these glands is disturbed the other is also affected. None of the glands of internal secretion is seldom affected alone, the others also suffering from the same cause. The ovaries, thyroid, and suprarenals are all similarly affected. There is a multiglandular syndrome. Lowered arterial tension, tachycardia, insomnia, asthenia, hyperidrosis, and sensation of heat all denote insufficiency of the hypophysis, and all are seen in Graves' disease. Hence there is probably a lesion of the hypophysis in this disease. All these symptoms are relieved by pituitary extract. The relief of insomnia is not difficult to understand if one remembers that the hypophysis exerts a marked influence on the nutrition of the nervous tissues.—*Il Policlinico.*

Vegetating Cysts of the Mammary Gland.—D. Angier and M. Dekester describe vegetating cysts of the mammary glands as developing from dilatations of the glandular acini or ducts, and occurring in the neighborhood of the nipple, sometimes adherent to the skin. They may degenerate and involve the neighboring glands. In general they are benign in evolution. They are of the histological type of cylindrical-celled papillary epithelioma, and the analogy with vegetating epithelioma of the ovary is complete. The internal walls are covered with cauliflower-like vegetations developed from the lining epithelium of the cyst. The contents are a straw-colored fluid which is sometimes tinged with blood. The cysts should be without delay removed.—*Journal des Sciences Médicales de Lille.*

The Wassermann Reaction in Fetal Monstrosities.—Montanelli performed the Wassermann test in nine of these cases, testing the blood serum of both parents and of the monster taken from the cord, and in one case the amniotic fluid. He obtained a positive reaction in one instance only, in a case in which the mother had an arterial hemiplegia. There can be no doubt that the condition of the parents has an important influence on the production of these monsters. Intoxications of various kinds, syphilis, and tuberculosis have their effect not by direct transmission of the microorganism, but by the general effect on the tissues and the constitution of the fetus. The author believes that the Wassermann reaction is of positive value in the diagnosis of the cause of fetal monstrosities.—*Rendiconti delle Societa Toscana di Ostetricia e Ginecologia.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 22, 1912:

Places.	Date.	Cases.	Deaths.
CHOLERA			
India: Bassein	Jan. 21–27	15	15
Calcutta	Jan. 21–27	.	49
Madras	Feb. 4–10	26	18
Total Madras Presidency, Jan. 1–31. Cases, 13,411, deaths, 8,509.			
Negapatam	Jan. 14–27	..	42
Siam: Bangkok	Dec. 31–Jan. 27	..	196
Turkey in Asia: Aleppo	Feb. 18–24	4	3
Provinces, Jan. 22–Feb. 5. Cases, 11; deaths, 27.			
PLAGUE.			
China: Hongkong	Jan. 26–Feb. 3	9	8
Hawaii: Honakaa	Mar. 18	1	1
India: Calcutta	Jan. 21–27	.	16
Karachi	Feb. 4–10	16	15
Siam: Bangkok	Dec. 21–Jan. 27	1	1
Straits Settlements: Singapore.	Jan. 21–27	3	3
SMALLPOX			
Australia: Thursday Island. From S.S. *Taiyuan*	Jan. 2	1	.
Canada: Quebec	Mar. 3–9	11	.
Windsor	Feb. 18–Mar. 9	5	.
China: Hongkong	Jan. 27–Feb. 3	41	27
Colombo: Ceylon	Jan. 27–Feb. 3	1	..
Egypt: Port Said	Jan. 30–Feb. 4	1	.
Gibraltar	Feb. 27–Mar. 3	1	.
India: Bombay	Feb. 4–10	74	23
Calcutta	Jan. 21–27	.	1
Madras	Feb. 4–10	16	6
Italy: Naples	Feb. 18–24	8	.
Turin	Feb. 19–25	1	.
Mexico: Aguas alientes	Feb. 26–Mar. 3	.	2
Magdalena	Mar. 2	.	.
31 cases present			
Porfirio Diaz	Mar. 3–9	1	1
Tampico	Feb. 24–Mar. 1	.	4
Russia: Odessa	Jan. 21–Feb. 24.	11	.
Siam: Bangkok	Dec. 31–Jan. 27	.	700
South Africa: Johannesburg	Feb. 4–10	7	.
Spain: Valencia	Feb. 18–24	34	.
Straits Settlements: Singapore.	Jan. 21–27	3	.
Turkey in Asia: Beirut	Feb. 18–24	150	10
Turkey in Europe: Constantinople	Feb. 19–25	.	15

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PHYSICAL EXAMINATION A REQUIREMENT FOR A CORRECT DIAGNOSIS AND THE HONEST TREATMENT OF THE SICK.

WITH BRIEF REFERENCES TO CASES ILLUSTRATING INEXCUSABLE ERRORS.*

BY ARTHUR M. JACOBUS, M.D.,

NEW YORK.

AT the outset it must be stated that this is not a paper on physical diagnosis, nor one on mistakes due to poor judgment, or illogical analysis of the presenting symptoms, but that it is a plea for the exercise of greater care and better diagnostic methods, and more especially a protest against the seemingly frequent failure to make a physical examination of patients by certain physicians, and which, it will be admitted, should be made in all cases or conditions, when and where possible, in order that a tentative diagnosis at least may be made before a physician shall assume charge of or treat a sick or injured person.

This charge of neglect has been questioned by several colleagues, in conversation regarding the subject under consideration, on the ground that, while it may apply to older graduates in medicine, it does not apply to, or is of very infrequent occurrence, in the practice of the younger graduates.

My professional experience dates back thirty-six years, every year of which has been in affiliation with either a hospital, or a dispensary, or a clinic, in an undergraduate or postgraduate institution, and it has seemed to me that there have come to my notice as many, if not more, errors in the past decade from failure to make a physical examination than in the earlier years of my practice.

It may seem a slander on the profession to-day to make such an assertion, but unfortunately such has been my frequent experience, as it must also have been that of many physicians connected with public clinics where the "flotsam and jetsam" of the sick poor drift.

Errors of omission are no doubt largely due to hasty, thoughtless, or unsystematic methods of examination, perhaps, at times, because of the rush of practice, but judging by the frequent statement of patients, there has often been no examination whatever, not even a perfunctory one.

To treat a patient under such conditions is certainly dishonest, if not really malpractice.

In order that you may not consider the latter statement unwarranted let me quote a decision of the highest court of this state, as to what malpractice is.

*Read at a meeting of the Northwestern Medical and Surgical Society of New York City, February 21, 1912.

This opinion was very kindly furnished to me by the counsel of the Medical Society of the County of New York, and is as follows:

"The principle of the law concerning which you inquired was stated as follows by Mr. Justice Vann, in the case of Pike vs. Honsinger, in 1898, and reported in 155 N. Y., page 201:

"'The law relating to malpractice is simple and well settled, although not always easy of application. A physician and surgeon, by taking charge of a case, impliedly represents that he possesses, and the law places upon him the duty of possessing, that reasonable degree of learning and skill that is ordinarily possessed by physicians and surgeons in the locality where he practises and which is ordinarily regarded by those conversant with the employment as necessary to qualify him to engage in the business of practising medicine and surgery.

"'Upon consenting to treat a patient, it becomes his duty to use reasonable care and diligence in the exercise of his skill and the application of his learning to accomplish the purpose for which he was employed. He is under the further obligation to use his best judgment in exercising his skill and applying his knowledge. The law holds him liable for any injury to his patient resulting from want of the requisite knowledge and skill, or the omission to recognize reasonable care, or the failure to use his best judgment.

"'The rule in relation to learning and skill does not require the surgeon to possess that extraordinary learning and skill which belong only to a few men of rare endowments, but such as is possessed by the average member of the medical profession in good standing. Still he is bound to keep abreast of the times, and a departure from approved methods in general use, if it injures the patient, will render him liable, however good his intentions may have been.

"'The rule of reasonable care and diligence does not require the exercise of the highest possible degree of care, and to render a physician and surgeon liable, it is not enough that there has been a less degree of care than some other medical man might have shown, or less than he himself might have bestowed, but there must be a want of ordinary and reasonable care, leading to a bad result. This includes not only the diagnosis and treatment, but also the giving of proper instructions to his patient in relation to conduct, exercise, and the use of an injured limb.

"'The rule requiring him to use his best judgment does not hold him liable for a mere error of judgment, provided he does what he thinks is best after careful examination. His implied engagement with his patient does not guarantee a good result, but he promises by implication to use the skill and learning of the average physician, to ex-

exercise reasonable care and to exert his best judgment in the effort to bring about a good result.

"ALMUTH C. VANDIVER,
"*Counsellor-at-law.*"

Three essentials are necessary for the making of a diagnosis:

1. A good working knowledge of the anatomy and of the physiology of the human body and its organs.

2. A careful physical examination of the sick or injured person, partly or entirely nude, a "sine qua non," as may be necessary, and also of such of his body fluids, secretions, and excretions as may be indicated and obtainable.

3. The use of common sense and an observing mind in order to form a proper conclusion and a logical diagnosis from the objective and subjective symptoms present.

These simple elementary propositions are self-evident and need no advocacy to any honest and intelligent practitioner, neither do they preclude the knowledge of other desirable aids, such as a more or less familiarity with chemistry, pathology, bacteriology, and modern clinical laboratory methods, which frequently are necessary in the making of an accurate and complete differential diagnosis in the many complex morbid conditions coming under observation and requiring wide knowledge, skilful technique, and a large clinical experience for their solution. Yet "with all our varied instruments of precision, useful as they are, nothing can replace the watchful eye, the alert ear, the tactful finger, and the logical mind which correlates the facts obtained through all these avenues of information and so reaches an exact diagnosis."*

"No small part of the greater success which attends modern treatment when compared with the treatment of former days is to be ascribed to the vast improvements made in the art of recognizing disease and of distinguishing one disease from another."†

A correct diagnosis, then, is the first step in treatment, and more, it is hardly an exaggeration to say that an exact diagnosis and a correct appreciation of the whole morbid condition present in the patient is half the treatment.

A diagnosis is based partly on the history of the patient, partly on his own account of his symptoms, and partly on the physician's or surgeon's physical examination of the patient.

While the relative value of these three sources of information varies in different cases, certainly a physical examination of the patient, stripped as indicated, is absolutely necessary, and should be made in all instances where any injury or organic, or even a functional disease, is suspected.

From conversations held with many patients in private, and especially in clinic practice, covering years, I feel certain that careless methods and neglect to make a proper physical examination has resulted in many instances, in a failure to recognize even a clearly defined disease from which the patient suffered, and not infrequently in unnecessary, and in unsuccessful, if not in harmful, treatment also. Further, I believe that such carelessness and neglect has caused many patients to seek relief through the dispensaries and hospitals where, it was presumed, intelligent and careful physicians might be found and successful treatment obtained. Physicians connected with such institutions will, no doubt, bear me out as to the truth of the foregoing statement. I believe also that that is the chief reason why so many well-to-do patients flock to public clinics and hospitals, and, worse yet, to quacks of all kinds and sects who promise so much and delude so easily and so frequently.

In answer to the question as to whether a given patient was not able to employ a private physician and why he or she came to a public clinic, the answer has frequently been that they had spent their entire savings with one physician or another without a determination of their disease, or material benefit, and not knowing where else to go for relief had felt compelled to go to a public dispensary.

As further proof of this, who has not at some time been consulted by a patient, in a clinic, for the mere purpose of obtaining a thorough examination and diagnosis, followed by a request for a certificate as to the nature of their disease. In fact, not only do patients voluntarily seek such examination for the purpose stated, but not infrequently the family physician imposes on the clinic physician, surgeon, or specialist, by secretly encouraging his patient, under the guise of poverty, perhaps, to seek such information in that underhanded way, and thus obtain a free consultation for his own and his patient's benefit. Such has been the experience of many clinic physicians, I am sure, as it has been that of mine.

The clinic physician may have his faults and be too ready at times to treat gratuitously the undeserving for the sake of experience and the reputation of his clinic, but others have their faults, also, and in some instances, apparently for purely mercenary reasons, at the same time doing an injustice to some of their professional colleagues who should have been openly called in in consultation.

To refer again to the subject of the paper, the necessity of making a thorough physical examination of the patient and of his body fluids, as indicated (in order to make a diagnosis) before commencing treatment, it is admitted that mistakes occur, even after a careful examination.

"Nor is this surprising when one remembers the extent of modern medicine and the impossibility of any one man mastering it as a whole and making himself practically familiar with each of its individual parts in detail; the extreme complexity of many of the problems with which the physician has to deal; the elaborate and highly technical nature of some of the chemical, instrumental, and other methods of clinical examination and research which we employ; the insufficient data on which we have to found our opinions; the great difficulty we often have in eliciting and observing facts; the circumstances that in some cases we have to rely upon the statements and observations of the patient or his friends for some of the data on which our opinions have to be based and that those statements and observations are often inaccurate and sometimes positively misleading; and the natural imperfections which are inherent in every human mind."*

But while mistakes may result from ignoring or making too light of the symptoms and complaints of patients, the remarkable absence of symptoms in some cases of advanced organic disease shows that the only way to avoid mistakes of omission is to make a complete physical examination in every case which comes before us.

*W. W. Keen, M.D., in Da Costa's "Physical Diagnosis," 1911.

†Wilmot Evans, M.D., "Medical Science of To-day," London, 1912.

*"Mistakes," by Byrom Bramwell, M.D., *The Lancet*, July 29, 1911.

In the case of experienced practitioners the incomplete examination of patients, due to hurry and hasty conclusions perhaps, is probably the most common cause of errors of diagnosis, but while this may be so there is no excuse for it.

In the case of the less experienced their very ignorance ought to impel them to great care and be an incentive to lead them to seek expert advice, through consultations, and also to compel them to take every opportunity to improve their knowledge in the necessary diagnostic technique.

In these progressive days no one can afford to be lacking in general medical knowledge, and never was the opportunity for self-improvement greater and more easily obtainable, and at so little cost of time or money as at present. The numerous excellent general, medical, surgical, and special periodicals; the wonderful variety of books in every department of medicine; the frequent opportunity to hear every possible branch of the science discussed in medical and allied societies; and the number of public clinics and practical post-graduate schools throughout this and other countries, open the year round and in charge of experienced up-to-date teachers in all departments of medical science, leave no excuse for the general or special practitioner not to add to his knowledge, and at least to equal the standard required by law and the necessities of honest practice, even though the general average and standard is becoming broader and higher every year.

That the profession at large is rapidly realizing its needs and opportunities is shown by the large and ever-increasing number of practitioners, of every grade and standing, who patronize the various clinics and post-graduate schools and technical laboratories.

It may be of interest at this point to mention that an inquiry, recently, of the librarian of The New York Academy of Medicine showed that there were on its shelves thirty-seven volumes on physical diagnosis, thirty-one volumes on surgical diagnosis, thirty-five volumes on chemical, bacteriological, and microscopical diagnosis, and 125 volumes on general diagnosis; that about half of them had been written since 1900, that each copy was either a last, or a new edition, and written by a different author.

In addition there were about as many more volumes on auscultation, percussion, uranalysis, blood, and radioscopy, or over 400 volumes devoted solely to diagnosis in some form or other.

Evidently physical, clinical, and technical diagnosis is becoming not only popular but more and more exact and scientific. How different, how difficult, and how expensive it was to obtain such opportunities and knowledge when we gray heads first began the study of medicine years ago.

In pleading for the physical examination of a given patient is meant an examination as complete as may be necessary to determine not only the nature of the disease from which the patient suffers, and seeks relief, but also to discover any other existing organic disease present, even though it has not yet caused noticeable symptoms. That means to have the patient partly or entirely nude, from head to foot, as necessary to inspect and examine closely any external part, or any internal organ, that can be reached and may possibly be affected, or injured, and also to make such further examination of the urine, blood, sputum, gastric contents, feces, vaginal and urethral discharges, and spinal, pleuritic, or other effusions as the symptoms suggest, and as may be required to determine the disease or diseases present. Naturally it would rarely be necessary to make such a complete general examination, yet I have seen only recently a little girl of eight years, in a certain research hospital, where nearly all of the means suggested had been looked into in a most scientific manner and no definite diagnosis made, and the little girl was held for further examination and observation. It only goes to show the great care and skill deemed requisite by physicians of the highest scientific qualifications.

It would surprise the average practitioner to observe the thoroughness and the detailed minutiæ exercised and the time expended, not only by the departmental and clinic staffs, but also by our greatest clinicians and teachers, busy men, in our public clinics and hospitals, in order to properly and fully study the cases coming before them, and which was considered necessary in order to make a correct, positive, or differential diagnosis.

It can hardly be expected that in the limited hours of office practice, or in the short time left each day to make calls, that a busy practitioner can make an extensive examination on the first consultation as outlined, but he can at least bare the chest, or abdomen, or extremity, or make such orificial examinations as seem to be necessary to determine whether he has to deal with a diseased heart, or lung, or a rheumatic joint, or a flat foot, or a sprain, or a fracture, an eruptive disease, or a floating kidney, an abdominal or other tumor (or possibly cancer), or a pregnancy, or a miscarriage, and ectopic gestation, etc.

An ear placed against the clothes on the chest, a pressure of the hand on the covered abdomen, a hurried feel of the pulse, a look at the tongue, and a hasty gunshot prescription, is not only a farce, but it is a crime, and yet, according to report, these things are done to-day, and often comprise the only physical examination, and sometimes even these crude methods of diagnosis are not employed.

It seems unnecessary to say that a specimen of fresh urine should be secured (and at times a twenty-four-hour specimen) and examined for albumin and sugar, and frequently for casts, pus, blood, indican, and other constituents, tubercle bacilli, and lead, as symptoms suggest organic disease of the urinary, or intestinal tract, or lead poisoning, for instance. It is certainly desirable to know whether we have a nephritis, or a diabetes, in addition to another disease, and especially before subjecting a patient to a surgical operation, and yet how frequently the urine is overlooked or but indifferently examined.

I recall several instances where a child, supposed to have had some simple indisposition or an erythema, was allowed to play out of doors, or to wade in the surf and to mingle with playmates, on the assurance of the attending physician that it was not a case of *scarlet fever*, suddenly become quite ill and bloated of face and legs, when an examination of the urine showed marked albuminuria and an inspection of the body a desquamating peeling skin, proving conclusively that it was a case of scarlet fever which should have been diagnosed with a proper examination, and that proper precautions should have been taken.

The cases of nephritis and diabetes overlooked because of a failure to examine the urine are of very common occurrence, and, further, one should not rely on a single negative specimen.

I remember a lesson received when an interne in the Presbyterian Hospital in examining a specimen of urine, as customary on the admission of a patient, of a man admitted for a "white swelling" of the knee joint, and found the urine apparently normal, but before morning the patient had violent uremic convulsions, and a specimen then obtained by catheter was found to be loaded with albumin and casts.

Another point well worth remembering is that in diabetes a morning specimen of urine will not always show sugar present, though later in the day it may show a high percentage.

I have in mind two such cases in patients running from 6 down to 2 per cent. and in a number of instances no sugar was found in the morning specimen obtained from them.

Every modern physician it would seem would recognize the importance of an early and quick diagnosis, and the value of laboratory aids in this direction, especially as shown by an examination of the blood and sputum.

A "blood smear," sometimes the only means of making a correct diagnosis, and which gives so much valuable information to the physician, as well as to the surgeon, seems rarely to be studied outside of hospitals and clinics, and in the practice of experienced practitioners. Sometimes it is the only means of recognizing and differentiating a malarial fever, for instance, running an atypical course without definite paroxysms, and simulating typhoid fever, or meningitis, or tuberculosis, or a pernicious anemia, the latter often mistaken and treated for a number of other chronic diseases.

A "blood smear" is easily taken, stained, and examined, and readily differentiates the various anemias, primary, pernicious, and secondary; leucemia, myelogenous leucemia, etc.; and also the different malarial parasites; filariasis; also the condition of eosinophilia, not infrequently associated with trichiniasis, uncinariasis, and intestinal tenias and parasites, and certain skin diseases.

Anyone can readily make a smear, and if one is too busy to make the examination, or has not the apparatus to do so, it can be done at little cost by physicians and laboratories competent and at hand almost everywhere.

I have heard it stated, as an excuse for neglect, that, in addition to being too busy, it was not necessary to make any special physical examination of a patient, on the ground that ninety odd per cent. of the patients consulting us recovered anyhow, and that the others would die in spite of what we did, or did not do;—certainly an easy way of practising medicine.

Surely no one should raise the objection of being too busy, and if one is not competent to make the necessary physical or technical examination an expert consultant should be called in to examine the patient, and such specimens as may be desirable to have examined, to clear up the diagnosis, should be submitted to a clinical expert, or to a laboratory, for a report.

It is possible now to have most of the clinical or laboratory examinations made for a moderate fee, and in a few hours' time, and time, as in diphtheria, for instance, is an important consideration, and often means the difference between life and death.

Not long since I was called in to see a four-year-old child, one of several of a former patient, and I was told that the child had been ill about six days with what the attending physician, a homeopath, said was tonsillitis, that the child continued to grow worse, and the parents then discharged the doctor and sent for me.

A look at the swollen cyanotic face and neck and the excoriated lip and nose, and the labored breathing, was enough to make a clinical diagnosis of diphtheria at once, and a look at the grayish exudate on the tonsils and fauces confirmed it.

Without waiting for a laboratory report of the smear taken, antitoxin was given and repeated later, and fortunately the membrane promptly began to curl up and disintegrate, and the boy recovered with only a slight palatal paralysis which cleared up later.

The neglect here was in not taking a smear, for the family had suggested the possibility of diphtheria, but the doctor stuck to his diagnosis of tonsillitis and so failed of a diagnosis. There was no excuse for such neglect, for a smear could have been sent to the nearby Health Department office, and a culture made free of expense, and a report received within twenty-four hours.

These thoughts suggest that the time is coming when medical science and practice will become so exact and the examination and treatment so technical that physicians will have to curtail the number of patients they see and the amount of work they do (though that seems to be happening from other causes) and also give more time and use better methods, and finally, we will hope, receive better and equitable remuneration for the services rendered as attending or consulting physician.

This leads me to suggest another vital matter, that is the need and advisability of the more frequent employment of qualified expert consultants in our modern practice with its many complex conditions and responsibilities. The poorest, as well as the richest litigant, person, or corporation, criminal or not, does not fail, either by direct assignment of the court or by personal engagement, to employ able specialists and numerous counsellors when seeking justice or exemption at law, or even in mere business matters, and why should the *physically* sick and we their physicians not do likewise.

I believe consultations are not only helpful to the sick but are also to the attending physician by helping to keep or restore confidence as well as in leading to better treatment.

Further, consultations with expert specialists must necessarily give confidence and encouragement to the physician in attendance and help to broaden his mind and to improve his diagnostic technique.

The ethics of consultations, a stumbling block to some, need not be discussed here, and especially, as I believe, that medical gentlemen of scientific attainments and standing are honorable, as a rule, and can be trusted to safeguard the rights of the practitioners calling them in.

I have had it in mind to write a paper on this subject, practically errors of omission, for some time, but have delayed owing to diffidence and the difficulty of saying anything new. But my experience in the tuberculosis clinics of the Presbyterian Hospital and of the Vanderbilt Clinic the past five years, where so many sadly neglected and unrecognized cases of pulmonary tuberculosis have come for treatment, with the somewhat similar experience related to me by some of my friends has induced me, under pressure of the rules of our society, to write a paper and to give public expression to the views and experiences herein narrated with the hope that they may lead to greater care in the examination and treatment of the sick.

A few years ago Dr. L. D. Bulkley related to us a case which came under his care after the patient had been treated by another physician for a supposed eczema, I believe, and in which the disease present, syphilis, had not been diagnosed for want of thoroughness in the examination.

Dr. Bulkley said that according to his custom in such conditions he had the man stripped of clothing, and on inspecting the body carefully he found the initial lesion, a chancre, on the man's perineum just behind the scrotum where it probably had been inoculated by scratches of the man's germ-laden finger nails.

This reminds me that we must always be on our guard respecting the possibility of syphilis, no matter who the patient may be, and if we cannot always find the specific lesion we may be able to make a diagnosis by exclusion, or by a therapeutic test, or, better yet, by the new and valuable Wassermann test.

In an article published in the MEDICAL RECORD of March 18, 1911, Dr. R. H. M. Dawbarn states that, "the ordinary estimate is that 10 per cent. of the population of cities, alike here and in Europe, are either now syphilitic or have been."

I remember a patient operated upon by an eminent surgeon years ago for a progressive stricture of the rectum, after failure to give relief by bougies. Colotomy was performed with some relief, but the suspicious and alert house surgeon suspected syphilis, especially as the patient was a "fast" woman and a morphine habitué, and he put her on mixed treatment with the result that in a few months' time the stricturé melted away so that the stools were voided naturally and, as I remember, the colonic opening closed up of itself. It was undoubtedly a gumma of the rectum.

Dr. A. R. Robinson has spoken of a patient operated upon by a prominent surgeon, since deceased, who excised the rectum for a supposed cancer, but which was subsequently shown to be a gumma. If either of these cases had had a few weeks' therapeutic test, with specific treatment, a serious operation could have been avoided; now a Wassermann test should be made in suspicious cases.

A year ago, nearly, an eminent physician of this city delivered an address at the opening of an extension to a certain teaching institution, before a mixed audience, professional and lay, and with startling frankness related the following report of a case as showing the need for such institutions. At his request his name is omitted. "Some time ago I was called in consultation by a reputable physician in this city, who does a rather large general practice, to see a patient whom I found *in extremis*. He had a consolidation of the lower and middle lobes of the right lung and was developing pulmonary edema, although he was perfectly rational and conscious. He did not consider himself very seriously ill nor did his physician or his family. His physician had made no physical examination of his chest and did not know that he was suffering from lobar pneumonia. I had serious doubts whether an examination of his chest by his physician would have made any difference in this instance because I doubt whether he was competent to recognize the physical signs of lobar pneumonia. I referred to this case as showing the possibiliteis for harm which lie in the hands of an untrained and incompetent medical man. This instance, which came under my observation, was probably only one of hundreds which would happen during the course of many years of practice of such a man."

Just think of it. The case terminated fatally of course. I think the doctor referred to two such cases, in one the attending had not thought to examine the chest, and in this case the physician, in answer to an inquiry as to why he had not made a physical examination, answered that "he did not have to because he knew and could recognize a case of pneumonia without."

Last July, 1911, I had the pleasure of attending a great clinic on early and late cases of locomotor ataxia by Dr. Henry C. Baldwin, at the Massachusetts General Hospital, in Dr. R. C. Cabot's course at Harvard, and I must say that I have never seen so many cases of that disease in women, as he showed us, and that was the opinion of the members of the class.

Dr. Baldwin laid great stress on the necessity of having all patients suspected of having "tabes" entirely nude, excepting a napkin over the genitals, in order to be able to detect the disease in its very earliest manifestations, and when so stripped the peculiar ataxic gait was apparent to all, and long before the classical signs of Westphal, Romberg, Argyll-Robertson, and Fraenkel,* might otherwise have made a diagnosis possible, though it seemed to the members of the class that Dr. Baldwin could make a positive diagnosis on the irregularity and inequality of the pupil alone.

This shows the importance of making a thorough physical examination of the person, with the body naked, and particularly in such a progressive disease as locomotor ataxia, where early recognition is vital, and especially now that the possibilities of "salvarsan" (606) are looming up as a valuable remedy to stay the disease, if not even to prevent or cure it, if given early enough.

It occurs to me here to remark how fearful some physicians are to ask a patient to remove his or her clothing for examination, or to ask certain questions, and especially of women, more particularly as to their age, possibility of pregnancy, or venereal disease, or to insist upon a vaginal or other necessary physical examination. As Dr. A. Jacobi has said, "there is no sex in medicine," so why fear to ask any necessary question in a proper and matter-of-fact way or fail to insist on such close examination of the person as may be desirable to detect disease.

I could narrate many cases showing inexcusable errors of diagnosis, or no diagnosis at all, because of failure to make a thorough examination of the patient, as herein briefly outlined, and as routine practice, but do not think it necessary to do so, as they must be of common experience.†

Errors of diagnosis in fracture of the base of the skull, where the police, and the ambulance surgeon, also, at times have made mistakes and taken injured persons to the "lockup" as "drunks" are of common newspaper report; and unrecognized cases of cancer of the uterus, and of serious heart, kidney, or lung, or other organic internal disease are so fre-

**Westphal's sign:* Absence of patellar reflex.

Romberg's sign: Swaying of body and inability to maintain an erect position with the eyes closed.

Argyll-Robertson pupil: Loss of pupil reflex to light, but reaction to accommodation retained.

Fraenkel's sign: Hypotonia, a condition found in tabetic persons in which a patient lying flat on his back on a level surface can completely straighten his legs, when at right angles to the body, which can not be done by a normal man, whose knees will be bent when the thighs are at right angles with the body.

†In the paper as read a number of cases showing inexcusable errors were briefly reported, but, owing to the length of the paper, they have now been left out.

quent, the symptoms so plain, and which so often lead to such unnecessary tragedies that it is with sorrow and regret that I even allude to them.

As to cardiac diseases, and tuberculosis, it would seem that if doctors but knew the normal heart and breath sounds, and would take the trouble to bare the chest and listen, they might, at least, recognize advanced conditions of disease. As for early cases of tuberculosis a careful study of the clinical history, with a temperature and pulse record taken night and morning by the patient for a week, ought to make a diagnosis possible, and especially if the bare chest be gone over thoroughly from apex to base, the sputum examined, and a von Pirquet tuberculin test made.

Conclusions.—1. Every active practitioner, I am ashamed to have to say, should be familiar with the common anatomical landmarks and of the general physiological phenomena of the human body and its organs and their functions.

2. No one should attempt to treat the sick or injured without first making a careful physical examination, in every case, as soon as possible, with the patient partly or entirely nude, according to the part affected, and also of his urine, as opportunity presents, and further, as indicated, examine his blood, sputum, gastric contents, and feces, and such other discharges or material as will throw any light on the nature of the disease and be helpful in the making of a diagnosis.

3. As patients present themselves we should determine our possibilities and limitations in the case, and when necessary seek such aid as may be desirable and available by calling in an expert physician, surgeon, or specialist, or if this be not practicable then refer the patient to one competent to diagnose and treat the disease presumed to be present and beyond our ken.

This suggests that whether general practitioner or specialist we should not attempt to "dabble" in every department of modern, general, and special medicine, but limit somewhat our field of work, though it were well that we should have as much special and general medical knowledge as may be possible.

Let us honestly recognize our abilities and deficiencies and make more frequent use of expert consultants and of laboratory specialists, and of their knowledge and skill, not only for the benefit of our patients, but for our own improvement and future benefit as well.

I suppose you will call all of this just preaching. Well, it is, but we need it, and plenty of it, over and over again. To emphasize it I will relate an incident that occurred during the recent very cold spell when a poor tramp of a woman wandered into our church one evening to get warm, I suppose, but on entering the lecture room and hearing the minister speaking she turned quickly, exclaiming, as she went out, "Preachin', preachin', nothing but preachin' every damn place I go."

In closing let me quote and amend an old proverb: "honesty is the best policy," though not because it is politic, *but because it is right, and what is right is best.*

131 West Seventieth Street.

The X-rays in the Treatment of Nephritis.—D. Galausino made a study of the effect of the *x*-rays in the treatment of experimental nephritis in rabbits and guinea pigs, and also in the treatment of nephritis in human beings. In none of the cases was either the circulation or the function of the kidneys favorably influenced by the treatment.—*Il Policlinico.*

THE SEXUAL EDUCATION OF THE CHILD.

By RALPH REED, M.D.,

CINCINNATI, OHIO.

ASSOCIATE IN PSYCHIATRY, CLEVELAND-PULTE MEDICAL COLLEGE CLEVELAND, OHIO; ALIENIST AND NEUROLOGIST, CINCINNATI POLYCLINIC, CINCINNATI, OHIO.

The problem of the sexual education of the child is but one phase of a much broader problem, the sexual education of the adult. The success of the former depends to a degree upon the latter. In general, current and popular ideas upon sex are still crude, immature, and interwoven with error and prejudice. But a gratifying change of sentiment has lately begun to be manifested. One might say that the world has only recently discovered the sexual. At least (if we except that formerly half-hearted attention medical men paid to the generative sphere and its disturbances of function) it is only recently that it has been realized that there were any real problems connected with the sexual—that, as an instance, it could even possess a psychology. First there came the modern gynecologists, a list so replete with honorable names; then the men who, by sincere and conscientious work in an allied field, that of genitourinary surgery, have given that specialty as honorable a place as any in medicine. Darwin and Wallace called attention to the importance of sexual selection in evolution; Weismann and others have studied the germ plasm itself and its relation to heredity. Wilson, McClung, and their coworkers have contributed valuable data to the problem of sex determination. Thompson and Geddes have studied its evolution and appearance in its many and varied forms in animal and vegetable life. Kraft-Ebing broke down the prejudice and paved the way for a more thorough investigation of its aberrations and perversions. Havelock Ellis followed Ebing in a series of studies broader in purpose and method, bringing this phase of the subject to a splendid fruition. Weiniger, so early lost to the world, revealed in a masterly, yet, perhaps, somewhat erratic and one-sided thesis, the innermost essence of the psychology of the feminine. Lastly, in this relation, Sigmund Freud, whom we shall have occasion to mention again, more analytical, more penetrating than any of his predecessors, approaching the subject from the standpoint of the neurologist and psychopathologist, presented the medical world with a series of clinical studies so clearly demonstrative of the relation the psychoneuroses bear to disorders and perversions of this fundamental instinct that his work has already effected a revolution in the treatment of a whole group of nervous disorders by those who have given the subject sufficient attention really to appreciate the importance of his discoveries. The social relation of the sexes is beginning to be discussed in a very frank way in novels and dramas; Ibsen, Shaw, Brieux, and Sudermann leading the way; while Ellen Key, with a remarkable insight, has discussed the ethics of love and marriage. The modern world is at last rubbing its eyes and awakening to a realization of its own impulses and tendencies.

The sexual ideally belongs to the unconsciousness, as it does with all animal life and largely with primitive peoples, but modern man has already long ago eaten of the tree of the knowledge of good and evil, and sex having become with us partially conscious there is now nothing to do, if we would

avoid the dangers of such partial consciousness of this powerful and universal instinct but to bring it more and more completely into consciousness and there boldly face the fact of its existence and solve the problems implied such recognition. *Self-consciousness* in the race as in the individual is ever the foundation of *self-control*. We no longer can obstinately close our eyes to the existence of this vast and universal hunger. One is reminded of the lines of Walt Whitman:

Out of the dimness opposite equals approach.
Always substance and increase.
Always sex.

The sexual is not as it was formerly supposed to be, episodal; it is like the rest of the laws of nature—never repealed. How important then is this question of the sexual education of the child! But immediately difficulties present themselves. Shall such education be accorded through the written word, through the school lectures, or be gained at the mother's knee? The first two, for reasons I shall later define, I do not consider the best methods. But if we expect the parent to educate the child another difficulty presents itself. The parents themselves are uneducated in this respect, and there are difficulties in the way of even the most simple, chaste and well-intentioned discussions of the subject. This is due to two attitudes taken toward the sexual by two classes of individuals; the shocked attitude and the obscene attitude; in other words, there are always some spinsterly minded individuals on the front seats who are shocked, and some frivolously minded on the back seats who are amused. Why is the statement frequently made that it is difficult to discuss calmly and simply the facts of sex with the child? Because outside of meetings of medical societies it is difficult so to discuss them with each other. This attitude of the old-maid (I use this term 'old-maid' ever to express a state of mind, never a state of years) on the front seat and of the young person on the back seat exists in a greater or less degree repressed or expressed in the minds of all of us. Hence as a preliminary to any useful discussion on the subject it is necessary to free our own minds as far as possible from any sexual complexes, pharisaical or obscene, and consider the problems of sex in their relation to human beings with a state of mind as unemotional as the biologist considers the problems of sex in their relation to, let us say, the star-fish.

As a result of this attitude toward the sexual one of the first barriers to be encountered is that of language. The sexual has always been a subject so forbidden, so tabooed that we really have no popular yet proper language of sex at all. Discussions on the subject of sex are carried on in three tongues, two of them more or less foreign to the users of a third. There is first the language of the masses, or as we would express it, the obscene or vulgar. This language was formerly the language of all classes when society was less sophisticated, more childlike minded and direct, as an examination of unexpurged editions of Chaucer, Shakespeare, or any of the older English dramatists will show. Then there is the scientific or technical language, and finally the language of polite society, the language of indirection, innuendo, double meanings, and paraphrasis. Whatever purpose this third tongue may serve its users, its tendency toward the corruption of the English language must be admitted, since it continually tends toward the perversion of non-sexual words to sexual usage. As witness the frequent perversion of such English words as nice, pure, clean, good, virtuous, etc., to a limited sexual connotation. Even such a useful word as "honest" has not escaped. As with many, and particularly, I believe, in England, an "honest" girl does alone not mean a girl who will not lie to you, or steal your purse, or rob your house, but a girl who does not indulge in sexual intercourse outside of the marriage relation. What is the meaning of this tendency? One explanation is just ordinary hypocrisy; another is a universal fear of the sexual in words and even in thought. The psychoanalyst will resognize the origin of this fear. But still another and better reason is the sacred and extremely intimate and personal character the sexual acquires for many. In almost all primitive religions the sexual and the sacred are nearly synonymous terms. Christianity in strong reaction against the earlier religions eliminated totally the obviously sexual, and going further, bitterly condemned all worldly pleasures. There was implied in the sexual a very old and very worldly pleasure, hence the whole business was given an extremely bad name by the Fathers of the Church. It constituted one of that great trinity of evils—the World, the Flesh, and the Devil. For those who look upon the sexual as *essentially* evil there is no problem to be discussed, because from that religious point of view, the essence of which is to condemn everything which brings pleasure or happiness in this world on the ground that happiness in the next will therefore be augmented, strict asceticism for everyone is the highest ideal. But the world has gotten beyond this or given up the hope of its attainment—as one pleases to express it.

But to return to the first-mentioned of the three languages of sex, the obscene. What constitutes obscenity? Obviously not the language itself; there is nothing essentially evil in that, since it is nothing more than merely words used to express certain ideas of mental images we all of us possess. Is it not rather that light, frivolous, and contemptuous attitude toward the sexual which the use of such language almost always implies? Sex is not an object to be dealt with lightly, frivolously, or contemptuously. It is a very serious, important and for many a very personal and intimate affair. Yet we all of us, because we belong to a sexually mis-educated generation, possess that contemptuous attitude toward this instinct in a greater or less degree, and we will never be able to free our minds from it entirely. In witness of this I refer the reader to the conversation of any group of men of the world, no matter what their occupation or social status may be, in certain moments of mental relaxation. Many women would be surprised if they could hear the sallies of wit and humor that on such occasions flash back and forth; but they would be no more surprised than many men would be, if they could overhear the conversation and gossip indulged in at certain card clubs or even some sewing circles devoted to the manufacture of garments for the heathen. Hence modern thought is interwoven with the obscene or the fearful way of regarding sex largely because of the manner in which the present generation acquired its early sexual education. That education was in the vast majority of cases the education of the gutter. Even when we do attempt some sort of rational education of the child along these lines we usually do not awaken to the need of such instruction until sex

has acquired for the child a degraded and obscene connotation. Then for most parents the factor of shame has entered with its inhibitory power and erected an almost insurmountable barrier between themselves and the child. Is there any wonder so many marriages are unhappy when so many individuals take so contemptuous an attitude toward the central function of marriage and have been taught to believe, by indirect suggestion and tactless instruction, in the essential sinfulness of that function.

It was formerly believed that prior to puberty the sexual instinct was dormant or entirely non-existent. But, thanks to the labors of the psychopathologists, a few students of the psychology of adolescence, and principally to the studies of that leader in the field of abnormal psychology, Sigmund Freud, we now know that this instinct is present, but, of course, in an unconscious form, even in the very early years of a child's existence. It is during these years that frequently the foundations for perversions are laid.

We thus see that in the great majority of cases it is impossible to keep such education away from the child, because, even if carefully secluded, it will still be subjected to a kind of autoeducation, an education which tends to foster and keep awake those very instincts, the development of which it is designed to restrict by the policy of no education at all. This is the unanswerable argument to those who would oppose the education of the child in sexual matters on the ground that by so educating it we run the risk of stirring up traits and tendencies which would normally be dormant for many years. Yet where a custom is of ancient origin and adhered to alike by cultured and ignorant, rich and poor, there is a strong probability that there is something to be said for it, and that it should not be too readily condemned or too ruthlessly swept aside, even though in individual cases its effects may be shown to be lamentable. Hence, if the reader expects from me any impassioned demands for the immediate introduction into the public schools of lectures on sexual science and hygiene, he will be disappointed. One of the advantages of the method of sexual education of the child that I shall propose is that, in contrast to public school lectures, it does not ruthlessly disregard the feelings of those who believe that sex is entirely too intimate and personal a matter to be discussed except, perhaps, between husband and wife, parent and child, or physician and patient.

Perhaps the most serious objection brought against any suggestions looking toward the enlightenment of the child in this respect is the view frequently expressed that it will rob the child of that delightful innocence, the most charming quality in the child character. But in answer to this we may well ask ourselves just what constitutes innocence. Is it synonomous with ignorance? To a certain degree it must be admitted that it is. But innocence is not wholly composed of sexual ignorance. One of its chief components is any kind of ignorance and those quaintly *naïve* questions of the child so indicative of its innocence may represent ignorance upon any subject. We do not hesitate to deprive the child of many other forms of ignorance for the sake of its innocence, then why hesitate to deprive it of sexual ignorance when this ignorance may eventually prove to be, instead of a mere character *nuance*, a treacherous foe. But innocence is not merely ignorance, it consists rather of a certain unspoiledness of outlook upon the world, a trustfulness that in itself often disarms aggression, and a simple, frank and direct method of expression and appeal. It is represented largely by an absence of indirection in obtaining an end and by an ability to enjoy the simple and minor pleasures of life, and an appreciation, as the Japanese have expressed it, of "the *ah!ness* of things." It represents rather an absence of cynicism and sophistication than an absence of ignorance. The world destroys innocence much more quickly by hurting, betraying, and saddening than it does by enlightening. Its most essential characteristic being a simple truthfulness and a confiding trustfulness, I believe that the average parent's attitude toward the sexual question destroys innocence in the child much more quickly than would a reasonable degree of enlightenment, since that attitude is neither a truthful nor a trustful one. And the attitude of the child is by suggestion quickly acquired from the attitude of the parents. But one of the qualities of innocence is no doubt to a degree an ignorance of vice. Still it is not necessary in teaching a child or any one, for that matter, a few simple facts about sex, to instruct it also in vice (I am not even in favor of warning a child against masturbation, unless there is reason to suspect the existence of the habit), any more than it is necessary to teach school children pathology merely because we teach them physiology and hygiene. Rather what is necessary is that complete confidence between parent and child that will enable the parent to recognize very early the outcropping of vicious traits.

But there are some who say that by taking away from the young the mystery of sex we take from love all its beauty and sacredness. This may be in part admitted, but the perverted education the child at present receives does this, we feel, much more quickly. Because of this very fact of miseducation it is doubtful if there are many people who are able to see anything very beautful or sacred in any phase of sex. If there are any such factors in sex it will remain for a generation with a much higher, purer, and nobler viewpoint than our own to properly appreciate them.

I will not burden the reader with a catalogue of the unhappy results of our present prudish and puritanical policy of attempting to keep the young steeped in sexual ignorance. The specialist in genitourinary disease and the social worker have, perhaps, the longest reports to file in this connection. I wish rather to call attention to certain disastrous consequences unnoted in the great majority of papers written upon this subject. I refer to *the mental and nervous disorders which may develop upon a basis of certain sexual incidents, misunderstandings, and perversions to which the child may be subjected, usually between the years of six and ten.*

In the absence of all explanation or education, yet frequently subjected to the influence of somatic turgescence and sexual fancies incident to the physical and mental development of many of the most normally constituted, is it strange that sex, which even for the adult possesses numerous contradictory elements, takes on for many children the aspect of a great mystery, not unlike the mystery that with the adult surrounds the nature of Deity? This soil of concealment is admirably adapted for the development in the child mind of many bizarre ideas, strange fancies, and hidden entanglements. Given certain peculiarities of temperament, particularly in girls, and with that certain peculiarities of

the first encounter with the sexual problem, such encounter is frequently able to produce a grave neurosis offering many difficulties to the neurologist, when, perhaps, after several years, the case comes under his care. The possibility of the dependence of a psychoneurotic state in, we will say, a patient aged twenty-nine, upon a sexual complication incident perhaps to the age of nine, is not at first obvious or even credible to some. Prior to the work of Freud such an etiology was never suspected. The reason for this was that the experiences constituting the start of the psychoneurosis are always lost to memory, and it is only by the method of psychoanalysis that a memory of the incident or misconception can be revived, and it is not until such revival has been effected and the repressed memories are again assimilated in consciousness that a cure is possible. This has been abundantly proved by numerous psychoanalyses, and my own cases have only verified for me the findings of others who have experimented with this wonderfully fruitful method. The reality of these revived memories has been questioned by the opponents of psychoanalysis, but when a case history is finished in detail the internal evidence furnishes abundant proof of their validity. Freud and Jung have reported physchoanalyses of developing psychoneuroses in children of four or five in which a direct verification of the relationship between the sexual misunderstanding and the nervous symptoms was possible (Jung, *American Journal of Psychology*, 1910). I have been fortunate in carrying an analysis to a successful conclusion in a girl of twelve, verifying the relationship her hysteria bore to certain sexual incidents occurring only a few weeks prior to the time she came under my care.

Parents are frequently afflicted by a curious delusion. Other people's children may be vicious, but theirs are always innocent. In such cases it is not usually the children, but the parents, who are the poor, innocent creatures. The children are wise, and if pornographic literature has by chance fallen into their hands, sometimes wise with the wisdom of the ancient Greeks and Romans. Wise, indeed, but usually with a perverted, wrong, and obscene wisdom. It is the parents who must first be educated.

A case history will here illustrate this point as well as some others that I have attempted to emphasize. It should be understood that this and the other case histories cited in this paper make no pretense to completeness. If I should report any one of them completely it would require more space than I have allotted to this entire paper. I have rather selected and isolated certain incidents in each case, not sufficient as an explanation for all of the symptoms, but sufficient for the purposes of illustration:

Lida S.—Came under my care at the age of 16. She was having severe convulsions at intervals, was confined to bed by an hysterical astasia-abasia, and contractures; anesthesias were marked, and she suffered from a persistent anorexia. A psychoanalysis revealed among others, the following complication. At the age of 13 she had acquired some ideas of birth, but possessed a very slight knowledge of the function of the male in reproduction. One day some girl friends told her stories of what a terrible disgrace it was for a girl to have a baby without being married. Such an incident occurring in her neighborhood, and the resulting gossip also impressed her deeply. Her mind reverted to an experience (innocent enough in itself) she had had some months before with a boy acquaintance, and an unjust and tactless accusation that followed it. She conceived the idea that she might, any day, almost any hour, give birth to a baby. For two years during the most critical period of her intellectual development, she brooded constantly over this idea. Her case was diagnosed almost everything from rheumatism to dementia præcox. To say nothing of the loss of schooling due to her prolonged invalidism, the mental damage done will never, perhaps, be entirely reparable. When her mother was informed of the state of affairs she was inexpressibly shocked. "I have always," she said, "made every effort to keep Lida absolutely innocent and pure. I had no idea that she knew anything at all of such things." And the daughter at that time a girl of eighteen!

Now, as in different children—according to their environment, general education and psychosomatic sexual development—sexual curiosity arises at different ages, such education as we are considering must be the most highly individualized of all education. The results of too little or too much may perhaps prove equally unfortunate. Hence, since I have seen only lately renewed demands for the embodiment of a course in sexual physiology in the public schools, I am compelled to protest against any such step. There are many educators in the United States who possess an excellent knowledge of child psychology, as far as such knowledge goes, but very few, if any of them, have any knowledge at all of psychopathology or the various anomalies of sexual development in the child, and without such knowledge no one is in a position to speak with authority on the subject at all. One might almost count upon the fingers of the two hands those who are, and they are not educators by profession, but physicians. It would thus seem that at least the request that before such a step be taken the subject should be much more thoroughly and widely discussed than it has been, is amply justified. No doubt in time a place for school education in this respect will be found, but personally I feel that the time is not ripe.

In Germany, school courses in sexual physiology are already in operation. Dr. Zenner has reported good results from a series of experimental lectures he delivered to the children of the Cincinnati schools. (Education in Sexual Physiology and Hygiene, Phillip Zenner. The Robert Clarke Co., Cincinnati, 1910). It may readily be conceded that while in school we teach children so many perfectly useless things (to describe the course of the Yangste-Kiang River, to bound Afghanistan, to name the chief industries of Iceland, and give the answer to many other curious questions), we yet fail to teach them to meet sanely and rationally many of the ordinary complications that arise in real life. It is a mistake to send children with no knowledge at all of sex, or with only the crudest and most perverted sort, out to battle with Life, Love, and the World. Still with all this certain objections occur to one, particularly where it is contemplated that these lectures shall be delivered by the teachers themselves. Our teachers being most young girls scarcely graduated from the age of gum-chewing and giggles, or prudish and superannuated spinsters, are in the main not fitted to teach anyone anything; much less, since they are in general quite ignorant themselves of the true facts of sex, are they fit individuals with whom to entrust this

delicate task. Another objection is that if the sexual education of the child is attempted as a part of the school curriculum, it will but further increase the intellectual estrangement between parent and child that we have already pointed out as being unfortunate.

Now, the thing to be desired with reference to the main topic under consideration, is the prevention of the development of an unhealthy imagination in the child, because the more such imagination is indulged the more possibility there is of its assuming the nature of an erotic stimulant, and hence favoring an undesirable and premature somato-sexual development. Such sexual fancies, acting as an erotic stimulant to the somato-sexual sphere do, in fact, constitute a form of masturbation, and result to some degree in the neuron exhaustion we know to be consequent upon the more direct form of this habit. Because it has a physiological origin the child's curiosity about sex is not comparable to other forms of child curiosity, such as the mechanism of a watch, or that unanswerable conundrum they not infrequently propound (in reply to the inadequate "God made you" explanation of their origin), "Who made God?" It is a more persistent curiosity and is sustained by and the product of actual, somatic, sexual excitation, which we know may be present, notwithstanding all absence of any external factors tending to awaken it. Because of this rise of a diffused sexuality prior to any somatic localization of the impulse, the child may develop a high degree of psychosexual curiosity prior to any somatosexual feelings; or in some children the reverse of this order may represent the facts. It is just because children differ so widely in this respect that the highest degree of individualization is necessary in their sexual education. In lectures questions cannot usually be freely asked or false ideas corrected. The lecturer is compelled to take such a warning attitude and exaggeratedly moral tone that there is the risk that with certain susceptible children, particularly those who have suffered some sexual experiences, the development of morbid fears may be favored. Much harm has already been done in popular books on the subject by the grossly exaggerated pictures of the supposedly horrible results of masturbation. Most books and lectures also indulge freely in generalities and metaphysical expressions not suitable for the understanding of the child. In the absence of useful information, there is much vague talk of honor and purity, and in this respect books of the "What a Young Girl Should Know" type are usually indefinite and absurd. When plant reproduction is used as an illustration it is difficult to see how the child can appreciate the mysterious shift of scene from plants to man. The question of when impurity becomes purity is always lightly passed over. And often, because of the difficulty of explaining how the marriage vow converts impurity into purity, black into white, bad into good, even the true nature of marriage is left unexplained. A patient of my own, age twenty-four, had heard something about vice and purity and had been taught that only the lowest and most degraded people did certain things. She therefore believed that marriage meant no more than a mere living together in a brotherly and sisterly fashion. She was profoundly shocked by the mere thought that her married friends and relatives might be guilty of what she had always believed was so depraved and sinful. An abnormal fear of and dislike of even thought of marriage was in this case the result of such miseducation.

In many cases where, in the course of a psychoanalysis, it has been necessary to revive memories of childhood it has been found that often children have not believed in the mythical explanations of their parents for a long time prior to the parents' knowledge of the fact. They have nevertheless pretended to. We have known of instances where children have for some time even pretended to a belief in Santa Claus because they imagined that they might gain an advantage thereby. Once, however, the child becomes aware of the deception that has been practised upon him, particularly with respect to sexual questions, the harm has been done, because to a greater or less degree his confidence in his parents has been forever lost. He will no more come to his parents with any questions. There are two reasons for this attitude; the first is the obvious one that he cannot, or feels he cannot, expect any true information from them; the second is that the child has by this time usually been infected through suggestion with that false modesty and abnormal shame which surrounds the whole subject. In this respect Ernest Jones has said "The organized conspiracy of silence is soon noticed by the child, and he is subjected to a mass of suggestion all the more potent for being indirect, which teaches him that the subject is taboo, mysterious, improper, peculiar and essentially wicked." ("Psychoanalysis and Education," *Journal of Educational Psychology*, November, 1910.) The very miseducation thus given the child erects a barrier which prevents him from attaining a true education. Furthermore, it may be pointed out that the average parents' attitude toward the whole subject is one that is so essentially impure, prudish and shameful that, partly for this reason and partly because they have no language that the child can understand into which to cast the subject, any profitable discussion of it between parents and children is usually an impossibility.

It is a mistake to teach children that there is anything particularly sacred, or, on the other hand, anything particularly sinful in the facts of sex in themselves. Again, the enlightenment should not, as Jones has remarked, consist alone of warnings and forbiddings with the risk of making the subject for the child one of shame, guilt, remorse, and terror. It should rather emphasize as far as possible the constructive, the beautiful, and the idealistic viewpoint.

The very young child rarely is curious with respect to more than the eternal question (particularly with little girls) as to where babies come from. This question will often be asked even by the child of five or six. It should be answered as simply as possible. Later, tendencies toward autoerotic stimulation may be inhibited by a tactful warning. At twelve or thirteen the child should be prepared for the onset of puberty, and in girls the menstrual function explained. After puberty it is usually impossible to conceal from children the function of the male in reproduction. Most boys are familiar with that any way at the age of ten. Still later, as a preliminary to marriage, both the young man and young woman should be accorded more detailed information in sexual hygiene.

More knowledge on any subject than can be usefully applied tends to a paralysis of the will, more knowledge on the subject of sex than is necessary tends to a morbidity of imagination.

Hence, while we are frequently told that a little knowledge is a dangerous thing, situations may be imagined where too much knowledge can be equally dangerous. Those who object to any sexual education of the child instinctively feel the danger of imparting too much knowledge of sex prior to an age at which it may be presupposed that the child has acquired strong ethical ideals. We have only to note the way in which the average child will pull apart and investigate anything from a captured fly to a doll or toy watch to see its "insides," or "how it works," to be made aware that the child is instinctively given to research and experimental investigation; incoordinated of course, yet with many children such an instinct is quite as strong as that to be observed in the experimental physiologist or other laboratory worker. Hence it is necessary to point out that it would be very unwise to impart to the child any more knowledge of sex than the child's spontaneous instincts lead it to desire, just as I have in foregoing discussions pointed out that it is unwise to attempt to repress and evade the natural desire for such knowledge that arises instinctively. There is much to know about sex that even parents do not need to know; and it is doubtful whether some of the information to be found in Kraft-Ebing, or certain volumes of Havelock Ellis, is necessary even to the average physician. But it should be remembered that *what is taught, be it ever so little, should be open to no misunderstandings.* Another case comes to mind in this connection, one incident of which was as follows:

A young married woman suffering from an anxiety neurosis was referred to me by Dr. Wilms. Analysis revealed the fact that at an early age some attempt had been made to instruct her in the process of birth, but owing to a misunderstanding she conceived the idea that birth took place by way of the umbilicus. Her mind was never disabused of this idea, until one day a few months following her marriage she was called, in an emergency, to assist a neighbor woman at childbirth. The revelation of the true nature of parturition produced a fear of having children, which in turn excited a fear of intercourse which, in conflict with desire, constituted one factor in the development of the neurosis from which she suffered.

The question as to who shall undertake the sexual education of the child presents itself. My personal opinion is that this, at least in the case of young children, should be the mother. She should be stimulated to undertake such education by her physician. Many prejudices on the part of the parents will undoubtedly have to be overcome. This can be accomplished by the tactful physician, not so much by a formal talk with the mother, as by the passing observation as opportunity offers of the dangers incident to permitting children to grow up entirely ignorant of sex or imbued with fanciful ideas. The younger the child the easier the task of such instruction. Books and pamphlets are useful, but they should be written for the adult, not for the child. They should be reinterpreted by the mother to the child. The words to be used should be plainly set down so that vague generalities may be avoided, since this is the principal defect in many books already written with this end in view.*

*Theodore Schroeder has wisely remarked that "these books are sold on false representation, more or less definitely made, that they will give some helpful and detailed information upon one's concrete personal problems. Instead of answering the questions which young men and women want answered and have a right to know about, the purchaser receives a little moral sentimentalism, some stupid and often truthless dogma, which, together with some that are really true, are promptly disregarded, because no convincing reasons accompany the information. After the reading of such "purity" books, so well filled with vague and mystifying phrases, which mean absolutely nothing to those who do not already know what is sought to be hinted at, one is convinced that he has been robbed of his money without being enlightened, and the young come from the reading of these books feeling more mystified and helpless than ever before over the personal problem." "Obscene" Literature and Constitutional Law, 1911.)

The language I should say ought to be the ordinary language used between physician and patient, perhaps somewhat simplified. The whole problem is a critical one. It is one that is not exclusively pedagogical, but in many of its phases peculiarly medical. Hence the medical profession should not remain indifferent to its duty in this respect and stand idly by, relinquishing the problem to others less fitted to properly deal with it.

I conclude with some brief notes taken from my case histories to further illustrate some of the points I have tried to emphasize. The sexual ignorance is but one factor in these cases, yet it formed a necessary groundwork. Many other inner conflicts and complications unnoted here must arise in after years to bring the disease to a full bloom.

(1) A girl of twenty believed that she had no knowledge of how babies were born until one day on a visit to a young married friend who had been recently confined she was treated to a vivid and dramatic recital of the details of a difficult and dangerous labor. At the conclusion of the story she fainted, was taken home and confined to her bed for some time, the real cause of her symptoms undetermined. This incident constituted what Janet has termed a psychic trauma, but a psychoanalysis according to the Freudian method revealed that it had merely served to light up, as it were, a neurosis that had been smoldering since childhood, the latter also being based upon sexual misunderstandings and a very early development of autoerotic tendencies, quite unrecognized by her parents.

(2) A nurse, aged twenty-eight, consulted me in the summer of 1910. Her life since childhood had been made peculiarly unhappy by the presence of obsessions in the form of religious and other doubts and a constant fear of infection. Even as a child she could remember her mother scolding her for so frequently washing her hands. This fear was for her peculiarly disadvantageous in that it interfered greatly with the practice of her profession. She was very religiously inclined and possessed an abnormal abhorrence of the sexual so that a psychoanalysis presented in her case unusual difficulties. However, I may say that her fear of infection had, in part, the following origin. In her early childhood she was erotically excited by certain incidents to which children are occasionally subjected. These passed from her memory, but a few years later some attempt was made to explain to her the function of the male in reproduction, and the reproductive processes in plants were used in illustration. She conceived the idea that germs from men or even animals were or might be carried in the same way, and she began to fear that she would conceive. She thought everything that she touched was perhaps contaminated in this way, and she devoted a great deal of her time washing her hands, clothes, and underlinen. Gradually, through repression,

she forgot all about the original fear, but it still found expression in consciousness through the process of supplantation or transvaluation as a fear of any form of contamination. This at first concerned itself with possible contamination from plants and flowers, then from insects, then poisons, and finally, when she became a nurse, it took the form of an abnormal fear of bacterial infection or poisoning from the handling of antiseptic solutions and tablets. Some ideas of the difficulties the case presented may be appreciated that of all her early fears and their antecedent experiences she had at first absolutely no recollection, so deeply repressed in consciousness they had been.

(3) This case I shall cite in illustration of the confused ideas the young girl may acquire as to the nature of virtue and purity. Miss M., aged thirty, was referred to me by Dr. Ambrose Johnson, to whom she had been sent for an ovariotomy. He suspected her to be hysterical and referred the case to me for further investigation. I shall not attempt to catalogue the vast number of morbid symptoms she had suffered from since her fifteenth year. They were scarcely greater in number, however, than the physicians she had consulted. She had had one sojourn in a private sanatorium, and another in an insane asylum. The morphine habit in a mild form was another incident of her psychosis. She was homosexual, but the chief symptoms for which she sought treatment were *angst* (anxiety) attacks, convulsive seizures and an anorexia. If I should transcribe the notes I have on the case without any elaboration they would probably cover some twenty sheets of typewriting. Resistance to the expression of many of her painful ideas was so strong that she was unable to utter them and was obliged to write them, a few words or a sentence at each interview.

Incestuous incidents usually between brother and sister are probably not so rare in child life as is generally believed. When they do occur they are usually episodal and occasion no ill results unless they happen to come strongly into conflict with other complexes of circumstances or ideas later in life. Analysis revealed that two such incidents had occurred in the life of my patient. She was at the time aged nine. During the second experience she was by her aunt discovered *in flagratio*. Both she and her brother were treated to a sound thrashing, but in addition the aunt, who was a most moral, stern, and hard type of woman, told my patient that she had forfeited her virtue, that no man after that would be willing to marry her, and that her life was ruined. The little girl took this quite hard at first, but as time passed and she was not struck by lightning, and the sun kept on shining, and she found that she could still be happy and contented at her play, she began to wonder just in what the awful ruin consisted, and finally, perhaps sensibly enough, forgot all about the incident. A few years passed and a traveling evangelist visited the country town where she lived. He preached vigorously against all kinds of sin, and particularly sins of the flesh. She now contracted that malady known as religious conversion, and she had it very bad. She began to hear from other sources of the great importance of virtue and chastity. She thought again of her childhood misfortune and became intensely depressed. She read her Bible almost constantly, but began to be tormented by sexual desire. This to her mind verified the idea that she had now acquired to the effect that she was totally depraved, innately wicked and eternally lost. The thought of what she considered to be her one great sin finally became too painful to bear and she put it out of her mind, never thinking of it until fifteen years afterward she came under my care. Her family took her to a physician, who said she was anemic, and prescribed iron, but she got no better. Other incidents arose to complicate the situation. Her fifteen years of invalidism marked by a few remissions had now fairly begun. The analysis of this case required over a year of careful study. It may be of interest to some who are of that type desirous of having case histories as well as novels end happily to know that her aunt's prediction failed of fulfillment. Following her complete recovery, she has married successfully and happily.

437 West Seventh Street.

SPECIFIC TREATMENT OF PYOSALPINX.*

By H. J. FARBACH,

LOUISVILLE, KY.

My experience recited in this paper has covered about four years, and has been confined to my private practice. This manner of investigation has serious drawbacks and some advantages. The most serious drawback is the limited number of cases one sees in any one line. The great advantage it offers is clinical experience in a better class of patients, who will follow instructions better and more intelligently; and then one sees the patient until time of dismissal, while in clinical work there is often doubt as to the final result, because of the disappearance of the patient.

Ever since the advent of antisepsis and asepsis on practical grounds the gonococcic infections of the female generative tract have offered a great field to the, I might say, radical surgeon. He sacrificed the sexuality of the woman with little or no hesitancy and claimed a successful result as soon as his skin incision had closed. In consequence, probably due to the general lack of knowledge of things sexual among women, they have raised little or no objection to such operations. If, on the other hand, the same sort of procedure had been directed toward the male members of the family, the operation would have been not only decried but absolutely refused. The standard saying of men that, like the Indian chiefs, they would be buried with their implements of combat, dates far back in the shadows of history.

The tube in the male is long and tortuous, its current is against gravity and its final opening is into a small restricted cavity. In the female the tube is short and straight, its current is with gravity, and its final opening is into a large free cavity. In regard to blood supply and return circulation, the advantage is all with the female.

One argument is that the small constricted isthmus of the female tube readily closes when inflammatory action begins, thereby leaving but one exit for the rapidly forming pus and that one into the abdominal cavity. The examinations I have made of the adnexa that were removed in recent or chronic cases have in the vast majority of instances shown that this portion of the tube was not closed and it was possible to force pus or fluid through it with very little pressure.

But in the instances where the pus is forced into the free peritoneal cavity, nature produces here a greater resistance than anywhere else in the body

*Read before the Louisville Clinical Society, January 23, 1912.

and against one of the most liable of pathogenic bacteria. In fact, so successful is her fight that to-day the surgeon advises postponing the operation until the acute process has subsided.

An argument why little or no operative procedures were used in the male, was formerly, that there was no true pus formation in orchitis and epididymitis, but recent investigations show that in every instance miliary abscesses, and sometimes an abscess of considerable size, are present.

The results I report are based on twenty-five cases of acute and chronic variety. My initiation into this work did not come from any celestial influence nor was it the result of scientific deduction. Case No. 1 was forced on me, so to speak. A young unmarried lady who had loved well and passionately but not wisely, especially from a sanitary standpoint, consulted me with a pelvis that had proven an ideal place for the cultivation of gonococcus. After an examination, an operation was advised, but refused as it had been before, on the grounds that it would necessitate a confession to her family, which she positively refused to make.

At this time I was obtaining some very happy results from the administration of the vaccines and serums in complicated and chronic gonorrheas in the male and suggested this line of treatment to the patient, promising her, however, nothing. The results were almost phenomenal. The record of this case shows that on the third day after the first injection of vaccine the patient stated there was less pain and pelvic tenderness than she had known for three months. Within less than one month she could assume any position and twist or bend in any direction without the least pain or inconvenience.

I have divided these cases in acute and chronic, considering any case chronic in which there have been one or more attacks of pelvic pain associated with rise of temperature and general malaise.

The etiology and pathology of these conditions are too well known to require discussion, but one fact that must not be lost sight of is that the chief offending microorganism, the gonococcus, is one of the most, if not the most liable, of bacteria that are infectious to the human. Outside of the human body, even under the most favorable of circumstances, in the majority of instances it is hard to cultivate and is prone to undergo autolysis. Almost any germicide or antiseptic will destroy it in a short time if brought in direct contact with it. Fresh blood serum destroys it even after strong inoculations.

The mode of injection in all of these cases was direct contact followed by careless, improper treatment of a vaginal, cervical, or bladder condition. I cannot help feeling that the female generative tract is not as liable to gonococcic injections as the male. In my own experience I have seen numbers of instances where the husband had for years chronic prostatitis or vesiculitis, still the wife shows no signs or symptoms of the disease. In other instances there is proof of the presence of the gonococcus by the subsequent ophthalmia neonatorum, but in some of these cases the mother shows no clinical evidence of the disease. The sexual toilet may explain this to a certain extent, but not always.

The clinical history in these cases was the classical book picture of tube and ovary inflammation both subjectively and objectively. As to the clinical types I have simply made the distinction of acute and chronic. In some instances the condition was unilateral, in others bilateral. I designated those acute in which the present attack was the initial one. The treatment, however, does not vary in the two conditions.

In regard to diagnosis I wish to say a few words about a procedure which I began two years ago, and thought it original, until I read a report published by Schwartz and McNeil in the *American Journal of the Medical Sciences* of May, 1911. This procedure is the complement fixation test in the diagnosis of latent or unsuspected gonococcic infections. The same reagents and technique are used as in the Noguchi modifications of the Neisser-Wassermann-Bruck reaction, except of course in the antigen. In my investigation I used a mixture of stock gonococcic vaccines and some cultures grown in my own laboratory. In brief, my results were that in some instances the reaction when positive was a great aid in diagnosis and could be depended on as shown by results obtained after treatment was instituted. In other instances I obtained negative reactions when I knew positively that I had a gonorrheal infection.

In every instance in which I had an infection through which I could obtain a culture, and used this culture as an antigen. I got a positive reaction. I was experimenting with a polyvalent antigen when Schwartz and McNeil reported their results along the same line. They had experienced the same difficulty I had, that in some instances of positive injection they obtained a negation reaction. They found, however, that by using an antigen made of a large number of different cultures and strains of the gonococcus they obtained positive reactions in every known infection and it was therefore more dependable as a diagnostic measure.

These results are valuable for two reasons. The most important perhaps is the sustaining of the contention of Rogers that there are different strains of gonococci which produce varying antibodies, and that this must be considered in the making of antigonococcic serum. The second is that it gives us an aid in making a diagnosis of obscure lesions in joints and the genitourinary tract.

I might mention here that these investigations in my hands have proven that the injection of dead bacteria into the human body is followed by the appearance, in the blood stream of the injected individual, of antibodies specific toward the injected material. Knowing, as we do, and as has been proven by these investigations, that the different strains of gonococci produce different antibodies, we appreciate that more good is to be derived from an autogenous vaccine than can be expected from a stock one. The proof of this statement is that in every instance where a vaccine was used in the treatment, the presence of the antibody could be proven by the complement fixation test. How soon these antibodies appear I am not in a position to state at the present time, but hope to be able to render some report during this session, as I am carrying out an investigation along these lines at present. Another question to be answered is how long these antibodies remain after treatment is discontinued.

The question of mixed injection must not be overlooked in the use of vaccines and it has been my rule during the past year in the making of autogenous vaccines not to isolate the special organism, but to grow all bacteria present synergistically and to standardize this vaccine by the predominat-

	Case	Civil State	Duration	Uterine Discharge	Gonococci	Reactions	Menstrual Show	No. of Injections	Length of Treatment	Result
1	I. C.	Single	10 months	Present	Present	Temp. 101	Present	Seven (50 and 75 million)	9-20/07 to 11-3/07	11/4/08 No recurrence
2	N. K.	Widow	13 months	Present	Present	Temp. 100²	Present	Six (80 and 100 million)	12-1/07 to 1-13/08	5/7/08 No return.
3	A. D.	Single	Acute	Present	Present	50 millions Stock vacc. Serum for 48 hours.		Seven	7 weeks	Gave birth to child 2 years later.
4.	C.	Married	3 months	Present	Present	No reaction from stock. Typical from autogenous		Six	5 weeks	Complete relief
5.	Mrs. R. V.	Married	5 weeks	Present	Present	Typical	Present	Six	6 weeks	No symptoms
6.	S. H.	Single	2 months	Present	Present	Typical	Present	Five	6 weeks	Discharge only symptom
7.	B. C.	Single	6 weeks	Present	Present	Typical	Present	Six	7 weeks	Complete relief
8.	M. G.	Single	2 months	Present	Present	Typical	Present	Eight	10 weeks	No recurrence
9	I. R.	Single	6 months	Present	Present	Faint	None	Seven	8 weeks	No recurrence
10.	Mrs. D.	Married	Acute	Present	Present	Mild	None	Four	5 weeks	No recurrence
11.	E. B.	Prostitute	One year	Present	Unable to find	Typical	Present	Five	6 weeks	No recurrence
12.	Mrs. S.	Married	8 months	Present	Present	Typical	None	Five	6 weeks	No recurrence
13.	Mrs. A.	Married	4 months	Scant	Present	Severe	Present	Six	6 weeks	No recurrence
14.	Mrs. G.	Married	Acute	Abundant	Present	Typical	Present	Six	7 weeks	No recurrence
15.	A. W.	Prostitute	One year	Scant	Present	Typical	None	Eight	9 weeks	No recurrence
16.	H. G.	Single	(?)	Present	Present	Typical	None	Four	5 weeks	No recurrence
17.	H. S.	Single	2 months	Present	Present	Mild	None	Five	6 weeks	No recurrence
18.	R. I.	Single	3 weeks	Present	Present	Typical	Present	Six	7 weeks	No recurrence
19.	S. W.	Single	1 month	Present	Present	Typical	Trace	Four	5 weeks	No recurrence
20.	P. L.	Prostitute	(?)	Present	Present	Typical	Present	Eight	5 weeks	No recurrence
21.	Mrs. B.	Widow	Acute	Present	Unable to find	Severe	Present	Seven	8 weeks	No recurrence
22.	E.	Prostitute	9 months	Present	Present	Typical	None	Six	7 weeks	No recurrence
23.	Mrs. H.	Wife	(?)	Present	Streptococci	Typical	Present	Trail	5 weeks	No recurrence
24.	T. D.	Single	Acute	Present	Present	Typical	Present	Eight	8 weeks	No recurrence
25.	S. S.	Single	10 weeks	Present	Present	Mild	None	Six	7 weeks	No recurrence

Cases Nos. 1-2-5-6-7-10-20-21-22 had specific bladder infections.
Cases Nos. 3-10-14-21-23 occurred as associated with acute specific infection of vaginal and cervix.
Case No. 5 had at the same time gonorrheal involvement of left ankle.
In Cases Nos. 16-20-23 one tube and ovary had been removed at previous operation.
Case No. 7 had a double cervix.
Case No. 18 was complicated by vulvovaginal abscess.

ing organism. This sort of vaccine has given me the best results.

In the treatment of these cases I employed all the medicinal, hydrotherapeutic and mechanical procedures used in these conditions. As a rule I clean the alimentary tract with a saline and then administer opiates. The benefit from them is twofold: they not only lessen the pain and thereby restlessness and exhaustion, but they lessen or suspend the vermicular movement of the intestines and allow nature to do her best in regard to limiting the injection.

The head of the bed is elevated at least 12 inches and hot counterirritants and hydroscopics are applied to the lower abdomen. After the severity of the acuteness has passed I order a hot iodine vaginal douche twice a day. I like urotropin and as a rule use large doses. Food and water are restricted until the pain and tenderness are greatly reduced or absent.

As to the specific treatment, we have two agents at hand, serum and vaccine. It is inexplainable to me how men who exercise most excellent judgment in the use of serums, say for instance in the treatment of diphtheria, will use it so impractically in gonorrheal conditions. The gonococcic serum contains specific antibodies, and when used should be used for effect. Use it like diphtheric serum: push it for effect. Who would think of giving 500 units of diphtheric antitoxin every four to seven days in a severe case of diphtheria, and still that is what is done with gonococcic antitoxin, and then the users say it is worthless because they get no results.

Give 2 or 4 c.c. at the initial injection; if no benefit has been derived in three or four hours double the dose, and double again three or four hours later if satisfactory results have not been obtained. I have given as high as 16 c.c. within twenty-four hours and have never seen any unpleasant results other than a slight erythema or severe attacks of "hives." I have seen less of this since using the horse instead of the sheep serum and it seems to be equally efficient.

The benefit to be derived from the serum must come in the first twelve or thirty-six hours after its injection. These long, drawn-out, small injections of serum are a waste of time and money. As a rule I give with the initial injections of serum a moderate dose of mixed gonococcic vaccine.

The microscopical and cultural study of these as well as other infectious conditions show that we rarely, if ever, have a one-germ disease. The sooner a polyvalent antigonococcic serum is made the sooner will the treatment of these conditions be more satisfactory. As soon as it is possible I make an autogenous vaccine for use at subsequent treatments.

This line of treatment has invariably in my hands, within twenty-six or forty-eight hours, made an entirely different clinical picture than one would expect to find. The patient is comfortable, temperature and pulse are within proper limits, local tenderness and rigidity are reduced to the minimum. The facial expression is happy and a desire for food is one of the first expressed.

But keep them in bed for ten days and as quiet as possible. Under no circumstances must there be a sudden or strenuous movement of any part of the body. This is a measure hard to enforce, but a great deal depends on it, for I have seen in several instances a classical recurrence when these orders were disobeyed.

The vaccine should be repeated every seventh day for at least five doses. This is an outline of the treatment I use in the acute conditions.

When you see these cases in the interval between attacks, of course the management is somewhat different. Iodine douches, urotropin internally, and quiet are recommended. Here in nearly every instance an autogenous vaccine is prepared for the initial injection. Following this injection from six to twenty-four hours the reaction begins. In some instances the first reaction is severe. Pain, almost of the intensity of past attacks, is present, the temperature and pulse go up and the patient is very uncomfortable. In cases where there is uterine

or cervical involvement also, it is common to have a profuse bloody discharge during this reaction.

The reaction should not extend over twenty-four to thirty-six hours at the utmost unless the vaccine dosage has been too large. If a continued reaction is produced either break it with a small dose of vaccine or lengthen the interval before the next injection and reduce the dose. As the reaction passes off the subjective symptoms disappear and the patient experiences less inconvenience than before the injection. As a rule I keep these cases quiet two days after the reaction has passed. Subsequent reactions as a rule are not severe, but patient should be kept quiet for twenty-four or thirty-six hours.

The size of the dose depends altogether on the extent and virulence of the infection and the weight and physical condition of the patient.

I continue the injections every seven days until objective and subjective symptoms have disappeared, and then as a rule give two more injections.

The results obtained in the twenty-five cases have fulfilled every expectation. Some of these cases were discharged four years ago and none of them has returned for treatment; some I have seen since and have learned that they have given birth to healthy children and that the pregnancy and labor was normal.

On examination in some instances little or no induration is found in or around the tube; in others where the condition when first seen had been present for a long time and large masses were present either on one or both sides some induration remains. The question of adhesions and consequent constipation and obstipation has not been lost sight of. The evidence is to the effect that there is a great deal less of this in the cases treated along these lines than after the operative procedures.

I wish to hereby express my appreciation and acknowledge the valuable assistance rendered me by the cooperation and suggestions of several surgeons and therapeutists in this work.

The Atherton.

FRACTURE AND DISLOCATION OF THE UPPER END OF THE HUMERUS.*

By JOSEPH B. BISSELL, M. D.,

NEW YORK.

VISITING SURGEON TO ST. VINCENT'S AND BELLEVUE HOSPITALS.

Fractures about a joint, when in the long bones, and close to the joint surface, are always interesting. When complicated with a dislocation they are still more so. The difficulty of recognizing this condition is great, and the perplexities of treating it when recognized even greater. Many troublesome symptoms following an unsatisfactory reduction of a dislocated shoulder may be explained by this condition of fracture-dislocation. The immediate and ultimate results arising from such an injury are always problematical, and a positive diagnosis more or less unsafe. Particularly is all this true in fractures and dislocations of the humerus at the shoulder joint. This combination injury, while not a common one, is more frequently seen now than formerly. The increase is due to our greater facility in the use of the modern means for clearing up the diagnosis, notably by the fluoroscope or radiograph. The *x*-ray also explains why pain, spasm, and return of the deformity are present in many instances after the apparent reduction. Anesthesia is of great help, both in diagnosis and treatment. Crepitus may not be found even under the anesthesia, but the *x*-ray demonstrates the fracture almost invariably. The importance of attaining a definite knowledge of the local condition in these injuries is obvious. With all our knowledge and facilities for treatment of this condition it is still difficult enough at times to reduce the deformity and to secure a proper apposition and immobilization of the fragments. The etiology of this accident is instructive. The trauma which produces dislocation of the shoulder joint is not usually a severe one. The injury producing fracture about the neck of the humerus may or may not be caused by great force. It would seem that, however strenuous the exciting cause may be, after it had dislocated the shoulder it could hardly go on and fracture the bone, or vice versa. Again, if the head of the bone is broken off first, close to the upper extremity, as occurs most frequently in these cases, how is it possible for there to remain leverage enough to dislocate the joint surfaces? From the study of a number of these fracture dislocations I have evolved a theory as to the probable causation. The theory is not exactly creditable to the medical profession, but I am sure it is quite often true. One will notice in the history of most of the cases which are included in this short paper the patient asserts that the injury which produced the dislocation was not a very severe one. One will also notice that in almost every case the patient reports that vigorous, long continued, and very forcible efforts were made to reduce the dislocation before the patient came under our observation. Also in some of the cases it was insisted that the bone was heard to return to the socket, but the symptoms of dislocation, in spite of that, remained unrelieved. My theory is, and it seems a fair and logical inference from these statements, that the bone was fractured by the force used in trying to reduce the dislocation. The noise which the patient and the doctor heard, and the "slipping into the joint" which the physician feels, was nothing of the kind, but was due to fracture produced in this manner. The following cases are typical of some of the phases of the condition just described:

Case I.—Miss G. School teacher. Aged 40. Slipped and fell on the icy pavement in January, 1906. She was unable to get up on account of the pain in her right shoulder and the distortion of her arm and forearm. She was assisted to her home by bystanders, and her physician sent for. She had a typical deformity with sub-clavicular displacement of the head of the humerus. Her physician and two other doctors made repeated, vigorous and strenuous efforts to reduce this dislocation by every method known to them, including the knee and heel in the axilla, with strong leverage against such fulcrum. Apparently they felt the bone go into the socket, but on examination the symptoms of deformity remained the same and the pain was much greater. Finally, patient and doctors being thoroughly exhausted, and the result unsatisfactory, after several hours' work, the patient was advised to go to a hospital for treatment. There, under *x*-ray examination, a subglenoid dislocation of the head of the humerus, with an almost transverse fracture, was clearly defined. After remaining in the hospital several days open operation was performed and the head of the bone, with much difficulty, was returned to the glenoid cavity. It was

*Read before the City Hospital Alumni December 20, 1911.

then found that the fractured surfaces were held together very easily in good position by external splints. The wound healed without reaction, and the patient made an uneventful recovery. She left the hospital at the end of six weeks with normal function of the joint.

Case II.—Frank H. 35 years old. House painter. While at his work on May 1, 1907, fell from his ladder a distance of about twelve feet, striking on his right shoulder. He suffered great pain at the joint, the arm was held abducted with the elbow sticking out from his side. Fullness in the axilla and concavity under the acromial process completed the typical symptoms of a subglenoid dislocation. He was taken to his home in the country and for several days repeated attempts were made to reduce his deformity. After final vigorous leverage efforts the bone was eventually manipulated and pushed into its socket. After the reduction the deformity seemed corrected, normal fullness returned to the point of the shoulder and disappeared from the axilla, but pain remained and was very severe, while the function of the joint was not restored. At the end of ten days, the man remaining in constant pain, and the shoulder joint so tender it could hardly be touched, the patient was brought to New York for a consultation. The *x*-ray at once cleared up the situation. The head of the humerus had been restored to the glenoid cavity, but the articulating surface was turned away from the glenoid fossa, and looked upwards, outwards and forwards. The greater tuberosity was resting in the concavity of the articulating surface of the scapula. A section of about one-third of the head of the humerus, including a portion of the articulating surface and part of the lesser tuberosity, had been broken away from the bone, torn off, evidently, by the contraction of the subscapular muscle. The patient was sent to the hospital, and under operation this fragment of bone was removed, and the articular surfaces restored to as nearly their normal positions as possible. The wound was closed with a small drain. Following a slight process of infection in the soft tissues, recovery was quite rapid, leaving a joint only slightly impaired in its function.

Case III.—Mrs. W. Housewife. Aged 42. In March, 1907, was dragged some distance after falling from a trolley car, and among her other injuries was a dislocation of the right shoulder. There was a subclavicular deformity, but no evidence of fracture at the time of the first examination. Repeated attempts at reduction failed, although it was thought by the physicians manipulating the bone that they had felt it slip into place. After these efforts it was thought that crepitus could be felt, and the patient came under my care for an opinion. Examination showed a typical subglenoid deformity with distinct point of crepitus. *X*-ray examination discovered the head of the bone below the glenoid fossa, and the external tuberosity, together with a part of the articular surface of the head, fractured off. There was an irregular line of fracture running diagonally down the bicipital groove to the internal surface of the humerus, but not extending quite though it. Through an open operation the portion of the bone separated from the shaft was removed and the articular surfaces of the joint restored to their normal relations. Before removing this fragment an endeavor was made to replace it, hoping thus to conserve the function of the large muscles attached to the greater tuberosity. Repeated efforts, however, failed to return it to its normal position, and it was found also impossible to return the head of the humerus to the glenoid fossa without removing this large piece of bone. As far as it was possible to do so the periosteal insertions of the muscles attached to the greater tuberosity were preserved. After taking away the loose piece of bone it was comparatively easy to place the articulating surfaces together. In spite of a slight infection the wound healed within a short time, and the patient at this date has perfect function of her joint. This is rather remarkable considering the disturbances to the muscular insertions and to the groove of the bicipital tendon arising from the osseous injury.

Case IV.—Mr. J. R. 55 years old. Clerk and messenger. Had a history of epilepsy and periodical alcoholism. Had dislocated his shoulder twice before this occasion. January 12, 1909, fell in an epileptic fit while drunk. Was taken to the hospital and the next morning an attempt was made to reduce a subclavicular dislocation of the left shoulder. This was unsuccessful, and under anesthesia repeated attempts were made, also unsuccessful. Following this, after several days' rest, a fluoroscopic examination showed the head of the humerus out of the glenoid fossa and resting high up under the clavicle. There was also a long crack extending from just below the greater tuberosity downward and inward transversely across the bone. This fracture appeared to be about four and a half inches in extent. The fragments seemed to remain in good apposition to each other except when manipulated in the endeavor to replace the head of the bone in its normal position. As the patient had a long history of alcoholism, some arteriosclerosis, and the urine showed numerous hyaline and granular casts, together with the fact that it was easy to adjust and hold the fragments in good position, it was decided to try and heal the fracture before making any attempt to reduce the dislocation. The arm was therefore put up with a shoulder cap and a triangular splint in the axilla, which appeared to hold the fracture firmly and satisfactorily. At the end of six weeks bony union had taken place and an endeavor was made to reduce the dislocation. This failed, as did further efforts, rather than run the risk of refracturing, and also because of the history of three dislocations already, I decided to leave the bone in the situation where it was and let him have a false joint in this position. Owing to changes in the joint relations and structure it seemed quite likely that if reduced the dislocation would be inclined to recur. The man has been under observation ever since and has now a very satisfactory result. There is very little restriction of the function of the joint and it does not interfere at all with his occupation.

Case V.—Mr. B. H. 65 years old. Merchant. February 10, 1908. Slipped and fell on the ice in walking up a hill in the village in which he lived. He suffered a subglenoid dislocation of his left shoulder which two doctors tried several hours to reduce. This was on the night when he was hurt, and the result was unsuccessful. The next morning they gave him ether, and with another physician tried again. They felt the bone go back, but it would not stay in place, and at this time they discovered what they took to be the head of the bone posteriorly and low down in the axilla. The patient was suffering a great deal of pain and it was decided to send him from the little village in New

Jersey in which he lived to New York. I saw him the second day after the injury and felt what I thought to be the fractured head of the humerus separated from the shaft in the lower part of the axillary space lying close to the chest wall in the anterior surface of the latissimus dorsi muscle. The *x*-ray plate shows the humerus fractured through the anatomical neck, the upper end of the lower fragment resting upon the inferior edge of the glenoid fossa. Posterior to this, and almost under the skin of the posterior axillary wall, is seen the upper fragment. This consists of the head of the bone and is loose and easily movable in this location. The day following I cut down from behind, removed the fragment, and closed the wound primarily. At the end of six days he went back to the country with his arm in a sling. The wound healed *per primam*, and he had apparently a normal shoulder joint. He has been seen within the past few weeks, and the functions of this joint are entirely satisfactory.

Case VI.—Miss N. Trained nurse. Was injured in April, 1908, slipping and falling, striking on her shoulder. She is a very fleshy person about 42 years of age. The injury took place two days before I saw her. She brought with her an *x*-ray plate showing dislocation and fracture of her left humerus. The head of the humerus was well forward under the clavicle where it was easily felt by examination, crepitus could not be detected by manipulation, but in the plate a fracture running from internal side of the anatomical neck downward and outward to the external surface of the humerus is plainly seen. She complained of great pain on the slightest motion of her shoulder joint. The patient states that diagnosis of dislocation had been made soon after the injury, and that several efforts had been made to reduce it. Treatment consisted of anterior arthrotomy, reduction of the dislocation, which was very difficult, adjustment of the two fractured surfaces together, which was very easy, and retaining them in position by means of two wire sutures. Apposition, after it was accomplished, was perfect. This patient made an uneventful recovery, and in the course of six weeks, aside from a rather long and unsightly scar, her condition was entirely satisfactory.

Case VII.—Rebecca H. December 10, 1909. Worker in a waist factory. This patient was injured in a struggle to escape from a fire in the building in which she worked. Several of her coworkers were injured or killed at this time and great force and strenuous efforts were made in getting her out of the mass of struggling, frightened people. It was difficult to say exactly what kind of an injury caused her condition. At the hospital, on the day following her admission, an *x*-ray examination showed dislocation of the shoulder posteriorly, and fracture just below the anatomical neck of the humerus. Open operation, reduction of the dislocation, and readjustment of the fractured surfaces were rather easily performed by means of a posterior and anterior opening. The fragments were retained in very good position by external splints, and when the patient left the hospital, aside from a little stiffness, she had good joint function.

Case VIII.—Sarah R. 56 years old. February 8, 1910. Patient, while cleaning a window, lost her balance and fell a distance of one story. She was brought to the hospital complaining of pain in her shoulder and inability to use her right arm. On examination the characteristic deformity of dislocated shoulder was seen, and the head of the humerus could be felt under the clavicle. Several attempts were made to reduce the bone without anesthetic. Next day the patient was taken to the operating room and under chloroform reduction was made. After recovering from the anesthesia, pain and inability to use the arm continued, and the appearance of the shoulder was not characteristically normal. The result was not satisfactory to either patient or surgeon. She left the hospital ten days after entering, still complaining of pain and inability to use the arm. At another hospital, a few days later, the *x*-ray plate showed the head of the bone on the lower edge of the glenoid fossa, and fractured off from the shaft just below the anatomical neck. Also there could be seen an apparent fracture of the neck of the scapula. The patient refused operation and was lost sight of, so that the ultimate result is unknown.

Case IX.—A. C. Aged 39. Carpenter. March, 1910. Fell down a few steps and injured his right shoulder. He was brought to the hospital and a diagnosis of dislocated shoulder made by palpation and manipulation. Several efforts to reduce the dislocation were made unsuccessfully. The *x*-ray examination showed a transverse fracture of the humerus below the tuberosity, dislocation of the head below the glenoid fossa; there was great mobility and wide separation of the fragments of the humerus. An open operation was performed, and on account of the movability of the fragments two Lane plates were used to restore and retain the continuity of the bone. Union took place by first intention. The man had an uneventful convalescence until the eighth day, when he developed an alcoholic pneumonia, from which he died.

The treatment of these cases depends wholly upon our appreciation of the pathological condition. It it sometimes impossible to make an anatomical reduction by manual methods or by ordinary external appliances or in this class of injuries without opening the soft tissues down to the joint or to the fracture. If this is not done it very difficult to put and retain the fracture in good position. *X*-ray examination should always be used to confirm the reduction and reposition of the fragments. External mechanical devices to retain in proper position the fragments in a fracture close to the shoulder joint, however ingenious, usually result in failure, as does also the endeavor to first reduce the head of the bone to its correct position before endeavoring to reduce the fracture. The reason for this inability to hold the fragments in apposition is of course the shortness of the upper fragment and the impossibility of getting it within the grasp of our mechanical devices. Restoration of the head of the humerus to its normal position in the glenoid cavity is often impossible, even under anesthesia, because of the shortness of the upper fragment. This fragment may consist only of the head of the humerus alone, sometimes only of a section of it. The recognition of these facts leads the surgeon to consider the more radical but more definite and certain procedure of open operation.

It is a great satisfaction when the indications point as plainly as they often do in these cases to operative measures. Once having recognized the impracticability of restoring the injured parts to their proper position and function by manipulation there is nothing else for the surgeon to do except cut down upon the site of the injury, and properly

and consistently adjust the distorted tissues to as nearly as possible their normal state. Operation naturally resolves itself into one of two methods of procedure. Either we endeavor to unite the fragments and keep them united until union takes place or we may be compelled to remove the upper fragment entirely. Here we use the lower fragment in the new joint. This latter variety of treatment is forced upon us by any of the following conditions, the impossibility of proper adjustment of the two fragments to each other, comminution of the fragments, too wide displacement of the upper one, complete destruction of the circulation and nutrition of the upper fragment, smallness of the upper fragment, or destruction of the joint surface of the glenoid cavity. It is curious to see what good joint function may be had in the shoulder joint, in spite of the fact that the head of the bone has either been removed entirely from the joint surface and the human body, or that a false joint has been formed with a shortened or lengthened humerus, as the case may be. In such cases satisfactory shoulder joints are not infrequent with the glenoid cavity entirely out of business. The false joint in such cases not infrequently results in an almost normally acting shoulder, even with the glenoid fossa completely deprived of its function. To restore the fractured humerus and retain it in its continuity till bony union occurs, there is no device to be compared with the steel plate of Mr. Lane. Collars, rings, wiring, interbone supports of various kinds have not in practice worked out as well as this simple device. Immobilization is necessary for proper and rapid repair of the bone. This can be obtained in the simplest and most efficient manner by a single or double Lane plate. When two are used they are not united, but applied at a considerable distance from each other, if possible on opposite sides of the bone. In these high fractures of the shaft of a long bone a single plate allows of too much motion between the fragments to obtain the firm apposition necessary. When the upper fragment is too short to allow of the adjustment of a Lane plate, and if in the opinion of the surgeon it is impossible to hold the fragments in good position, the upper fragment is to be removed. If one wishes to be overcareful or the lower fragment tapers into a sharp spicula of bone, this may be smoothed or cut off with a bone forceps or Gigli saw. The arthrotomy itself is not a dangerous operation, though likely to be difficult and at times tedious. Mr. Lane attaches great importance to the asepsis. He says that the asepsis required in abdominal work is not to be compared with the necessity for care and cleanliness demanded in plating fractures. The plate may be removed at any time by a slight operation if it should subsequently be thought desirable.

The experience of the writer with these cases brings out three points for consideration.

1st. That in a fracture-dislocation at the shoulder joint the fracture is usually secondary to the dislocation, and is caused by ill-advised and unskillful efforts to reduce it.

2nd. The immunity with which the shoulder joint may be operated upon under proper conditions and for proper purposes.

3rd. The remarkable ability of the shoulder joint to adjust itself to a great amount of damage and injury and to eventually recover its functions, or to more or less successfully replace them.

46 West Fifty-fifth Street.

SALVARSAN AS A CURE OF SYPHILIS.*

A RÉSUMÉ OF RESULTS OBTAINED IN CASES AFTER TEN MONTHS' OBSERVATION.

By JAMES M. WINFIELD, M. D.,

BROOKLYN, N. Y.

The rapidity with which articles upon salvarsan have appeared in medical literature testifies to the continued interest in the subject. As it would be useless to attempt to collate the observations of various authors and present them as a paper, I have accepted the suggestion of our president and will offer for your consideration an analytical résume of the results obtained in a hundred cases of syphilis treated with the new drug that have been under my observation for ten or more months.

Until recently it has been impossible for anyone to write much about the lasting after-effects because there had not been sufficient time for observers to draw conclusions. It is an undoubted fact that much harm was done by some of the premature enthusiastic reports that were published within a few months after Ehrlich announced his discovery, for there are those who still think that salvarsan is a specific for syphilis, and that a single dose of a few decigrams will effectually and thoroughly free the system from the syphilitic virus.

The cases that furnished the notes for this paper were both hospital and private patients. For obvious reasons it will not be necessary to give the detailed history of each case. I will limit the paper to the general analysis of the hundred cases, making special comment upon any important phase or symptom observed during the ten months the patients were under my care.

Eighteen of these cases were females and eighty-two were males; the drug was administered by the four recognized methods, viz., subcutaneously, intramuscularly, intravenously, and by the subcutaneous or intramuscular injection of the oil suspension. The subcutaneous method was used only seven times; in three cases the drug was given in suspension; in the remaining four the clear alkaline solution was employed. Two of the patients in whom the suspension was used developed necrosis of the tissues surrounding the point of injection; the third developed an abscess. Two in whom the clear alkaline solution was used subcutaneously also had necrosis and abscesses as a complication. One of these cases is of especial interest on account of the tardy development of the necrosis. The patient was a young woman in the early secondary stage of the disease. Twenty cubic centimeters of the clear solution were injected deep into the tissues between the shoulders; a few days later the injected area became inflamed and indurated, but these conditions disappeared under massage. Two months later the patient re-entered the hospital complaining of pain and tenderness between the shoulders. Upon inspection it was found that there had developed a large necrotic area, which was removed surgically. The patient went on to an uninterrupted recovery. The Wassermann reaction was at no time negative. (Since this paper was read the patient has again entered the hospital suffering from the late secondary manifestations of syphilis, eleven months after receiving salvarsan.) This case emphasizes the fact that salvarsan has absolutely no effect when the injection is followed by induration, because under this condition the drug is not absorbed.

*Read before the Brooklyn Pathological Society, October, 1911.

Most of the cases received the drug by the intramuscular method, and neither necrosis nor abscesses developed in any of them; a long needle was used and the solution was injected deep into the muscle of both buttocks. Many of the earlier cases complained of considerable pain and in some there was a slight induration lasting a few days. It would seem that the reason why the early cases suffered so much more pain than the later ones was that the needle employed was too short and that the quantity of the solution was too large; it has been found that with the salvarsan now on the market it is possible to obtain a proper solution with considerably less water, so that instead of being obliged to inject twenty or more cubic centimeters, many times one can get a satisfactory solution with only twelve to sixteen cubic centimeters. Another cause of pain when the drug is introduced intragluteally is that the injections are made too low in the buttock. When the needle penetrates the lower border of the gluteus maximus muscle some of the solution is apt to work down into the fascia and tissue underneath and cause a certain amount of inflammation and induration. If the induration is at all pronounced the sciatic nerve may become involved in the inflammatory process, causing severe neuralgia and, as in two of my cases, loss of muscular function. Experience has taught that if the salvarsan solution is properly prepared and correctly placed in the gluteal muscle the pain in many instances is only a little more severe than an ordinary injection of salicylate of mercury.

The intravenous method was employed in a number of cases, mostly in private patients. Judging from the articles dealing with this method one would think it is a very simple matter to always place the needle in the vein at the first attempt; but this is not the case, for it often happens that even when the vein is large and prominent the moment the needle strikes the outer wall of the vein the vessel slips aside. Instead of penetrating it and becoming continuous with the tube of the vein, the needle either desects up the walls of the vessel or goes clear through it. In adipose people and in most women the quickest and most satisfactory way is to cut down upon the vein and then introduce the needle. I have come to the conclusion that the simple gravity apparatus is much better for general use than any of the more complicated ones that are recommended.

In discussing the comparative advantages of the different methods of administering the drug, my experience coincides with that of other observers that the subcutaneous method should never be used, because the solution comes in contact with the subcutaneous fat, and it has been demonstrated that the minutest quantity of salvarsan injected under the skin causes inflammation and necrosis of the fatty tissues, and is thereby rendered inert, for the same reason the oily emulsion should never be placed subcutaneously. The intramuscular method can be utilized for the general run of cases, especially if the patient can be kept quiet for at least five days; indeed all patients receiving salvarsan should be kept quiet and under observation for at that length of time. The intravenous method is the ideal one, especially when the patient is obliged to pass from observation shortly after the operation, or when, for any reason, the disease must be gotten under quick control. It is undoubtedly the best method in all acute or obstinate cases, for in them time is precious and the quicker we get the patient under the influence of antisyphilitic remedies the better. As far as rapid results are concerned there is but little gained by giving the drug intravenously when the patient is in the tertiary stage of the disease or even after the secondaries have subsided, unless, of course, the case is one of malignant syphilis. In fact, the symptomatic cure of the tertiary lesions is as rapid and more permanent when the drug is injected into the muscles, probably because of the slower absorption of the remedy. Experience has taught that it is not safe to give salvarsan by any method to ambulatory patients. It is in this class that the oily emulsion can be employed. I have used this emulsion in eight cases and I think the symptomatic cure has been much slower than when the solution has been used. In all but one the Wassermann reaction never became negative, and five of the cases rapidly developed recurrent syphilitic symptoms. Perhaps in these cases the absorption of the drug was too slow, and on account of this the treponema became immunized to the toxic effect of the drug.

The behavior of the Wassermann reaction in my cases was similar to that reported by others. In four the reaction never became negative, in two of these the drug was administered subcutaneously and one of them developed an extensive necrosis. In the remaining cases the Wassermann became negative in from ten days to six weeks. The earliest of these was in a young man aged nineteen with a chancre of the lip and tongue and a beginning secondary eruption. The *Treponema pallidum* in large numbers was demonstrated in the chancres the day before salvarsan was administered. A serological test made at the same time was strongly positive. Twenty-four hours after the drug had been given the labial chancre showed signs of improvement and the one on the tongue was practically healed. None of the specific microorganisms could be found in the secretions from the chancre on the lip, the swelling in the glands under the jaw had begun to subside, and the eruption was nearly gone. The Wassermann reaction was delayed upon the eighth day and negative upon the tenth, and has remained so ever since. This is evidently an instance of a cure after one dose of salvarsan. One year has elapsed since the patient received the salvarsan and he is both serologically and clinically free from any symptoms of syphilis. In 60 per cent. of the cases the Wassermann reaction became negative in about four weeks; in 10 per cent., between the third and fourth week; and in the remaining 30 per cent. the negative reaction did not occur until after the fifth week. Out of the hundred tabulated cases there are forty-five that still give a negative reaction after six months.

To thoroughly test the value of salvarsan, up to this time none of the patients in this series has had any other antisyphilitic treatment. Since this paper was read some of the patients have received a second dose of salvarsan and all have been put upon mercury. Of the four cases that never became negative two developed late secondary symptoms of syphilis, one two months and the other four months after receiving the salvarsan. The other two patients have not had any clinical manifestations of the disease. Both were in the tertiary stage. One was a man who had not been free from some syphilitic cutaneous lesion for six years. After receiving the salvarsan his tertiary ulcers and new growths healed, softened, and disappeared. This was the first case of the series to receive the

drug, which was administered in a dose of only four decigrams deep in the muscles between the shoulders. Aside from some slight discomfort immediately following the injection, the patient never experienced any special pain, the tertiary lesions being all well within a month and remaining so for a year. Monthly serological tests have been made and at no time has the reaction been negative; in fact, most of the time it has been strongly positive. Seventy-one of the cases have not yet shown any clinical evidences of the disease.

Among these reported cases there were six cases of nerve syphilis: Epilepsy, tabes and spastic spinal paraplegia. Two of the last showed some improvement. In one patient, a female in the incipient stages of tabes, the symptoms were ameliorated and the disease was apparently arrested. The case of syphilitic epilepsy showed immediate and marked signs of improvement. The tertiary cutaneous lesions healed, and after one severe convulsion occurring shortly after the drug was administered, all the symptoms of epilepsy ceased and the Wassermann reaction became negative in three weeks. Nearly three months later she suddenly became maniacal and was removed to the Kings Park Hospital for the Insane; a Wassermann taken there gave a positive reaction; she is still at the State Hospital, her mental condition is considerably better than on her admission, and a late report states that she has not had any more epileptic convulsions.

Unless the involvement of the nervous system is of recent origin it is unwise and even risky to use salvarsan; every observer from Ehrlich down has warned against this. Salvarsan does not possess the power of restoring lost tissues; all it is supposed to do is to kill the luetic organism and in a certain measure to sterilize the system of the specific poison, but it cannot restore lost cerebral tissue any more than it can produce an imperceptible scar over the site of a chronic ulcerating cutaneous syphilide. Much has been written both pro and con regarding the effect of salvarsan upon the optic and auditory nerves; only three of my one hundred cases have shown any disturbance of hearing and this has been only a slight tinnitus. The drug was used in three cases of secondaries complicated with acute iritis, and the curative effect upon the eye symptoms was as wonderful as in the cases with cutaneous lesions. The case of double optic neuritis that I reported in a paper read before the Medical Society of the State of New York, April, 1911, has progressed until, at the present time, the patient is totally blind. His Wassermann reaction has been positive for over three months and he refuses further treatment. At first I feared that this eye symptom was due to the toxic effects of salvarsan upon the optic nerve, but recently I have learned that the patient has been in the habit of drinking "white whisky," a compound of methyl alcohol and aromatics, and I am now inclined to believe that this explains the occurrence of the eye complications in this case better than either the toxic action of the salvarsan or the degenerating changes of syphilis.

I think that any one who has had experience with this new drug is justified in sounding a word of warning against the indiscriminate use of salvarsan. This drug is not indicated in all cases of syphilis, or is our experience with it great enough to warrant its use in routine office work. There is considerable risk in giving this drug to office or dispensary patients, for serious accidents have happened even when every care and precaution had been taken and the patients had been surrounded by every hospital facility.

Until time has proved all the possibilities for good or bad that salvarsan possesses, it would be far better if all would agree to administer it only by means of the intravenous method, thereby avoiding all possibility of malpractice suits or the temptation on the part of the operator to report or promise anything that might not prove to be absolutely true.

From the study of these cases it may be concluded that although salvarsan is a powerful antisyphilitic, it does not cure the disease any more surely than does mercury, but it does relieve the clinical symptoms more quickly than any other known remedy. Therefore it should always be given when for any reason there is need for haste. One or more doses of salvarsan cannot insure a cure, and each patient should be put upon a course of mercury within three months after receiving the new remedy. Experience indicates that if syphilitic patients are so treated the possibilities are that the duration of treatment can be reduced to one-half of the time it formerly took to effect an apparent cure. The introduction of salvarsan has done much to emphasize the value of the Wassermann and other serological tests. All cases under antisyphilitic treatment should be subjected to these tests, for in many instances this is the only way one can gauge the effects of the remedy. One should always have in mind the possible occurrence of untoward by-effects; all of the precautions known to the modern scientific physician should be observed for the protection both of the physician and the patient. Salvarsan is practically useless in parasyphilitic nerve diseases unless it is given when the disease first manifests itself. The intravenous method of administration is the one of choice, especially when a prompt effect is desired. If it were not for the pain and discomfort, the symptomatic effect would be as sure when the drug is administered intramuscularly. The divided doses of the oily emulsion provides the only really safe method for office or dispensary administration.

47 Halsey Street.

CLINICAL TECHNIQUE FOR ENZYMES.

By FELIX VON OEFFLE, M.D.,

NEW YORK

All body liquids contain more or less enzymes and for the statement of health or sickness, it is very important to be able to estimate the amount of enzymes in comparison with the normal. The enzymes can be divided into five different groups: (1) Reductases, (2) oxydases (oxygenases and peroxydases), (3) albumin-splitting enzymes, (4) carbohydrate-splitting enzymes, (5) fat-splitting enzymes.

The reductases are not very important and, therefore, can be excluded in the clinical tests. For the four others we will give simple clinical tests.

The first thing to do is to get the enzymes concentrated and purified and without coloring matter. This is possible by the fact that enzymes are soluble in glycerol water and insoluble in alcohol without deteriorating them, if we work quickly enough.

Any material, dry or liquid, can be mixed with nine times its weight of 10 per cent. glycerol water. This is then centrifuged and the almost clear supernatant liquid now contains the original enzymes

ten times diluted. Now 50 c.c. of this liquid (equal 5 grams material) is mixed with 50 c.c. alcohol; the mixture is allowed to stand for five to ten minutes, and then centrifuged. We pour the supernatant liquid off and wash the sediment again with 40 to 50 per cent. alcohol, and centrifuge again. The sediment now contains the enzymes of 5 grams original matter.

The liquid is poured off carefully and the sediment again dissolved in 10 per cent. glycerol water. If the solution is 5 c.c., the concentration of the enzymes is the original concentration. If we get 10 c.c. solution, it is only 50 per cent. of the original concentration, etc. The value of the foregoing is that we have less of foreign matter than in the original material, and especially not so many pigments as in feces.

Oxydases Test.—Make a fresh solution of 0.5 per cent. metadiaminophenylene. Pour 5 c.c. in each test-tube and put them in an incubator with a temperature between 50° C. and 55° C. for about one-half hour. (If the temperature of the incubator is below 50° C. these tests are not so conclusive, and if it is above 55° C., it will be impossible to perform these tests properly.) After the tubes have been in the incubator the solution must be of the correct temperature and of a violet color. Now drop by drop add the enzyme extract received as above described. If oxydases are present the violet color turns gradually to brown. (If reductases are present, the violet may become more bright.) The oxydases can be divided into two groups, called oxygenases and peroxydases. The foregoing test is used for both; but the last one needs the addition of peroxide to react. The amount of extract used to get an exact color stays in an inverted relation to the amount of oxydases present.

Albumin-splitting Enzyme.—Make the following solution, which should be made fresh each day: 0.5 gram casein is mixed with 50 c.c. water and 5 drops hydrochloric acid. This is shaken up very well and the supernatant liquid decanted and thrown away. This purification is absolutely necessary because the purest caseins of the market contain albumoses and peptones, the presence of which will interfere with this test. To the remaining undissolved casein is added 1.0 gram Na_2CO_3, and 10 c.c. Fehling's copper solution, and 5 to 10 c.c. Fehling's alkaline solution, and the whole brought up to 1 liter with distilled water. Place 5 c.c. in each test-tube, put in incubator for about one-half hour. This should come out of incubator a very light blue color. Now drop by drop the enzyme extract is added until the color changes to violet, then pink, and finally disappears. One will get all these colors if a casein-splitting enzyme is present. The amount of enzyme is higher in inverse relation to the amount of extract used.

Carbohydrate-splitting Enzyme.—Take 5 grams of Kahlbaum's soluble starch, add about 100 c.c. distilled water, heat, stirring and shaking until there is a clear colorless solution. Then add distilled water to bring up to 1 liter. Drop by drop add a weak solution of iodine in potassium iodide (Lugol's solution) until the whole solution becomes a blue color. Pour 5 c.c. into each test-tube and put in the incubator for one-half hour. Then drop by drop add the enzyme extract. If a starch-splitting enzyme is present the color turns to violet, then pink, and finally disappears. The amount of enzyme is higher in an inverse relation to the amount of extract used.

Fat-splitting Enzyme.—Make a fresh solution of 1 per cent. Na_2CO_3, add few drops phenolphthalein solution. Then mix equal parts of the above solution either with melted butter or cotton-seed oil or olive oil. Butter is more sensitive than other fats. Shake very well, and if it does not become red, titrate it with NaOH solution until it becomes strongly red. Now place 5 c.c. in each test-tube and put in incubator for one-half hour. It will be two-stratified when removed from incubator. It must again be shaken until it becomes a homogeneous emulsion. Drop by drop the extract is added. The red color becomes paler and paler, and finally yellow if a fat-splitting enzyme is present. The amount of enzyme is higher in relation to the amount of extract used.

These tests are especially good for stomach contents containing regurgitated intestinal contents, or for duodenal contents, and also for feces. With matter of this kind other tests are difficult by reason of the color impurities.

326 East Fifty-eighth Street.

Hypophysis Medication in Obstetrics.—J. Parisot and A. Spire employed the extract of the entire hypophysis in ten cases of pregnant or puerperal women, with some success in causing increased uterine contraction. The extracts of the entire hypophysis or of the posterior portion of the gland have been used in cardiovascular and renal cases as a means of stimulating unstriped muscle.—*Annales de Gynécologie et d'Obstetrique.*

Serotherapy of Pertussis.—R. Duthoit has been experimenting with a serum prepared at the Pasteur Institute of Brussels for the treatment of whooping-cough. He has as yet treated but twenty cases but the results have been encouraging. The serum was injected only after the author had seen the patients in a typical paroxysm, and no other medication was used. The author noted carefully the number of attacks of coughing that occurred for the few days previous to the beginning of treatment, the patient keeping a record of the attacks. About ten centimeters of the serum were injected in each case, that is, one dose being given. No preventive injections have yet been made. The injections were given as early as possible in the disease. All of the injected cases were among private or dispensary patients, excepting one, which was treated in a hospital. After the injection the number of paroxysms diminished, especially at night, together with the duration of each attack. The cough was shorter, the whoop was absent, there was less fatigue, and no vomiting occurred. Expectoration was facilitated and became mucopurulent. The author believes that the remedy is of distinct value in the treatment of this disease. No bad effects have been noted.—*La Clinique.*

Foreign Physicians in Peru.—The Peruvian regulation requires that physicians who are graduates of foreign universities and who desire to practise their profession in Peru shall present themselves before the Faculty of Medicine of the University of Lima, bringing with them the diploma of the university from which they have been graduated, with the signatures properly legalized by the Peruvian Ministry of Foreign Affairs, and a certificate of personal identity issued by the minister or consul of the nation of the applicant resident in Lima. In the absence of these there must be produced a legal identification by witnesses. The fee to be paid before taking the examinations amounts to $493, which is the equivalent of the dues incurred by an alumnus receiving his medical instruction in the University of Lima. Anyone contemplating practising medicine in Peru can get information regarding these regulations from the Dean of the Faculty of Medicine of the University of Lima, Dr. Ernesto Odriozola.

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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PORTS OF ENTRY FOR PATHOGENIC GERMS IN ACUTE ARTICULAR RHEUMATISM.

IN a very small percentage of cases the evidence that acute articular rheumatism is set up by the entrance of a pathogenic germ through some accidental foramen in a mucous membrane seems almost conclusive. That there is nothing violent in this supposition should be apparent from the analogy of gonorrheal rheumatism which must proceed from infection through the urethra. It is none the less true, of course, that in the vast majority of cases no such infection from without can be demonstrated in connection with acute articular rheumatism which further may be widely differentiated from all forms of pseudorheumatism due to mild bacillemia, not only by the clinical picture presented but still more by the history of exposure and the evidence of a constitutional predisposition. The stubborn facts which constitute the notable exception to the type are as follows: the most clear cut cases of acute polyarticular rheumatism, including endocarditis or pericarditis, may follow at once upon a tonsillitis, intranasal lesion, or even a laryngitis, and in very rare instances may follow some cutting operation in the nose or throat.

At a recent meeting of the Verein für innere Medizin und Kinderheilkunde in Berlin (*Deutsche medizinische Wochenschrift*, February 29), Max Senator read a paper on so-called nasal rheumatism (abstracted in the MEDICAL RECORD, March 16, 1912) in which he reported a personal case fortified with two others from the literature which tended to show that a turbinectomy, even when done aseptically, may sometimes give rise at once to very severe yet typical acute polyarticular rheumatism. A full discussion followed the delivery of the paper. Gudzent had long investigated his cases of rheumatism from the tonsillar viewpoint and had isolated a series of cases presenting the association. These patients were all subjected to tonsillectomy with the hope of securing immunity from further attacks of rheumatism but all to no purpose. Although the tonsils were infected and manifestly in need of removal severe subsequent attacks of rheumatism were not prevented. A. Fraenkel went further and fared worse, for he removed infected tonsils in a patient who had not yet suffered from acute rheumatism, but was a victim of nephritis. Immediately following the tonsillectomy an acute endopericarditis developed, while the nephritis, which had always become worse with each attack of tonsillitis, suffered a marked exacerbation. Heymann saw no actual similarity between nasal and tonsillar rheumatism. The cases cited by Senator were nasal and traumatic. He had seen one case of this character, together with a nasal case which had no traumatic factor. This was one of polyarthritis which was clearly dependent on a chronic, periodically exacerbating sinusitis of the maxillary antrum. The existence of a tonsillar rheumatism had long been conceded and he had had one case of recovery following tonsillectomy. Kraus had never seen a case of rhinogenic rheumatism but said there was such an affection as laryngeal (laryngogenic), rheumatism. He would never ablate an infected tonsil while it was acutely inflamed. In his experience tonsillar rheumatism was mostly of the subacute relapsing type, connected with the presence of a pocket of pus in one of the tonsils. The indication is to deal with this pocket, not necessarily by ablation. F. Meyer studied tonsillar rheumatism bacteriologically in 1899. Since that time he has collected notes of thirty-five cases of articular rheumatism associated with lesions of the nose and tonsils. Streptococcus sore throat ought to immunize a patient against successive attacks in time, but this is open to doubt. The speaker also referred to the occasional cases of appendicitis of apparent tonsillar origin. Senator in closing referred to the association of intranasal, tonsillar, and laryngeal lesions on the one hand with articular rheumatism and appendicitis on the other as furnishing documents to the essentially infectious nature of rheumatism.

THE PHYSICIAN AS AUTOCRAT.

THE Madeira-Mamore Railway is now building in the Amazon country, in order that the products of this region, especially rubber, may the more expeditiously be conveyed to civilization. This is a region dreadful by reason of its dangers from savages, from inimical animal life, and from the poisonous vegetation; and one most insalubrious because of its equatorial fevers. There are reported by the *New York Evening Post* to be six thousand men, of most diverse races and temperaments, employed in this work; and the bodies of some two thousand more have been buried along the line, or have been sunk in the black river (the Rio Negro) or in the muddy Amazon.

Physicians are engaged to keep fever from these workers, and to dose those who have unfortunately experienced the bite of the malaria-transferring mosquito. They are medicated in order that they may work. If, however, they sicken beyond the ability for work they are humanely sent back down the river to the coast. In the Amazon jungle railway building is a matter of sanitation rather than of engineering, and the makers of the railway now under construction there, like the builders of the Panama Canal, have done what they have done with the doctor as pioneer. Each force of workers has its physician, armed with quinine in one hand, a revolver in the other, to see, as a matter of choice,

that the medical bullets enter the laborer's economy at the rate of ten grains a day; he who does not take his medicine at once, be he either digger or engineer in charge, gets his "time" and his dismissal. The physician is "boss of the line." His office or field hospital may be a palm shack or a box car; but one or the other is a part of each construction camp, and his authority is supreme. If any among those under him fall seriously sick despite his ministrations, he orders them back to the big, well-equipped modern hospital at Porto Velho, which has a force of physicians and trained women nurses, mostly from the United States. Here the Amazon mosquito is screened against. All the houses of Americans are double-screened, and even their shacks are screened. The system is not yet perfect enough to make the laborers use screens; for many among them are contemptuous of mosquitos, and quinine must give them whatever immunity they get. The latest reported order sent in by the company building this railway was for 1,000,000 five-grain capsules, which forced the recipient drug house to beg for "a few months' warning" before receiving another order of the same kind.

Here, again, in the Amazonian wilds, is demonstrated what for a score of years past has been manifest in India, in Africa, in the West Indies, and most resplendently in our Canal Zone. Formerly the hot lands were death to the white man; to-day the medical missionaries of this era are demonstrating by their practice of the modern sciences of bacteriology and prophylaxis that the Tropics can be freed of infection and pestilence, that the earth, between Cancer and Capricorn, can be made habitable for the white. When in the torrid region the doctor has done his work, the rest may safely follow—but not until then. And it is, indeed, a policy of enlightenment which prompts those exploring and exploiting the Tropics to give the physician paramount authority in these expeditions.

HUMAN BLOOD SERUM IN THE TREATMENT OF HEMORRHAGIC DISEASE AND OTHER CONDITIONS.

THERE is a large group of morbid conditions which though differing in their fundamental pathology, nevertheless present one common clinical manifestation, namely the tendency to spontaneous hemorrhage. Within recent years many cases have been reported in which successful results followed the use of transfusion of blood in hemorrhagic disease of the newborn. The tendency nowadays, however, is to substitute for the difficult methods of transfusion of blood the comparatively simple method of using ordinary human blood serum, obtained preferably from a near relative and injected subcutaneously into the affected individual. This method is equally as efficacious as the former, and its simplicity has suggested its applicability in a wide group of disorders. Not only in hemorrhagic disease of the newborn, but also in hemophilia, Henoch's purpura, and pernicious anemia, human blood serum has been employed with good results.

The expression "melena neonatorum" should be discarded in favor of the more scientific term hemorrhagic disease of the newborn, as pointed out by W. R. Nicholson, in the *Therapeutic Gazette*, February 15, 1912. In this condition the symptom hemorrhage may be but a minor manifestation of the morbid condition during life, and in fact may be revealed only on post-mortem examination. The author believes that this condition is an infective one, and that the infection enters by way of the child's mouth during the progress of parturition. He reports a case in which recovery followed the use of human blood serum.

J. E. Welch was the first to report two years ago the brilliant therapeutic results obtained by this form of therapy. In a further communication in the above-mentioned journal he states that the fundamental condition in these cases is bound up with the endothelium lining the blood vessels and a disturbance in the balance of the ferments contained in these cells is the immediate cause of the hemorrhages. This disturbance he believes is due to malnutrition. Hemorrhage so commonly observed in cases of inherited syphilis and of bacteriemia can be accounted for in this way. The condition is primarily a disease of the blood and the effect of normal blood serum in controlling these hemorrhages seems to be through the nutritional effect upon the endothelium lining the blood-vessels. The normal blood serum contains molecules whose receptors fit those of the endothelium cells. In this manner the nutritive constituents of the blood serum are capable of being taken up by the cell body without any energy being wasted in the process of digestion. The nutrition being thus easily restored, the balance of ferments is reestablished and the hemorrhage is controlled. In various hemorrhagic conditions associated with sepsis and in any other condition in which there is a disturbed equilibrium of the ferments contained in the endothelial cells the injection of human blood serum has amply demonstrated its efficacy.

UNTOWARD EFFECTS OF SALVARSAN.

NUMEROUS attempts have been made to explain certain untoward effects accompanying the administration of salvarsan; effects which are rather infrequent and but seldom serious, yet detract somewhat from the value of this sovereign remedy. The use of saline solution or of water contaminated by the bodies of dead bacteria, the failure to neutralize properly the acid solution of salvarsan, too high or too low a temperature of the solution, the administration of arsenic in other forms previous to the use of salvarsan, are among the causes of untoward effects that have been brought forward, and have in a measure explained them. That great care is needed in preparation of the salvarsan solution used for intravenous administration is further shown by the researches of R. Gonder, published in *Russkii Vrach* of February 4, 1912. Gonder has shown that solutions of salvarsan are extremely unstable in the presence of other substances, and the use of freshly distilled water is only one step in forestalling untoward effects. Thus minute traces of calcium chloride are enough to form a precipitate in a neutral solution of salvarsan, a precipitate

which may work great injury when injected because of the small emboli it causes. Salvarsan solutions containing small amounts of calcium salts proved more toxic than pure solutions of the drug.

Now, while freshly distilled water is used for making salvarsan solutions, yet the curette, needle, and syringes used are usually sterilized by boiling in tap water and in sterilizers that are frequently coated by a layer of salts deposited from previous sterilizations of instruments. Enough calcium salt may thus find its way into the instruments to increase the toxic effect of salvarsan and explain some of its injurious effects. Of course, the individuality of the patient is the deciding factor in the appearance or absence of such effects, and this may explain the difference in opinion among men who have given but a few injections and have had good or bad "luck" with them. Gonder's paper shows the minute care which is necessary in preparing for intravenous administration of salvarsan, and such care should certainly be taken in justice to the originator of the remedy, and especially in justice to the patient who submits in all confidence to the use of the new drug. Boiling instruments in freshly distilled water is surely not too complicated a procedure for well-equipped hospitals or sanatoria, and it is only in such places that intravenous injections of salvarsan should be given.

DIAGNOSIS OF TUBERCULOSIS OF THE BRONCHICAL LYMPHNODES IN CHILDREN.

Behring's contention that the gastrointestinal tract serves as the most frequent portal of entry of the tubercle bacillus in children led to a great deal of careful pathological work in Germany with the result of almost completely disproving his findings. The old belief that tuberculosis of children is usually pulmonary in origin has been strengthened, and yet the route of infection has been more clearly defined. It has been shown that the lymphnodes gathered about the hilus of the lung are frequently the primary seat of infection, tubercle bacilli inspired into the bronchi being taken up by these nodes, and finding their way thence into the pulmonary tissue or into the general circulation. The diagnosis of "hilus tuberculosis" has therefore become of great importance, but the usual physical methods of such diagnosis, however successful with some *virtuosos* of percussion and auscultation, have proved inadequate for the great majority of physicians to whom children are first brought for advice.

Writing in the *Wiener klinische Wochenschrift* of February 15, 1912, Erich Sluka shows how important in this connection are repeated *x*-ray examinations of the lungs. Of course suspicious shadows at the site of the pulmonary hilus, seen but once, may be explained by acute enlargement of the lymphnodes, such as often follows infectious diseases of childhood. When, however, the same shadows are repeatedly seen in a child who seems to be below par, perhaps coughs a little, or is slowly growing paler and weaker, tuberculosis of the lymphnodes must be suspected. That such suspicion is well warranted has been amply shown by numerous autopsies, especially by Weigert and by Hamburger, who have demonstrated tuberculous infection of the lymphnodes in children in whom the infection runs a latent course until the final catastrophe in the shape of an acute miliary tuberculosis of the lungs or of a tuberculous meningitis. These accidents may be interpreted as massive autoinfections, a wall of a blood-vessel or of a bronchus being slowly eroded by the progressive caseation of a neighboring lymphnode. The *x*-ray examination should serve, then, more or less as a prophylactic measure. While existing tuberculosis of the lymphnodes may be shown by it, further damage may be prevented by the usual hygienic and sanitary measures and especially in shielding the child from such infections as measles, whooping-cough, etc., that break down his partial immunity to the spread of tuberculosis.

Nephrotyphus.

That Eberth's bacillus is able to attack the organ of least resistance and give rise to the picture of a localized affection is of course well known. We have pneumotyphus and pleurotyphus and cholecystitis typhosa, which may be part of an ordinary typhoid syndrome or a purely isolated lesion, recognizable only through the agglutination test and the presence of the bacillus in the secretions. That the kidneys should be attacked by the latter is not strange, for the case is known with which the *Bacillus coli* can set up both ascending and descending pyelonephritis, the latter apparently through lymphatic propagation from the intestine; and it might be supposed that Eberth's bacillus is sometimes capable of similar pathogenicity. But a case recently described by Pollitzer at a medical meeting in Vienna (*Berliner klinische Wochenschrift*, Feb. 12) seems of a different character, and one which deserves especially the designation nephrotyphus. The patient, a woman, was taken with a chill and other evidences of toxemia, enlarged spleen, and pain in the left lumbar region. There was albuminuria. The diagnosis having been placed beyond doubt, the author seeks to explain the peculiar course of the disease by the vagotonic constitution of the patient.

Athletes and Long Life.

In answer to the query, "Do athletes die young?" Dr. William G. Anderson, director of the Yale University gymnasium, has given the results of a study of the college records for fifty years. A comparison of the mortality of specialized athletes with the general graduate who has not distinguished himself in athletics shows in favor of the athlete. Of 10,922 students in academic and Sheffield classes from 1855 to 1905 inclusive, 1,406 have died, and 9,516 are still living. This shows the percentage of deaths to be 12.6 per cent. Of the 207 athletes from 1855 to 1905, only 58 are dead, a percentage of 7.2, or a little over half that of the general graduates. Dr. Anderson concludes that the Yale athletes do not die young, nor is heart disease a leading cause of death in them. Lung trouble is the cause of the greatest number of deaths, but the percentage of men dying from these causes is not greater than the expected death rate among non-athletes from similar causes. However, although the athlete is not short-lived, the statement is not warranted that he owes his longevity to athletics.

News of the Week.

Practical Eugenics.—From Chicago comes the announcement of a definite step in the direction of the control of marriage, the dean of the cathedral of the Protestant Episcopal Church in that city having declared that henceforth no marriages shall be permitted in the cathedral unless both the man and woman are able to present certificates of health from a reputable physician to the effect that they are normal physically and mentally, and are not suffering from an incurable or communicable disease. This step, the dean announces, has been taken only after months of study of the situation, and it is believed that the stand will meet with the approval of the clergy generally, all of whom must have long felt the undesirability of being a party to the marriage of persons who, because of their physical condition, should never be allowed to enter the married state. The innovation has resulted at least in much discussion of the subject, the approval of many being freely given, and the practicability of the plan only being called into question.

Measles Prevalent.—Reports of the Department of Health of New York show that there are about twice as many cases of measles in the city as during this time last year, although the department does not admit that there is anything approaching an epidemic. During January and February there were 6,860 cases of the disease reported, as against 3,006 for the same months of 1911.

For Pure Water.—Provision for the protection of the Croton water supply and of all water supplies in the State which are drawn from watersheds traversed by railroads is made in a bill introduced in the New York Legislature on March 27. The bill provides that after January 1, 1913, the cars of every railway crossing a watershed from which any public or private water supply is obtained must be so equipped as to prevent all possibility of contaminating the supply.

Smallpox Epidemic.—There were at the end of March twenty-three cases of smallpox in Naugatuck, Conn., eleven cases having developed within a short time.

Surgery Under Difficulties.—While the surgeons were at work in the operating room of the Bushwick Hospital, Brooklyn, on March 26, a fire broke out in another part of the hospital building, a frame structure accommodating twenty-six patients. The fire was extinguished before great damage was done and without the necessity of removing any of the patients, and the operation was continued through the excitement of clanging bells and shouting firemen, although the dense smoke made it necessary to open windows in the operating room.

Newspapers Help Tuberculosis Fight.—According to an estimate of the National Association for the Study and Prevention of Tuberculosis, one and a half million inches of space in the columns and newspapers of this country are devoted each year to aiding by publicity in the fight against tuberculosis.

Wood Alcohol Poisoners.—In Berlin, Germany, five men accused of being responsible for wood alcohol poisoning of many inmates of the Municipal Night Shelter for the Homeless in the city were placed on trial on March 26. The indictment specifies eighty-nine deaths and five cases of total blindness. The charges are of violation of the pure food law and fraud merely. The accused includes a druggist who prepared the poison and two saloonkeepers who mixed and sold the stuff as rum and other popular cheap drinks.

Radium Standard.—It is stated that at the request of the international commission for fixing a radium standard, Mme. Curie has prepared a glass tube three centimeters long and three millimeters in diameter, and that the exact amount of radium contained in this tube will be fixed as the standard of weight.

Heredity and Hare Lip.—Dr. Charles B. Davenport and Dr. W. F. Blades of the Eugenics Record Office, Cold Spring Harbor, N. Y., announce that they are engaged in a study of heredity of hare lip, cleft palate, and associated malformations of the oral cavity, and they solicit correspondence with physicians who can supply histories of families more than one member of which has an oral defect. Such data will be held as strictly confidential and will be used solely to aid in the solution of a problem which is of humanitarian as well as of scientific interest.

Candidates for Nobel Prize.—The Academy of Science, the Medical Faculty of the University of Havana, and several other scientific societies and institutions have passed a joint resolution in which the names of Dr. Carlos J. Finlay and Dr. Aristides Agramonte are presented to the Nobel Prize Commission as candidates for the prize to be awarded in 1912. The resolution points out that Dr. Finlay was the first to claim that yellow fever is transmitted by the mosquito, while Dr. Agramonte is the sole survivor of the United States Army Board composed of Drs. Reed, Carroll, Lazear, and himself, which demonstrated the correctness of this theory. It is suggested that the prize for this year be divided between these two men whose work was thus so directly complementary.

Resignation of a Hospital Staff.—The entire consulting staff, consisting of ten physicians, of the Municipal Hospital for Tuberculosis of Lawrence, Mass., has resigned. The trustees of the hospital have also retired, the action of all being taken because of the decision of the director of public health in determining that the hospital should come under the direction of the city physician and his staff.

Charitable Gifts.—The Northumberland and Durham County (Ontario) Councils on March 12 decided to accept the first plan of Mr. John Helm's will, by which the Port Hope Hospital receives $20,000; the Cobourg Hospital, $20,000; the Hospital for Sick Children, Toronto, $6,000; the Toronto General Hospital, $50,000, and the Muskoka Free Hospital at Gravenhurst, $6,000. The alternative offer was $100,000 for the establishment of a hospital in Port Hope, and the decision as to which was the better plan was left to the Council. The American Museum of Safety has received a gift of $5,000, which will enable it to purchase the famous Sommerfield collection of wax models illustrating occupational diseases and industrial poisons, now in the Berlin Museum of Safety. The collection will probably be installed in the fall. By the will of the late Walter D. Lebrenz of Philadelphia the sum of $1,000 is bequeathed to the Rush Hospital for Consumptives.

New Hospital for Colored Persons.—The new hospital building for the Leonard School of Medicine of Shaw University, Raleigh, N. C., has just been completed at a cost of $47,000. It is operated in connection with Shaw University, the Baptist

school for negroes at Raleigh, and is entirely for the treatment of negro patients.

To Enlarge a Medical Library.—The Hartford (Connecticut) Medical Society, at its meeting on March 18, voted to build an addition on the rear of the Hunt Memorial building, which will cost about $12,000 and will be large enough to house approximately 05,000 volumes. The building will be of fireproof construction, and will probably be ready about September 1.

A Graduate School of Medicine at Harvard.—In accordance with a recommendation from the Faculty of Medicine, the Corporation of Harvard College voted on May 8, 1911, to establish a Graduate School of Medicine. This school will take control of all graduate instruction in medicine October 1, 1912, and will be administered by a separate Dean and Administrative Board. It will thus be on an equality with the Medical School proper and the Dental School. Dr. Horace D. Arnold of Boston has been appointed Dean of the Graduate School. The work of organization has begun and plans are being developed which promise to make this an important move in medical education.

Memorial to Dr. Long.—On March 30 there was unveiled at the University of Pennsylvania a bronze medallion in memory of Dr. Crawford Williamson Long, who was graduated from the medical school in 1830, and who, on March 30, 1842, just seventy years before, for the first time in the history of surgery, made use of ether as an anesthetic for surgical purposes. The medallion, which was sculptured by Dr. R. Tait McKenzie, was unveiled in the hall of the Medical Laboratories Building, and addresses were made by Dr. J. William White, former professor of surgery at the University of Pennsylvania, and by Dr. J. Chalmers Da Costa, professor of surgery at the Jefferson Medical College, Philadelphia.

Sir Bertrand Dawson, Surgeon to King George of England, arrived in New York on March 29 by the steamship *Mauretania* on a tour of inspection of hospitals and medical institutions in this country.

Dr. Joseph S. Gibb of Philadelphia has resigned his professorship of diseases of the nose and throat in the Philadelphia Polyclinic and has been elected professor emeritus.

Dr. Elie Metchnikoff, director of the Pasteur Institute of Paris, has been elected a member of the French Academy of Sciences.

The Fifth Weir Mitchell Lecture of the College of Physicians of Philadelphia was delivered on the evening of March 29 by Dr. Wm. H. Howell, Professor of Physiology in Johns Hopkins University, and dealt with the subject of "The Factors Concerned in the Coagulation of Blood and Their Variations under Pathological Conditions." He pointed out that fibrin, on which blood coagulation depends, was a product of the interaction of fibrinogen and thrombin in the presence of calcium. The fibrinogen is a soluble proteid present in the blood, while the thrombin is preceded by a substance prothrombin derived especially from blood-platelets and activated by thrombokinase or thromboplastin, a derivative of blood-cells and tissue-cells. In addition the blood contains a substance, antithrombin, which acts normally as a corrective in the direction of antagonizing clot-formation. Changes in the proportions and activity of these several bodies play some part, not entirely demonstrable, in the mechanism of conditions like thrombosis and of diseases like purpura.

Dr. Fred Brush has resigned the superintendency of the New York Post-Graduate Medical School and Hospital, to become superintendent of the Burke Relief Foundation, and engage in the planning and organization of the Convalescent Hospital, to be erected at White Plains, N. Y., on the sixty-acre plot of land recently purchased. McKim, Mead & White are the architects, and a new type of institution and work for the care of the city's sick will be established.

Dr. R. M. Pearce, Professor of Research Medicine at the University of Pennsylvania, will deliver at the Syracuse Medical School the annual Alpha Omega Alpha address of the Gamma of New York Chapter. The title of the address is "Medical Education." The address will be delivered at the annual public meeting of the chapter at 8:30 P.M. At 6:30 P.M. Dr. Pearce will be the guest of honor of members of the fraternity at their annual dinner.

The Polyclinic Hospital.—The Trustees and Medical Staff of the Polyclinic Hospital invite the members of the medical profession to an inspection of their new building, 341-351 West 50th street, from 3 to 6 P.M., on the 17th, 18th, 19th and 20th of April. The hospital will be opened for patients on April 22. The ambulance service will be inaugurated on May 1. The formal dedication of the school and hospital buildings will take place on Saturday, June 8, the day after the adjournment of the annual session of the American Medical Association.

Ambulance Crash.—While crossing Fourth avenue, Brooklyn, an ambulance from the Norwegian Hospital in that city conveying a patient to the hospital, came into collision with a Fifth avenue trolley car and was wrecked. The patient, a baby of two years, and the driver were unhurt, but the ambulance surgeon, Dr. Carter, suffered two broken ribs and internal injuries.

"Healer" Found Guilty.—Willis Vernon Cole, a Christian Science practitioner, on trial in the Criminal Branch of the Supreme Court of New York, was on March 30 found guilty of violating the statute relating to the practice of medicine, the jury reaching this verdict after only forty-five minutes' deliberation. As this was a test case Justice Seabury imposed a nominal fine of $100, and the case will doubtless be carried to the higher court. The defendant, during the course of the trial, admitted that he had had over 3,000 professional visits in a year.

Endowment Fund for Homeopathy.—A movement is reported to be on foot having for its object the raising of a $1,000,000 fund to be used for the endowment of homeopathy in the United States.

American Medical Editors' Association.—The annual meeting of this society will be held at Atlantic City, N. J., on June 1 and 3, with headquarters at the Marlborough-Blenheim Hotel. An attractive program is being prepared. The annual banquet will be held on the evening of June 3. Every editor and those associated in medical journalistic work are cordially invited to attend and take part in the proceedings.

The Harvey Society.—The Annual Meeting of this society will be held at the College of Physicians and Surgeons, 437 W. 59th street, on Wednesday, April 10, at 8:30 P.M.

South Carolina Medical Association.—The annual meeting will be held in Columbia on April 16 to 18, under the presidency of Dr. J. Wilkinson Jervey of Greenville. Dr. E. A. Hines of Seneca is the secretary of the society.

Ninth District (Georgia) Medical Society.—At the annual meeting held in Gainesville on March 21 the following officers were elected: *President*, Dr. Vincent D. Lockhart of Gainesville; *Vice-President*, Dr. L. C. Allen of Hoschton; *Secretary-Treasurer*, Dr. A. D. White of Gainesville.

Prof. Adelchi Negri, famed for his studies on rabies and for the discovery of the so-called Negri bodies, died in Pavia, Italy, on February 10. For many years an associate of Professor Golgi in the Institute of General Pathology at Pavia, Professor Negri contributed greatly to the elucidation of many problems in pathology and bacteriology, and, in addition to his studies in rabies, had made valuable observations on the structure of glands and of the red cells, on the activity of vaccines, on the filtration of vaccine virus, and on the regeneration of the parathyroid.

The Late Dr. John S. Hawley.—The Hospital Graduates Club desires to place on record its sense of loss in the death of Dr. John S. Hawley. Dr. Hawley was one of the corporate members of the organization and at his own request was transferred to the associate list in March, 1891. Though of late years he was unable to meet with us often, owing to ill health, his colleagues, especially the older members, entertain a lively recollection of his admirable traits of character. He was the soul of honor, abominated all pretense and professional bombast, had in his make-up an unusually large amount of the milk of human kindness, and was ever ready to help those less fortunate in life than himself. Withal he was a keen wit and on the social occasions of the club was ever ready to contribute to the success of its programs. Some of his contributions are indeed memorable in the literary efforts of the local medical profession. We shall always remember his genial disposition, good fellowship, and lovable traits of character. Therefore be it *Resolved*, that this tribute be entered in full on the club records, and *Resolved*, that it be published in the local professional journals and a copy sent to the survivors of Dr. Hawley's family. (Signed) James E. Newcomb, Arthur B. Townshend, William Kelly Simpson, Committee.

Obituary Notes.—Dr. James H. Sternberg of Waterloo, N. Y., a graduate of the Jefferson Medical College, Philadelphia, in 1856, died on March 26, after a short illness, aged 79 years.

Dr. Edmund K. Goldsborough of Washington, D. C., a graduate of the Medical College of Virginia in 1864, a surgeon in the Confederate Army after his graduation, and for many years a practitioner in Washington, died at his home after a short illness on March 14, aged 69 years.

Dr. Jessup David Bell of San Antonio, Tex., a graduate of the Pulte Medical College, Cincinnati, Ohio, in 1890, and a member of the American Medical Association and the Texas State and Berear County Medical Societies, died at his home of pneumonia on March 10, aged 44 years.

Dr. Floyd W. Rogers of Newport, R. I., a graduate of the University of Maryland School of Medicine, Baltimore, in 1902, and a member of the American Medical Association and the Rhode Island State and Newport County Medical Societies, died at the Newport Hospital, on March 26, aged 53 years.

Dr. Alonzo D. Hill of Dexter, Mo., a graduate of the Miami Medical College, Cincinnati, in 1866, died after a short illness, on March 24, aged 75 years.

Dr. Alexander E. Garceau of San Francisco, Cal., a graduate of the University of Vermont College of Medicine, Burlington, in 1881, and a member of the American Medical Association, and the California State and San Francisco County Medical Societies, died after a short illness, on March 14, aged 58 years.

Obituary.

JOHN HERR MUSSER, M.D.

PHILADELPHIA.

Dr. John H. Musser died suddenly from heart disease at his home in Philadelphia on Wednesday of this week, at the age of 55. He was born in Strasburg, Pa., in 1856, obtained his medical degree from the University of Pennsylvania in 1877, and had practised in Philadelphia ever since. Dr. Musser was a Professor of Clinical Medicine in the University of Pennsylvania, and was connected with the Philadelphia, University, and Presbyterian hospitals. He was a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, the American Medical Association (of which he was president in 1904), the College of Physicians of Philadelphia, and a number of other societies, local and national.

Dr. Musser was especially noted as a diagnostician, and had contributed much of great value to this branch of medical literature. He came from a long line of practitioners, not only his father, but his grandfather and great-grandfather having been physicians.

Correspondence.

GONORRHEAL AUTOTHERAPY AND BUCCAL GONORRHEA.

To the Editor of the Medical Record:

Sir:—Whatever may be said of Dr. Charles H. Duncan's paper in the Medical Record of March 30, "Gonorrhea: Its Prevention and Cure by Autotherapy," it is certainly unique. I am not ready at this moment to criticise it. The author's three cases are not only insignificant in number but are in themselves inconclusive. Still I do not belong to those who will condemn and ridicule a treatment merely because it is novel and at first glance looks somewhat bizarre or even absurd. There is one statement, however, to which I wish to take exception. It is the statement that "the possibility of gonorrheal infection of the mouth is so slight as to be practically disregarded." That gonorrhea of the mouth is rare is true, but that the danger of infection is so slight as to be disregarded is far from being true. The author has apparently not studied the literature of the subject very thoroughly. Otherwise he would know that undoubted cases of gonorrhea of the mouth have been reported. It is sufficient to mention Dohrn, Cutler, Hölder, Widal, Petit, Colombini, Jurgens, etc. It must also be borne in mind that the conditions for buccal infection were never so favorable as those that would prevail if the author's method of treatment would become universal. Even the lowest prostitute would object to practise coitus *ab ore* with a man suffering from gonorrhea in the active stage. And to deposit pus teeming with gonococci on the tongue or the oral mucous membrane, containing perhaps fissures or erosions, is certainly a risky procedure. Of course the pus could be administered in pill or capsule form, but this is an-

other matter. I repeat, I am not in any way discussing the therapeutic value of this unique method. I am only objecting to the author's minimizing the dangers of buccal infection or the prevalence of buccal gonorrhea.

WILLIAM J. ROBINSON, M.D.
12 W. MORRIS PARK WEST.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

VIVISECTION COMMISSION'S FINAL REPORT—HOSPITALS AND INSURANCE ACT—ST. GEORGE'S HOSPITAL LABORATORY QUESTION—ELEPHANTIASIS TABLET TO LISTER IN R. C. S.—BATH MINERAL WATER — TELEPHONES AND TUBERCULOSIS—OBITUARY.

LONDON, March 15, 1912.

THE Royal Commission on Vivisection, which was appointed in 1906, has at last issued its final report. The document has only been in circulation a couple of days, and expressions of public opinion are generally favorable to it as the result of an impartial and thorough inquiry. It is true that the voice of the fanatics is being raised by the officials of their societies who may find their salaries in danger, for the report is a heavy blow to the antis. The main conclusion reads thus: "After full consideration we are led to the conclusion that experiments upon animals, adequately safeguarded by law faithfully administered, are morally justifiable and should not be prohibited by legislation." The Commission finished taking evidence in March, 1908. The evidence taken extends through five bulky blue books, and some time was lost by the decease of the first chairman rendering it necessary to go over much work a second time. The following are the recommendations of the Commission: (1) An increase in the inspectorate; (2) further limitations as regards the use of curare; (3) stricter provisions as to the definition and practice of pithing; (4) additional restrictions regulating the painless destruction of animals which show signs of suffering after experiment; (5) a change in the method of selecting and in the constitution of the Advisory Body to the Secretary of State; (6) special records of experimenters in certain cases. The eight members of the Commission sign the report, which may therefore be called unanimous; but three make some reservations, and one of these has written a further memorandum as long, almost, as the report itself. As to the above recommendations, on (1) the appointment is advised of a whole-time chief inspector and three others, or of such a number of part-time inspectors as would be equivalent, and they should be "qualified medical men of such position as to secure the confidence both of their own profession and the public"; on (2) there is some difference of opinion, but it is agreed that if curare is to be permitted an inspector or a nominee of the Secretary of State should be present and satisfy himself that the animal is throughout completely anaesthetized. Further, as to safeguards against pain, it is recommended that an inspector should have power to order painless destruction of any animal which shows signs of considerable pain after experiment. Also, the experimenter himself should so destroy an animal suffering severe pain which is likely to endure, although the object of his experiment has not been attained.

In commenting on the evidence the Commissioners declare they believe that holders of licenses and certificates have with rare exceptions endeavored with loyalty and good faith to conform to the law, and they condemn the methods of the fanatics thus: "We desire to state that the harrowing descriptions and illustrations of operations inflicted on animals, which are freely circulated, are in many cases calculated to mislead the public, so far as they suggest that the animals were not under an anaesthetic. To represent that animals subject to experiment in this country are wantonly tortured would, in our opinion, be absolutely false." The evidence of some of the antis is closely analyzed, *e.g.* Mr. Coleridge's complaint about Dr. Schäfer's drowning experiments is disposed of in this way: The certificate authorized ten unanesthetized dogs being submerged and resuscitated. Only two, however, were used, and both were drowned without resuscitating, and "so far as we can judge, suffered no more pain than stray dogs that are destroyed by drowning." Of one of Miss Hageby's cases the Commissioners say: "It is obvious that this statement was founded on a misapprehension on the part of Miss Hageby, who mistook." * * * Concluding this part, the Commissioners say: "The witnesses have either misapprehended or inaccurately described the facts."

Under the heading "Progress of Science and Results of Experiments" we are told that notwithstanding some failures, valuable knowledge has been acquired in regard to physiological processes and the causes of disease. Further, "useful methods for the prevention, cure, and treatment of certain diseases have resulted from investigation on living animals, and there is ground for believing that similar methods, if pursued in the future, will be attended with similar results."

With regard to the classes of animals on which experiments might be made there were differences of opinion in the Commission. Some would prefer the protection granted to horses, asses, and mules should be extended to dogs, and some would like dogs to be excluded altogether from experimentation. But "if any alteration be made in the existing procedure the majority would agree that the special enactments now applicable to horses, asses, and mules might be extended to dogs and also to cats and anthropoid apes."

In the House of Commons a motion on another subject having been ruled out of order gave an opportunity for a motion, of which notice had been given, to exempt altogether the dog, as the "particular friend of man," from experiments. This was urged by one who did not object to vivisection in other cases. Mr. McKenna, for the Government, declined to express any opinion on the ground that the Commissioners' report had only appeared that morning, after six years' investigation, and there had been no time to give it due consideration. The subject was, therefore, dropped.

At hospital meetings the effect of the Insurance Act is generally referred to as injurious. The Hon. A. Brodrick, presiding at R. Westminster Ophthalmic Hospital, said everyone connected with hospital administration must feel its effects. Mr. Lewis, in seconding the report, said he was afraid the voluntary hospitals would shortly have to be taken over by the State, and then they would be managed in the way the State usually managed such institutions. Sir E. H. Currie suggested that, as the hospital had a discretionary fund, it might be as well to charge that with the bacteriological expenses—a suggestion the treasurer said his committee would consider.

You may remember that the Lord Mayor under-

took to inquire into the allegation that St. George's Hospital spent too much on the bacteriological and pathological departments, for which reason the King's Fund withheld their grant. At the meeting of the council of the Sunday Fund at the Mansion House last week the Lord Mayor reported that he had carefully investigated the matter and was convinced that the work done in these departments is as necessary as in others for the welfare of the patients, that the proportion paid by hospital and school is a fair one and the sums expended by the hospital are properly taken from the general funds, being for the direct treatment of the patients.

A supplement to the *Journal of the London School of Tropical Medicine* is devoted to the report of Dr. P. H. Bahr on Filariasis and Elephantiasis in Fiji. He urges that destruction of mosquitoes should be efficiently carried out as the only known means of prevention. He points out that the pathological expression in the Fiji islands as elsewhere is elephantiasis; that the precise method of its production has yet to be determined; that a large proportion, 27.1 per cent., of Fijians harbor microfilariæ in their blood and there are reasons for believing that, at one time or another, nearly every Fijian is the subject of filariasis; that the evidence is insufficient to decide whether or no the filaria in Fiji is a new species; and medicinal doses of parasiticide drugs have no manifest influence on the circulating microfilariæ.

Yesterday at the Royal College of Surgeons the council passed a vote of condolence with the relatives of the late Lord Lister. The college is a specially appropriate place for the recognition of his great work, but you may take it that not only in all surgical, medical, or scientific institutions has his death called forth expressions of admiration but similar testimonies have been offered in public assemblies of all kinds, not only here but in all countries. The council also decided to place a tablet in a suitable position within the walls of the college "to serve as evidence to future generations of the honor, respect, and reverence in which the great founder of aseptic surgery was held by his contemporaries and immediate successors."

Sir William Ramsay has been investigating the mineral waters of Bath and on Monday gave an account of his research at a public meeting of the Corporation. He has found an appreciable quantity of niton and gave a full exposition of this radium emanation, sufficiently technical to puzzle the general reader. So all the week the newspapers have been endeavoring to explain the properties of this substance and to illustrate the infinitesimal quantities in which it can produce effects. The people of Bath are delighted to have a new reason for the efficacy of their Spa and especially to learn that the niton in the gas of their waters is four times greater than in that of Buxton.

In consequence of statements as to the possibility of transmitting tuberculosis through telephone mouthpieces, Dr. Spitta for the postmaster-general has carried out an investigation at St. George's Hospital. The work was carried on throughout the year 1911 and a final report has now been received from Dr. Spitta showing the results to be all negative. Not only were telephones in ordinary use examined but some in a sanatorium used only by patients and neither cleaned nor disinfected during the course of the inquiry. Dr. Spitta concludes that "the transmission of tuberculosis through the medium of the telephone mouthpiece is practically impossible." I think a similar result was obtained from an inquiry on your side some time ago.

Surgeon Lieut.-Col. Edward Mason Wrench, F.R.C.S., J.P., died on the 12th inst. at the age of seventy-eight. He was a surgeon in the Crimean War and after retirement often lectured on that campaign. He was a member of the Royal Victorian Order and a magistrate and was medical attendant to King Edward when His Majesty was at Chatsworth.

Lieut.-Col. F. Gillespie, late A.M.S., died on the 7th inst., aged seventy-four. He was formerly assistant-surgeon at the Royal Military College, Sandhurst. He qualified at the Dublin Hall in 1858 and R. C. S. Ed. 1860. That year he took also M.D. St. Andr. and joined the army medical staff. He retired in 1886.

OUR PARIS LETTER.

(From Our Regular Correspondent.)

RADIOGRAPHY OF THE VISCERA—THE LIFE OF THE TISSUES OUTSIDE THE BODY—DETERMINING CAUSES OF SEX—OBITUARY.

PARIS, February 20, 1912.

At the Society of Internes a very interesting discussion took place on the radiography of the viscera. The Röntgen rays for a long time served only for the diagnosis of osseous lesions. At the present time the perfection of the apparatus used allows us to obtain clear images of the viscera, so that radiodiagnosis may be constantly used to confirm the clinical diagnosis or change it if necessary. Radioscopy and radiography of the lung in the normal state permit us to note the perfect transparency of the pulmonary field, the movements of the diaphragm, the depth of the costodiaphragmatic sinus; the affections of the lungs and pleura are shown by radiography; tuberculosis at first shows itself by the obscurity of the pulmonary field and a lessening of the amplitude of the movements of the diaphragm. At a more advanced stage cavities can be easily diagnosed. Abscesses of the lung, hydatid cysts, and cancers of the lung give clear images.

In the mediastinum strictures, deviations, and dilatations of the esophagus are easily seen after the administration of bismuth. The examination of the heart allows us to get valuable information, especially of the deviations of that organ. For the lesions of the aorta the *x*-rays constitute a very important means of detecting lesions of that artery from simple dilatation to the largest aneurysm. The stomach may be studied in a most interesting way after the ingestion of milk of bismuth. We can note the time which a meal remains in the stomach, and the evacuation of liquids from the stomach, and from this may deduce the presence or absence of a pyloric lesion. The successive examination of the patient in the upright position and then lying down shows considerable morphological differences which up to the present time have been unknown. The large intestine may be studied after an injection of bismuth and we may thus detect strictures, adhesions, and dilatations of the large intestine, as well as deviations due to the development of a tumor. The liver, which is a dark organ, may be studied by radiography; it may be displaced, elevated, increased, or diminished in volume. Its lower border may be easily recognized when the stomach is inflated.

The urinary apparatus has benefited considerably

by radiography, especially since rapid radiography has permitted us to photograph organs in perfect immobility. Urinary calculi are very well seen by radiography and can be studied as to their number, volume, and position. The new improvements of radiography have also enabled us to recognize the form of the kidney, its direction, and volume, and to know whether the kidney is small or large and whether the direction of its axis is normal or not. Still there is much difficulty in the interpretation of the shadows in the lower ureteral region. To make a diagnosis of an abnormal shadow in the pelvis and not be deceived into believing in a calculus that does not exist, we must make several plates, place in the ureter a sound that is opaque to the rays, or make an intraureteral injection of collargol, so as to guard against diverticula of the ureter. We see how numerous are the visceral affections which are recognizable by radiography and how far the science of röntgenology is of service to the clinician.

At the Academy of Medicine, Pozzi reported the new experiments by Carrel on the life of tissues outside the body—matters, of course, familiar to American medical men, since the experiments were made in New York.

The causes of the determination of sex have been discussed in an interesting way by Jules Regnault, Professor of Anatomy at Toulon in the *Clinical Journal*. Among the numerous theories that have been advanced to explain the formation of sex there are few which deserve recognition. We may retain certain points that seem established. The unripe ovule which contains lecithin produces a female; the ripe ovule in which lecithin is replaced by fatty acids give a male. Russo has made experiments in rabbits by injecting lecithin into the mother only, and obtained a large proportion of females; when he injected lecithin in both father and mother he got almost exclusively females. When the female is young and its organic combustion is complete and rapid, the spare elements such as lecithin are rare, or rapidly transformable, so that the maturation of the ovule is more rapid and we have a greater chance of having fecundation produce a male. Determination of sex seems to be in relation with the greater or less maturity of the sexual element and seems to depend on the greater or less equilibrium of the internal secretions of the parents. Various diets or methods of treatment, especially opotherapy, the employment of glandular extracts, variable according to the case, put the parents in a better condition to get an infant of one or the other sex.

Albarran, Professor of Diseases of the Urinary Passages of the Hôpital Necker at Paris, has died prematurely at the age of 52 years. Albarran inherited the difficult position of Guyon. His rich scientific past, his competence in the specialty to which he had devoted his life, his world-wide fame, made him certain of the votes of the *Faculté*. Made first interne at the age of 24, four years later he obtained the gold medal of the "internat." At 30 years he was chief of clinic for diseases of the urinary passages; at 32 he was made assistant professor; at 34 he was surgeon to the hospitals. Lastly, it was in full strength and maturity that he was called to put on the purple and become the chief of the Necker school, which under his revivifying impulse was to become still more active. This rapid and brilliant career resulted from the great natural gifts of Albarran. Indefatigable worker, marvelously served by a quick and perfect intelligence, he had studied all branches of his specialty, and there is no subject in urinary surgery on which his works are not known. As well by his anatomical researches as by his patient experiments in physiological pathology, and as much by the importance of his works as by his manual ability. Albarran was truly a master. At the international congresses one might readily note the interest he impressed on the scientific discussions, with what attention his words, warm, vibrating, persuasive, were received by all, with what authority he was appreciated and how he could popularize abroad French science. But besides these qualities of the public man, Albarran possessed other virtues which were concealed from those who did not approach him closely. His pupils, especially his friends, alone knew him; the qualities of the heart and the treasures of disinterested devotion he gave out with both hands, with magnificent prodigality. It was necessary to see him when he wished to oblige one of his friends to know how he gave everything, not sparing his time, his health, his attention, as if he were dealing with one of his own family, to understand how he made profound friendships, living and strong. Undoubted master, Albarran could only dignify further the illustrious professorship which he had won. For three years Albarran had known that he had an incurable malady and was one of those whom death sought before his time, but his courage was firm and his heart heroic. He saw death approach with sadness, but without fear and with the tranquil courage of those who have the intimate consciousness that they cannot perish altogether. His contributions to science will remain as the model of their kind, and the name of Albarran will be imperishable.

REPORT OF THE MEETING OF THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE. (*Continued*).

(From Our Manila Correspondent.)

HONGKONG, Jan. 27, 1912.

Third Day.

THE first paper read at this session was one entitled "Studies in the Multiplication of Amebæ of the Human Intestine," by Dr. A. Gaudu cheau, Major, Medical Corps, French Army. Dr. Gaudu cheau stated that he had made a series of experiments from which he concluded that trichomonas is one stage of an ameba. In the cases of amebic dysentery which he had studied he is satisfied that in the cultures which he obtained from the ameba of the stools, such morphological change actually took place. In the discussion which followed the trend of opinion was to the effect that, in view of the fact that he made his cultures with amebæ which he obtained from amebic stools, even if the biological phenomena took place such as he claimed, it was not likely to be associated with amebic dysentery, because, so far, it has been impossible to cultivate pathogenic amebæ.

The next paper was "An Experimental Study of the Action of Ipecacuanha on Amebæ," by Captain Edward B. Vedder. The author stated that amebæ in bouillon cultures were found dead at the end of twenty-four hours, with ipecac of an alkaloidal strength of 1.80 per cent. in dilutions even as great as 1 to 10,000. Emetin, similarly

employed, was efficacious in dilutions of 1 to 100,000. He also gave a series of clinical cases in which ipecac had been used with almost complete success, and expressed the opinion that, when properly administered, it is the best remedy which can be employed for this disease.

The next paper was entitled "The Surgical Treatment of Dysentery," by Dr. O. Muller. Dr. Muller gave a series of cases of both amebic and bacillary dysentery, in which appendicostomy followed by quinine irrigations had resulted in complete success after medical treatment had failed, and he made an earnest plea for the early resort to surgical means instead of depending upon slow and uncertain medical treatment.

The next paper was "A Contribution to the Study of the Bacteriological Diagnosis of Cholera," by Professor Teruchi. Dr. Teruchi exhibited a powder which could be used as an agglutinating agent in bouillon cultures of cholera for making a microscopical test for the presence of cholera vibrios. Upon adding the powder to the culture in a test tube a thick, flocculent precipitate formed which could easily be observed with the naked eye.

The next paper read was entitled "A Preliminary Report on the Source of the Human Liver Distome," by Dr. H. Kobayashi. The author expressed the belief that the distome, as it is found in Japan, could almost invariably be traced to the ingestion of raw fish.

The next paper was entitled "Intestinal Parasites of Man in Hongkong," by Dr. J. Bell. This was illustrated by lantern slides and gave a brief account of the usual intestinal parasites that are found in the Far East. Sixty-eight per cent. of the persons examined were afflicted with some form of intestinal parasite.

The next paper was entitled "Immunization Against Pneumonic Plague," by Dr. Richard P. Strong, which was read, in the absence of Dr. Strong, by Dr. Paul C. Freer. The author gave a brief review of the unsatisfactory scientific results which had been obtained by the use of immunizing measures which depended upon the use of dead cultures of plague organisms, and he expressed the conviction that in order to produce a thoroughly satisfactory immunizing substance, attenuated, living plague organisms would have to be used. In the discussion which followed the majority of the speakers were of the opinion that, however valuable immunizing substances for the prevention of plague might be, we must not lose sight of the fact that even repeated attacks of plague do not confer immunity beyond a few months at most, and that it is too much to hope that an artificial product can be prepared that has a greater immunizing power than the immunity which nature confers after attacks of a dangerous communicable disease.

The next paper was entitled "The Connection Between Man and Rat in the Plague Epidemic in Malang, Java, During 1911," by Dr. W. L. deVogel. This paper was illustrated with lantern slides, and was a most convincing confirmation of the now generally accepted theory that the transmission of bubonic plague is due to fleas. Dr. deVogel showed numerous photographs in which persons had died of plague, and upon removing the ceiling immediately over the bed of the deceased there were found many rats dead of plague. In other instances dead rats were found in the walls alongside of the beds in which persons had died of plague. The author inferred that upon the death of the plague infected rats the fleas must have deserted their host and found their way to the bodies of the persons who had been stricken. He also showed a most interesting map of one of the provinces in Java upon which was indicated all the places at which large deposits of rice imported from Rangoon was stored, and in a different color he indicated thereon the houses in which cases of plague had occurred. In almost every instance the disease prevailed in the neighborhood of such rice storehouses, and no cases were found where these did not exist.

The introduction of plague into Java is also interesting, in view of the fact that it has been frequently asserted that Java's freedom from plague, which she enjoyed up to 1911, was attributable to the intense heat which always prevails, owing to Java's proximity to the equator. That it only needed the introduction of plague infected rats was most conclusively demonstrated by the experience of the past year. Java's experience is also another concrete instance of the value of modern quarantine measures; so long as the introduction of plague infected rats was prevented complete freedom was enjoyed, but when these passed the defenses, outbreaks soon occurred.

The next paper was entitled "Preventive Inoculation in Experimental Plague Pneumonia," by Professor G. Shibuyama. The author gave the history of a number of cases which had been inoculated in the recent Mongolian plague campaign, but the results were either negative or wholly unsatisfactory.

Fourth Day.

The first paper read was entitled "Researches Into the Supraepitrochlear Gland in Cases of Undiagnosed and Denied Syphilis," by Dr. Lannelange.

The second paper was entitled "The Care of the Eyesight in the Tropics," by Dr. C. Montagu Hartson. The title of this paper was somewhat misleading, in that the author dealt almost exclusively with the treatment of trachoma and other inflammations of the eye which are not necessarily associated any more with the tropics than they are with the temperate zone.

The next paper was entitled "Some Remarks on the Subject of Vesical Calculi in South China, with a Report of More Than One Thousand Cases," by Dr. J. M. Swan. In this the author related the history of a series of vesical calculi, and stated that the mortality in 1013 cases had been .076 per cent. He pointed out, however, that many of the patients in China only entered a hospital after they were in a hopeless condition. Death frequently resulted from cardiac and renal causes. Perineal section was, in his experience, the operation of choice. The largest stone extracted weighed 11½ ounces. The total weight of the calculi was 77 pounds.

The next paper, "Carbon Dioxide Snow—Its Use in Private Practice in the Tropics," was by Dr. Gregory P. Jordan. In this were given a series of instances in which this snow had been used with success in the removal of moles, warts, nevi, and other skin affections. He also reported the most excellent success in the treatment of trachoma, and stated that an ordinary case might be cured in from a few weeks to a few months, and that complete cessation of the discharge and cicatrization of the lesions invariably resulted. He gave a demonstration of the manner in which the snow was employed. The carbon dioxide is confined in a large steel cylinder, and the gas permitted to

escape into a small, round container of suitable size, which is well wrapped in gauze. The snow which forms in the container can then be readily moulded into pencils, plates, or other forms convenient for the area in which it is to be used.

The next paper was entitled "The Result of the Past Two Years' Work in the Study of Tropical Sunlight," by Dr. Paul C. Freer. The author has an exhaustive digest of the extensive observations which had been made in connection with the actinic and other rays in various parts of the world. Reports were obtained from as far south as Australia and as far north as Libau, in Russia, and numerous observations at Manila, Assouan, Cairo, Alexandria, and Washington were recorded. From these the author concluded that the actinic ray is of no more significance in the health of man in the tropics than it is in the temperate zone, and that its action depends largely upon the meteorological conditions—that is to say, upon the state of cloudiness and vapor which obscures the rays of the sun. In addition to the experiments which were reported last year by Aaron, at the meeting of the Philippine Islands Medical Association, Dr. Freer related an experiment that had been made with white rabbits, black rabbits and gray rabbits, at Baguio, which is at an elevation of 5,000 feet, and has a night temperature which frequently falls to 50°, or even lower. Upon these rabbits being exposed to the sun it was found that the black rabbits were much less able to resist the effects of the rays than were the white rabbits. For instance, the black rabbits died as the result of 30 minutes' exposure, and the white rabbits were not affected by the exposure, and were later exposed for the period of an hour or more without damage, while black rabbits again succumbed. He also reported a series of skin examinations which had been made on Americans and Filipinos. These showed that sweat glands were more numerous per square inch in the Filipino than in the American, and were much more evenly distributed throughout the Filipino's body. He also stated that further experiments, made in different latitudes with regard to ionization showed that the inferences drawn from the paper which he had read two years ago had not been justified, and that, apparently, no great difference existed between this electrical phenomenon in Washington and the same phenomenon in Manila. The author reviewed his researches into the chemical and physical properties of light in connection with the recent experiments which have been made regarding the color of materials for clothing for use in the tropics, and concluded that the ideal costume for the tropics would be one in which man would use no other protection against the sun than an umbrella.

Progress of Medical Science.

Boston Medical and Surgical Journal.
March 21, 1912.

Significance of the General Practitioner. A. Jacobi.
Acute Suppurative Pericarditis in Infancy. H. Barkan and W. P. Lucas.
The Blood Platelets in Normal Women, in Obstetrical Patients, and in the Newborn. M. E. Morse.
Demineralized Food and Cancer. H. Packard.
Delayed Total Absorption of a Traumatic Cataract after Settlement with an Accident Insurance Company. D. Coggin.

The General Practitioner.—A. Jacobi states that while one should continue to admire the specialist, one should learn to revere the general practitioner. In twenty-five years the latter will recover the place of honor which was his fifty years ago. Alongside of his other work he will help to build characters and souls. He will then be a doctor that will not mount on a bank, as was customary for mountebanks in dark centuries; but he will again be the general adviser, having learned from the laboratory men and the specialists who are the modern handmaids of practical medicine; knowing the history of his trusting friends and taking an interest in their wholeness and wholesomeness—the chum of the old people, the intimate of confiding girlhood, and the uncle and oracle of the children.

Acute Suppurative Pericarditis in Infancy.—H. Barkan and W. P. Lucas report a case of this condition in a child 16 months old. This case illustrates, (1) the occurrence of pericarditis without any symptoms attributable to the heart beyond the collapse which is a common symptom in all cases of marked infantile atrophy; (2) the occurrence of pericarditis without any physical signs that could be made out; (3) the occurrence of suppurative pericarditis without any involvement or infection of the lungs or pleura; and (4) the absence of profuse cardiac involvement, as endocarditis or myocarditis. The only processes to which this pericarditis could have been secondary were an eczema which was gradually improving, or some subacute intestinal infection which gave no definite symptoms. There may have been a primary infection of the pericardium or a subacute intestinal indigestion. The infecting organism, the streptococcus in this case, probably gained its entrance through the skin or the intestinal tract, due to the lowered resistance in these two fields; therefore this case must probably be considered a secondary infection rather than a primary.

Blood Platelets in Normal Women, in Obstetrical Patients, and in the Newborn.—M. E. Morse concludes from her investigations that in some normal women, but not in all, there is an increase in the platelets accompanying menstruation. During the latter half of pregnancy most primiparæ have a high normal or an increased platelet count, while multiparæ usually show no rise. There are no special changes in the platelets during labor or the early days of the puerperium. At the end of the first week there is an increase which does not seem to be dependent upon lactation. In eclampsia and pre-eclamptic toxemia the platelets may be high, low, or normal, and they may be greatly increased during recovery. After postpartum hemorrhages of considerable size, the platelets show a moderate rise, with a maximum occurring late in the puerperium. The platelets may be low after prolonged labors terminated by operation. In case of short uncomplicated obstetrical operations done when the patient is in good condition, the platelets follow the same curve as in a normal labor and puerperium. In uncomplicated abdominal and vaginal operations there is in some cases a transitory rise of the platelets following operation. Scopolamine-morphine, used during labor, causes no changes in the platelets. The number of platelets at birth varies greatly, being sometimes high and sometimes low. After the end of the first week, however, these differences disappear and in early infancy the platelets are numerous (350,000 to 450,000). The platelets show a marked increase in icterus neonatorum. In hemorrhagic disease of the newborn there is no diminution of the platelets at the onset, but a posthemorrhagic rise with a late maximum. In skin lesions of early infancy the platelets may be high or rather low, depending on the condition of the child.

Demineralized Food and Cancer.—H. Packard suggests that cancer is the result of a nutritional defect due to mineral starvation. Upon the basis of this theory he presents the following dietary as suitable for cancer patients: One should exclude all white flour bread, and all articles into which white flour enters, from the diet, and substitute for it bread made from whole wheat flour. Potatoes next to bread form the most important and widely used article of diet, and properly conserved in cooking

they are rich in the food salts, which are located in the peripheral portion immediately beneath the skin. Therefore, one or two baked potatoes daily are advised prepared as follows: One should discard the heart or central starchy portion and eat the peripheral portions rich in mineral ingredients. The common way of cooking potatoes, by paring raw, soaking in cold water for an hour or two, and then boiling, dissolves out and leads out about 50 per cent. of the food salts. One should encourage the eating freely of well-cooked fresh vegetables, apples raw or cooked in any way, and fresh ripe fruits. Meats and fish may be used moderately according to inclination, bearing in mind that these probably make no difference one way or the other in the development or growth of cancer.

New York Medical Journal.

March 23, 1912.

Personal Experience with Diseases of the Pancreas. J. B. Deaver.
Report of Progress in Sanitary and Moral Prophylaxis. P. A. Morrow.
Some Reasons Why Incipient Pulmonary Tuberculosis Is Not Diagnosticated. J. H. Pryor.
Plastic Kontrenography. W. H. Dieffenbach.
A Case of Quadruple Infestation and the Occurrence of Ameba in the Stools of Apparently Healthy Individuals. R. C. Rosenberger.
The Preparation and Use of Thrombokinase. L. W. Strong.
Secret Division of Fees. R. E. Coughlin.
The Extension of the Registration Area. H. A. Brown.
The Dowd Phosphatic Index in Relation to Disease of the Eye. J. C. Clemesha.

Diseases of the Pancreas.—J. B. Deaver states that his experience with these diseases comprises twenty-two acute and one hundred and thirty chronic cases. In the causation of pancreatitis both systemic and local factors have to be considered. From the viewpoint of surgery the local factors are the more important, and the chief of these is direct infection. The damming back of active pancreatic secretion into the interstitial substance of the gland is likely to result in hemorrhagic pancreatitis. About 50 per cent. of all cases of pancreatitis are associated with demonstrable disease of the gall-bladder or common duct. In the majority of instances the infective agent in pancreatitis is carried by way of the lymphatics tributary to the pancreas. Acute pancreatitis is subdivided into the hemorrhagic, suppurative, and gangrenous forms, which represent successive stages of the same process. There is no pathognomonic sign or set of symptoms of acute pancreatitis. One may with great probability infer its presence when an individual, usually an adult male in previously good health, is suddenly stricken with agonizing pain in the upper abdomen, associated with persistent vomiting of a biliary character, obstinate constipation with epigastric swelling and tenderness, and collapse; usually there are also subnormal temperature, a dusky pallor, slow pulse gradually rising, increasing general distention, all of which if unchecked lead up to a fatal termination, usually in a few days, though at times weeks may elapse or recovery ensue. The diagnosis of chronic pancreatitis is more difficult than that of the acute form. The leading and most constant symptom is pain, which varies from dull discomfort or ache to sharp lancinating or colicky pain quite like gallstone colic. Slightly less frequent than pain is the history of nausea or vomiting or both. A third important symptom is jaundice. Impairment of the pancreatic function results in loss of weight. The bowels are constipated. The physical examination rarely affords much positive information and is of more value in excluding other conditions. The Cammidge reaction, even the improved or "C" reaction, does not render any assistance. Treatment is both medical and surgical; medical in mild cases, to be continued if improvement results or symptoms are at least arrested; surgical, if medical treatment fails to relieve the symptoms. Mayo Robson was the pioneer in showing that free drainage of the biliary tract, and, through this outlet, drainage also of the pancreatic ducts, would in many instances enable the pancreas to cast off the infection and resume its normal function. This is, in a nutshell, the principle of the treatment.

Progress in Sanitary and Moral Prophylaxis.—P. A. Morrow states that some of the most significant signs of progress in this field are (1) the change in the spirit and practice of the medical profession in sharing its knowledge with the public—the break with the policy of silence and concealment; (2) the change in the attitude of the public toward the sex problem; and (3) the revolution, in pedagogic and social sentiment regarding the question of the introduction of sex teaching in schools and colleges, as well as in the home.

Preparation and Use of Thrombokinase.—L. W. Strong states that the essential feature of Batelli's method of extracting this body from the tissues is the precipitation of the aqueous extract by acetic acid, neutralizing by sodium bicarbonate, sterilizing with alcohol, and evaporating in vacuo at 37° C. The idea that the tissue juices might furnish a body which would hasten clotting, and that this might be of more service than fresh blood serum in the control of hemorrhage, led the writer to follow the method of Batelli. Thrombokinase has been used clinically with success by many operators in nose and throat work as a means of checking hemorrhage. It has also been found of service in sporadic and hereditary hemophilia.

Journal of the American Medical Association.

March 23, 1912.

Medical Aspects of Surgical Diseases, or Preventive Surgery. J. Colt Bloodgood.
A New Apparatus for Administering and Warming General Anesthetics and New Methods of Administration. R. C. Coburn.
The Use of Nitrous Oxide and Oxygen to Maintain Anesthesia and Positive Pressure for Thoracic Surgery. S. Bunnell.
A Study of the Significance of the Habit-Movements in Mental Defectives. L. P. Clark and C. E. Atwood.
A New Method for Controlling the Administration of Serum in Epidemic Meningitis. Preliminary Note. A. Sophian.
An Operation for Prolapsus Uteri without Disturbance of Anatomical Relations and without the Necessity for Abdominal Section. B. C. Hirst.
A Case of Diabetes Mellitus Associated with Tuberculosis of the Adrenal Glands. C. M. Montgomery.
Chloride Excretion in Alcoholic Cirrhosis. A. C. Burnham.
An Instance of Unusual Sensitiveness of the Colon to Mercury. D. W. Montgomery.
A Case of Sporadic Cerebrospinal Meningitis Simulating the Uremia of Bright's Disease. G. W. McCaskey.
The Effect of Intercurrent Pneumonic Complications on the Course of Chronic Pulmonary Tuberculosis. J. W. Pettit.
A Case of Acute Mercurial Poisoning Followed by General Necrosis of Maxillary Bones and Purulent Otitis Media. M. Herzstein and A. Baer.
Intravenous Local Anesthesia. C. Smith.
A Case of Status Epilepticus with an Unusually Large Number of Convulsions. S. A. Smith.
Epithelioma of the Tongue with no Recurrence Nine Years After Clinical Cure with the X-Ray. M. F. Eneman.
Malicious Amputation of the Penis. R. L. Murdy.

Preventive Surgery.—J. C. Bloodgood states that one cannot hope for any better results from surgical intervention unless the methods of diagnosis now used by the minority come into general use. The general practitioner should be a better diagnostician, but the facilities for these methods are out of the reach of the large mass of the profession at the present time practising medicine far from large centers and well-equipped hospitals. Important as these methods are, however, they are not absolutely essential in the great majority of cases for the recognition of most surgical diseases in their most favorable period for surgical treatment. The average practitioner has had experience, however, with but few surgical lesions, and the author thinks that if the surgeon really desires to get his cases at an earlier and more favorable period he should study his records and present this investigation to his medical colleagues. Surgery should be resorted to earlier than is the practice at the present time. Gastric ulcer precedes the development of gastric cancer. The surgery of gastric ulcer and cancer, especially of ulcer, is by no means settled to-day, but the technique is far ahead of the diagnosis. The symptoms of cancer of the colon are also reviewed, and the author believes that this condition should

be earlier recognized in a larger number of cases. At present the patient who suffers from obstruction bringing about surgical intervention is fortunate. In this case there are almost 80 per cent. of cures of those who survive the operation itself. It is the insidious cases which should be recognized early without the aid of this complication. Cancer of the colon is a most favorable type of cancer and the technique is well established and has a minimal danger. Graves' disease in its later stages is successfully treated only by surgery. There is no doubt that cases in the early stages may recover with proper medical treatment, but a surgical operation at this stage would be perfectly safe, and it is suggested that this disease can be treated surgically in its least dangerous period, even if occasionally it may not be absolutely necessary.

Habit-Movements in Mental Defectives.—L. P. Clark and C. E. Atwood have found that in mental defectives tics, in the neurological sense of the term, are very rare, while peculiar habit-movements are very frequent. Habit-movement is the frequent or constant repetition of uncalled-for and exaggerated movements, devoid of convulsive element, but from which the patient seems to derive pleasure or satisfaction. All the habit-movements noted bear some relation to or suggest a sexual libido and often lead up to or replace the masturbatic act. Analysis of these acts permit of their being grouped in three regions of the body, which the authors refer to as "erogenous zones," a term used by Freud to signify an organ or part the stimulation of which bestows on the impulse the sexual character. The regions distinguished are that of the lower trunk embracing the genital and anal zones, the face, and the hands. The movements mostly observed in young idiots were finger or rag-sucking and pelvic rocking or swaying. All these have been repeatedly observed in neurotic children in whom they are repressed and cease in a short time, while in idiots and defectives incapable of normal education or diversions they persist and become aggravated.

Administration of Antimeningitic Serum.—A. Sophian concludes from his observations that the old method of administering serum is inaccurate and sometimes dangerous. Blood-pressure change is a very accurate guide to the quantity of serum that can be safely injected, frequently also indicating the quantity of cerebrospinal fluid that can be withdrawn. The average dose of serum as controlled by blood-pressure is smaller than by the old method. Following an injection of serum, controlled by blood-pressure, the after-effects are usually much less severe.

Meningitis Simulating Uremia.—G. W. McCaskey states that sporadic cases of this disease are probably more frequent than is commonly supposed, and while some may have been wrongly so reported many other cases have probably passed unrecognized. There should be no doubt in the diagnosis. Both the epidemic and sporadic cases are due to the same organism. It is just as reasonable to suppose that sporadic cases of this infection may occur as those of typhoid, scarlatina, etc. The failure of the sporadic case to propagate others is as easily explained in one case as in the other. With a low virulence of the organism a special or exaggerated susceptibility may be needed for it to produce its specific effect. The author presents a history of a case in which a provisional diagnosis of uremic convulsions has been made. The patient had the cardiovascular conditions incidental to long-continued high blood-pressure. The urine was scanty and heavily loaded with albumin, and with these the diagnosis of uremic convulsions or coma seemed justified. The comparative suddenness of the onset in ordinary health, the high temperature and return of completely normal renal function were sufficient grounds for suspicion. Examination of the spinal fluid and of the blood revealed the typical diplococcus of meningitis.

Chloride Excretion in Alcoholic Cirrhosis.—A. C. Burnham reports the history of a case of alcoholic cirrhosis of the liver, in which there was but slight involvement of the kidneys as confirmed by autopsy, and in which the following points were noted: There was a constant and continuous decrease in the elimination of water and chlorides. Diuretics had only a slight and transitory effect on elimination. A dose of 10 grams of salt was followed by a retention of water, and a corresponding increase of body weight. The retention of salt appears, in some cases, to be the primary process. A diet of low salt content may be of service in prolonging the ascitic stage of cirrhosis, thus allowing time for the desired collateral circulation.

Pneumonia in Tuberculosis.—J. W. Pettit states that one is in the habit of regarding afebrile cases of tuberculosis as most dangerous and acute exacerbations as unfavorable. Ordinarily this view is correct, but not rarely the acute pneumonic process set up by a mixed infection heals rather than disintegrates. This is not the acute tuberculous pneumonia due to the turbercle bacillus alone, but rather the acute pneumonia due to other germs, superimposed on chronic ulcerative tuberculosis. This, if not too severe, the author is inclined to consider as favorable and he regards the prognosis after such an attack as good. A plausible explanation of the phenomenon is that the intercurrent pneumonia causes an accumulation of leucocytes in the lung, which not only overcomes the pneumonic infection, but acts on the tuberculous infection also. It is similar to the effect that has been repeatedly noted of the beneficial effect of erysipelas on chronic tuberlulous ulcers. If an accumulation of leucocytes could be induced artificially in a tuberculous focus by the use of some positive chemotactic substance—not necessarily bacterial—it might be of benefit in hastening the cure of the tuberculous process.

The Lancet.

March 16, 1912.

Paratyphoid Fever and Meat Poisoning. F. A. Bainbridge.
Derangements of the Knee following Strains and Blows. A. E. Barker.
Hypersensitiveness: the Parallelism in the Phenomena of Hypersensitiveness and Certain Clinical Manifestations of Obscure Nature. H. Batty Shaw.
The Bed Isolation of Cases of Infectious Diseases. C. Rundle and A. H. G. Burton.

Paratyphoid Fever and Meat Poisoning.—F. A. Bainbridge defines paratyphoid fever as a disease which clinically resembles, and is often indistinguishable from, typhoid fever, and which is caused either by *Bacillus paratyphosus A* or by *Bacillus paratyphosus B;* the latent period varies generally from eight to eighteen days, and the usual mode of infection is by human carrier cases. Meat poisoning is a disease of which the characteristic symptom is acute gastroenteritis of comparatively brief duration, and which is caused in a very considerable proportion of cases by either *Bacillus enteritidis* (Gaertner) or *Bacillus suipestifer:* the latent period is short, rarely exceeding forty-eight hours, and the usual source of infection is contaminated meat. Paratyphoid fever in Europe is much more frequently caused by *Bacillus paratyphosus B* than by *Bacillus paratyphosus A*. The course of a typical case of paratyphoid A fever closely resembles that of mild typhoid fever. The incubation period varies from ten to eighteen days, and is usually about fifteen days. The onset of the illness is gradual, the patient complaining of severe frontal headache and pains in the back and limbs. Bronchitis and sore throat are not infrequent. The temperature rises in a step-like fashion, reaching its maximum by the fifth or seventh day; it falls gradually and becomes normal at the end of the second week. In severe cases the temperature may remain raised for three or four weeks. In contrast with mild typhoid fever the pulse is rapid and is quite often as much as 110; the frequency of the pulse in paratyphoid fever does not necessarily indicate that the attack

is a severe one. The abdomen is slightly distended, the spleen is enlarged, and constipation is the rule. The typical rash is often present and other forms of rash (*e.g.*, purpuric or morbilliform—are occasionally seen. Relapses are not infrequent and phlebitis, cholecystitis, and anæmia are not uncommon complications. Intestinal hemorrhage and perforation have been observed, but are rare. Although practically every symptom and complication of typhoid fever also occur in paratyphoid A fever the majority of the cases are of a mild character; sometimes the illness is so slight that it may be readily overlooked, and ambulant cases have been met with. The mortality is less than 2 per cent.

Derangements of the Knee Following Strains and Blows.—A. E. Barker describes the following conditions that may result from strains of or blows upon the knee-joint: partial separation of the semilunar cartilage; enlarged synovial membrane; rheumatoid arthritis of the knee; typical displacement of the internal meniscus; chips of articular cartilage free in the joint; rupture of the lateral ligaments; rupture of crucial and probably of lateral ligaments; fracture of tibial spine; effusion of blood into the joint; and hysterical affections of the knee.

Hypersensitiveness.—H. Batty Shaw advances the view that in clinical medicine certain unexplained phenomena may after all be due to the mechanism of hypersensitiveness. It may be that asthma, epileptic seizures (for example, those found to follow upon infantile hemiplegia), the coma met with in cirrhosis of the liver and granular kidney, "uremic" palsies, "uremic" fits, "uremic" diarrhea and vomiting, various forms of local or general edema occurring independently of albuminuria and kidney disease or other ordinarily accepted cause, the convulsive seizures of general paralysis, and eclamptic convulsions may all be examples of hypersensitiveness. It is possible that an eclamptic woman is really suffering from an absorption of amniotic fluid. Recurrent edema of the lungs independent of an infection, even emphysema itself not dependent upon excessive muscular exercise, recurrent hemiplegia and monoplegia, which are entirely recovered from, and which can be traced to no known cause, the excitation and depression which are such marked features in insanity, pruritis, and the many unexplained skin manifestations such as urticaria, also may be due to hypersensitiveness. The proteins responsible for the production of these phenomena may be derived from the individual so afflicted.

Bed Isolation of Cases of Infectious Disease.—C. Rundle and A. H. G. Burton record their experience with this procedure during the past two years at the City Hospital, Fazakerley, Liverpool. The total number of cases of infectious disease treated was 473. There were only two instances of ward contagion. It is admitted that facilities for the spread of disease by aerial infection are obviously greater under the system of bed isolation than under cubicle isolation; in fact, a total breakdown of the system of bed isolation might be expected if aerial infection were of common occurrence. In the light, however, of the very satisfactory results obtained by this latter system, as compared with those of cubicle isolation, it is argued that the danger of spread of infection in a hospital ward by means of aerial infection is to be disregarded for practical purposes. It would appear that the practice of rigorous asepsis on surgical lines has a value equal to or greater than of any of the accepted methods of separation by artificial barrier.

Münchener medizinische Wochenschrift.

March 12, 1912.

Is Uremia an Acidosis?—Straub and Schlayer state that thus far we know nothing of the nature of uremia. Among the many theories concerning the latter the acidosis doctrine goes back to 1888, when von Jaksch noted that uremic blood showed diminished alkalescence. Owing to technical shortcomings, no advance has been made in this direction until recently, when after Haldane and others began to report results in the estimation of carbonic acid tension in the lungs it was found that the latter would serve as a measure of acidosis. One of the writers (Straub) has published results of work of this character in diabetic acidosis. Thus far the two authors have tested eight uremic patients for carbonic acid tension. In these cases the latter was always below the lowest normal values, and each case showed some individuality. The tension increased as the uremic phenomena disappeared under treatment. In case six a value was obtained by chance before uremia developed and was found to be normal, although the patient had chronic nephritis due to lead poisoning. When uremia developed later (it was evidently precipitated by an attack of erysipelas) the tension fell below normal. In one fatal case the tension was as low as that of the severest diabetic acidosis. The question arises, "is this acidosis in any way due to inanition?" This is readily answerable in the negative. Nutrition was good, patient had been eating well, and had not vomited. Naturally an inanition factor might conceivably be present in some cases. Acetone and acetoacetic acid were absent in all cases. The authors will continue these researches.

The Eucalyptus Treatment of Scarlatina.—Koerber has been testing Milne's treatment at the Hamburg-Eppendorf Hospital. The English pediatrist had been using eucalyptus in scarlatina for a quarter century. The author divided his material so that a certain number of patients were treated by Milne's method, while the remainder were managed in the usual way. In addition to inunctions with eucalyptus oil, Milne recommends swabbing the throat every two hours with 10 per cent. carbolic acid. The treatment is intended incidentally to prevent the spread of the disease to others, including return cases. This point was especially investigated and apparently with an unfavorable result, as the frequency of return cases was not lessened, but, in fact, slightly increased. In regard to mortality, this under the customary treatment was but 2.56 per cent., and Milne's method did not lower this figure much since 2 per cent. of fatalities occurred. On the other hand, the method fulfilled a third claim, viz., that it prevents complications. This was strikingly true for such as endocarditis and nephritis, although arthropathies were present even in excess percentage. The treatment did not shorten the average duration of the disease. The author's results compare well with those most recently published in Great Britain as far as discouraging the claim that eucalyptus antagonizes the infectious element of the disease *in toto*. It is not denied that it is a good treatment, but may not be superior to the measures already in vogue. The future must determine this point.

Failure of Transfusion in Pernicious Anemia.—Bennecke saw much pernicious anemia in the Jena medical clinic during 1909-10—a dozen cases during six or eight months. The disease appears to be on the increase, not only in the author's vicinity, but elsewhere. Five cases were subjected to transfusion, four by the intravenous and one by the subcutaneous route. Defibrinated blood only was used. It was necessary to take blood for one transfusion from a healthy subject who had recovered some time before from typhoid and whose blood still contained agglutinins. No lives were absolutely saved. Some may have been prolonged, but one may have been shortened. The blood finds showed no decided improvement. The typhoid agglutinins disappeared from the recipient's blood.

The Albumin Reaction of the Sputum in Pertussis.—D. Paulian found this reaction to be positive in almost all cases of pertussis in which it was looked for, although none of these cases gave any evidences of tuberculosis.—*Revista stiuntzelor medica.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

TABLE OF HEIGHTS AND WEIGHTS FOR MEN.—A proper relation of weight with height and age should be required when selecting a certain group of risks, otherwise the mortality in that group will be too high in spite of the utmost care which may have been exercised in excluding other unfavorable elements. The companies have adopted approximately uniform tables for determining this relation, and as so much emphasis is directed to the subject the examiner ought to have some knowledge of its fundamental principles instead of harboring, possibly, the belief that it is merely a mass of arbitrary rulings. In the earliest tables, compiled in 1836, one weight and one height is given for each age, and these are supposed to be the average height and weight for that age. They are imperfect but still agree fairly well with our present standard and served as a starting point. In 1840 Hutchinson published a table of heights and weights based upon certain data gathered in England and which purports to represent the standard weight for each height at the age of 30. Compared with the present standard the weights in this table are too light for the shorter and too heavy for the taller heights. Other tables have been constructed with more or less consideration given to the influence of age, but the number of individuals observed was too small for authentic results. Finally, in 1897, Dr. George R. Shepherd offered some accurate and definite conclusions to the Association of Life Insurance Medical Directors in the form of a table of heights and weights for each quinquennium of age from 15 to 69, based upon an observation of 74,162 accepted male applicants for life insurance in the United States and Canada. The weights and heights include the clothing and shoes, so that the conditions are the same as those under which the applicants present themselves to the medical examiners. The table seemed so complete and accurate that it was adopted by the leading life insurance companies and, with occasional slight modifications made in accordance with individual opinions, is still in use.

HEIGHTS AND WEIGHTS OF MEN AT DIFFERENT AGES.

	15–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65–69
5′ 0″	120	125	128	131	133	134	134	134	131	.....
1″	122	126	129	131	134	136	136	136	134	.....
2″	124	128	131	133	136	138	138	138	137	.....
3″	127	131	134	136	139	141	141	141	140	140
4″	131	135	138	140	143	144	145	145	144	143
5″	134	138	141	143	146	147	149	149	148	147
6″	138	142	145	147	150	151	153	153	153	151
7″	142	147	150	152	155	156	158	158	158	156
8″	146	151	154	157	160	161	163	163	163	162
9″	150	155	159	162	165	166	167	168	168	168
10″	154	159	164	167	170	171	172	173	174	174
11″	159	164	169	173	175	177	177	178	180	180
6′ 0″	165	170	175	179	180	183	182	183	185	185
1″	170	177	181	185	186	189	188	189	189	189
2″	176	184	188	192	194	196	194	194	192	192
3″	181	190	195	200	203	204	201	198	.....	.....

TABLE OF HEIGHTS AND WEIGHTS FOR WOMEN.—The weights of women were roughly estimated formerly by assuming that they were 6 to 9 pounds less than men at the age of 25, and that this difference gradually diminished until it practically disappeared after the age of 45 or 50. As authentic figures were not available, this crude and unsatisfactory method was the one commonly resorted to until a few years ago. A table, based on a sufficiently large number of entrants to be convincing, was presented to the Association of Life Insurance Medical Directors in 1908 by Dr. Faneuil S. Weisse. This compilation was based on the study of the heights and weights of 59,525 insured women in the United States and Canada, and supplied a long-needed standard for use in estimating female risks.

TABLE OF HEIGHTS AND WEIGHTS FOR WOMEN

Heights	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64
4′11″	111	113	115	117	119	122	125	128	128	126
5′ 0″	113	114	117	119	122	125	128	130	131	129
1″	115	116	118	121	124	128	131	133	134	132
2″	117	118	120	123	127	132	134	137	137	136
3″	120	122	124	127	131	135	138	141	141	140
4″	123	125	127	130	134	138	142	145	145	144
5″	125	128	131	135	139	143	147	149	149	148
6″	128	132	135	139	143	146	151	153	153	152
7″	132	135	139	143	147	150	154	157	156	155
8″	136	140	143	147	151	155	158	161	161	160
9″	140	144	147	151	155	159	163	166	166	165
10″	144	147	151	155	159	163	167	170	170	169

By comparing this table to that prepared for men, it will be seen that there is a tendency for women to increase more rapidly in weight from age 20 to age 50 than for men. This period of more rapid increase corresponds to the reproductive period of women's lives, which, taken in connection with their more sedentary lives, would appear to be a reasonable explanation of the difference of the weight curves of the two sexes. As a matter of fact, it has been generally assumed by those interested in the influence of the bearing of children upon a woman's relative weight, that more overweights are found among women who have borne children than among those who have not.

MAXIMUM AND MINIMUM WEIGHTS.—Having established a satisfactory average of heights and weights, it remained to determine how far the individual may deviate from this standard before entering the class of overweights or underweights. As the maximum and minimum weights of men and women do not correspond with each other they must be considered separately.

Mortality.—The term "mortality" appears frequently in articles dealing with life insurance and an explanation should be inserted before going further. It means the ratio of actual deaths to expected deaths. The actuaries have compiled a standard mortality table from the combined experience of many companies by means of which the number of deaths in a given group of individuals may be calculated. If the group of individuals shows 1,000 actual deaths and 2,000 expected deaths, the mortality is 50 per cent.; if there are 2,000 actual deaths and 1,000 expected deaths the mortality is 200 per cent. The best interests of the companies calls for a mortality well under 100 per cent.

Men.—It has been assumed, in a general way, after going over much data, that a man becomes a moderate overweight when his weight is more than 20 per cent. above the standard for his age, and an excessive overweight when it is more than 30 per cent. above. Dr. Brandreth Symonds studied a large number of cases, however, and concluded that the effect of overweight is peculiarly influenced by two factors, the amount of overweight and the age of the individual. This is illustrated in the following table in which the first column stands for the age period, the second for the mortality in moderate overweights, the third for the mortality in excessive overweights:

Age	Moderate Overweights	Excessive Overweights
15 to 28	80%	88%
29 to 42	105%	121%
43 to 56	133%	162%
57 to 70	125%	156%

The deduction from this table is that 20 per cent. overweight in a person below 29 is not an impairment, or at least a mild one, but that the mortality increases with advancing age, so that an excess of 33 per cent. at age 22 is almost equal to 20 per cent. at age 45. On this basis the maximum weights are indicated as the same for all ages in the following table.

In the case of underweights, the influence of age is reversed as the younger ages are the ones most affected, while the older ages are but slightly disturbed. The minimum weights, therefore, are given for each age period in this compact table which will be useful to the medical examiner.

TABLE OF MAXIMUM AND MINIMUM HEIGHTS AND WEIGHTS FOR MEN

Height	Maximum for all Ages	Minimum for Different Ages			
		Age 15–24	Age 25–29	Age 30–39	Age 40 and over
5′ 0″	160	96	100	103	106
5′ 1″	163	98	101	104	108
5′ 2″	166	99	102	105	110
5′ 3″	170	102	105	108	113
5′ 4″	174	105	108	111	115
5′ 5″	178	107	110	114	118
5′ 6″	182	110	114	117	122
5′ 7″	188	114	118	121	125
5′ 8″	194	117	121	124	129
5′ 9″	199	120	124	128	133
5′10″	205	123	127	132	137
5′11″	212	127	131	137	142
6′ 0″	220	132	136	142	146
6′ 1″	227	136	142	146	152
6′ 2″	233	141	147	152	157
6′ 3″	240	145	152	157	161

Women.—Overweight and underweight women, measured by their own standard, show practically the same mortality as in the case of men. On account of the different course pursued by the increasing weight, already referred to, as compared to that of men, the maximum as well as the minimum weights for each age period are included in the following table. It will be observed that young women, as in the case of men, are not classed as overweights unless they are 33 per cent. or more above the standard, but that they are only allowed 20 per cent. at the age of 45 or over.

The minimum at 20 per cent. below standard holds good for all ages.

TABLE OF MAXIMUM AND MINIMUM HEIGHTS AND WEIGHTS FOR WOMEN

Height	Age 15–19	Age 20–24	Age 25–29	Age 30–34	Age 35–39	Age 40–44	Age 45–49	Age 50 and over
4′ 1″	148	149	150	151	151	152	153	154
	89	90	92	94	95	98	100	102
5′ 0″	149	150	151	152	153	154	155	156
	90	91	94	95	98	100	102	104
5′ 1″	153	154	155	156	157	158	159	160
	92	93	95	97	100	102	105	106
5′ 2″	156	157	158	159	160	162	163	164
	94	95	96	98	102	106	107	110
5′ 3″	160	162	163	164	165	166	167	169
	96	98	100	102	105	108	111	113
5′ 4″	164	165	166	167	168	170	172	174
	98	100	102	104	107	111	114	116
5′ 5″	167	171	172	173	174	175	177	179
	100	102	105	108	111	114	117	119
5′ 6″	171	175	176	177	178	180	182	184
	102	106	108	111	114	117	121	122
5′ 7″	175	180	181	182	183	184	186	188
	106	108	111	114	118	120	123	126
5′ 8″	181	185	186	187	189	190	192	193
	109	112	114	118	121	124	126	129
5′ 9″	186	191	192	193	194	195	197	199
	112	115	118	121	124	127	130	133
5′10″	192	195	196	197	198	200	202	204
	115	118	121	124	127	130	133	136

Occupation, Social Condition, and Heart Disease.—A. Grotjahn states that diseases of the heart and blood-vessels occurring in workmen are more apt to be found in those engaged in tasks requiring prolonged and severe exertion, for example, in coppersmiths, laborers, porters, etc. Even though the strain on the cardiovascular system does not produce any conspicuous pathological manifestations, nevertheless it may predispose or contribute to a premature breakdown. The statistics of the Imperial Insurance Office for the period from 1896 to 1897 show that, of 1,000 cases of illness, disease of the heart and arteries occurred in 71 men and 103 women. In spite of the greater morbidity from cardiovascular disease which is found in the lower classes of society, the mortality from this cause is greater among the upper classes. This is a fact confirmed not only by experience but also by statistics. Thus, Sörenson classified according to age-groups and social condition, among 100,000 cases of death in Denmark, those caused by cardiovascular disease, as follows:

Age in Years	Copenhagen				Rural Districts			
	Men		Women		Men		Women	
	Lower Class	Two Upper Classes	Lower Class	Two Upper Classes	Lower Class	Two Upper Classes	Lower Class	Two Upper Classes
20–35	20	30	20	30	20	30	30	40
35–45	80	50	80	70	50	50	60	50
45–55	190	120	140	90	90	160	90	80
55–65	280	350	310	160	160	220	220	180
65–75	470	550	700	450	310	680	390	470

Similarly, S. Rosenfeld found that in Vienna of every 1,000 of the population there died from circulatory diseases among the well-to-do classes 1.55 and 1.64, as against 1.31 and 1.16 among the poorer classes. This greater mortality from cardiovascular disease among the upper classes is explained by the fact that the latter attain a riper age, and are therefore more apt to succumb to such diseases.—"Soziale Pathologie."

Surgical Diseases of the Nose and of Its Accessory Sinuses in Relation to Life Insurance.—F. Röpke states that a subject of great importance is the attitude of life insurance companies with reference to applicants who have been operated upon for empyema of the nasal accessory sinuses. Before these applicants can be accepted the suppuration must have ceased. An exception may be made in the case of operations on the maxillary sinus in which complete success has not been attained, and in which there may be a discharge of pus into the nasal cavities or through an opening made in the canine fossa or in the alveolar process. In such cases there is neither directly nor indirectly any danger to life, provided that the disease process is strictly localized, which is to be expected from the topography of the superior maxilla. The conditions are, however, different in the case of the other accessory sinuses, whose walls are in direct apposition to the cranial cavity. If, in spite of operation, suppuration should continue in these sinuses, there is danger of the process invading the interior of the cranium, even though in some cases this danger may be remote. At any rate, the acceptance of these risks must be postponed until the suppuration has entirely disappeared, which in the majority of cases would follow appropriate operative treatment. Previous operations for nasal polypi, provided there has been no complicating sinus suppuration that still continues, and previous operations on the soft parts of the nose and on the septum for the relief of nasal obstruction do not militate against the acceptance of a risk. Applicants who have been operated upon for a lupous or tuberculous process in the nose must be rejected, even though at the time of examination apparent healing has taken place. The same applies in malignant disease.—"Handbuch der spezielle Chirurgie des Ohres und der oberen Luftwege."

Book Reviews.

A Pocket Atlas and Text-Book of the Fundus Oculi with Note and Drawing Book. Text by G. Lindsay Johnson, M.A., M.D., F.R.C.S., Fellow of the Royal Society of Italy (Modena); Fellow der Gesellschaft Naturforschender Freunde, Berlin; Fellow of the American Society of Ophthalmology and Laryngology; Late Ophthalmic Surgeon West End Hospital for Nervous Diseases; Consulting Ophthalmic Surgeon Western General Dispensary, etc. With drawings from life by Arthur W. Head, F.Z.S. Illustrator of "The Mammalian Eye." Frost's Atlas of the Fundus Oculi," etc. Price $2.50 net. Chicago: F. A. Hardy & Company, 1912.

The work of Johnson and Head is comprised in a compact little volume of 203 pages with 54 plates in color, and accompanying the volume is a small sketchbook for the purpose of recording the conditions of the fundus oculi as they come before the surgeon. In the text the methods of ophthalmoscopy and skiascopy are described, then follows a chapter on the anatomy of the chorioid, ciliary body and retina. The rest of the text is devoted to a description of the normal and pathological appearances that may be observed by the ophthalmoscope. The colored prints of the fundus are beautifully drawn and are very true to nature. The work is practical and would be a valuable addition to the working library of every one who is engaged in the treatment of diseases of the eye.

Hautveränderungen bei Erkrankungen der Leber. Von Sanit.-rat Dr. S. Jessner, Königsberg i. Dr. Price 60 Pfennigs. Wurzburg: Curt Kabitzsch, 1912.

In an essay of twenty pages Dr. Jessner presents the various skin changes, from jaundice to xanthoma, frequently observed in the diseases of the liver. There is nothing original in this study, but the known facts are well presented.

Ärztliche Fortbildungkurse der freien Organisation für die medizinischen Kurse an der K. K. Universität, Wien. Postgraduate medical work under the patronage of the free organization for medical courses at the University of Vienna. Berlin and Vienna: Urban und Schwarzenberg; New York: Rebman & Company, 1912.

The above contains a full description of the opportunities for doing postgraduate work at the medical faculty of Vienna University with all necessary details as to lectures, including free lectures by professors, and so forth. It should prove a useful vade-mecum for the foreigner in Vienna desirous of doing medical postgraduate work.

Honan's Handbook to Medical Europe. A Ready Reference Book to the Universities, Hospitals, Clinics, Laboratories and General Medical Work of the Principal Cities of Europe. By James Henry Honan, M.D., Rush Medical College (University of Chicago), Imperial Frederick William University of Berlin, etc. With maps of Berlin, Edinburgh, London, and Paris. Price $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1912.

The object of this book, as stated in the preface, is to give a concise, comprehensive outline of the medical work of Europe, as a guide to English-speaking physicians who go abroad for post-graduate work and as a book of reference for all who are interested in medical work in other lands. It appears to fulfill this object in a satisfactory manner.

Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. Volume B. General Science. Andrew Balfour, M.D., B.Sc., F.R.C.P. (Edin.), D.P.H. (Camb.), Director. Price, cloth, $4.50 net. Published for Department of Education, Sudan Government, Khartoum, by Ballière, Tindall and Cox, 8 Henrietta Street, Covent Garden, London. Depot for the United States, Toga Publishing Co., New York City.

The first part of the Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum, contained the record of the purely medical aspects of the work of research. The present volume deals with general science. Dr. Andrew Balfour with his able band of coadjutors writes these reports, and as may be imagined from the scientific and literary attainments of all concerned, and from the nature of the country to which they refer, the book teems with interest and information. The first chapters contain the report of the Chemical Section compiled by Dr. William Beam and is instructive in a high degree. The chapter on experiments on gum production in Kordopan by Mr. E. S. Edie is of practical as well as of scientific value. Perhaps the most engrossing and certainly the most attractive part of the volume is the Report of the Entomological Section by Harold H. King. The account of mosquitos collected by King during three months spent on the White Nile in 1909 tells of the discovery of five new species and a new sub-species. Descriptions are given of blood-sucking insects other than mosquitos met with, a sufficiently lengthy list. Mr. Fred V. Theobald describes a new genus and two new species of culicidæ from the Sudan. Mr. A. L. Butler, F.Z.S., M.B.O.U., Superintendent, Sudan Game Preservation Department, writes on the finches and weaver birds of the Sudan. These birds do much damage to the grain crops. They are excellently described by Butler. The chapter on scorpions and allied annulated spiders of the Sudan is contributed by Professor Franz Werner of the University of Vienna. Sir Thomas R. Fraser, M.D., F.R.S., the well-known authority on snake poisoning, writes a note on the Sudan spitting-snake. Ancient Gold Mining in the Sudan is discussed by Mr. Stanley C. Dunn, Sudan government geologist. Dr. C. E. Seligmann writes on the cult of Nyakang and the Divine Kings of the Shillak, while Captain R. G. Anderson, R.A.M.C., describes some tribal customs in their relation to medicine and morals of the Nyam-nyam and Gour people inhabiting the Eastern Bahr-El-Ghazal. These people believe in evil spirits and their remedies for disease are weird in the extreme. The last chapter of the book is devoted to the consideration of some municipal engineering problems in the tropics with special reference to Khartoum City and is contributed by Messrs. W. H. McLean and G. E. Hunt. It would seem from a perusal of these pages that Khartoum, from the standpoints of sanitation, water supply, and housing, need not fear comparison with many Western cities. The complete volume, in addition to being filled with valuable information and well written, is a splendid example of the printer's art. It is excellently bound and printed and contains throughout beautiful illustrations in colors and black and white and several maps. Dr. Balfour and his fellow workers in the Sudan are doing good work. It is a boon to the human race that this book should be published in behalf of future generations.

O roli selezinki pri Bolyezni Banti i drugikh splenomegalicheskikh zabolyvaniakh (The Rôle of the Spleen in Banti's Disease and Other Splenomegalic Affections). By A. Strukoff. Moscow, 1911.

In Russia the title of "doctor of medicine" is conferred upon a physician only after he has been in practice or in scientific work for several years and has written and defended a dissertation on some medical subject. The volume before us is a dissertation of this nature.

Dr. Strukoff has collected and abstracted all the published cases of anemia splenica (type Banti-Griesinger), splenomegalia (type Gaucher), anema splenica infantum, and finally of Banti's disease proper. These cases are exceedingly well brought together in four large tables that give the reader all necessary information about them.

The second part of the book is devoted to an experimental study of the behavior of the spleen in animals poisoned by various hemolytic substances, and to an attempt to explain the pathogenesis of Banti's disease by the results of these experiments. A complete bibliography is appended. The book is very valuable for any student of splenic disease. Being written, however, in that little known language, Russian, it makes one see the advantage that existed in the past, when Latin was the universal language of science, or may exist in the future, when some one tongue (even Esperanto if need must be) may become intelligible to every educated man.

Diseases of the Genitourinary Organs Considered from a Medical and Surgical Standpoint, Including a Description of Gonorrhea in the Female and Conditions Peculiar to the Female Urinary Organs. By Edward L. Keyes, Jr., M.D., Ph.D., Professor of Genitourinary Surgery, New York University and Bellevue Hospital Medical School; Surgeon to St. Vincent's Hospital. New York and London: D. Appleton and Company, 1912.

The most important change made in the text of this edition is the introduction of a special chapter dealing with salvarsan. The unquestioned value of this preparation in the treatment of syphilis, its mode of administration, dosage, after-effects, and toxicology are briefly discussed. The author prefers the intravenous method of administration in the smaller doses repeated, *i. e.*, 2 or 3 decigrams not oftener than once a week or less often than every two weeks for from 4 to 6 times. He advocates the use of mercury following salvarsan, since experience thus far has shown that we may only temporarily check the activity of the disease with Ehrlich's preparation if used alone.

Society Reports.

NEW YORK ACADEMY OF MEDICINE

Stated Meeting March 21, 1912.

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR

THIS meeting was held under the auspices of the Section on Dermatology, and was devoted to the consideration of diseases of the skin in relation to internal disorders.

Gastrointestinal Dermatoses.—Dr. UDO J. WILE read this paper, the title of which he said should properly include all the diseases in which the cutaneous and alimentary systems, from the mouth to the anus, were coincidently involved, but he proposed to limit his remarks to those disorders of the skin and gastrointestinal tract which resulted from the ingestion and absorption of certain foodstuffs and drugs. In cases of food or drug idiosyncrasy the symptoms which manifested themselves on the skin following the ingestion of such substances were erythema and urticaria; in rarer instances more violent eruptions, bullous, hemorrhagic, or purpuric in character were met with. So also in the alimentary canal, the symptoms varied with the degree of susceptibility, from mild cramps to violent gastroenteritis, with vomiting, diarrhea, and, more rarely, hemorrhage. In the past ignorance of the nature of these manifestations had been cloaked under the vague terms autointoxication, toxic rashes, and idiosyncrasy. But now, by the application of the principles of immunity to this problem, investigation had been turned into the right channels and they were in a fair way toward the solution of the subject of idiosyncrasy. Experimental studies in this connection were based upon the work of Richet, v. Pirquet, and Schick, and the hypothesis of Wolff-Eisner on anaphylaxis. By anaphylaxis they understood a condition of the organism due to a preliminary sensitization by a small dose of protein substance, followed by a condition of hypersusceptibility to repeated doses of this protein. That Wolff-Eisner's hypothesis was along the lines of correct reasoning was shown by the work of Carl Bruck, which appeared in 1909. From his experiments Bruck concluded that hog serum and crab meat contained substances to which rabbits and guinea pigs showed hypersusceptibility. The question arose as to whether such phenomena produced in animals by the injection of alien proteins could be applicable to the idiosyncrasy of human individuals following the ingestion of these same substances. The fact that Rosenau and Anderson had been able to sensitize guinea pigs to bovine and horse serum by feeding them at first on beef and horse meat lent color to this possibility. Bruck, in an experiment on a young man who, owing to an indiscretion in diet of eating too much sausage made of pig meat, had been unable to eat pork in any form, as the slightest amount gave rise to violent itching and urticaria, had been able to show this definitely in the following experiment: He injected 10 c.c. of this patient's inactivated serum into guinea pigs and twenty-four hours afterward they were injected intraperitoneally with 5 c.c. of inactivated hog's serum. Of two animals so treated both became anaphylactic and one died. Control animals remained entirely normal. From this experiment Bruck concluded that the peculiar idiosyncrasy to pork in this patient depended upon an experimentally proved hypersusceptibility to hog protein. The writer reviewed the "Case of Food Allergy, Idiosyncrasy to Eggs, Oatmeal, and Almonds," reported before the Section on Pediatrics of the New York Academy of Medicine on February 8, and described in the report of that section in the MEDICAL RECORD of March 2. This was a typical case of marked idiosyncrasy to egg, following an initial sensitization of the organism. Of special interest was the method of treatment by which Schloss was able to immunize his patient so that at the present time eggs were tolerated and complete immunity to oatmeal established, as well as a lessened susceptibility to almonds. In considering drug idiosyncrasy they were confronted by the fact that they were here dealing with non-protein substances and substances which were more or less toxic to the normal individual. Recent experiments, however, tended to show that drug idiosyncrasy was closely analogous at least, if not identical in nature, with idiosyncrasy to protein in foodstuffs. There were but few drugs in the Pharmacopeia to which certain individuals had not been shown to exhibit an idiosyncrasy. Certain ones stood out, however, by reason of the frequency with which intolerance to them was encountered; such were the iodides, bromide compounds, iodoform, quinine, copaiba, mercury, and the members of the coal-tar series. Up to the present time iodide of potash, antipyrine, bromide of potash, and mercury had been studied experimentally. The writer reviewed the work of Bruck, Klausner, Cruveillier and Maniloff in experimenting with drug idiosyncrasy and concluded that the evidence in the case of iodine, bromine, antipyrine and quinine pointed to a phenomenon closely allied to anaphylaxis as the logical explanation for the train of symptoms following their ingestion by hypersusceptible individuals. It seemed safe to assume that further experimentation would show other drug idiosyncrasies to be readily explainable on the same basis.

Diseases of the Skin in Relation to Hepatic and Renal Disorders.—Dr. L. DUNCAN BULKLEY read this paper, in which he said that the relation between derangements of the liver action and diseases of the skin had been but little observed and studied and there were relatively few cutaneous disorders which had been definitely traced to and clearly shown to be definitely dependent upon the former; there were, however, enough of them and also enough indirect indications of an intimate connection between the two to make a study of the relationship interesting and profitable. After calling attention to the importance of the liver as a factor in connection with metabolism and the consequent significance of derangements of its action in relation to many disorders and diseases of various organs and structures of the body, the writer stated that perhaps the most striking and definite skin affection connected with liver derangement was found in the pruritus which accompanied jaundice. Murchison had found that while it was absent in many cases of jaundice, he had frequently known itchiness of the skin to be a source of extreme distress to patients with hepatic derangements unaccompanied by jaundice. Xanthoma in its multiple form had been shown pretty clearly by Hutchinson and others to be also associated with biliary disturbance in a considerable proportion of cases at least: while another form of the disease, exhibiting more inflammatory lesions, had so far been connected with faulty glycogenic action of the liver as to have received the name of xanthoma diabeticorum. Boils and carbuncles were also associated with glycosuria and this was universally recognized as an effective predisposing cause of the condition of the skin in which pus cocci found a satisfactory soil for growth. Disturbance of the urea formation function of the liver played no inconsiderable part in connection with several diseases of the skin, though evidence of this was clinical and had not thus far been supported by actual chemical or laboratory tests. Urticaria was also an eruption which had been traced by Murchison and others to functional derangement of the liver, and finally pigmentation of the skin, varying all the way from a dirty sallow complexion to well-defined chloasma, resulted from hepatic derangement in a certain number of cases as the results of treatment often showed conclusively. The exact manner in which disorder of the liver affected the skin had never been demonstrated, but it could be readily understood that a toxemia from imperfect liver action might irritate the nerves and cells of the skin, and in conjunction with external causes or independently could give rise to pruritic sensations and alterations of structure, even as it could cause changes in the joints in gout and deforming arthritis. The connection between diseases of the skin and renal derangements was a more satisfactory field of observation and research because of the ease with which the urinary excretion could be secured and analyzed and the relations noted between its varying composition and the condition of different eruptions. The urine was a most perfect exponent of the catabolism and anabolism of the system, and too much stress could not be laid upon the importance of its repeated and complete volumetric analysis in very many cases of skin disease. By it they might learn daily much which could not otherwise be ascertained in regard to the manner in which the nutritive processes of the body were carried out and the character of the blood which induced the eruption on the skin. This was strikingly illustrated in two cases of dermatitis herpetiformis recorded by Hardouin. Making a daily analysis of the urine of twenty-four hours over a period of nearly six months, he found that in one case on eight occasions, at pretty regular intervals, there was a fresh outbreak of the eruption after a period of diminished excretion of urea. In the second case the onset of the attack repeatedly coincided with the lowest point of urea excretion. This relationship had been confirmed by other observers. In the study of the relation of skin diseases to renal derangements it was not albumin and casts or glycosuria which were sought for, but the volumetric changes in the many constituents of urine which might be considered normal

were it not that it was often quite imperfect in regard to some of its elements. Insufficient and defective function of the kidneys, not necessarily actual disease, played a most important part in connection with many diseases and were of special significance in relation to certain affections of the skin. Not only was it important that the chemical ingredients of the urine should be in the proportions belonging to health, but it was essential that the individual should pass them in sufficient quantity. The actual volumetric acidity of the urine often afforded the greatest aid in determining the exact state of the patient as to the alkalinity of the blood. Practically the reaction of this high acidity was continually observed in connection with many diseases of the skin and eruptions would often be seen to be red and congested and the itching increased when there was high acidity and would be relieved when the urinary acidity was reduced. The daily excretion of urea afforded, as all knew, a valuable indication of the nitrogenous metabolism of the system which often had an important bearing on certain diseases of the skin, notably psoriasis. Indican in excess in the urine was being recognized more and more as a valuable indication of putrefactive changes occurring in proteids, mainly in the large intestine. Many cases of urticaria arose from intestinal putrefaction and careful examination of the urine as to indican would often afford intelligent indications for the treatment; the same was more or less true regarding eczema, acne, and perhaps other affections of the skin. The occurrence of urates in the urine and the appearance of crystals of uric acid were always of more or less significance in many diseases of the skin which were frequently aggravated when they appeared in the urine; they afforded a good indication of the so-called gouty state often associated with them. Clinically the finding of crystals of oxylate of lime in the urine did not commonly indicate gastorintestinal disturbances or those of the liver which were found to be of significance in connection with certain diseases of the skin. The quantitative estimation of the chlorides excreted was sometimes of value in connection with the treatment of certain cutaneous affections, as indicating the state or condition of the nutrition at large and the character of the food taken. The amount of phosphates in the urine might also afford considerable information of value along the line of treatment of many patients with diseases of the skin associated with or dependent upon neurotic elements. Continued increased elimination would often indicate a waste of nervous tissue and energy, which must be met by proper measures. In chronic diseases in which the nutrition of the body suffered the excretion of phosphates might be far below the normal, and this condition should be met by proper measures if the best results were to be obtained in treating the condition of the skin. The sulphates might often prove to be a good indicator of the proper metabolism of proteid substances. Mention had been made of a number of more or less acute and some chronic cutaneous affections in regard to which functional disturbances of the liver and kidney action had been observed to be of etiological moment, and it therefore seemed probable that careful study would demonstrate that the same was more or less true of other eruptions which had not thus far been investigated in this direction and possibly that in every case in which skin was diseased with few exceptions there might be some metabolic errors which might be evidenced in the urine when sufficient time, patience and skill were employed to detect him. Skin diseases as a class were notoriously rebellious and it behooved dermatology to look away from the purely local etiology and therapeutics and to seek for underlying causes, which were often dependent upon a defective metabolism which was indicated by hepatic and renal disorders.

Skin Diseases in Relation to Nervous and Sexual Disorders.—Dr. S. POLLITZER read this paper. He said that the skin was an organ of such great complexity of structure and function that it needed no elaborate demonstration to show that in one way or another the nervous system was involved in the lesions underlying most dermatoses. The effects of the nervous diseases were manifested through the sensory nerves and those of the sympathetic system especially the vasomotor nerves. In addition there were trophic disturbances of the skin in consequence of central nerve disease of which the exact mode of occurrence was still undetermined—the clinicians, as a rule, assuming the existence of special trophic nerves, the physiologists explaining these trophic lesions as of vascular or neurovascular origin. The subject might be divided into three groups: 1. Skin diseases whose connection with the nervous system was established by their constant association with definite lesions of the central nervous system. 2. Skin diseases which occurred in connection with great organic diseases of the central nervous system. 3. Skin diseases which occurred in connection with the so-called vasomotor trophic neuroses and those in which the connection with the nervous system was purely hypothetical. There was only a single disease of the skin in which there was constantly present a definite anatomical lesion of the central nervous system, namely, herpes zoster. Head and Campbell had shown that zoster always implied a lesion of the spinal ganglion of the nerve of the affected area, and that this lesion was a hemorrhagic inflammation with destruction of ganglion cells and nerve fibers and the cutaneous lesion did not correspond to the region supplied by the ganglion cells, but rather to a definite spinal cord segment. However, the pathology of zoster was by no means cleared up. In addition to the cases of idiopathic zoster the disease occurred symptomatically in a variety of conditions; in connection with destructive lesions of the central nervous system like tabes, hemiplegia, chronic spinal meningitis, etc.; in many infectious diseases; in disorders of metabolism; in many toxemias, uremia, eclampsia, arsenic, carbon dioxide poisoning, etc. In considering the dermatoses of the great organic diseases of the central nervous system they should bear in mind that these diseases were of great chronicity and it was possible for many things to happen to the patient during his long illness. There was, indeed, no lesion of the skin which constantly accompanied the organic diseases of the central nervous system and none which could be explained as depending directly on the central lesion. The skin diseases of the vasomotor trophic neuroses constituted a group of great clinical and pathological interest. The condition known as erythromelalgia was not a disease but rather a symptom complex on the basis of organic or functional disorders of the central nervous system or of the peripheral nerves. In one case in which there were symptoms of Raynaud's disease the post-mortem examination disclosed extensive atrophy of the gray matter of the cervical and dorsal cord involving the intermedio-lateral tract and the basal cells of the posterior horns. In other cases no lesion of the central nervous system could be found; in still others the sole changes were severe arteriosclerosis of the vessels and thickening of the nerves of the affected limb. As to erythromelalgia, while vasomotor disturbances played an important rôle in the disease there was no evidence at all of involvement of the central nervous system. In Raynaud's disease the probabilities seemed to favor the view that this was an affection of the vascular rather than of the nervous system. The question of the nervous origin of various inflammatory dematoses had during the past decade greatly occupied dermatologists. The weight of evidence was decidedly on the side of the hematogenous origin of the angioneurotic dematoses. The rôle of the vasomotor nerves in the production of skin disease was nevertheless one of great importance. The effects of long continued hyperemia were manifested in a diminished resistance of the affected area and skin diseases might develop secondary to such a locus minoris resistentiæ. Through the vasomotor nerves the emotions might enter into the causation of skin diseases. Pigmentary and trophic changes in the nails and hair were often cited as examples of this, but it must be said that recent critical sifting of the evidence threw some doubt on the reality of the occurrence of these remarkable changes that were popularly supposed to take place in a few hours. Many of the lesions supposed to be due to hysteria were in reality of traumatic origin. There was still a number of dermatoses for which a connection with the central nervous system had been assumed on grounds wholly insufficient. It might be said that with the advance of knowledge the number of dermatoses to which a nervous origin might be ascribed had constantly grown less and to-day they regarded external infections and internal toxemic conditions as the principal factors in the causation of skin diseases. As to the relation of skin diseases to the sexual organs, the writer said that in men the dermatoses connected with the genital organs were of less importance and less frequent occurrence than in women; this was because the genital glands in the male were of less physiological importance as compared with those of the female and were less subject to disease. The connection between certain dermatoses and disorders of the genital organs in women lacked distinct experimental foundation, but that such a connection existed was so strong and so direct that there could be no reasonable place for doubt. The writer considered the dermatoses of puberty, menstruation, pregnancy and the climacterium, and explained the relationship between these and the various dermatoses on the basis of vasomotor and glandular changes. He said that the entire subject was one of great difficulty in the present state of our knowledge. The difficulty in the way of an

understanding of the pathological effects of altered internal secretion was increased by the enormous complexity of the chemical correlation that existed between the various organs of internal secretion, so that they were often at a loss to know whether it was a subsecretion or supersecretion of one organ or the resulting disturbance in the secretion of another that produced the disturbance in the effects clinically observed. One fact, however, seemed evident, they must give up their traditional notions of a mysterious reflex action in these cases. They were dealing with the internal secretions, with chemical substances of a definite and in most cases relatively simple chemical constitution.

Dr. Alexander Lambert said that the general practitioner often saw instances of skin diseases arising from disordered conditions in the intestinal tract and it certainly was a pleasure to him to have had the privilege of listening to Dr. Wile's paper and what he had to say in regard to anaphylaxis and drug poisons. It was very interesting to watch the sensitiveness which appeared in different people to insect bites. Some appeared to be naturally immune to the bites of all insects and some immune only to certain insects. Some only appeared to suffer from the bite of the mosquito. Those who lived where the insect was the most common appeared to be the least affected. Some were very sensitive to very small doses of opium, and to even 1/50 grain of heroin, and this peculiarity seemed to run in families. Again they did not see to-day as they did years ago the number of rashes that were caused by the giving of antipyrine when it was the fad to use this agent in the reduction of temperature; veronal had largely been abandoned because of the many rashes that resulted from its employment, even in small doses. This was a hypnotic that had to be abandoned because it produced a group of rashes that did not occur when sulphonal or trional were used. It seemed to Dr. Lambert that what was found in the urine was an expression of the state of metabolism; the kidneys were the great chemical laboratories of the body and filters of products that were brought to them. There were many substances which they got rid of; at the same time there were certain imperfectly broken down products that they were unable to get rid of. It was one of the functions of the liver to break down certain poisons or substances into their end products and these the kidneys could care for. This, however, Dr. Lambert said, was a subject about which very little was known.

Dr. Theodore C. Janeway said that it was exceedingly interesting to note to what extent dermatology had developed, yet this was purely a descriptive science. The papers read showed very clearly the pathological anatomy of skin diseases that was being investigated, and this study would certainly be very fruitful, especially in the study of the etiology and pathogenesis. For many years the dermatologists had had a fruitful field in the study of the many lesions of the skin, but it should be remembered that the etiological study of skin lesions was far more difficult than the etiological studies they dealt with in internal medicine. These lesions were far more difficult to decipher. There were so many skin lesions associated with so many different disturbances of the internal organs that one was often at a loss to explain any real relationship. If every skin lesion was as definite and clear cut as heart lesions or diseases accompanied by high blood pressures it would be different. The problems that confronted dermatologists were very difficult ones and especially that which concerned the exanthematous diseases. Anderson and Goldberger had tested the problem quite clearly and practically had solved it. Dermatological problems might be solved along the same lines they employed. The question of the soil was very striking and very important, and as in tuberculosis depended much upon the non-resistance of the bacilli in particular individuals and upon the rôle they played in determining what individual should fall a prey to the disease. This same thing applied in dermatology. In diabetic patients the skin lesions were most striking, as well as in cases of chronic nephritis where there were such great disturbances in metabolism, with retention of the products of metabolism, increase of the amount of urea in the blood and other associated conditions such as were seldom seen in other disturbances. Dr. Janeway confessed that it was very difficult for him to believe in any definite clear-cut relation between the retention of metabolic products and disturbances of the skin. In closing he called attention to the phenomena of anaphylaxis due to the use of buckwheat in the diet, and the many urticarias and many cases of hypersensitiveness which followed the use of certain spices which had been adulterated with buckwheat.

Philadelphia Neurological Society.

At a stated meeting held March 22 Drs. Jay C. Knipe and Samuel Leopold presented a communication entitled "A Case of Dyspituitarism, with Interesting Eye Symptoms." The patient was a drug clerk, seventeen years old, who, without warning, was seized with impairment of vision, first in one eye and then in the other. Examination disclosed a binasal hemianopsia, with swelling and edema of the optic papilla. There were no motor or sensory or mental symptoms, and the reflexes were unaltered. There were some increase in weight and some growth in stature, and also cyanosis of the extremities. The levulose test for carbohydrate tolerance was not made. The *x*-ray picture was not clear. The Wassermann test yielded a negative response. The genitalia appeared to be unaffected. Marked improvement took place under administration of potassium iodide. The symptoms were attributed to disease of the hypophysis, the further development of which was to be carefully looked for. Dr. John H. W. Rhein presented "A Case of Bitemporal Hemianopsia." The patient was a man, forty-two years old, with a history of several attacks of gonorrhea, but who denied syphilitic infection. He had had several convulsions at the age of eighteen. When about thirty-five years old the eyesight became bad, and examination disclosed loss of vision in both temporal fields, with degenerative changes in the optic discs. The reflexes were exaggerated. There was also marked increase in bodily weight, with diminished sexual desire, and an *x*-ray picture showed apparent increase in size of the pituitary body, with wasting of the sella turcica. Dr. Alfred Gordon presented "A Case of Progressive Muscular Atrophy with Unusual Symptoms." The patient was a woman, about forty years old, who presented wasting and weakness in the small muscles of the hands and also in the muscles of the arms and the forearms, as well as of the face and tongue, with fibrillary twitching in places. There was, in addition, characteristic foot-drop and a marked steppage gait, with abolition of the knee-jerks and absence of sensory symptoms. A positive response was obtained to the Wassermann test. It was thought the case might be one of chronic poliomyelitis, with the addition of peripheral neuritis. Dr. James Hendrie Lloyd made the "Report of a Case of Brain Tumor Associated with Cystic Formation in the Right Parietal Region," and he exhibited the specimen. The patient was a young man, about sixteen years old, who complained of pain over the right eye of paroxysmal character, with vomiting independently of food, and suggestive of migraine. Examination disclosed inflammatory changes in the optic nerve on the affected side, but there was no tenderness on palpation or percussion of the skull. The patient had no convulsions and no other motor symptoms, but was subject to attacks of somnolence or stupor, so that it was not possible satisfactorily to make tests for astereognosis. A diagnosis of tumor of the brain was made, although its situation appeared uncertain, and operation was recommended, but declined. The condition of the patient grew gradually worse and death resulted. On post-mortem examination a tumor of considerable size was found in the substance of the right cerebral hemisphere behind the Rolandic area and surrounded by a space apparently resulting from destruction of adjacent brain tissue. The opinion was expressed that surgical removal would have been readily possible. Dr. Wm. G. Spiller reported "A Case of Detachment of the Tuberosities of the Humerus from Muscular Action." The patient was a man who was seized with severe pain in the arm close to the shoulder after flinging a suitcase from the railway platform to the top step of the car platform. For some time the condition was treated on the basis of a neuritis of the brachial plexus. Examination showed that the arm could be elevated only to a horizontal level, and in an *x*-ray picture it was found that the tuberosities of the humerus had become detached from the body of the bone.

Contribution to the Study of Leucemia.—F. de Marchis states that in chronic myelocytic leucemia the opsonic index varies little from the normal as long as the patient remains in good physical condition. When the nutrition and general health fail the index is much lower than normal. There is no direct relation between the number of white blood cells and the opsonic power of the blood. Under *x*-ray treatment the opsonic index is lowered owing to the diminution in the number of phagocytic leucocytes. Even the neutrophile leucocytes can acquire a phagocytic power in leucemia.—*Le Sperimentale.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF OKLAHOMA.

October 10, 1911

ANATOMY.

1. Name the bones of the face.
2. Describe the shoulder joint.
3. Give origin, insertion, and nerve supply of the pectoralis major.
4. Name the cranial nerves; which one takes a part of its origin from the spinal cord?
5. Describe the formation and name the branches of the lumbar plexus.
6. How may tubercle bacilli gain entrance to the lungs from the intestinal tract?
7. Describe the minute structure of the lungs.
8. Locate superficial and deep palmar arches. What vessels are concerned in their formation?
9. What anatomical arrangement makes it possible to have an infection of the middle ear from a pharyngitis?
10. Describe the cul-de-sac of Douglas.

PHYSIOLOGY.

1. Tell about the heart as follows: (*a*) structure, (*b*) nerve supply, (*c*) position, (*d*) trace the blood from the vena cava to the aorta, naming the valves, chambers of the heart, and organs it passes through in their order.
2. State circumstances that influence secretion of glands
3. Tell about the liver as follows: (*a*) structure, (*b*) nerve supply, (*c*) blood supply, (d) function of bile
4. Where is chyme found? Describe it. What is chyle and where found?
5. Give deep origin, distribution, and function of the eleventh cranial nerve (spinal accessory).
6. What functions originate in the corpora quadrigemina? What is the effect of the removal of the anterior corpora quadrigemina?
7. Give origin and function of (*a*) ptyalin, (*b*) trypsin, (*c*) succus entericus.
8. What is the composition and office of vernix caseosa?
9. Define excretion and secretion and give example of each.

MATERIA MEDICA AND THERAPEUTICS.

1. For what is santonin used? How does it affect the urine?
2. What is an alkaloid? Name one obtained from ergot, nux vomica, colchicum, pilocarpus, ipecacuanha.
3. For what is potassium permanganate used?
4. Give the therapeutic uses for mustard
5. Give indications for the use of chloral hydrate. How is it eliminated?
6. Name and explain the use of three counter irritants.
7. Diagnose and treat apoplexy.
8. What is Graves' disease? Give diagnosis and treatment.
9. Give prophylactic treatment of diphtheria, smallpox.
10. Give symptoms of gastric ulcer.

CHEMISTRY.

1. What metallic element is constantly present in the coloring matter of the blood? What is allotropism?
2. Give the characteristics of (*a*) nephritic urine and (*b*) cystitic urine.
3. In examining a specimen of urine, how detect or show there is an excess of uric acid present?
4. What is nitric acid? How formed? Give chemical symbols, specific gravity, and properties of same.
5. What antidotes are used in cases of poisoning from (*a*) carbolic acid and (*b*) caustic alkalies?
6. What is the chemical composition of pancreatic juice?
7. What is mucin, where is it found in the body?
8. What is collodion; also what is litmus?
9. What is the chemical name and formula for iodoform?
10. Give two tests for morphine

PHYSICAL DIAGNOSIS.

1. What is physical diagnosis?
2. What is a rale?
3. Name the rales.
4. What is a murmur?
5. What is a respiratory murmur?
6. Give physical signs of last stage of lobar pneumonia
7. Give physical signs of hydrothorax
8. Give physical signs of pulmonary tuberculosis in last stage.
9. Give physical signs of chronic bronchitis.
10. Give physical signs of aortic regurgitation.

BACTERIOLOGY AND PATHOLOGY.

1. Name and describe the bacilli found in leprosy, syphilis, and tuberculosis.
2. Name the bacilli of cerebrospinal meningitis and where found.
3. Name and describe the two bacilli found in pyemia.
4. Give the pathological changes that take place in chronic peritonitis.
5. Give the morbid changes that take place in diphtheria.
6. Name the pathological changes that take place in variola.
7. Classify cysts according to origin; name and describe three kinds of cysts under each class.
8. Give the morbid anatomy of actinomycosis.
9. Divide periostitis into three classes and describe each class.
10. Give complete pathology of the appendix vermiformis and the surrounding tissues usually involved.

SURGERY.

1. What is the difference between congestion and inflammation?
2. Define septicemia and give its causes.
3. What is lupus?
4. Give the diagnosis and treatment of Pott's disease
5. How may a quart of normal salt solution be prepared at the patient's home?
6. Outline the principles of treatment for a compound dislocation.
7. Name and describe the different varieties of fractures.
8. What circumstances demand amputation of an extremity?
9. At what point is paracentesis of the thorax preferably performed?
10. Give the symptoms of gallstones in the common duct.

GYNECOLOGY.

1. Describe the blood supply of the uterus and ovaries.
2. What is salpingitis? Give etiology.
3. Discuss ventrofixation of the uterus.
4. Why does retrodisplacement of the uterus cause leucorrhea?
5. Give causes and treatment of ulcer of cervix.
6. Diagnose and treat polypi of cervix.
7. Give causes of acute vaginitis.
8. What is a tampon? What are its gynecological uses?
9. Give causes of menorrhagia.
10. Give indications for knee-chest posture in office treatment.

OBSTETRICS AND HYGIENE.

1. Differentiate between puerperal eclampsia and hysteric convulsions during labor.
2. What symptoms during labor would cause you to fear postpartum hemorrhage? What measures would you use to prevent its occurrence?
3. Describe a four months' fetus sufficiently exact to be of value in a medico legal investigation.
4. At what period of gestation is abortion most dangerous? Give reasons.
5. Name several conditions of the mother that unfit her milk to nurse the infant.
6. During pregnancy, what clinical symptoms would be most likely to cause a patient to consult you for threatening toxemia of pregnancy? How would you verify diagnosis? How would you manage the case?
7. What are the symptoms of threatened abortion?
8. What causes any one to catch cold? What hygienic means should be employed by persons prone to catch cold?
9. How long does a diphtheria patient remain infective? How may it be proved that the infected period has ceased?
10. Name six efficient disinfectants and indicate the application to different purposes.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

1. How would you treat a case of morphine poisoning?
2. In a case of death by poison, what organs would you select for chemical examination, and how would you prepare them for the chemist?
3. What is melancholia?
4. Give some of the causes of death from heat, other than burns and scalds.
5. Give the technique of medicolegal post-mortem examination.
6. Give some of the conditions simulating death.
7. Give some of the most common causes of organic dementia

8. How would you diagnose and treat a case of delirium tremens?

9. Give some of the symptoms of lead poisoning and the treatment.

10. Give the effect of poisoning by acetanilide and the treatment.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF OKLAHOMA.

October 10, 1911.

ANATOMY.

1. *Bones of the face.* Two nasals, two superior maxillary bones, two lacrymals, two malars, two palates, two inferior turbinates, vomer, and inferior maxillary bone.

2. See Cunningham's "Anatomy" (1909), page 276; or Gray's "Anatomy" (1910), page 301.

3. PECTORALIS MAJOR. *Origin:* Anterior surface of inner half of clavicle, lateral half of anterior surface of sternum as far as seventh costal cartilage, cartilage of true ribs, and aponeurosis of external oblique of abdomen. *Insertion:* Outer edge of bicipital ridge of humerus. *Nerve supply:* External and internal anterior thoracic nerves.

4. *The names of the cranial nerves* are: (1) Olfactory. (2) Optic. (3) Motor oculi. (4) Trochlear or pathetic. (5) Trifacial. (6) Abducens. (7) Facial. (8) Auditory. (9) Glossopharyngeal. (10) Pneumogastric or Vagus. (11) Spinal accessory. (12) Hypoglossal.

Of these the *spinal accessory* takes a part of its origin from the spinal cord.

5. See Cunningham's "Anatomy" (1909), page 641; or Gray's "Anatomy" (1910), page 1047.

6. From the intestinal tract the tubercle bacilli gain access to the peritoneum and mesenteric lymph nodes, thence to the thoracic lymphatics, and thence to the lungs.

7. See Cunningham's "Anatomy" (1909), page 910; or Gray's "Anatomy" (1910), page 1196.

8. The *superficial palmar arch* is formed by the ulnar artery, and is completed by the ulnar artery anastomosing with a branch of the radial (superficial volar or princeps pollicis). It gives off the four digital branches.

The surface marking is a line drawn transversely across the palm from a point where the web of the thumb joins the palm.

The *deep palmar arch* is formed by the radial artery, and is completed by the radial artery anastomosing with a deep branch of the ulnar. Its branches are the palmar interosseous, perforating, and palmar recurrent arteries.

The surface marking is a line drawn transversely across the palm, one-half inch nearer the wrist than the superficial arch.

9. Infection of the middle ear from a pharyngitis is possible by extension of the inflammation from the pharynx, along the Eustachian tube, to the middle ear.

10. See Cunningham's "Anatomy" (1909), pages 1090, 1100, and 1189; or Gray's "Anatomy" (1910), pages 1256 and 1409.

PHYSIOLOGY.

1. HEART. *Structure:* See Cunningham's "Anatomy" (1909), page 791; or Gray's "Anatomy" (1910), page 565. *Nerve supply:* Vagus, sympathetic cardiac plexuses, and intrinsic cardiac ganglia. *Position:* In the thoracic cavity, obliquely behind the middle part of the sternum, and adjacent costal cartilages; about one-third is to the right of the median line and about two-thirds to the left. *Course of blood:* From vena cava into right auricle, through the tricuspid valve into the right ventricle, through the pulmonary semilunar valve into the pulmonary artery, thence into capillaries in the lungs, thence into pulmonary veins, thence into left auricle, through mitral valve into left ventricle, and through the aortic semilunar valve into the aorta.

2. *Circumstances that influence the secretion of glands:* (1) The nervous system; and (2) the amount of blood which passes through the gland.

3. LIVER. *Structure:* See Cunningham's "Anatomy" (1909), page 1121; or Gray's "Anatomy" (1910), page 1329. *Nerve supply:* Left vagus and sympathetic. *Blood supply:* Hepatic artery, (portal vein), and hepatic veins. *Function of bile* is: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.

4. *Chyme* is the food at the end of gastric digestion as it passes into the duodenum. It is a thick, grayish, acid fluid and consists of proteids, proteoses, peptones, fats, salts, and undigested matter. *Chyle* is the lymph which comes from the small intestine during the period of digestion.

5. SPINAL ACCESSORY NERVE. *Deep origin.* The medullary portion arises from the spinal accessory nucleus in the lower half of the floor of the fourth ventricle; the spinal portion arises in an elongated nucleus on the external surface of the anterior cornua of the spinal cord (as far down as the fifth cervical vertebra). *Distribution:* After emerging from the cranial cavity the nerve soon separates into two branches: (1) An *internal* or *anastomotic* branch, consisting chiefly of filaments coming from the medulla oblongata. It soon enters the trunk of the vagus, from which fibers pass to the muscles of the pharynx, to the muscles of the larynx through the inferior laryngeal nerve, and to the heart according to most authorities. (2) An *external* branch, consisting chiefly of the accessory fibers from the spinal cord.

It is distributed to the sternocleidomastoid and trapezius muscles.

Function: The transmission of nerve impulses from the cells from which they take their origin to the muscles to which they are distributed. They therefore excite to action some of the muscles of deglutition, the muscles which regulate the tension of the vocal bands during phonation, and the muscles which control the respiratory movements associated with sustained or prolonged muscle efforts; the fibers also convey nerve impulses which exert an inhibitory influence on the heart; it is the motor nerve to the trapezius and sternomastoid. (From Brubaker's *Physiology.*)

6. *The Corpora Quadrigemina.*—"The anterior tubercles of the corpora quadrigemina, together with the external geniculate bodies, form part of the primary centers of vision. The anterior tubercles, however, have to do chiefly with reflex movements of the pupil and the ciliary muscles. The posterior tubercles of the corpora quadrigemina and the internal geniculate body are connected with the auditory nerve, and have to do with reflex movements associated with hearing and space sensations. They also appear to receive some fibers from the cerebellum; their injury or disease produces some disturbances in equilibrium and possibly in hearing. Owing to the fact that the nuclei of the third nerves and the red nuclei lie beneath the corpora quadrigemina, lesions of these latter produce irritations and paralyses of the third nerve, disturbances in equilibrium and forced movements. Lesions in this neighborhood sometimes cause somnolent and stuporous states." (Dana's *Nervous Diseases.*)

7. *Ptyalin* is found in the saliva; it changes starches into dextrin and sugar. *Trypsin* is made in the cells of the pancreas; it changes proteids into proteoses and peptones in an alkaline medium. *Succus entericus* is made in Lieberkuhn's crypts of the intestine; it has a slight action on carbohydrates, turning starches into sugar, and sugar into dextrose and levulose; it acts also on proteids, splitting up proteoses, petones, and polypeptids into amino-acids.

8. VERNIX CASEOSA. *Composition:* Chiefly fat and epithelial cells. *Function:* Protection of the fetus, preservation of its skin from the action of the amniotic liquid.

9. *Secretions* are materials separated from the blood by glandular cells, and which serve some further purpose in the animal economy; as milk, gastric juice.

Excretions are materials separated from the blood by cell activity, and discharged from the body, and which are harmful if retained; as urine.

MATERIA MEDICA AND THERAPEUTICS.

1. *Santonin* is used as an anthelmintic for round worm and thread worm. It colors the urine a greenish-yellow.

2. An *alkaloid* is a nitrogenous, basic, organic substance, alkaline in reaction, and capable of uniting with acids to form salts in the same way that ammonia does. An *alkaloid:* of ergot, is cornutine; of nux vomica, strychnine; of colchicum, colchicine; of pilocarpus, pilocarpine; of ipecacuanha, emetine.

3. *Potassium permaganate* is used as an antiseptic, disinfectant and deodorant; it is an emmenagogue, and so is used in amenorrhea; it is used as a lotion for wounds, ulcers, abscesses, leucorrhea, and as an antidote in morphine or opium poisoning.

4. *Mustard* is used (in form of a paste) as a counter-irritant; as a cardiac and respiratory stimulant; in rheumatism, neuralgia, inflammations; also in amenorrhea.

5. *Chloral hydrate is indicated in* Insomnia not due to pain, whooping cough, tetanus, strychnine poisoning; also locally, as a counterirritant. It is *eliminated* by the kidneys and skin.

6. *Three counterirritants:* Mustard, cantharides, and croton oil. *Mustard* is a rubefacient, and produces a hyperemia of the skin. *Cantharides* is a vesicant and acts more vigorously than a rubefacient, producing blisters in addition to the hyperemia. *Croton oil* is a pustulant, and besides causing hyperemia and blisters it acts on the sweat glands and produces pustules.

7. See French's "Practice of Medicine" (1910), pages 1108, 1111, and 1113; or Osler's "Practice of Medicine (1909), pages 969, 975, and 980.

8. See French's "Practice of Medicine" (1910), page 557; or Osler's "Practice of Medicine" (1909), page 705.

9. See French's "Practice of Medicine" (1910), pages 194 and 309; or Osler's "Practice of Medicine" (1909), pages 123, 207, and 209.

8. See French's "Practice of Medicine" (1910), page 557; or Osler's "Practice of Medicine" (1909), page 473.

CHEMISTRY.

1. *Iron* is the metallic element constantly present in the coloring matter of the blood.

Allotropism. Some elements (as phosphorus and carbon) exist in two or more forms, in which the chemical relations remain unaltered, but the physical properties vary; these different conditions of the same element are said to be allotropic.

2. *In acute diffuse nephritis:* "The urine is greatly diminished in amount (4 or 5 ounces in 24 hours), or is even totally suppressed. It is smoky, blackish, or of a chocolate color. The specific gravity is high. Albumin is found in large amount, and the heavy deposit contains abundant red corpuscles, blood, hyaline and epithelial tube casts. The total urea is lessened."

In *chronic diffuse nephritis:* "The quantity of urine is diminished, it is cloudy from urates, the specific gravity may be high in the early, but is low in the later, stages. Albumin is abundant, sometimes more so than in any other disease. The heavy sediment contains large numbers of nearly all the varieties of tube casts, hyaline, epithelial, granular, and fatty. The latter are especially characteristic. Occasional red corpuscles, many leucocytes, and numbers of degenerated epithelial cells are also found. The amount of urea is decreased." In *chronic interstitial nephritis:* "The urine is increased in quantity, light yellow, clear, with a persistently low specific gravity. Albumin is scanty, occurring in traces and is sometimes absent. A few narrow hyaline casts are almost constantly found in the very small deposit. Cellular elements are as a rule no more abundant than in normal urine. Polyuria, persistent low specific gravity, and the presence of a few hyaline casts constitute the urinary signs of this disease. Albumin may or may not be present in small quantity."

In *acute cystitis:* "The urine is acid and contains blood, pus, albumin, and epithelium. In *chronic cystitis* the urine is turbid, alkaline, and ammoniacal. It contains a considerable amount of viscid pus, albumin, much epithelium, crystals of triple phosphates, and numerous bacteria (*Coli communis*, staphylococcus, streptococcus). Occasionally blood is present." (Butler's *Diagnostics of Internal Medicine.*)

3. *Excess of uric acid* can be shown by the centrifuge method, as follows: "The *centrifuge method* of estimating requires that the phosphates be first separated by placing 10 c.c. of urine in the percentage tube with about 1 gm. of sodium carbonate and 1 to 2 c.c. of ammonium hydrate. The phosphate precipitate is thrown down by rotation, and the clear urine poured off into another tube. To this is added 2 c.c. of ammonium hydrate and 2 c.c. of a 5 per cent. solution of silver nitrate (to which ammonium hydrate has been added until the first precipitate clears up); and the translucent precipitate of silver urate is separated by rotation. Having poured off the clear liquid, the precipitate of silver urate is washed free of chloride by mixing it with at least 5 c.c. of ammonium hydrate. The mixture is then well rotated until the precipitate is reduced to its least bulk. For 1 c.c. of this precipitate the uric acid is read off as 0.001176 gm. in 10 c.c. of urine. To get percentage this product is again multiplied by 10." (Holland's *Medical Chemistry.*)

4. Nitric acid is the chief nitrogen acid; it is a strong mineral acid, and is made by the decomposition of an alkaline nitrate by strong sulphuric acid:

$$2NaNO_3 + H_2SO_4 = Na_2SO_4 + 2HNO_3.$$

Its formula is HNO_3; specific gravity, from 1.4 to 1.5; *Properties:* It is a colorless liquid, with a strong acid taste and reaction; when exposed to air and light it is decomposed into N_2O_4, H_2O, and O. It is a strong oxidizing agent; with metals it forms salts called nitrates.

5. *Antidotes for carbolic acid:* Sodium sulphate, alcohol; *for caustic alkalies:* Vinegar, or weak acetic acid.

6. *Pancreatic juice is composed of:* Water, enzymes (trypsin, amylopsin, steapsin, and a milk curdling ferment), leucin, tyrosin, xanthin, soaps, sodium chloride, potassium chloride, some carbonates, and phosphates (of sodium, calcium, and magnesium).

7. *Mucins* are glycoproteids, found in the secretions of mucous membranes and mucous glands, saliva, bile, mucus of nose and vagina, umbilical cord and also in the urine.

8. *Collodion* is a substance made by dissolving soluble gun cotton (pyroxylon) in ether and alcohol.

Litmus is a blue pigment obtained from Rocella tinctoria, a lichen; it is used for determining the reaction of certain substances.

9. The chemical name for iodoform is tri-iodomethane; its formula is CHI_3.

10. *Two tests for morphine:* (1) Solution of neutral ferric chloride (Fe_2Cl_6) gives a blue color with morphine. (2) nitric acid colors morphine first orange, then yellow.

PHYSICAL DIAGNOSIS.

1. *Physical diagnosis* is a diagnosis made by means of physical or objective signs (such as auscultation, palpation, etc.), without regard to subjective symptoms (such as vertigo, pain, etc.).

2. *A râle* is an adventitious sound produced in the air cells or in the bronchial tubes.

3. The râles are: Dry, moist, sibilant, sonorous, crepitant, subcrepitant, crackling, bubbling, gurgling, mucous, ringing, metallic.

4. *A murmur* is a sound produced by the flow of a fluid (liquid or gas) along a tube.

5. *A respiratory murmur* is the sound heard from the lungs of a healthy adult.

6. See French's "Practice of Medicine" (1010), page 150; or Osler's "Practice of Medicine" (1909), page 175.

7. See French's "Practice of Medicine" (1910), pages 718 and 708; or Osler's "Practice of Medicine" (1909), page 646.

8. See French's "Practice of Medicine" (1910), page 375; or Osler's "Practice of Medicine" (1909), page 320.

9. See French's "Practice of Medicine" (1910), page 668; or Osler's "Practice of Medicine" (1909), page 605.

10. See French's "Practice of Medicine" (1910), page 600; or Osler's "Practice of Medicine" (1909), page 800.

BACTERIOLOGY AND PATHOLOGY.

1. *Leprosy:* The bacillus of leprosy is very much like the tubercle bacillus; it is a long and slender rod, about 6 mikrons in length, slightly curved; it is non-motile, non-flagellate, has no spores, is acid-resisting, gram positive, and stains (generally) in the same way as the tubercle bacillus. It has not yet been cultivated on artificial media, and (so far) is pathogenic only for man.

Syphilis: The germ of syphilis is the *Treponema pallidum*, also called the *Spirochæta pallida*. It is a slender spirillum, with regular turns, the curves varying in number from three or four to twelve or even twenty; it is about 4 to 20 mikrons long, actively motile, with a fine flagellum at each pole; it is flexible, hard to stain, and has not been cultivated on artificial media. How it divides is not known. It stains best with Giemsa's eosin solution and azur.

Tuberculosis: The tubercle bacillus is rod shaped, is from 1½ to 3½ mikrons in length and about one-third to one-half a mikron in breadth, is a strict parasite, is not motile, and has no flagella. It is slightly curved, does not form spores, is not liquefying, and nonchromogenic, is aërobic; it resists acids; it grows well on blood serum, glycerin agar-agar, glycerin and gelatin; stains well by Ehrlich's, Ziehl-Nielsen's, or Gabbett's method; it is Gram positive.

2. See French's "Practice of Medicine" (1910), page 139; or Osler's "Practice of Medicine" (1909), page 159.

3. The *Streptococcus pyogenes* is a micrococcus, of spherical shape, and arranged in chains of about thirty or forty cocci (in liquid media), but the chains are much shorter in solid media. Each coccus is about one-half to two mikrons in diameter. It is not motile, does not form spores, does not liquefy gelatin, and stains readily with the ordinary anilin dyes, and by Gram's method.

The *Staphylococcus pyogenes aureus* is a small round cell which appears in clusters like a bunch of grapes; its diameter is about 0.8 to 1.0 mikron; it is facultative anaërobic, has no flagella, is not motile, it stains readily with the

anilin dyes, and is not decolorized by Gram's method; it forms an orange pigment on gelatin, potatoes, and other media; it also liquefies gelatin.

4. See French's "Practice of Medicine" (1910), page 887; or Osler's "Practice of Medicine" (1909), page 580; or Rose and Carless' "Surgery" (1911), page 087.

5. See French's "Practice of Medicine" (1910), page 182; or Osler's "Practice of Medicine" (1909), page 198.

6. See French's "Practice of Medicine" (1910), page 330; or Osler's "Practice of Medicine" (1909), page 114.

7. See Rose and Carless' "Surgery" (1911), page 222; or Da Costa's "Surgery" (1911), page 306.

8. See French's "Practice of Medicine" (1910), page 465; or Osler's "Practice of Medicine" (1909), page 294; or Rose and Carless' "Surgery" (1911), page 181; or Da Costa's "Surgery" (1911), page 309.

9. See Rose and Carless' "Surgery" (1911), pages 500, etc.; or Da Costa's "Surgery" (1911), pages 501, etc.

10. See French's "Practice of Medicine" (1910), pages 807, etc.; or Osler's "Practice of Medicine" (1909), pages 512, etc.; or Rose and Carless' "Surgery" (1911), pages 1046, etc.; or Da Costa's "Surgery" (1911), pages 985, etc.

SURGERY.

1. *Congestion* is excess of blood in the more or less dilated blood-vessels of a part.

Inflammation is the name given to the series of changes occurring in a part as the result of some injury, provided such injury does not at once destroy the vitality of that part.

Congestion is the first stage of inflammation.

2. See Rose and Carless' "Surgery" (1911), page 84; or Da Costa's "Surgery" (1911), pages 209 and 210.

3. See Rose and Carless' "Surgery" (1911), page 401; or Da Costa's "Surgery" (1911), page 250.

4. See Rose and Carless' "Surgery" (1911), page 717; or Da Costa's "Surgery" (1911), page 862.

5. *To prepare a quart of normal salt solution:* Take a quart of water, filter it and sterilize it; then dissolve one and a half drams of table salt in it, and again boil the water.

6. See Rose and Carless' "Surgery" (1911), page 615; or Da Costa's "Surgery" (1911), page 668.

7. See Rose and Carless' "Surgery" (1911), page 467; or Da Costa's "Surgery" (1911), page 517.

8. *Conditions which justify amputation of a limb* are "Any injury, disease, or malformation rendering retention of the limb incompatible with life or comfort; avulsion of limb; compound fracture; compound dislocation; fracture with great comminution of bone; laceration of important vessels; extensive contusion; extensive laceration; gunshot injuries; aneurysm; effects of heat and cold; gangrene; extensive bone disease; tumors; elephantiasis; tetanus; snake bite; deformities." (Bickham's *Operative Surgery.*)

9. See Rose and Carless' "Surgery" (1911), page 955; or Da Costa's "Surgery" (1911), page 903.

10. See Rose and Carless' "Surgery" (1911), pages 1075 and 1076; or Da Costa's "Surgery" (1911), page 1033.

GYNECOLOGY.

1. See Cunningham's "Anatomy" (1909), pages 1102 and 1185; or Gray's "Anatomy" (1910), pages 1412 and 1493.

2. Salpingitis is inflammation of the Fallopian tube. *Causes:* Septic infection, gonorrhea, menstrual congestion, taking cold at the menstrual periods, cancer, tuberculosis.

3. *Ventrofixation* consists in fixing the uterus to the anterior abdominal wall; it is performed for displacement of the uterus, and is often more satisfactory than shortening the round ligaments. Hermann (*Students' Handbook of Gynecology*) states objections to this operation as follows: "(1) Its risk. Oversights will occur in the practice even of the most careful; but the risk is very small. (2) Adhesions within the peritoneum are sometimes absorbed. They are absorbed often enough to make stitching of peritoneum to peritoneum unsatisfactory. After abdominal section ventral hernia may first develop after the scar has held firm for twelve years; and possibly the new attachment of the uterus may also, after many years, give way. (3) The operation lifts up the uterus. If the vulval orifice is very large there may still be a protrusion of the vaginal mucous membrane. It is well, therefore, to precede ventral fixation in women past child bearing by posterior colporrhaphy. (4) It is said to cause difficulty in labor, should the patient become pregnant. It does not always do so; and in many cases reported as illustrating such difficulty, the ventral fixation was not the cause of the difficulty. Ventral fixation after colporrhaphy, if the result be permanent, relieves the patient of any necessity for the continual readjustment of a pessary, and lifts the uterus up effectually. Ventral fixation is not advised in cases in which the womb can be comfortably kept up by a pessary."

4. Retrodisplacements of the uterus are generally accompanied with interference of the circulation in the uterus, this is followed by congestion and enlargement of the body of the uterus and later on by hypertrophy of the endometrium. These conditions cause the leucorrhea.

5. Ulcer of cervix. *Causes:* Carcinoma, tuberculosis, chancre, chancroid, friction from pessaries and in prolapse of the uterus.

Treatment: Remove the cause, if possible, local treatment, as for similar conditions elsewhere; constitutional treatment, as indicated; if hypertrophy is present amputation may be necessary; in cancer, hysterectomy may be required.

6. *Polypi of cervix.* "Polypoid tumors are found growing from the mucous membrane of the cervical canal, projecting into the canal or protruding from the external os. The mucous polypus is the most usual form, and is caused by cystic degeneration of the Nabothian glands of the cervical mucous membrane. Sometimes such polypi protrude from the ostium vaginæ. Less often a papillary or warty growth is found on the mucous membrane of the cervical canal, in the neighborhood of the external os. There is usually present dilatation of the external os and cervical canal. The symptoms of cervical polypi are not characteristic. Inflammation of the cervical mucous membrane and cervical catarrh may result. There may be slight, and rarely profuse, bleeding from the external os. The bleeding may follow efforts at straining, sexual connection, long standing, or exercise. Occurring at the time of the menopause or later, this symptom would excite the suspicion of beginning cancer of the cervix.

"Pediculated polypi should be twisted or cut away. Bleeding is usually very slight. The sessile growths, like the papillomata, should be excised, the incision being carried well below the base of the tumor into the healthy tissue of the cervix. The wound may then be closed with an interrupted suture. In every case of such tumor a careful microscopical examination should be made to determine its benign or malignant character." (Penrose's *Diseases of Women.*)

7. Acute Vaginitis. *Causes:* Gonorrhea, erysipelas, diphtheria, tuberculosis, syphilis, chancre, uncleanliness, obesity, pessary or other foreign body, sexual excesses, vaginal fistulæ, diabetes or other condition with irritating urine.

8. A *tampon* is a small roll of absorbent cotton, about 2½ x 1 inches, and is inserted into the vagina either with or without some medicinal substance. Around the center of the tampon is a strong string, long enough to hang out from the vulva, and by which the tampon can be removed. The details of the mode of use will depend upon the condition for which the tampon is employed. In any case the patient's bowels should be empty, and as a rule she is placed in either the dorsal or knee-chest position. The tampons are removed after about 36 hours, and a douche is then taken. The *purposes* of a vaginal tampon are: For controlling hemorrhage, either vaginal or uterine; to exert pressure; to support the uterus; as a means of applying medication locally; and for depleting inflammatory conditions.

9. Causes of menorrhagia. *Local causes:* Uterine displacements, malignant disease, inflammations of uterus or appendages, fibroids, cystic degeneration of the cervix, subinvolution, ectopic gestation, abdominal tumors.

General causes: Hemophilia, scurvy, purpura, malaria, anemia, mitral disease, diseases of kidneys, or liver, acute infectious fevers.

10. *Knee-chest posture* is employed (in office treatment) for the replacement of a retroverted uterus, or of a prolapsed uterus or appendages; or for insertion of tampons in the vagina.

OBSTETRICS AND HYGIENE.

1. See Jellett's "Midwifery" (1910), page 619; or Hirst's "Obstetrics" (1909), page 632.

2. See Jellett's "Midwifery" (1910), pages 350 and 365; or Hirst's "Obstetrics" (1909), pages 342 and 586.

3. See Jellett's "Midwifery" (1910), page 108; or Hirst's "Obstetrics" (1909), page 85.

4. Abortion becomes more dangerous as gestation advances. In the earliest weeks the ovum may be expelled entire with little or no danger; but after the formation of membranes, decidua, and placenta, there is always a risk of part of these remaining.

5. *When maternal nursing should not be attempted.*—"(1) No mother who is the subject of tuberculosis in any form, whether latent or active, should nurse her infant; it can only hasten the progress of the disease in herself,

while at the same time it exposes the infant to the danger of infection. (2) Nursing should not be allowed where serious complications have been connected with parturition, such as severe hemorrhage, puerperal convulsions, nephritis, or puerperal septicemia. (3) If the mother is choreic or epileptic. (4) If the mother is suffering from any serious chronic disease or is very delicate, since great harm may be done to her, without any corresponding benefit to the child. (5) Where experience on two previous occasions under favorable conditions has shown her inability to nurse her child. (6) When no milk is secreted. With reference to the fourth and fifth conditions, an absolute opinion cannot always be given at the outset." (Holt's *Diseases of Infancy and Childhood.*)

6. See Jellett's "Midwifery" (1910), pages 606, 617, 619, and 620; or Hirst's "Obstetrics" (1900), pages 203, 249, and 230.

7. See Jellett's "Midwifery" (1910), page 637; or Hirst's "Obstetrics" (1900), page 276.

8. *Taking colds:* General debilitating conditions (such as exposure to cold, damp, etc.) are predisposing factors, also poor hygiene; overheated and poorly ventilated rooms; the exciting cause is probably some bacterium. To avoid taking cold, the patient should be surrounded with the best hygienic conditions (suitable clothing, avoidance of draughts, proper ventilation, exercise, bathing, etc.); he should also remove any factors that militate against good physical health.

9. See French's "Practice of Medicine" (1910), page 194; or Osler's "Practice of Medicine" (1900), pages 207 and 210.

10. See Rose and Carless' "Surgery" (1911), page 266; or Da Costa's "Surgery" (1911), pages 26 and 63.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

1. *Treatment of morphine poisoning* consists in washing out the stomach, preferably with a dilute solution of potassium permanganate; ambulatory treatment, to keep the patient awake; artificial respiration is indicated, and strong coffee should be administered by the mouth or rectum; the bladder should be emptied by the catheter. There is no antidote.

2. In case of suspected poisoning "the following portions of the cadaver should be preserved: The alimentary canal from the cardia to the middle of the rectum, *unopened*, and the contents inclosed by ligatures at the esophagus, duodenum, and lower end of gut; the liver, including the gall-bladder; one kidney; the spleen; a piece of muscular tissue from the leg; the brain, and any urine which may remain in the bladder. Any suspected food articles and any obtainable vomited matter are to be also preserved. All of these are to be placed in *clean* and *new* glass jars, closed with glass or cork covers or stoppers. Jars with metallic caps should never be used. Tapes or cords should be tied about the jar and can, to which they should be attached by sealing wax bearing impressions of a seal, in such a manner that access can be had to the interior only after breaking the seals or cutting the tapes or cords. Great care must be exercised that no sealing wax can get into the jars. Each portion should be placed in a jar by itself."—(Witthaus's *Essentials of Chemistry and Toxicology.*)

3. *Melancholia* is a variety of mental disorder, characterized by a general perversion of the mental faculties and accompanied by depression.

4. Causes of death from heat, other than burns and scalds, are: Heat exhaustion, heat collapse, thermic fever, suffocation.

5. For the details of post-mortem examination see some good text-book on Medical Jurisprudence or Pathology.

6. *Conditions Simulating Death:* Coma, epilepsy, trance, and partial asphyxia.

7. See French's "Practice of Medicine" (1910), page 1128; or Osler's "Practice of Medicine" (1900), page 896.

8. See French's "Practice of Medicine" (1910), page 986; or Osler's "Practice of Medicine" (1900), page 372.

9. The *symptoms of acute lead poisoning* are: "Metallic taste; dryness of the throat; thirst; severe colicky abdominal pains, referred particularly to the umbilical region, and relieved by pressure; pulse very feeble and slow; great prostration; constipation; urine scanty and red; violent cramps; paralysis of the lower extremities; convulsions, and tetanic spasms." The *treatment* consists in administering "magnesium sulphate, which brings about the formation of the insoluble lead sulphate, while the purgative action of the magnesia is also useful. It should be preceded by an emetic or by the use of the stomach tube."

10. POISONING BY ACETANILIDE. *Effect:* Chilliness, cold sweat; nausea; pulse is soft, slow, and feeble; respirations slow and shallow. *Treatment:* Lavage, diffusible stimulants, application of heat, coffee or strychnine, inhalation of oxygen, or saline infusion.

Medical Items.

Serodiagnosis of Typhoid Fever.—C. Gatti studied the agglutinating power of the blood serum of typhoid fever patients with respect to the paratyphoid and colon bacilli. With respect to typhoid bacilli agglutination is always positive in dilutions of 1 to 100; there is no relation between the amount of fever and the agglutination power. In dilutions below 1 to 100 typhoid serum causes the agglutination of paratyphoid and colon bacilli. The author has thus demonstrated the non-specificity of the reaction of agglutination possessed by typhoid serum with respect to other bacteria of the same species.—*Il Policlinico.*

Adrenalin in the Treatment of Asthma.—E. Tranquili has used adrenalin in the treatment of spasmodic asthma with the following results. In 24 per cent. of the cases of essential asthma it had no effect; in asthma due to renal or cardiac disease it has no appreciable value; in reflex asthma it has a favorable effect whether used locally in the nasal mucosa or administered by the stomach or rectum or hypodermically. In one case preceded by gastric symptoms when adrenalin was administered by the stomach or rectum it had an abortive action, but by hypodermic injection it had no effect. If we desire to quickly stop an attack of asthma morphine is to be preferred to adrenalin. But the latter is preferable to nitrite of amyl, though less active than inhalations of chloroform or pyridin. When asthma is accompanied by cardiac dilatation adrenalin and oxygen, together with cold applications over the heart, are effective in stopping the suffering. Regulation of the diet and the administration of iodides between the attacks favor the action of adrenalin.—*Gazzetta Medica di Roma.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 29, 1912:

Places.	Date	Cases.	Deaths.
CHOLERA.			
India: Bassein	Jan. 26–Feb. 3	39	32
Calcutta	Jan. 28–Feb. 3	.	61
Madras	Feb. 11–17	39	27
Negapatam	Jan. 26–Feb. 3	.	4
Rangoon	Dec. 1–31	56	49
Indo-China: Saigon	Jan. 26–Feb. 12	75	57
Straits Settlements: Singapore	Jan. 27–Feb. 3	1	1
Turkey in Asia: Aleppo	Feb. 25–Mar. 2	1	1
YELLOW FEVER.			
Brazil: Bahia	Mar. 23	.	.
Manaos	Feb. 11–24	.	9
Ecuador: Bucay	Feb. 1–29	5	2
Duran	Feb. 1–29	10	4
Guayaquil	Feb. 1–29	98	43
Huigra	Feb. 1–29	1	.
Milagro	Feb. 1–29	8	6
Naranjito	Feb. 1–29	2	2
Yaguachi	Feb. 1–29	1	.
PLAGUE.			
China: Hongkong	Feb. 4–10	4	4
Ecuador: Duran	Feb. 1–29	1	.
Guayaquil	Feb. 1–29	22	10
India: Calcutta	Jan. 28–Feb. 3	.	23
Karachi	Feb. 11–17	25	22
Rangoon	Dec. 1–31	12	11
Indo-China: Saigon	Jan. 26–Feb. 12	4	.
Java: Pasoeroean Residency	Feb. 4–10	5	4
Mauritius	Dec. 22–Jan. 11	8	.
Persia: Buchir	Feb. 4–10	3	1
	Feb. 18–24	10	3
South Africa: Durban	Jan. 20–Feb. 11	3	2
Straits Settlements: Singapore	Jan. 25–Feb. 3	1	1
SMALLPOX.			
Arabia: Aden	Jan. 23–Feb. 26	11	4
Austria-Hungary: Galicia	Feb. 18–24	1	.
Canada: Fernie	Mar. 4–16	3	.
Montreal	Mar. 4–16	1	.
Ottawa	Mar. 4–16	15	.
Windsor	Mar. 4–16	1	.
Ceylon: Colombo	Feb. 4–10	1	.
Vicinity.			
Chile: Iquique	Jan. 14–20	1	1
China: Hongkong	Feb. 4–10	47	37
Shanghai	Feb. 12–18	.	1
Egypt: Cairo	Feb. 5–11	1	.
France: Paris	Feb. 18–24	8	.
Germany	Feb. 28–Mar. 9	6	.
Great Britain: Southampton	Mar. 3–9	1	.
India: Madras	Feb. 11–17	15	2
Rangoon	Dec. 1–31	32	8
Indo-China: Saigon	Jan. 26–Feb. 12	3	.
Italy: Naples	Feb. 25–Mar. 2	6	.
Palermo	Feb. 18–Mar. 2	166	67
Japan: Nagasaki	Feb. 12–18	1	.
Java: Batavia	Feb. 4–10	5	4
Mexico: Guadalajara	Mar. 3–9	1	.
Juarez	Mar. 3–9	2	.
Magdalena	Mar. 6–12	.	1
10 cases present.			
Salina Cruz	Mar. 3–9	2	1
Portugal: Lisbon	Jan. 26–Mar. 2	7	.
Russia: Moscow	Feb. 4–10	4	.
Spain: Seville	Feb. 1–29	.	3
Valencia	Feb. 26–Mar. 2	22	.
Straits Settlements: Singapore	Jan. 28–Feb. 3	1	1
Turkey in Europe: Constantinople	Feb. 26–Mar. 3	.	7

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Original Articles.

SOME SALIENT POINTS IN THE HISTORY OF THE CAUSAL AGENT OF SYPHILIS.

By JOHN BETHUNE STEIN, M.D.,

NEW YORK.

"There is one thing among all which I affirm, it is that this disease is contagious."—C. Galinus, 1497.

DONNÉ,[1] in 1837, described a microorganism which he discovered in ulcerated syphilitic lesions of the penis and vulva and which he considered the cause of syphilis. In 1838 Ricord[2] attacked Donné's claim and the latter abandoned it in 1844, when he stated he could not invariably find the organism in the syphilitic products. This organism of Donné was a vibrio or spirillum and Donné's description of it is "an animalcule having the form of a vibrio described by Müller under the name of the Vibrio lineola." A drawing of the spirillum by Donné himself is to be found in his work, "Recherches Microscopiques sur la Nature des Mucus," Paris, 1837. It is highly probable that with the means at his command Donné did not see a spirillum so fine as that of Schaudinn's.

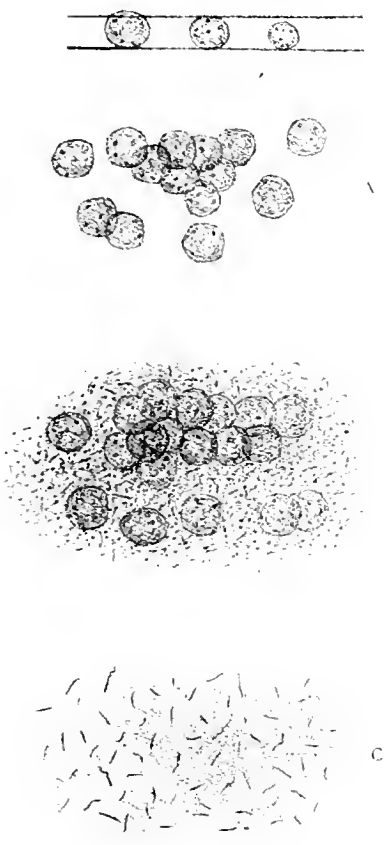

Fig. 1—A, Pus from gonorrhea. B, Pus from chancre. C, Vibrios contained in the pus from a chancre. From a plate in "Recherches Microscopiques sur la Nature des Mucus," by Dr. Alfred Donné, 1837.

Fig. 2—Dr. Alfred Donné.

Alvarez and Tavel[3] (1885) found spirilla in smegma. Berdal and Bataille[4] (1861) and Csillag[5] (1898) found the same organisms in the products of ulcerative balanoposthitis. Róna[6] of Budapest (1903-1905) found a spirillum in nine primary lesions, but he did not consider it an etiological

Fig. 3—Dr. P. Ricord.

factor in syphilis, as he found it in non-syphilitic lesions (gangrenous lesions of the genitals) in the genital smegma in both sexes, and in a case of mercurial stomatitis.

The coarse thick spirillum described by these observers is, in the opinion of such men as Rille, Metchnikoff, and Roux, identical with the organism described by Donné, and the *Spirochæta refringens* described in 1905 by Schaudinn and Hoffmann and

Fig. 4—Dr. Sigmund Lustgarten.

Fig. 5—Dr. S. Róna.

Fig. 6—Prof. T. H. Rille.

which is found about the genitals in both specific and non-specific lesions. Rille[7] believed that he had discovered in 1894 the *Treponema pallidum* of Schaudinn.

In 1884, about the time when the tubercle bacillus was discovered by Koch, Lustgarten,[8] who was working in Weigert's laboratory, observed a bacillus in gummata and chancres which in form and in the difficulty of staining resembled the tubercle bacillus. Lustgarten considered this organism as the cause of syphilis, and it has been since known as the bacillus of Lustgarten. It was found in syphilitic skin lesions and was thought to be present in other organs of syphilitics. Doutrelepont and Schutz[9] (1885), Marcuse[10] (1888), Babes[11] (1885), and others regarded the presence of this organism as valuable in the diagnosis of syphilis. Bitter[12] (1886), Alvarez and Tavel (1885), however, identified this acid resisting bacillus of Lustgarten with a saprophytic organism normal to the genital organs, the smegma bacillus. Sabourand[13] (1892) looked in vain for Lustgarten's bacillus in fifty-one sections of syphilitic lesions.

Kassowitz and Hochsinger[14] (1886) and Disse and Taguchi[15] (1887) alleged that the streptococci and diplococci were the causal agents of syphilis, without substantiating their assertions.

Since 1896, von Niessen[16] has claimed that a bacillus, discovered by him, and probably the same as that found by Joseph and Piorkowsky[17] (1902), is the cause of syphilis. This claim "he has defended against all contradictions with a tenacity and vigor little known" (A. Lefebvre).[18] He asserts that he has found his bacillus in the blood, in the great majority of cases of syphilis examined by him.

Von Niessen's bacillus is of the same genus as that of pseudodiphtheria. It is polymorphous; at times a coccus, sometimes a short thin rod, or a rod thickened at its ends, or a longer rod containing three or four granules disposed in series which are metachromatic. It grows well on gelatin serum and bouillon, but poorly on agar. He further claims that he has, by inoculating the hog and monkey with this bacillus, infected them with syphilis. But Neisser, Bärmann, and Halberstädter,[19] during the course of their recent experiments in Java, were unable to transmit syphilis to different species of monkeys, which were inoculated with cultures made by von Niessen himself.

It was at about this period in the history of the discovery of the causal agent of syphilis that the attempt was made by Klingmüller[20] and Bärmann to verify the prevailing opinion that this agent was a virus belonging to the so-called invisible microorganisms. They obtained the virus from primary lesions and condylomata, which mixed with a given quantity of normal salt solution, they triturated for one or two hours. This emulsion was then filtered through a Berkefeld filter (pressure 250 mm. of water). The filter had been previously tested with a culture of the spirilla of chicken cholera and only those filters which were impermeable for these microorganisms were employed. Klingmüller and Bärmann inoculated themselves three times with the

Fig. 7—Prof. Klingmüller.

products thus passing through the filters, not only by scratching the skin and rubbing the material in the wound, but subcutaneously. In spite of the large quantity of filtered virus used and the care that was exercised to prolong the contact, no manifestations local or general, were noted. They came to the conclusion that the microorganism of syphilis did not pass through the filter and therefore it could not be classed among the organisms called invisible.

Metchnikoff and Roux,[21] thinking that the foregoing experiment was open to some objections, as several hours were necessary to obtain the filtrate

and that the virulence of the material might be altered by the salt solution, obtained the virus from an indurated chancre of the penis and from two chancriform syphilides of a woman. This was diluted with 2 c.c. of the aqueous humor of a sheep and filtered through a 12A Berkefeld filter. This filter permits the passage of the microorganism producing peripneumonia in bovines, but prevents the passage of the vibrios living in water and those

Fig. 8—Prof. Elie Metchnikoff.

Fig. 9—E. Roux.

Fig. 10—Dr. Siegel.

of chicken cholera. The passage of the diluted virus through the filter occupied fifty minutes. A chimpanzee was inoculated with the filtered liquid by scratching the skin in the region of the supraorbital arch and thigh. At the same time another chimpanzee was inoculated in the same manner with the virulent emulsion which had not been filtered. The first animal showed no manifestations; the second animal, thirty-seven days later, showed a chancre of the supraorbital arch, followed by an adenitis of the adjacent lymph nodes, and a typical eruption. They concluded that the syphilitic virus did not pass through this Berkefeld filter, and that the microorganism of syphilis was therefore not in the class of invisible microorganisms.

It has been known for some time that a disease

Early in 1905 Siegel, a German zoologist, described a protozoon, the *Cytorrhyctes luis*, in the blood and exudates of syphilities, which he regarded as the cause of syphilis. He was supported in this claim by his collaborators, W. Schulze[24] and F. Schulze,[25] Professor of Zoology in the University of Berlin. This discovery created a sensation. The organisms discovered by Siegel had a diameter of 0.5 to 2.5 microns, appeared round, oval, and pyri-

form, and were probably blood plates or broken-down erythrocytes.

Although the claim that here at last was found the causal agent of syphilis had to be abandoned, yet, by a curious chance, Siegel's discovery of the *Cytorrhyctes luis* was indirectly the cause of, or at least furnished the occasion for, the discovery by Schaudinn of the *Treponema pallidum*.

In February, 1905, Kohler, the director of the Imperial Sanitary Bureau at Berlin, named a commission of medical men and naturalists to ascertain whether the *Cytorrhyctes luis* of Siegel was, as Siegel claimed, the cause of syphilis. The commission was composed of Hoffmann, the first assistant of Lesser, for the clinical and histological side, Neufeld and Gonder for the bacteriological, and Schaudinn

Fig. 11—Dr. Erich Hoffmann.

Fig. 12—Fritz Schaudinn.

Fig. 13—Dr. A. Buschke.

of the genitals of the horse resembling syphilis (dourine) can be transmitted in coitus and be produced by a trypanosome. It was therefore thought that possibly syphilis was caused by a protozoon. Schüller[22] (1905) claimed not only that he had discovered, in specific products, certain bodies covered with cilia having sacs filled with spores, but that he had cultivated these bodies.

for the zoological side. Schaudinn was not a physician but a protozoologist and his researches upon the coccidia, the protozoal hemoparasites, and spirilla were well recognized, and during his stay at Rovigno and Herzegovina he had made a particular study of the spirillum of relapsing fever. In his work upon the *Leukocytozoon ziemanni* he had found, in the cycle of evolution of this parasite,

stages which established a close relationship between protozoa with flagella and the spirochetes.

Schaudinn was unable to find the organism of Siegel in chancres and lesions of secondary syphilis which had been excised by Hoffmann. However, on the 3d of March, 1905, he was struck by the presence, in the fresh extravasation from a papule which was slightly eroded, of a very small motile spirocheta which was extremely difficult to

Fig. 14.—Dr. Jules Bordet.

Fig. 15.—Dr. Octave Gengou

Fig. 16.—Prof. A. v. Wassermann

study. The history of the case is the following:

A woman, aged twenty-five, presented since January 20, 1905, a painless nodule on the labium majus. On March 3, 1905, a papulosquamous eruption, general adenopathy, and an initial lesion accompanied with slight eroded papules about the vulva were seen. One of these papules was excised by Hoffmann and in the extravasation from the under surface of this papule Schaudinn saw, for the first time, the causal agent of syphilis, the *Treponema pallidum*. Schaudinn and Hoffmann then sought the *Treponema pallidum* in various syphilitic products. Their first results, finished April 10, 1905, were published April 23, 1905, from the Imperial Bureau of Sanitation of Berlin (Arbeiten aus dem Kaiserlichen Gesundheitsamte, 1905). This first contribution, entitled "A Preliminary Report on the Presence of Spirochetes in Syphilitic Products and Papillomata," contained an account of thirty observations. Their work was simply an exposure and registration of facts. They reported the discovery of two organisms, one, the *Spirochæta pallida*, which they afterward named the *Treponema pallidum*, as Ehrenberg had applied the former name to another organism, the other the *Spirochæta refringens;* but they formulated no definite conclusions as to the role these two organisms played in the pathogeny of syphilis. On May 4, 1905, they published under the title, "On the Discovery of the Spirochetes in the Lymph of Lymphnodes of Syphilitics," some facts tending to show that an intimate relationship existed between the *Treponema pallidum* and syphilis. They sought the organism in closed syphilitic lesions (the lymph ganglia in the neighborhood of the chancre) for fear it might be said that the presence of the organism in open lesions, the chancre, etc., resulted from outside contamination and was only a secondary infection. They found the treponema present and other microorganisms absent in the lymph obtained from eight lymphnodes in syphilitics in whom the duration of the disease varied from some weeks to four months. In two cases the lymph ganglia were excised and in the other six the fluid was obtained by puncture and aspiration.

Some time before the publication of his first communication, April 23, 1905, Schaudinn sent to Metchnikoff by Professor Kraus of Vienna, specimens of the organism which was soon to be considered the cause of syphilis. It was in these specimens that the organism was first seen in France. He also requested Metchnikoff to send him some smears obtained from chancres in apes which had been inoculated with syphilis in order to search them for the *Treponema pallidum*. Schaudinn, however, was unable to discover any spirilla in these smears.

The news of the still unreported discovery of the *Treponema pallidum* by Schaudinn was not a surprise to Metchnikoff, Roux, and the other experimenters at the Pasteur Institute in Paris, for Metchnikoff and Roux[26] made the following statement in their communication presenting the first results of their investigations on May 16, 1905, to the Academy of Medicine in Paris: "We know of only a single case where anyone has seen the *Spirochæta pallida* before Schaudinn and that was a single unpublished observation. Three years since Bordet and Gengou at Brussels found in a chancre a great number of spirilla, very thin, corkscrew-like in shape, and difficult to stain." They finally stained the organism with Kühne's methylene blue and Nicolle's gentian violet, and sought the organism, without success, in five chancres, in the lymphnodes, and in the papules and blood of syphilitics.

Bordet in discussing the question of the discovery of the causal agent of syphilis with the writer said that, as he and Gengou did not confirm their discovery, they consequently did not publish their results, but had sent to Metchnikoff previous to the discovery of the *Treponema pallidum* by Schaudinn a number of smears containing spirilla which they had obtained from a chancre and stained with great difficulty by means of gentian violet, and that Metchnikoff failed to find any spirilla in these specimens.

In their communication to the Academy of Medicine at Paris, May 16, 1905, Metchnikoff and Roux further state: "A few days since Bordet has sent us one of their old preparations, in which we can, not without difficulty, recognize the spirillum absolutely identical with that of the *Spirochæta pallida*."

After Metchnikoff had succeeded in inoculating chimpanzees with syphilis and was aware of the discovery of the spirillum by Bordet, he sought, with negative results, the spirillum in the syphilitic products of these anthropoids. He therefore concluded that the spirillum was not a specific cause of syphilis. Metchnikoff says later that "the bril-

liant researches inaugurated by Schaudinn have led us to renew our investigations upon the syphilitic products in apes and to modify our opinion. . . . In six syphilitic apes which we have studied we have proved the presence of the spirillum in four cases."

On May 17, 1905, Schaudinn and Hoffmann[27] presented to the Medical Society at Berlin a communication entitled "On the *Spirochæta Pallida* in Syphilis and the Difference Between This Form and Other Species Belonging to This Genus." But the history of syphilis contained so many disproved claims to the discovery of its causal agent that von Bergmann[28] ended the spirited debate, wherein the Schaudinn and Hoffmann claims were bitterly attacked at the meeting, May 17, 1905, of the Medical Society in Berlin with the remark: "On this, the discussion is closed until another causal agent of syphilis comes to claim our attention."

Fig. 17—Prof. Ernst von Bergmann.

Fig. 18—Prof. A. Neisser.

Fig. 19—Dr. Hideyo Noguchi.

The facts collected at this time, however, seemed to prove that the *Treponema pallidum* was the cause of syphilis. The organism was found in the deeper parts and on the surface of chancres, in numbers in the ganglia adjoining the chancres, to the exclusion of other microorganisms, and finally in the primary and secondary manifestations in apes which were infected with syphilis. Still the questions arose: First, as to whether these open lesions were not secondarily infected by the organism; and second, whether the presence of the organism was not, even in the closed lesions (the adenopathy), due to the fact that it was carried to the lymphnodes by the lymphatics from adjacent open lesions.

Buschke,[29] on May 11, 1905, discovered the treponema in the organs of an infant ten weeks old who had died of heredosyphilis. The child's father was suffering from a general papular syphilide. The autopsy, made 36 hours after death, showed an indurated spleen, edema of the lungs, hemorrhagic nephritis, and hepatitis. Smears made from the liver and spleen showed spirilla having the characteristics of *Treponema pallidum*, and a specimen which was sent to Schaudinn was declared by him to contain treponemata pallida. No treponemata were found in the lymph ganglia or papillæ of the skin. He and his assistant, Fischer, hesitated to conclude, from this single observation, as to what part the *Treponema pallidum* played in the etiology of syphilis, as their examination was made upon the cadaver, and it was possible that the treponema had come post mortem from the intestines, or, since during life the infant presented open cutaneous lesions, the infection had traveled from without.

Buschke and Fischer later discovered some of the organisms of Schaudinn in smears made from the same infant's blood prior to death, but they still reserved their decision. At about the same time Levaditi[30] discovered the *Treponema pallidum* in bullæ of pemphigus which were still closed, in the liver, spleen, marrow of bones, and most of the organs of a newborn infant of syphilitic parents. Consequently Buschke, Fischer and Levaditi considered the presence of the *Treponema pallidum* in the tissues of heredosyphilitics as an argument in favor of its being the causal agent of syphilis. Numerous investigators of the subject are now convinced *that wherever the Treponema pallidum is found in the tissues there is syphilis.*

Schereschewsky,[31] in 1909, and Mühlens,[32] in 1910, succeeded in cultivating the *Treponema pallidum*, but were unable to produce syphilis in animals by means of their cultures. The Mühlen cultures were pure; those of Schereschewsky impure. Bruckner and Galasesco,[33] 1910, produced a syphilitic orchitis in a rabbit by means of impure cultures, and Sowade,[34] 1911, caused a generalized syphilis in a rabbit through an intracardial inoculation of a culture.

The three last-named investigators were unable to obtain a second generation of their cultures; hence there is a question as to whether the syphilitic lesions in their animals were due to cultivated spirochetes or to the original organisms which they intended to grow. Hoffmann[35] obtained pure cultures of the *Treponema pallidum* and has recently produced a specific orchitis in rabbits by inoculating a pure culture derived immediately from human tissues.

The *final proof* that the *Treponema pallidum* is the contagium of syphilis we owe to Noguchi,[36] 1911 and 1912, who has obtained pure cultures of *Treponema pallidum*, first, in serum water (sheep, horse, rabbit) to which a small piece of sterile rabbit tissue has been added; second, in a medium consisting of 2 per cent. alkaline agar and one part of ascitic or hydrocele fluid, at the bottom of which has been placed a piece of sterile rabbit tissue (kidney or testicle).

For the purpose of cultivating the *Treponema pallidum* he first used, "unlike all previous investigators," the *Spirochæta*-containing testicular tissue of a rabbit which had been inoculated with human syphilitic material instead of directly employing the human syphilitic material. "From this first generation in rabbits any number of generations can subsequently be obtained by transmitting the strain at

appropriate intervals from rabbit to rabbit." Noguchi employed as material for obtaining his cultures twelve different strains of pallida which were passed into rabbits through many generations, and succeeded in producing in rabbits which had been inoculated with material from pure cultures a typical syphilitic orchitis, in the lesions of which are to be found numerous *Treponemata pallida*.

Noguchi has also cultivated the organism of Schaudinn, obtained directly from human syphilitic lesions, in a solid medium consisting of a 2 per cent. alkaline agar, ascitic or hydrocele fluid, and sterile rabbit tissue. Three of the four strains worked with were successfully cultivated. The organisms grow only under strict anaërobic conditions; their morphology is typical under optimum cultural conditions; in cultures they multiply by longitudinal division; and, finally, the cultures do not produce any putrefactive odors. Most important are the facts which Dr. Noguchi has called to the writer's attention; that, the pure cultures of the *Treponema pallidum* obtained by him are grown only in a medium containing sterile tissue, and that they do not produce any putrefactive odors. The cultures of *Treponema pallidum* as obtained by Muhlens and Hoffmann, grown upon a medium devoid of fresh tissue,

Fig. 20—Dr. Halberstadter, Dr. v. Prowazek, Karl Leschner (Porter). —From Neisser's Beitrage zur Pathologie und Therapie der Syphilis.

do produce strong putrefactive odors, and in this respect cannot be differentiated from cultures of *Treponema microdentium* (Noguchi), (the *Spirochæta dentium* of Koch, or small *Spirillum dentium*), obtained by Noguchi in a medium containing sterile rabbit tissue; because these last named organisms also produce putrefactive odors.

"Inoculation of the pure cultures of the *Treponema pallidum* into the skin of two species of lower monkeys was followed by the production of lesions resembling the primary lesion occurring in man and those caused in the monkey by inoculation of spirochæta containing serum from human sources."

Noguchi has still further shown that during the course of the positive inoculation in the monkey with his pure cultures made directly from human syphilitic material the blood develops the property of giving a positive Wassermann reaction. He thus supports the relation of *Treponema pallidum* to the Wassermann reaction, and establishes the identity of the cultivated strains with the species found in human syphilitic lesions.

Fritz Schaudinn died at not quite the age of thirty-five, on June 22, 1906, fourteen months after the publication of his memoir on the discovery of the *Treponema pallidum*. His work will ever remain celebrated in the annals of the history of medicine, not only because of his discovery of the cause of syphilis, but also because it blazes the trail for the work of a host of investigators. Among the

Fig. 21—Dr. Bruck, Dr. Kaiser, Karl Leschner (Porter), Pof. Neisser From Neisser's Beitrage zur Pathologie und Therapie der Syphilis.

results of the recent investigations (all of which, except the microscopical technique, were dependent upon experiments upon animals and those men who offered themselves for experimental purposes) we have such priceless benefits to mankind as:

Fig. 22—Geh. Obermedizinalrat Prof. Dr. Paul Ehrlich and Dr. S. Hata.

1. An exact knowledge of how the syphilitic infection takes place.

2. A better knowledge of the pathology of syphilis, largely due to the work of the Java expedition composed of Neisser, Bärmann, Halberstäder, Siebert, Bruck, Kaiser, and von Prowazek.

3. A better knowledge of the treatment [illegible]se of syphilis.

4. The prophylaxis of syphilis.

5. The means of diagnosing early and positively the most infectious forms of syphilis by the various staining methods, the Burri method, and especially by the dark field microscope.

6. The application of the seroreaction of Bordet and Gengou by Wassermann, Neisser, and Bruck in the detection of syphilis; the improvement of the Wassermann reaction by Landsteiner, Muller, and Potzl; Noguchi's luetin; the cytodiagnosis of Nissl, and the globulin reaction of Nonne-Apelt.

7. The discovery and application of salvarsan by Ehrlich and Hata.

8. (Assuming that the old-fashioned practitioner and professional doubter will be proved justified in their present arbitrary denial of the value of the work of the men mentioned above) a great advance toward and aid in the probable discoveries yet to be made relative the nature and cure of syphilis and some other diseases.

BIBLIOGRAPHY

1. Donne: (*a*) "Cours de Microscopie," Balbere, Paris, 1844; (*b*) "Recherches Microscopiques sur la Nature des Mucus," L'Auteur, Rue de Conde, No. 15, Paris, 1837.

2. Ricord: "Traité pratique des Maladies Veneriennes," p. 50, Paris, 1838.

3. Alvarez et Tavel: *Archives de Physiologie Normale et Pathologique*, 1885, vol. 6, p. 393.

4. Berdal et Bataille: *Médecine Moderne*, 1891, No. 18, p. 340.

5. Csillag: *Archiv. f. Derm. u. Syph.*, Bd. 40, p. 150, 1898.

6. Röna: *Arch. f. Derm. u. Syph.*, 1903, Bd. 67, p. 259.

7. Rille: "Über Spirochaetenbefunde bei Syphilis," *Med. Gesell. zu Leipzig*, June 27, 1905; *Münch. mediz. Woch.*, 1905, No. 29.

8. Lustgarten: *Wien. mediz. Jahrbucher*, 1885, No. 1, p. 89.

9. Doutrelepont und Schutz: *Deutsch. med. Woch.*, 1885, p. 320.

10. Marcuse: "Vierteljahresbericht f. Derm. u. Syph.," 1888, p. 343.

11. Babes: "Le Microorganisme de la Syphilis," Lévy-Bing.

12. Bitter: "Le Microorganisme de la Syphilis," Lévy-Bing.

13. Sabouraud: "Ann. de l'Inst. Pasteur," 1892.

14. Kossowitz und Hochsinger: *Wien. mediz. Blatter*, 1889, No. I and IV.

15. Disse and Taguchi: "Das Contagium des Syphilis," Tokio, 1887.

16. Van Niessen: (*a*) *Wien. mediz. Woch.*, 1906, No. 27; (*b*) "Der Syphilis Bacillus," Leipzig, 1908 (Otto Nemnich). (*c*) "Der Syphilis Bacillus," Wiesbaden, 1899.

17. Joseph and Piorkowsky: (*a*) *Berlin. klin. Woch.*, 1902, Nos. 12 and 13. (*b*) *Deutsch. mediz. Woch.*, Nos. 50-52.

18. Lefebvre: "Du Rôle Étiologique des Bacilles dits Syphilitiques," Ann. du Service de Derm., de Syphil., et d'Urol. de l'Hôpital St. Pierre de Bruxelles, Mai, 1904, pp. 85-94.

19. Neisser, Bärmann, und Halberstädter: *Deutsch. mediz. Woch.*, 1906, Nos. 1 and 2.

20. Klingmüller und Bärmann: *Deutsch mediz. Woch.*, 1904, No. 21.

21. Metchnikoff et Roux: Annales de l'Inst. Pasteur, 1904, vol. 18, p. 658.

22. Schüller: (*a*) *Centralblatt f. Bakteriologie*, Bd. 27, p. 516, u. Bd. 32, p. 342. (*b*) *Deutsche Ärzte Zeit.*, 1905, Heft 12.

23. Siegel: (*a*) "Abhandlungen der kgl. preuss. Akad. der Wissenschaften, Berlin, 1905. (*b*) *Münch. Klinik*, 1905, No. 56, p. 1449. (*c*) *Münchener mediz. Woch.*, 1906, Nos. 28 and 29. (*d*) *Centralblatt f. Pathologie*, 1906, Bd. 42, Heft. III and IV.

24. Schulze, W.: (*a*) Ziegler's "Beitrage zur pathologischen Anatomie," 1906, Bd. 39, p. 180. (*b*) *Berlin. klin. Woch.*, 1905, No. 23, p. 733.

25. Schulze, F. E.: *Berlin. klin. Woch.*, 1905, No. 2.

26. Metchnikoff et Roux: (*a*) Bulletin de l'Académie de Médicine, vol. 53, p. 468. (*b*) Bulletin Méd., No. 17, Mai, 1905, p. 38.

27. Schaudinn, F., und Hoffmann, E. (*a*) Vorlaufiger Bericht uber das Vorkommen von Spirochaeten in Syphilitischen Krankheitsprodukten und bei Papillomen," "Arbeiten aus dem Kaiserlichen Gesundheitsamte," Bd. xxii, Heft 2, pp. 527-534, April 23, 1905. (*b*) "Über Spirochaetenbefunde im Lymphdrusensaft Syphilitischer," *Deutsch. med. Woch.*, No. 18, pp. 711-714. (*c*) "Über Spirochaete Pallida bei Syphilis und die Unterschiede dieser Form gegenuber anderen Arten dieser Gattung," *Berlin. med. Gesell.*, Mai 17, 1905. (*d*) *Berlin. klin. Woch.*, No. 22, pp. 673-675.

28. Von Bergmann: *Berlin. klin. Woch.*, No. 23, pp. 731-734.

29. Buschke und Fischer: (*a*) "Über das Vorkommen Spirochaeten in inneren Organen eines syphilitischen Kindes; von Praparaten auf dem Ärzteabend," *Am Urban*, Mai 11, 1905. (*b*) *Deutsche mediz. Woch.*, 1905, No. 20, pp. 791 and 792. (*c*) *Mediz. Klinik.*, No. 24, 1905, p. 612.

30. Levaditi: *La Presse Medicale*, 1905, No. 43.

31. Schereschewsky: (*a*) "Zuchtung der Spirochaete Pallida," *Deutsche med. Woch.*, 1909, No. 35, p. 835. (*b*) "Weitere Mittheilung uber dir Zuchtung der Spirochaete Pallida," *Ibid.*, p. 1200. (*c*) "Bisherige Erfahrungen mit der gezuchteten Spirochaete Pallida," *Ibid.*, p. 1052.

32. Muhlens: (*a*) "Reinzuchtung einer Spirochaete (Spirochaeta Pallida?) aus einer Syphilitischen Druse," *Deutsche med. Woch.*, 1909, No. 35, p. 1201. (*b*) "Über Zuchtungsversuche der Spirochaete Pallida und Spirochaete Refringens, sowie Tierversuche mit kultivierten Spirochaeten," Klin. Jahrbuch, 1910, No. 23, p. 339.

33. Bruckner et Galasesco: "Orchite syphilitique chez le lapin par cultures impures de spirochètes," Compt. rend. Soc. de biol., 1910, No. 68, p. 684.

34. Sowade: "Syphilitische Allgemeinverkrankung beim Kaninchen durch intrakardiale Kulturimpfung," *Deutsche med. Woch.*, 1911, No. 30, p. 682.

35. Hoffmann: (*a*) "Beitrage zur Reinzuchtung der Spirochaete pallida," Zeitschr. f. Hyg. u. Infektionskrankh., 1911, No. 58, p. 27. (*b*) *Deutsche med. Woch.*, 1911, No. 37, p. 1546.

36. Noguchi: (*a*) "A Method for the Pure Culture of the Pathogenic Treponema Pallidum (Spirochaeta Pallida)," *Journal of Experimental Medicine*, vol. xiv, No. 2. (*b*) "Cultural Studies on Mouth Spirochaetae (Treponema microdentium and macrodentium)," *Ibid.*, vol. xv, No. 1. (*c*) "The Direct Cultivation of Treponema Pallidum Pathogenic for the Monkey," *Ibid.*, vol. xv, No. 1. (*d*) "Morphological and Pathogenic Variations in Treponema Pallidum," *Ibid.*, vol. xv, No. 2.

126 West Seventieth Street.

PAPILLOMA OF THE VOCAL CORDS CURED BY RADIUM.

By ROBERT ABBE, M.D.,

NEW YORK

SURGEON TO ST. LUKE'S HOSPITAL

Of all the surgical conditions encountered in the human larynx, excepting cancer only, that of warty vegetations on the vocal cords, is the most rebellious to cure, obstinate in recurrence, destructive to the voice, and menacing to breathing.

It has been claimed that this condition occasionally changes to one of malignancy by irritation of the basal cells, but it is probable that this occurs as infrequently as in warts upon the skin.

One of the most persistent and unchanging cases to illustrate this point has been recorded by Dr. W. L. Culbert of this city, who published in 1904 (see the *Laryngoscope*, St. Louis, September, 1904) the history of a woman whose larynx he had repeatedly cleared of masses of obstructive papillomata by cutting punches. This case was a legacy to him from Dr. Lincoln, who had done the same, and who only continued to do what had been done by Dr. Elsberg, America's pioneer laryngologist. The picture of this larynx stuffed with warty growths was illustrated by Dr. Elsberg in a report of the case to the American Medical Association in 1865 and published in the Transactions for that year.

The patient had had her larnyx cleared out every six months for over forty-seven years. When Dr. Culbert presented her case to me for radium treatment in February, 1908, the growths were still non-malignant, but obstructive. A large part of

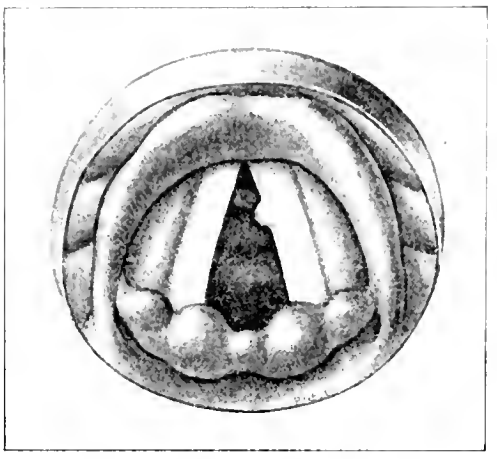

Fig. 1.—First fibroma removed by punch.

them were rapidly dissipated by radium applications. Dr. Culbert reports that he did not operate during the three years subsequently and the larynx was clearer than he had ever seen it without operation. "She also now breathes freely enough with one-third of the larynx entirely free from vegetations."

Believing that warts within the larynx ought to be as perfectly curable by radium as warts on the skin, lips, tongue, or eyelids—for which it is a specific—I now treated with great interest and perfect success a striking illustration of the same condition of laryngeal papillomata in a young woman referred to me also by Dr. Culbert.

The illustrations shown herewith in series, demonstrate the appearance, type, and course of the disease from its incipiency to its worst condition when the patient came under my care, and, finally, a picture of her restored vocal cords six months after my treatment by radium.

This attractive young woman of seventeen years had an unusually sweet singing voice which became

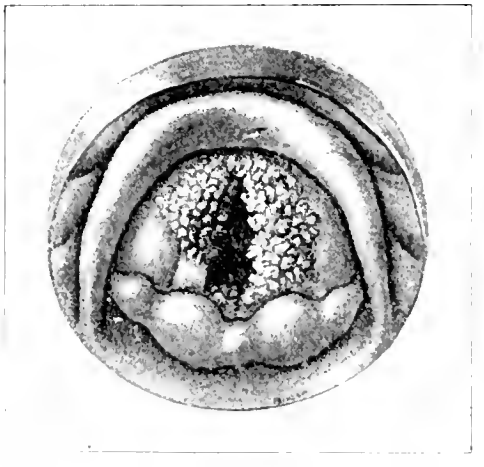

Fig. 3.—Condition when treated by radium.

hoarse in July, 1910. She applied to Dr. Culbert in September, 1910, who found the growth on the left vocal cord, as shown in Fig. 1. He excised it and submited it to Dr. Ewing, who regarded it as a "fibroma." A rapid recurrence took place looking larger and like papilloma in its rougher surface (Fig. 2). Again it was excised with thoroughness, but not examined.

Again a rapid recurrence looking more dusky and more like sarcoma than papilloma. It occupied the

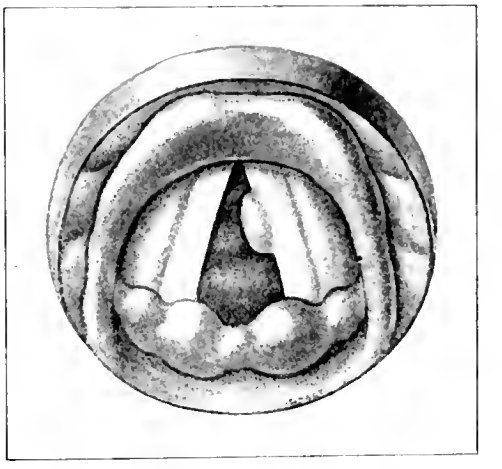

Fig. 2.—Return tumor removed by operation.

central half vocal cord and overflowed somewhat into the ventricle.

Attempts to apply radium when she was submitted to me at this stage were not satisfactory owing to the patient's restlessness under difficult laryngeal anesthesia in spite of Dr. Culbert's patience and skill.

The growth progressed rapidly now as a papilloma. By June, 1911, the voice was entirely gone and respiration was obstructed. The accompanying picture shows the growth at that date (Fig. 3).

On June 14 I did a tracheotomy under ether anesthesia, and through this wound passed a wire up through the larynx into the mouth. By this means I drew up into the larynx a small smooth capsule containing 100 milligrams of pure radium, which was thus suspended precisely between the vocal cords. Here it was held for thirty minutes while anesthesia was continued through the tracheotomy opening. No further care than this one treatment was given.

During the summer the patient gained steadily

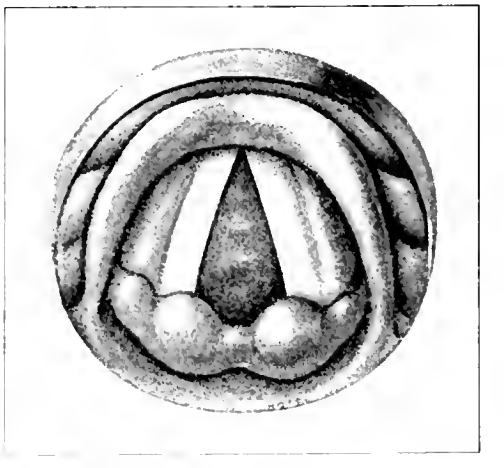

Fig. 4.—Restoration to normal, six months after one radium treatment.

and three months later, when examined by Dr. Culbert and myself, no trace of the growth remained.

Six months later the patient was shown at the Practitioners' Society and demonstrated her perfect restoration of singing voice. The illustration

was now made (Fig. 4) of her perfectly healthy vocal cords as seen by the artist and others. No disease or scar can be detected.

Two other cases of intractable papillomas of the larynx, one even extending into the trachea, have been treated by me with demonstration of the same reducing action of radium. Both are still under treatment and promise ultimate cure of the extensive growths.

13 West Fiftieth Street.

PEDIATRIC MEMORANDA.

CONGENITAL MYXEDEMA — CYSTIC GOITER WITH FEEBLE MENTALITY.

By HERMAN B. SHEFFIELD, M.D.,

NEW YORK.

Cretinism in children is due to partial or total arrest of the secretion of the thyroid and parathyroid glands, in consequence either of congenital or acquired (extirpation) absence, atrophy, or goitrous degeneration of the gland. In the first case under our observation the myxidiocy developed apparently as a result of congenital absence of the thyroid, in the second case the feeble mentality was due to goitrous degeneration.

Congenital Myxedema.—The little girl was six months old when her photograph was obtained. She seemed quite normal at birth, and for the first few weeks subsequently while breast fed (has probably received an ample supply of thyroid through the mother's breast milk). A few weeks later, however, the child's appearance began to change. The baby was growing unusually plump, though partaking but little nourishment and occasionally suffering from indigestion. She showed a marked tendency to persistently protrude the tongue, to snore heavily while asleep, and to "grunt" while awake. The mother and her good neighbors could readily

Fig. 1.—Congenital myxedema.

explain away the plumpness and the protrusion of the tongue, attributing the former to her unusual good temper (for she was for ever sleeping) and the latter either to teething or to a "craving for something to eat the mother must have longed for during pregnancy—and could not obtain"; but the noisy breathing they rightly thought was not natural for a healthy child, hence they decided to see a physician. The baby was examined by several physicians, privately and in dispensaries, and it finally came under my observation. As can readily

Fig. 2.—Cystic goiter with feeble mentality.

be seen from the accompanying illustration (Fig. 1), the case was characteristic. The head was broad, flat, and plump and set upon a thick and short neck. The forehead was low and the root of the nose broad. The anterior fontanelle was widely open and the cranial sutures were barely united. The hair, though long, was lustreless, sparse and brittle. The face was waxy, apathetic, lifeless, marbleized, as it were, and much older in appearance for the child's age. The eyelids were puffed, and the eyes spindle-shaped, dull and dreary, but not profoundly idiotic—she recognized the mother and was annoyed by the approach of strangers. The tongue was extraordinarily large, pale, and thick, entirely too large in size comfortably to be accommodated in the oral cavity, hence ever protruding and snugly embraced by the deathly pale, unusually heavy lips. The anterior portion of the neck was thin and loosely covered by wrinkled skin and subcutaneous tissue. Careful palpation failed to locate the thyroid gland even in rudimentary form, the space normally allotted to it being apparently free from any soft structures suggestive of thyroid tissues. The supraclavicular and subclavicular spaces were filled in by so-called "fatty-tumors." The abdomen was pendulous and flabby and marked by a large umbilical hernia. The articulations of the extremities were thickened, and the hands greatly resembled the so-called "trident-hand," *i.e.*, peculiar fan-like divergence of its thick, almost uniformly sized fingers. Under moderately large doses of thyroid gland substance the child usually brightened up considerably, but the idiocy invariably returned on discontinuance of the medication.

With so typical a clinical picture the diagnosis of congenital myxedema or cretinism could readily be

made, almost at a glance. In less pronounced cases, however, errors of diagnosis are quite possible. For example, macroglossia with rachitis or Mongolian idiocy in infants *under six months* have several symptoms in common with myxidiocy, and may for a time keep the physician guessing. But in macroglossia we usually find that the tongue seemed largest at birth and became gradually *relatively* smaller as the baby grew older and its oral cavity larger; furthermore, the child's mentality is not affected. Mongolian idiocy, while, like congenital cretinism, characterized by idiocy and protrusion of the tongue, presents entirely different facial and cranial features. Thus, the cranium of the Mongolian idiot is somewhat smaller than normal, rounded, with the occiput running quite parallel with the plane of the face. The face is sunken, the cheek bones are prominent, the nose is short and broad and bound laterally toward the eyes by distinct vertical folds. Finally, all forms of athyreosis improve under the administration of thyroid or parathyroid gland substance, while this is entirely useless in congenital macroglossia or Mongolian idiocy. Hence the advisability of resorting to this therapeutic test in all cases of doubt.

Cystic Goiter with Feeble Mentality.—In this case I was unable to conclude whether I was dealing with a case of hypothyroidism or hyperthyroidism, since, while her bodily development precluded a deficiency of thyroid, her gradually developing feeble mentality simultaneously with the progressive goitrous degeneration of the thyroid gland fully justified such an assumption. When I first saw her she was thirteen years old. She was five feet six inches in height, and slender in build, weighing one hundred and twelve pounds. Her general health was good and her heart's action slow and regular. Her menstruation had not set in and her mammary glands were not developed. Her head was large and covered by a fair supply of normal hair. Her eyes were large, but not bulging, and her facial features seemed normal, when she was not laughing—which latter was rarely the case, especially when spoken to. When addressed she would invariably grin (that peculiar idiotic grin) or laugh aloud for several minutes at a time, open her mouth very wide and show a set of ugly, big, blackish brown, partially decayed, crooked teeth. Examination of the neck revealed (see Fig. 2) a large, elastic, cyst-like swelling, spreading out as a broad goitrous mass, especially to the right. According to the mother the tumor developed gradually within about two years previous to my examination. The family history was apparently negative. The parents were hard-working, healthy people, and their two other children were well. The patient's mental condition was supposed to have been quite good up to ten years of age. At about that time it was noticed that she lost interest in her school work, became slovenly and forgetful and very "nervous." As weeks and months passed by her feeble mindedness grew more and more pronounced, so that on coming under my observation I found her essentially idiotic. As already stated, when addressed she would grin and laugh; when questioned about something, she would turn to her mother and partly repeat what the mother had to say; she was unable to add together, for example, two and two, and had not any idea of where she lived. She was extremely restless and disturbed by the slightest commotion, and like a frightened baby was closely clinging to her mother's side. I put her on slowly increased doses of thyroid extract, but it seemed to have no beneficial effect upon her feeble mentality—her condition remained stationary for several months. I lost track of her for about six months thereafter, when one day I read in the daily press that on being sent to a grocery store across the street she had lost her way back home and was picked up by a policeman the following day, exhausted from hunger, thirst, and fatigue, wading knee-deep in the swamps of Westchester and unable to give any information as to her name or place of residence.

127 West Eighty-seventh Street.

EXAMINATION OF THE DUODENAL CONTENTS FOR DIAGNOSTIC PURPOSES TO CLEAR UP CERTAIN AFFECTIONS OF THE UPPER ABDOMINAL REGION.

By M. GROSS, M.D.,

NEW YORK.

As it is not always possible to correctly interpret pains located in the upper abdominal region or to establish the cause of such pains, any method that may be instrumental in elucidating these conditions should be availed of. There are notably the macroscopic, microscopic, and chemical examinations of the duodenal contents by means of the duodenal tube devised by me,[1] which methods seem capable of pointing the way to an elucidation of these frequently veiled conditions (affections of the stomach, pancreas, duodenum, gall-bladder, and liver). It may be opportune to commence with the description of a concrete case in order to better illustrate the points at issue and also to show the extent to which microscopic examinations of the duodenal contents can in certain cases be made serviceable for diagnostic purposes.

Mrs. S. T., 28 years old, mother of three children, was first examined by me on July 20, 1911. Family history negative. According to her statement, has always been in perfect health until five years ago, when she contracted a cough which, however, completely disappeared after a few months. Soon afterwards, and shortly after a delivery, she commenced to suffer from sporadic paroxysms of "stomach cramp," which often lasted for hours, often came during the night, radiated toward the right shoulder, were accompanied by nausea and followed by debility; in short, the characteristic picture of gallstone colic. During the last few months the paroxysms were more frequent and severe. She never vomited and stated she never had had a yellow complexion. Menstruation always regular.

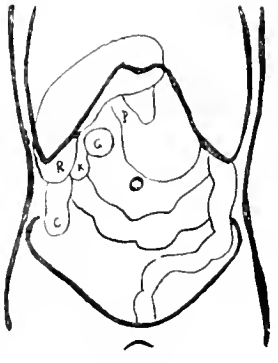

Fig. 1.—P, pyloric part; G, gall-bladder; K, kidney; R, Riedel's lobe; C, cecum.

General examination showed a pale, emaciated

woman of slight structure. Mucous membranes pale, the scleræ slightly yellowish discolored. Reflexes rather exaggerated. Temperature normal. Cardiac findings negative; vessels hypoplastic. The right apex of the lungs reveals distinct traces of an old affection that has run its course. Urinary findings negative. Abdominal inspection shows at the first glance two distinct protuberances (see photographic illustration). The bulging at the left side of the median line corresponds to a displaced, dilated stomach which is just undergoing a stiffening, advancing to the pars pylorica, and rendering the same visible. The protuberance in the right hypochondrium corresponds to an enlarged gall bladder. On inspiration the latter can be distinctly seen to move downward, returning to its original position on expiration. By means of abdominal palpation nearly all the organs are found to be prolapsed and can be distinctly palpated through the attenuated abdominal walls (Fig. 1). The enlarged gall bladder has the size of a small hen's egg, is pear-shaped, smooth, firmly elastic, but not painful, freely movable in all directions, with the fixation point in the region of the cysticus. Patient states that she could see and feel the enlargement for the past three years. The liver is smooth, of normal consistency, and slightly extended beyond the costal margin in the mamillary line. The left lobe appears normal, whilst toward the anterior right axillary line a sharp, tongue-shaped process can be distinctly felt, similar to a floating kidney, but thinner, more superficial, and continuously passing into the hepatic tissue. This is the so-called "Riedel's lobe" (or "Schnurlappen").* The liver itself is not susceptible to pressure with the exception of one point close to the left margin of Riedel's lobe in the region of ampulla of the gall bladder and the ductus cysticus.† The gall bladder itself is not very susceptible to pressure from without (Lenander); when patient is at all conscious of any pain during these manipulations, she refers it to the region of the neck of the bladder where it joins the ductus cysticus, which means lower down, below the liver. Also during the paroxysms patient had frequently occasion to observe that the pain manifested itself at the place just described, and this might perhaps be regarded as pointing to the cause of the pain in "colicky attacks." The causation of the pain can certainly not be attributed to the pressure of an inflammatory exudate alone (Aschoff and Bacmeister), because in that case any exaggerated pressure upon the gall bladder, such as I have often exerted, would produce a paroxysm which, however, has happened only once and then only momentarily. Nor can a "muscular spasm" be held responsible for the pain, since the above named authors have found that at the spot where the calculus is most frequently impacted, the cysticus possesses practically no muscle fibres at all. On the other hand, a typical colic may occur without concrements, as for instance in cholecystitis, in cholangitis (Riedel) and in adhesions. Inflammatory manifestations of the mucosa itself can only be considered as causes of these colics, if erosions or ulcers should simultaneously develop at the same place, where in that case the lightest touch or contact is capable of causing the most exquisite paroxysms, notably owing to the abundance of sensitive fibres at these very parts. Inquiry among surgeons has partly confirmed this view.

Distinct splashing sounds, extending below the umbilical region, can be elicited in the gastric region, six hours after ingestion of a light meal (stagnation). On digital examination the contracting pars pylorica can be palpated as a cord the thickness of a finger, running toward the liver upward and to the right.

On July 21 the gall bladder was tapped and a very small quantity of a clear viscid fluid was evacuated and found sterile. On July 22 the stomach was examined before breakfast and 40 c.c. of contents withdrawn which contained distinct food remnants of the previous day. Congo positive. This was followed by lavage of the stomach and immediately afterwards by insertion of the duodenal tube. After half an hour clear, golden yellow duodenal contents were withdrawn which contains the three ferments: trypsin, steapsin and amylopsin, in distinct quantities.* No blood was found, either macroscopically or chemically. The first duodenal lavage† was made with warm distilled water. On July 24 patient reported a violent gallstone colic on the previous day, stating that the tumor felt larger and harder during the paroxysm (contractions of the hypertrophic wall of the gall bladder). Local examination resulted in the same findings of the gall bladder as at the first examination. The stagnant gastric contents showed free HCl 40, total acidity 60. Lavage of both stomach and duodenum was done at once, as on all succeeding days of treatment. The duodenal tube was introduced to about "80," which means 80 cm from the teeth, or a few centimeters beyond the caruncle, but still this side af the duodenojejunal juncture. This time the duodenal lavage was made with a decinormal HCl solution, we being led by the idea (1) to cause reflex closure of the pyloric ring and (2) to prevent regurgitation of the duodenal contents into the stomach, and thus to have a still better chance of causing a reflex action of the gall bladder. July 25. There was no paroxysm of pain, but a passing diarrhea following the duodenal lavage (intestinal irritation). This day, for the first time, a few calculous concrements were found in the aspirated duodenal contents. Gastroduodenal lavage instituted. July 26. Patient had no pain and the local findings were unchanged. Temperature 99½°. No lavage was done this day. July 27. Last night patient had a violent paroxysm. There was distinct stagnation of the gastric contents. Gastric lavage. Microscopic examination of the aspirated duodenal contents revealed in spite of the thorough lavage of the stomach small quantities of starch granules, which are a sign of duodenal stagnation,† little neutral fat in minute droplets, fatty acids, little mucus, no epithelia and no concrements. By way of experiment the duodenal lavage was this time made with a Carlsbad salt solution (4 to 250). Upon withdrawal of the duodenal tube a large quantity of regurgitated duodenal contents was found in the stomach.† On July 31 patient reported a number of painless days and felt more hopeful. The gall bladder was unchanged in shape, size, etc. Stagnation of gastric contents was con-

*The origination of this lobe is not yet quite cleared up, but it is a fact that in the presence of Riedel's lobe gallstones are found in the reservoir system (L. Arnsperger).

†Probably in consequence of inflammatory processes and adhesions, which are particularly prone to establish themselves at this point, and also in consequence of the large number of sensitive fibers there (Aschoff and Bacmeister).

*The ferments were examined in accordance with our simplified method, as described in the MEDICAL RECORD, November 12, 1910.

†The infused alkaline solution prevents the reflex closure of the pylorus; hence the unusually large quantity of massy regurgitation.

siderably less. Gastrointestinal lavage was done as usual. In order to prevent regurgitation due to duodenal lavage, two measures were adopted: (1) The duodenal tube was inserted deeper (85 cm) and (2) patient remained in the right recumbent position during the entire procedure. As a consequence, regurgitation during the duodenal lavage was considerably less. Microscopic: In the pure duodenal secretion few but distinct concrements. On August 3 patient again reported a painless day. On palpation the gall bladder for the first time gave the impression of being smaller and less resistant (owing to a more abundant evacuation of the gall bladder). On August 4 the report was again favorable. The aspirated duodenal contents appear somewhat darker and more viscous. (Bladder contents.) Microscopic: Large quantity of cholesterin crystals of different sizes, sometimes covering the entire field of vision. Besides, the preparation shows a large quantity of concrements in greater accumulation, dark red to brown with a dull lustre and arranged in piles; furthermore small scales, dark red to brown of strong refraction (bilirubin crystals).* On this occasion I was also able to observe, for the first time in this patient, a distinct strangling effort at the moment the small ball of the

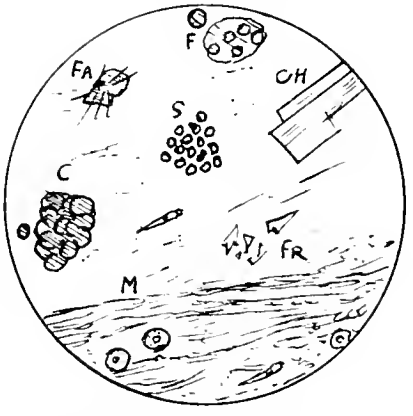

Fig. 2.—M, mucus with embedded cells and epithelia; C, concrements; S, starch granules; Fr, fragments; Ch, cholesterin crystals; Fa, fatty acids and crystals; F, fat.

duodenal tube passed the pyloric ring while withdrawing the tube (60 cm).

There was a fresh paroxysm in the night from August 5 to 6. On August 6 the gastric stagnation was again more pronounced. The enlarged gall-bladder again felt replenished. (Calculous impaction and renewed stagnation of the bladder contents.) Gastroduodenal lavage. August 8. Patient complains of a more constant pain in the hepatic region in the intervening days and of anorexia. Temperature 99°. Bladder is smaller, and of a rounder contour than pear-shaped, and not painful. (Renewed partial exacuation of the cystic contents, the bladder containing almost nothing but gall stones.) On this day the duodenal lavage was experimentally made with filtered lemon juice (4:200). We then also succeeded for the first time, although only under simultaneous pressure on the gall bladder from without, in evacuating large quantities of bladder contents *i.e.*, the fluid obtained in the "receptacle" was much more turbid and dark, more nearly black-brown and, which is important, of a viscous consistency, transfused, as it were, by mucous clouds, which would indicate distinctly characteristic gall bladder contents. Microscopic: Numerous cholesterin tablets, brown concrements arranged in piles, but also in minute fragments and particles as well as free minute globular deposits of brick-red to brownish color. A few formed elements were embedded in the mucus; the cells were somewhat larger than leucocytes (Fig. 2) (Petry). As to spindle and polygonal cells, observed by the same author, I have not yet been able to discover any. The duodenal contents thus obtained, with a distinct admixture of gall bladder secretion, was now examined for typhoid bacilli, with a negative result.*

At this juncture I may be permitted to interpolate the following statement: The microscopic inspection of the duodenal contents, as it is gathered with the aid of aspiration in the "receptacle" of the instrument, enables one after a short experience to draw certain conclusions as to the part of the duodenum from which the fluid emanates. Thus, in the pars superior duodeni the contents are more likely to resemble gastric contents, although there are already all the characteristics of the duodenal contents, such as reaction, color, and oftentimes ferments (secondary stomach, "Nachmagen"). A few centimeters lower down, but still above the caruncle (papilla of Vater) they have all the properties of pure duodenal contents, that is, they are alkaline, limpid, viscid, fluid, light yellow to green or golden yellow; in rare cases it is even possible to obtain pure duodenal secretion, or rather intestinal secretion, *i.e.*, without an admixture of bile. This fluid has a lighter color, scarcely yellow. In the pars inferior, a few centimeters lower still and below the caruncle, the duodenal contents may show the same characteristics as above the caruncle, but (when the stomach is empty, in irregular and infrequent intervals), the duodenal contents will contain also a wave of the characteristic bladder contents. In normal conditions, *i.e.*, under the stimulation of ingested food and the reflex impulse of the latter, the inspissated bladder bile, mixed with the now abundantly secreted liver bile, flows freely into the duodenum at the beginning of digestion and at the opening of the so-called duodeno-choledochal sphincter. When, however, this sphincter is closed, there is an obstacle to the flow of bile, compelling it to take its course through the cysticus and gall bladder (Pawlow). In our present case, as long as nothing but pure duodenal contents could be aspirated, this occurrence points to an occlusion of the cysticus, and only the increased flow of characteristic gall bladder contents showed that the cysticus became, even if only temporarily, unoccluded.

On August 10 patient did not complain of pains, but had experienced a severe paroxysm between August 10 and 11. It is a remarkable fact that almost regularly after each colicky attack there is a stagnation of the gastric contents, probably due to the reflex spasm of the pyloric muscle occurring in cholelithiasis, as observed by Büttner. On August 13 patient produced a calculus which had been voided with the stool. It was nearly the size of a cherry stone, of light yellow color, hard, and rough on the surface. Cross-section showed an irregular stellar nucleus with no layers (cholesterin-bilirubin-

*Minute, almost colorless, particles of great refractive power, which are often found microscopically, arranged in heaps, are minute starch granules, which should not be confounded with "free concrements."

*Weber was the first to examine, after Volhard's method, the duodenal contents for typhoid bacilli (*Münchener medizinische Wochenschrift*, 1908, p. 2443). It is, of course, necessary to interpret these findings with caution, since the pancreatic secretion was found to be extremely bactericidal.

calculus). A finely powdered portion of the calculus showed under the microscope that it was of exactly the same character as the concrements mixed with the duodenal contents; so were the particles obtained by beating the stone with a glass rod (Petry). From August 13 to September 2 the pathological picture repeated itself in the manner before described: Paroxysms of pain and replenished gall bladder alternating with painless days, sometimes but not always accompanied by reduced swelling of the gall bladder. The method of treatment also continued in the same way as before. On September 2 every attempt at reducing the gall bladder, even under exaggerated pressure, was futile. (Complete irremovable occlusion of the cysticus.) Treatment was now interrupted and operation advised, which patient however flatly declined.

The diagnosis in the present case was not open to doubt from the very first. There was a dropsical gall bladder with hypertrophic walls, containing biliary calculi. Probably there was also a chronic ulcerative process at the neck of the gall bladder. The entire process may have developed in two phases. In the first phase there was a non-inflammatory stage with simple biliary stasis without the co-operation of bacilli, with formation of so-called pure "radial isolated cholesterin calculi" (Aschoff and Bacmeister, "Die Cholelithiasis," Jena, 1909).* In the second, or inflammatory, phase there is, according to the authors named, a "radically different" ("prinzipiell verschieden") biliary calculous formation: the "secondary mixed calculi" (cholesterin-pigment stones); contrary to the old theory of Naunin that every gall stone formation required the presence of both stagnation of bile and bacterial infection.

E. Petry, of Gratz, was the first to show[4] that gall bladders containing calculi also contain smaller concrements of the same nature as the calculi, whether as "free" deposits or as fragments of the larger stones. If then, he argues, it should be possible to demonstrate these concrements in the bile, the proof of the presence of biliary calculi in the gall bladder would be adduced. His method is as follows: In accordance with Volhard's[5] suggestions he introduced 200 grams of oil into the empty stomach and after about an hour examined the contents regurgitated from the duodenum for these concrements. It is owing to the method adopted that Petry was unable to obtain pure duodenal contents, *i.e.* unmixed with gastric juice, even when administering the oil upon an empty stomach, being that even in the normal empty stomach there are often small quantities of contents, and always mucus, epithelia, etc. It is due to this fact that the results obtained may lead to errors. On the other hand, with the duodenal tube devised by me it is possible to obtain pure duodenal contents in a relatively short time, sometimes already in half an hour. The demand for a rational internal treatment of biliary calculi would according to P. Meyer[6] be fulfilled if, in the first place, biliary stasis were prevented, which he proposes to do by "fluidification of the bile." This should be accomplished by copious drinking of hot water in the morning and evening, and by partaking of frequent small meals, since the duodenocholedochal sphincter is patent during digestion, dependent upon the entrance of food from the stomach into the intestine, and thus would be instrumental in frequently renewing the bile supply. In the second place, it would be necessary in the internal treatment of gall stones, to stimulate intestinal peristalsis in order to incite the "muscular power of expulsion of the gall bladder contents," thus promoting the secretion of bile. Lavage of the stomach with hot water is also intended to serve the same purpose (Ewald). All this was the leading idea in applying and pursuing my purely mechanicotherapeutic proceeding in the present case; it would be hard to devise a more purposeful and direct proceeding. But as I have already intimated in my article on the "Lavage of the Duodenum"[7] duodenal irrigation is probably ineffectual in gall-bladder affections for therapeutic purposes. As was to be expected, the success could only be nominal, although the desired reflex effect of lavation upon the gall bladder could be directly demonstrated (palpable contractions of the gall bladder; evacuation of the small calculus). It is conceivable that the small stone would have passed without any mechanical assistance, but a passage of larger stones could most certainly not be effected by this method.

In conclusion I may be permitted to emphasize a few more diagnostic points. The distinct stiffening

Fig. 3.—Showing the stomach in peristalsis and the enlarged gall-bladder.

of the stomach in the present case was assuredly not caused by a hypertrophic pyloric stenosis, as has usually been assumed up to the present, because the duodenal tube passed smoothly through, which is not always the case in constrictions at the pylorus. The causes for the stiffening of the gastric wall might have been (1) an angulation of the pars superior duodeni,[8] (2) pressure of the enlarged gall-bladder upon the duodenum; or, perhaps, (3) adhesions emanating from the ampullar part of the gall-bladder and connecting the same with the pyloric part of the stomach or duodenum—adhesions which are capable of exerting a disturbing effect upon normal function of these parts. The pyloric spasm certainly could also have assisted in a stenosis of the pylorus, even though temporarily. It must be left to further investigations to find out whether and how far a duodenum hanging down in a weak condition, in which apparently the food is more or less stagnant, as in the present case, can exert an influence upon the motility of the stomach; and it will also have to be shown in how far duodenal affections can give rise to painful paroxysms in the upper abdominal region (Lane). Furthermore, the fact was

*Reidel, too, believes in the non-bacterial mechanical development of hydrops vesicæ fellæ.

of diagnostic importance that in all duodenal examinations in the present case "macroscopically visible blood specks" were not mixed with the duodenal contents on a single occasion, as their presence would have been a sure sign of duodenal ulcer, as I have pointed out[9] on a previous occasion.

REFERENCES.

1. *Journal of the American Medical Association*, April 23, 1910.
2. *New York Medical Journal*, January 28, 1911.
3. *New York Medical Journal*, August 26, 1911.
4. *Wiener klinische Wochenschrift*, 1911, No. 20.
5. *Münchener medizinische Wochenschrift*, 1907, p. 403.
6. *Berliner klinische Wochenschrift*, 1911, No. 16.
7. *l. c.*
8. *New York Medical Journal*, August 26, 1911.
9. Medical Record, April 22, 1911.

40 East Forty-first Street.

CHEYNE-STOKES RESPIRATION WITH REPORT OF TWO REMARKABLE CASES.

By DAVID FELBERBAUM, M.D.,
NEW YORK,
PATHOLOGIST TO THE MONTEFIORE HOME
AND
SAMUEL EHRENREICH, M.D.,
NEW YORK,
HOUSE PHYSICIAN OF THE MONTEFIORE HOME.

This type of respiration, occurring as it does in the course of various conditions, has aroused a great amount of interest and produced a corresponding number of contributions to medical science. Hippocrates, in the First Book of the Epidemics, makes reference to it; Nicolas, in 1780, gave a full description of the ascending phase of Cheyne-Stokes respiration, but did not mention the period of descending respiration. With the above exceptions this peculiar form of breathing remained unnoticed until Cheyne observed it anew.

Fig. [illegible] (Case II) at level of exit of fifth cranial nerve, showing the numerous scattered foci of degeneration.

In reporting a case in 1818, of fatty degeneration of the heart, Stokes, whose name as well as Cheyne's is now indissolubly bound up with the peculiarity of breathing, made it pathognomonic of fatty degeneration of the heart, saying that he had never seen it except in examples of that disease. In 1858 similar phenomena were produced experimentally by Schiff. He observed the characteristic breathing as the result of hemorrhages involving the medulla oblongata but not directly affecting the vital spot. Von Basch, Little, Benson, Traube, Mader, Gibson, and many others have written very valuable treatises upon this subject; it is Gibson, especially, who has gone into it in detail.

Among the conditions in which the Cheyne-Stokes respiration is seen are various cardiovascular affections, such as fatty heart, coronary sclerosis, noncompensated aortic stenosis, arteriosclerosis; various severe affections of the brain, such as tumors and hemorrhage; various diseases of the respiratory apparatus, and chronic nephritis. The administration of morphine has occasionally produced it. Although more frequently observed in the unconscious it is not uncommon even when consciousness is maintained, especially in patients with chronic respiratory or circulatory disorders.

The explanation of the cause of Cheyne-Stokes respiration is still not wholly agreed upon. It is an indisputable fact that it depends upon a reduction of irritability of the respiratory center. The original theory of Traube assumed that the symptom arises when the excitability of the respiratory center is so greatly lessened by the insufficient supply of oxidized blood to the medulla that, at a certain moment coinciding with the first breathing pause, there is no longer a sufficient physiological stimulus to arouse the respiratory movements. With the cessation of respiration the blood becomes still more decidedly venous. This irritates the respiratory center intensely, so that despite the diminished susceptibility, breathing begins again. This in turn diminishes the venous character of the blood, and the breathing gradually becomes weaker in proportion to the oxidation of the blood. Sahli explains certain discrepancies in this theory by calling attention to the fact that the blood becomes more venous even after the beginning of respiration, which accounts for the gradual increase in strength of the respiratory movements; another objection to Traube's theory is that after the respiratory center's normal excitability has been restored by an improved supply of oxygen, why should the breathing fade away again? If we hold with Traube that the asphyxia of the respiratory center is the sole cause of its diminished excitability, the objection cannot be answered; but if we regard the excitability of the center inherent and not altogether dependent on the circulation, the objection loses its force. (Sahli.)

Rosenbach maintains that the periodicity of this type of breathing results simply from an abnormal fatigue of the respiratory center, but that this fatigue should not be confused with a diminished irritability. The center is active for a time, works against a gradually increasing difficulty, finally stops entirely and begins its activity again only after the pause has to some extent recuperated its powers. Fihlene thinks that the excitation of the vasomotor center causes an anemia of the respiratory center, and thus this type of breathing. These are the three theories most generally known.

In typical Cheyne-Stokes breathing the normal rhythm is interrupted by distinct arrests of respiration; there is an alternation of periods of respiratory activity and periods of respiratory repose. The arrests of respiration in typical Cheyne-Stokes breathing occur at definite intervals of time; they are therefore periodic; another essential feature is that the period of activity consists of two distinct phases, termed by Cheyne as ascending and descending. During the former there is a gradual increase not only in amplitude of the respiratory movements, but also in their rate; while during the

latter phase there is a gradual decrease, both in extent and rate, of these movements. No hard and fast line can be drawn between the regular periodicity of events seen in classical Cheyne-Stokes breathing, and the altogether stoppages of respiration characteristic of cerebral breathing. Many other modified forms of these breathings occur, in which the irregularity varies a good deal and where periods of apnea may be absent.

During the period of repose there is an entire absence of all movement and during the period of activity the patient often appears as if laboring under severe dyspnea. Sometimes the rate of the pulse is diminished and the blood pressure falls during the apneic phase and a rise of blood pressure with quickening of the pulse occurs during the period of respiratory activity. These are the cases which, according to Eyster, are always associated with increased intracranial tension. The cases with Cheyne-Stokes respiration occurring in cardiac and arterial disease have a slowing of pulse and fall in blood pressure during the dyspneic period, and a rise of blood pressure and quickening of the pulse rate during the apneic period.

Certain eye changes have also been observed frequently, the eye being open during the period of breathing and closed during cessation of respiration. A conjugate deviation of the eyeballs has occasionally been noticed during the pause; in the latter stage the pupils are contracted and do not react, while during the active stage they widen and react once more. No changes have been observed in the condition of the vessels of the retina during the various phases of respiration.

The occurrence of Cheyne-Stokes breathing is a very grave symptom, usually being the harbinger of death, although a few cases have recovered from it. Therapeutically Eyster has attempted to treat the condition by increasing the irritability of the respiratory center; (1) by injections of strychnine, and (2) by inhalations of CO_2, and he has been fairly successful.

The two cases that we now wish to present are unique in that (1) the typical manifestations of Cheyne-Stokes respiration continued for a long period of time, and (2) they were associated with definite symptoms of pontomedullary disease and chronic nephritis, so that clinically the origin of this symptom was evidently very obscure. In the second case the periods of dyspnea and apnea each lasted for 35 seconds, which is an exceptionally long time.

Case I.—Patient, M. W., age 64, male; admitted to the Montefiore Home April 3, 1908, died May 5, 1908. Father died of cardiac disease; mother died of "softening of the brain" at 74; one brother died of stomach disease at 45, and a sister is suffering with gastric trouble. Mother had a few miscarriages, patient not knowing the number or time of occurrence. No consanguinity. About twenty years ago complained of "liver disease," was ill for a few months, jaundiced, etc. Otherwise patient has always been well previous to onset of present trouble. Habits were regular, no excesses. Venereal history unknown. Cigarmaker by occupation, worked under poor surroundings. No drug habits.

Present Illness. Three years ago was suddenly stricken with dysarthria; was put to bed where he remained for two days, after which time he could be understood. This disability of speech has continued through illness. About one year later, while sitting in a chair at home, he suddenly commenced to rub the eyes; after being asked what the trouble was he asserted that he could not see distinctly. Previous to this he felt dizzy for a few minutes. There was no history of headache or vomiting between first and second attacks. There was, however, a history of occasional dizziness. He did not work as well as usually, and attributed this to weakness. Since the second attack has been troubled with eyes, especially the right (wife says), besides a general feeling of weakness. While drinking he showed evidences of dysphagia ever since the first attack; since last attack the following mental symptoms have presented themselves: Occasional spasmodic crying and laughing spells; he became very irritable, would demand impossible attentions; memory deteriorated rapidly, and his statements were very unreliable; he became careless in his dress and habits; he often wet the bed unconsciously, but never soiled it; slept very much and lost interest in current events. About five weeks ago daughter suddenly noticed crossed eyes, patient not complaining of anything at the time; he felt somewhat dizzy and walked with the aid of chairs to the supper table; had supper, had to be carried from the table and complained of dizziness, diminished vision, and inability to walk; could move legs and arms. For the next five days could not recognize his relatives; for the following few days only recognized them by their voices. At no time had the patient a paralysis of either arm or leg. However, the left side appeared higher and drawn.

Since the last attack has had the following mental symptoms: Disoriented as to time and place; could not remember any occurrence during the day, would fabricate considerably, telling of many experiences when questioned; had greater crying spells, but less marked laughter; from time to time soiled his bed as well as wet it; dysphagia no worse. Shortly before the last attack it was noticed that patient would have peculiar respiration, which would stop at intervals, then return. A few months previous to the last attack he was taken suddenly ill with marked dyspnea and a cold perspiration lasting a few minutes. When seen yesterday patient was irritable, refused to go to bed for examination; was nonoriented; said he had kidney trouble for three weeks.

The patient is of average height, well built, general nutrition good; when left alone he lies upon his back, and only from time to time exerts himself by sitting up and asking for a glass of water; panniculus adiposus moderate in amount. The most characteristic and noteworthy condition present is the constant presence of typical Cheyne-Stokes breathing (see Tracing 1). The periods of apnea and dyspnea each lasting 20 seconds; the number of respirations during the dyspneic period is 12. Nothing characteristic in the station. The gait is that of a senile character; no ataxia or staggering.

Head is well formed; temporals very tortuous and prominent; right side of face droops, right eye shows a convergent squint; eyes are nearly in constant nystagmus, made more so by any attempt at focusing. Face is flushed and mucous membranes cyanotic; occasional oscillations of head from side to side present. First cranial nerve apparently normal; 2nd, sight is fair, but at times, especially when looking to the right, he apparently has diplopia, for he counts two fingers as four; 3rd, 4th,

and 6th, ocular movements of the left eye normal except for constant nystagmus; of the right eye there is a well-marked paresis of the external and superior recti. Arcus seniles marked; 5th, motor and sensory normal; 7th, facial innervation much stronger on the left side, pharyngeal innervation stronger on the right; 8th, hears the watch at a normal distance on both sides; 9th, apparently taste is preserved; 10th, see tracing of Cheyne-Stokes pulse, high-tension, systolic pressure, being 205 mm. Hg., diastolic 140; rate is 90 per minute, regular; vessel wall intensely sclerotic; 11th and 12th, normal. Patient is apathetic, when left alone is somnolent; asks for water spontaneously, which he drinks in large quantities; when asked a question his response is snappy and monosyllabic; absolutely resists examination. Disoriented, he is irritable, very suspicious, and is easily excited. The speech is thick, dysarthric; while questioned he would repeatedly ask, "Aren't you through yet?" Impulsive crying and laughing present. He fabricates, e.g. gives a story of having fallen from a ladder recently. Writing is very indistinct.

Active movements are good in upper as well as in lower extremities; can assume sitting posture with ease while in bed. Gross motor power fair and equal on both sides. Pupils do not react; left is slightly smaller in size than is the right, and both are irregular in outline; jaw jerk is present, supraorbital reflex exaggerated, especially on right side; both triceps jerks obtained, wrist jerks not obtainable; knee jerks lively, Achilles not obtained; dorsal flexion of all toes on right side, slight

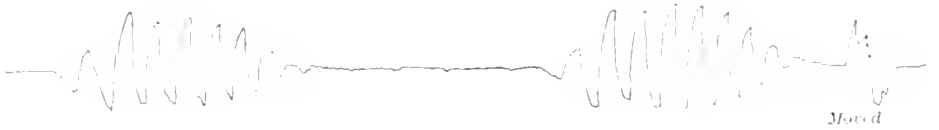

Chart 1.—Tracing from Case I

Babinski on the right side; abdominal reflexes absent, as is true of the cremasterics. No ataxia, but there is an intention tremor brought out when fingers reach their destination. Deep muscular sensibility intact; no astereognosis; no atrophies or deformities; sensation to touch, pain and temperature fairly well preserved. Has cold clammy, cyanotic hands and feet.

Heart, negative, except for a distinct hypertrophy to the left, and an accentuated second aortic. Blood examination normal; urine showed all the evidences of a chronic interstitial nephritis. While at the hospital patient gradually became very restless and stuporous, not recognizing anyone about him; an intense grade of cyanosis developed in all limbs, at times almost black; often had convulsive twitchings of muscles of the right limbs. The respirations remained of the Cheyne-Stokes type until death, a month after admission. Unfortunately no autopsy was performed, but judging from the clinical findings, as compared to the next case, this patient probably had pontomedullary softening resulting from cerebral lues, and a chronic diffuse nephritis.

Case II.—I. C., aged 40, born in Russia; admitted to the Montefiore Home June 4, 1911. Family history is of no importance. Previous history, little obtainable; met with an accident at about 10; he fell into a pond and was almost drowned. Served in the Russian Army for five years, married at 25; wife aborted the first pregnancy in the eighth month, and the third in the fifth month; gave birth to nine normal children, of which eight are well. Patient used very little alcohol, tea, or coffee; always lived under adverse hygienic surroundings.

Present illness commenced three years ago, not preceded by any prodromata. One day, while at work, he was taken with violent trembling of his right arm and leg; no loss of consciousness at the time; the right side of face did not participate in the tremor; no impairment of speech and no disturbance of vision; no headache or vomiting. He returned home without any assistance, but was dragging his right leg, limping considerably. His taking to bed did not check the tremor, and soon it became evident that he could not move the right limbs at all. He remained in bed for two months, continually presenting the mentioned trembling which he could somewhat control by placing the limbs in a certain position. His condition improved, so that at the end of three months following the onset power returned in right limbs; he returned to work, remaining at it for the following two years as efficiently as ever before. His physician diagnosed the case as one of apoplexy. Ten months ago, after a hard day's work, he complained of pain and weakness in right limbs, in which the power gradually diminished; for the next five months he was treated with massage and electricity, and improved slightly. During the ten months following the second onset of his disease he has not complained of headache, pain, or vertigo; no vomiting, dyspnea, or loss of consciousness; no visual disturbances, but there was a marked change in his disposition; he became very irritable and nervous, and would often strike his children on the slightest provocation. Two weeks ago he was aroused from his sleep by a severe dyspnea; a warm drink relieved this somewhat, but there soon followed a paroxysm of cough and sanguineous expectoration, the latter persisting for several days; for some time he was unable to assume the reclining posture because of the dyspnea and cough; he was put on a chair for nearly a week, but finally became too feeble to sit up, and was placed in bed seven days ago; the dyspnea continued to grow worse, he could not sleep nor chew any food, and was in a semi-stuporous condition; three days ago incontinence of urine developed but not of feces. Did not lose consciousness, and two days ago could still speak distinctly and rationally, recognizing people about him. His wife states that when she parted from him a day before admission to this institution he cried, shook her hand, and bid her good-bye.

The striking feature is the presence of typical Cheyne-Stokes respiration, the periods of dyspnea and apnea each lasting 35 seconds (see Tracing 2). The number of respirations during the dyspneic period is 47; during the apneic period the pulse is somewhat slower in rate and the pupils are equal and contracted, whereas during the dyspneic one the pupils dilate and contract alternately (hippus). Another interesting feature is the occurrence of unconsciousness during the apneic phase; he cannot hear anything said to him. There is some cyanosis of the face and extremities, this being pres-

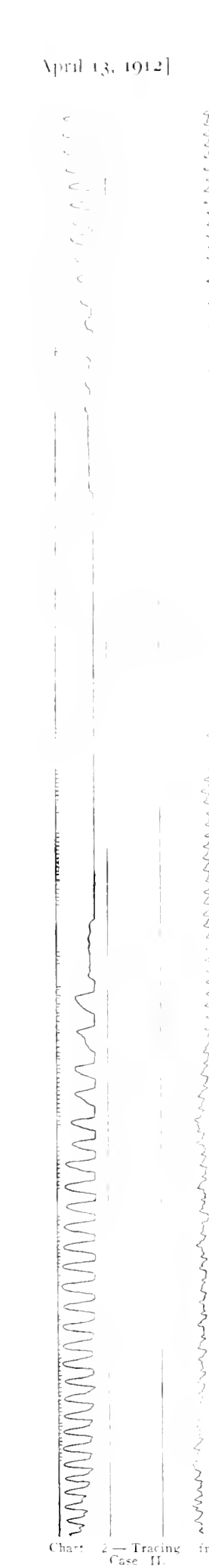

Chart 2.—Tracing from Case II.

out all the time. Speech is thick and indistinct on observation. Head is of normal shape and contour, no tenderness over any part of skull. Pupils are unequal in size, the right being larger, irregular in outline, react to light and accommodation; nystagmus is only present during the apneic period; there is a weakness of both external recti, more so of the right; exophthalmos of both eyes; some ptosis of lids. No involvement of the fifth cranial nerve; marked incapacity of facial innervation, being weaker in the three branches on the right side. Tongue: Cannot be protruded beyond the margin of the lips, deviates toward the right side, is dry and coated. Mouth is continually kept open, lips are cyanotic. Neck: Marked pulsation of jugular vessels on the right side, less so on the left. Chest is emphysematous in type, symmetrical, both supraclavicular fossæ depressed, the right more so. Breathing is stertorous abdominal in type and irregular (see above). Percussion of lungs hyperresonant throughout except for dullness over the right apex; on palpation the wheezing râles are felt everywhere. Auscultation reveals a typical emphysematous condition of both lungs; high pitched wheezing rhonchi all over, prolonged expiration, and a few moist râles over both bases posteriorly. Heart: Apex beat visible and palpable in the fourth interspace, 4 inches to left of midline; on percussion a moderate enlargement of the heart to the left is made out. Sounds are normal all over; heart action more rapid during the period of dyspnea. Pulses are equal in time of appearances, but the left radial is palpated more distinctly; not regular in rate or rhythm, occasional drop-beats. Tension is increased, arterial sclerosis moderate.

Liver palpable 2 inches below free costal border; spleen just felt. Extremities are cyanotic; slight edema of the right ankle. Sensation cannot be tested owing to stuporous condition of patient. Abdominal reflexes not obtained, cremasteric present, a pseudo-Babinski present on both sides; all deep reflexes exaggerated on the right side; left knee jerk increased. Inexhaustible ankle clonus on the right side, none on the left. Gordon and Oppenheim on the left side, no Mendel.

There is a paresis of the right limbs, the lower member more affected than the upper. No trophic disturbances. Deglutition: Patient cannot swallow any solid food, and liquid food only with difficulty. Fundi show congenital medullation of fibers, but no swelling of discs. Urine shows the presence of albumin, hyalin, and granular casts; specific gravity 1.020, excess of indican.

Wassermann reaction is strongly positive. Hb. 90 per cent., R.B.C. 4,800,000, W.B.C. 10,000. Differential count normal. Marked polychromatophilia and granular degeneration of the red cells. A lumbar puncture was performed and fluid was under a very great pressure. Patient died four days after admission, the antemortem temperature being 105.6° F.

Autopsy Findings.—Brain was only organ obtainable. It was rather large in size; convolutions and sulci well developed; veins distended; pia adherent in anterior fossa; basilar vessels sclerotic, with patches of calcification, especially in the vertebrals; cerebellar vessels also tortuous and sclerosed. On sectioning the pons at the level of exit of the fifth cranial nerve a patch of softening is found (Fig. 1); this patch has an irregular shape and extends on either side of the median raphe, but especially to the right anteriorly. The lesion, although greatest at this level, extends throughout the pons lengthwise, measuring about two centimeters; in places the edges are pigmented, brown in color, resembling the remains of an old hemorrhage; above, the degeneration begins at the level of the substantia nigra, and extends in an irregular manner to the junction of pons and medulla below. The meninges are apparently normal; the basal vessels on cross-section are thickened, sclerotic, and slightly tortuous; no thrombosis seen in any of the larger vessels. Numerous areas of softening were likewise found in various situations in the cerebrum, especially on the right side, in the white matter of the internal and external capsules, and in the posterior portion of the left optic thalamus. These areas are about the size of a millet seed, a few of them slightly larger.

Microscopical Examination.—Section of pons at level of most extensive softening was made, *e.g.* level of exit of the fifth cranial nerve and the following picture was present: The arteries are all greatly thickened, lumen narrowed; this process involves both the muscularis and the intima, *e.g.* hypertrophy of the muscular layer and a fibrous condition of the intima; in many the lumen is practically gone. The small arterioles are surrounded by an extensive area of round cell infiltration while the large vessels have a clear zone surrounding them, being separated from the brain substance. The areas of degeneration are numerous, some being very minute; at one situation there is a small hemorrhage which on serial section was found to originate in a plugged arteriole. The areas of softening consist of detritus, fibrillæ, and large epithelial-like cells; the walls of these areas are composed of many small round cells. Similar pictures were found in optic and thalami.

It is manifest that the condition primarily is a diffuse arteritis, probably of syphilitic origin, sec-

ondarily leading to thrombosis of the finer vessels with subsequent hemorrhage and softening. The lesion is most marked in the pons (see Fig. 3), but extends throughout the entire brain, mainly, however, in the white matter.

We are greatly indebted to Dr. S. Wachsmann, Medical Director of the Montefiore Home, for his kind assistance and for permission to publish the above cases.

3390 Broadway.

EXTENSION AND RECURRENCE OF BREAST CANCER THROUGH THE DEEP FASCIA.

By LEIGH F. WATSON, M.D.,

Oklahoma City.

The frequency of malignancy in tumors of the breast makes their early recognition and diagnosis a subject of paramount importance to both the general practitioner and the surgeon. When it is realized by the family physician and patient that thirteen out of every fourteen breast tumors in women over forty are malignant and one half of the benign growths ultimately become malignant the urgency for an early diagnosis and thorough surgical treatment is apparent.

It is the duty of the profession to impress on women the necessity for a prompt consultation with the family physician on the first appearance of a tumor or growth in the breast, however small or apparently insignificant it may appear to be; therein lies the only hope for a cure and the prevention of metastatic extension of the disease. Pilcher says it cannot be too strongly emphasized that practically every case of carcinoma of the breast, when it has reached the degree of development by which a palpable tumor is formed, is already in an advanced stage, such an advanced stage that, as a rule, metastatic deposits have already begun to be formed. Unfortunately the diagnostic signs that we are taught to associate with cancer are really its complications; when the classical symptoms are sufficient to make a positive diagnosis the case is incurable with the most radical operation.

As with cancer in other parts of the body, breast cancer is at first local and curable. The fact that many cases even though operated upon finally succumb is a factor that will continue to deter a certain class of patients from seeking medical advise at the earliest and most favorable period. These patients will seek an early operation only when the family physician impresses on their mind the favorable results obtainable with the early operation and that the operation itself is practically free from danger when performed early.

Cancer of the breast is more frequent in middle and old age because of the senility and lack of tissue resistance. In the young the liability is much less, but when it appears in youth the growth is more rapid and metastasis occurs earlier.

Richardson writes, "the more I consider the question of reasonable accuracy in the diagnosis of breast tumors, and the larger my experience becomes, the more I am inclined to advise operation on all breast tumors, whether the diagnosis points to malignancy or not, provided the patient is of the cancer age."

Bloodgood says that 31.5 per cent. of the breast tumors in the surgical clinic of Halsted at the Johns Hopkins Hospital were benign—among these benign lesions 25 per cent. were simple cysts, 5 per cent. papillomatous cysts, and 1 per cent. galactocele. Over 30 per cent., therefore, of benign lesions are cystic. With but few exceptions cysts appear during the cancer age. Among the carcinomas, about 25 per cent. are cysts, about equally divided between cancer cysts and the malignant papillomatous cysts. To about every 100 benign cysts there are about 25 malignant. In 604 mammary neoplasms at the Johns Hopkins Hospital 1.5 per cent. were sarcomas

In an analysis of 5,000 cases from the German clinics by Rodman, 20.5 per cent. occurred under 40 years, 9 per cent. between 20 and 30, and 5 per cent. between 30 and 40. The period of greatest liability is about and after the climacteric, when the gland is undergoing functional decline and its epithelial elements are prone to proliferate unduly. This should be kept constantly in mind because an involution mastitis, the condition most difficult to differentiate from carcinoma, is also likely to occur about the menopause. While cancer may, and does at times, affect all parts of the breast, it is more frequently found in the axillary hemisphere than in the sternal half of the gland; and of the two outer quadrants the upper is more frequently involved than the lower. Next in point of frequency, the middle portion of the gland—directly behind the areola—will be involved. It is the latter variety of tumors that by their adhesions to neighboring structures pull on and cause retraction of the nipple. Benign tumors and sarcoma, on the contrary, are more frequently met in the sternal hemisphere, the upper and inner quadrant particularly.

Carcinoma hardly ever occurs before puberty, sarcoma is also rare in children. Both are more frequent in girls than boys.

Handley claims that cancer recurs in the fascia and not in the skin and many cases of recurrence are due to neglect of the surgeon to remove the deep fascia over the ribs, clavicle, and sternum. Cancer extends through the lymphatics and not through the blood stream. The lymphatic distribution of the breast is divided into six distinct groups. The earliest extension occurs in the axillary region. Second in the neck; here extension occurs through the fascia and lymphatics over the clavicle as well as under it. Third through the lymphatics that return with the anterior intercostal vessels to the anterior mediastinal glands; these glands drain the inner side of the breast. Fourth, extension to the posterior group of glands that receives the lymphatics of the internal intercostal muscle. This is the route of extension that occurs when the tumor is fixed to the chest wall and the prognosis is practically hopeless as regards a cure. Fifth, across the sternum to the other breast. Cases rarely occur with cancer involving both breasts. Sixth, down the epigastric fascia and into the abdomen between the recti and digitations of the external oblique.

Horsley states that pain is more likely to be present in a benign growth than in cancer, though it is not often encountered in any tumor of the breast in the early stages. Pain is usually present in inflammatory rather than malignant disease.

Chronic or involution mastitis, adenoma, and the several varieties of cysts are the diseases most frequently encountered in the breast that may mask the diagnosis of malignancy, but when it is remembered that one-half of these benign conditions tend to become malignant it is evident that all tumors of the breast the nature of which is doubtful should

be removed. Every tumor of the breast should be considered malignant until its innocence is proved. As a rule, the nipple of the affected breast is on a higher level than the nipple of the healthy breast, owing to a shortening of the trabeculæ. The nipple of a breast containing a benign tumor on the other hand will be found to be lower than the nipple of the healthy breast.

Early operations on patients in middle or advanced life are favorable. The younger the patient the worse the prognosis. Meyer says, with the radical operation in the hands of all surgeons, no matter in which direction we advance in operating, between 40 and 50 per cent. of the patients operated on pass the three-year mark; between 30 and 40 pass the five-year mark. Rodman believes operation in the first year should yield 75 per cent. of cures. Cheyne reports 50 per cent. of cures. At the Johns Hopkins Hospital there were only 43 per cent. of cases living three years following the radical Halsted operation where there was no axillary involvement; of the cases with axillary involvement only 25 per cent. survived the three-year limit; while of those with cervical involvement only 7 per cent. lived over three years.

Jacobson says the importance of removing all of the retromammary tissue, pectoral and axillary fascia, and the axillary fat and glands, along with the breast, in all cases of carcinoma, cannot be too strongly insisted upon or too often repeated. The anastomoses and intersections of the lymphatics are so free that it is impossible to say toward which set of glands the lymph from any given point in the breast will be conveyed.

Butlin states that when the supraclavicular glands are cancerous a case is hopeless so far as a radical cure is concerned. Recurrences usually come within the first, occasionally in the second, and infrequently in the third year.

Stiles believes local recurrence of cancer after removal of the breast is usually due, not to the rest of the breast being in a precancerous state, but to the non-removal of small and often microscopic foci of cancer, more or less remote from the main tumor, and depending for their origin upon the rest and growth of cancerous emboli disseminated more or less directly from the primary tumor along the lymphatics.

When recurrence appears it is evident that the disease was more extensive than was apparent at the first operation; especially discreditable to the operator is reappearance of the cancer *in situ*; to avoid this risk the whole of the skin, breast, tissue, fat, and fascia over the affected breast should be removed, regardless of the earliness of operation and smallness and mobility of the growth.

An operation is contraindicated in cases that present extensive infiltration of the skin with shot-like nodules, commonly seen after osteopathic treatment; in Hutchinson's "cancer erythema"; in *peau d'orange*, a brawny leather-like condition of the skin; in the presence of visceral deposits; with infiltration of the supraclavicular or cervical glands; involvement of the axillary vessels and nerves positively contraindicate operation.

A secondary operation should be performed when the recurrence is in the form of small nodes in the skin incision or axilla and in those cases when the radical operation was not performed the first time. Even then the chance for a recovery is very remote, for, as Cheyne says, "the patient's chance lies in the first operation."

Severe pain from involvement of the brachial plexus is fortunately a rare complication; when this occurs Jacobson advises dissecting out the subclavian triangle and removing the enlarged glands that will be found to be pressing on the nerve trunks. Swelling and edema of the arm in cases that are inoperable can usually be relieved by elevating the limb at night and the constant wearing of a snug fitting bandage or elastic support.

Pain and swelling of the arm of the affected side in inoperable carcinoma can often be relieved by Handley's operation, which consists of passing several buried silk threads beneath the skin from the shoulder down into the arm. A longitudinal incision is also made and a roll of ten or twelve threads buried in the incision and the wound closed. His object is to form new lymphatic channels and thereby relieve the obstruction of the lymph flow.

In selected cases local anesthesia can be successfully employed for amputation of the breast; in the presence of malignancy and axillary involvement it is contraindicated. In simple mastitis and adenoma local anesthesia is sufficient. Massive infiltration is the best method for blocking the anterior thoracic nerves. Hirschel outlines the field with a series of ten injections of the anesthetic, pointing the needle in four directions to spread the fluid. The first puncture of the needle in the axilla is the only one that is painful, the others being all at previously anesthetized points. He reports several hundred operations successfully performed on the thorax under local anesthesia.

One of the most satisfactory operations is to remove the breast tissues, fat, and fascia with a circular incision. Pads wrung out of hot saline solution are applied to the raw surface as rapidly as the breast structures are removed; with this method the bleeding is insignificant and, as Bodine has demonstrated, is easily controlled with four hemostats. The incision is now prolonged upward and outward along the arm following the line of curvature of the first incision. Dissect up the skin flaps freely around the entire wound by sharp dissection, then free the under surface of the pectoralis major and divide the muscle in the center. Dissect up the humeral head of the pectoralis major and cut off close. Dissect free the under surface of the pectoralis minor and cut in the center; this exposes the axillary vein. Carefully remove all glands in the axilla and along the axillary vessels and excise all fat and fascia possible. Cut the pectoralis minor close to its humeral attachment and remove the costal attachments of both muscles along with their sheaths and the origin of the pectoralis major from the sheath of the rectus. According to Handley, cancer enters the abdomen through the fascia between the recti. Make an incision extending up over the clavicle for the removal of the supraclavicular fascia. Always remove all of the fascia. Handley writes, "the aim should be to remove as widely as is practicable a circular area of deep fascia with its center at the primary growth, remembering, however, that growth extends in the fascia more readily in a vertical than in a horizontal direction. The use of the expression 'removal of the pectoral fascia,' instead of 'removal of as wide an area as possible of the deep fascia,' and the exclusive attention paid to the axillary glands as the channels of dissemination, have led to the neglect in the incision of the deep fascia over the lower part of the thorax and the upper part of the abdomen. It seems to be in this direction that the scope of the

operation needs extension, rather than in the direction of opening up the posterior triangle. The distance from the nipple to the clavicle may be taken as the radius of the circle of deep fascia round the growth, which can be removed without difficulty by undermining the skin flaps sufficiently. If the growth starts under the nipple the deep fascia should accordingly be removed—above, up to the clavicle; internally, one to two inches beyond the median line; externally, just beyond the edge of the latissimus dorsi; below, to a horizontal line running at least two inches below the tip of the ensiform cartilage. If the growth is in the lower and inner part of the breast the circle of infected deep fascia will encroach still more on the surface of the abdomen, over the opposite side of the breast, and the removal of the deep fascia in these directions must be carried out yet more widely."

Control oozing with pads wrung out of hot saline solution and dry the wound carefully. Dawbarn advocates the use of boiling water to be applied to the raw surface for a few moments; this effectually seals all lymphatics and speedily stops all oozing of blood. Introduce a gutta percha drain through a skin puncture at the lowest point of the axillary wound. Close the wound, using tension sutures as required. Finally, apply a large gauze dressing and Bodine's triangular splint. This splint affords the patient the greatest amount of comfort, prevents scar formation with limitation of movement of arm on affected side, and when it is removed at the end of a week the patient is able to comb her hair. This disability when present is due to cicatricial contraction and not to loss of the pectoral muscles.

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MALIGNANT TUMORS.

By L. M. STROUD, M.D.,

TERRELL, TEXAS.

The hypothesis that degenerate cells reproduced by diseased cells, through a long line of ancestry, will, I think, harmonize the theories of Cohnheim and Ribbert. Cohnheim's conception of embryonic cells, out of time and place, held favor with pathologists for a quarter of a century. Ribbert's theory is still more subtle; accepting as he does Cohnheim's hypothesis in part, he predicates his theory upon a theory of cell disassociation, a removal of the normal restraint of neighboring cells of the same tissue or different tissues, but does not admit a primal cause of the inherent proliferative capabilities of degenerate cells through a long line of ancestry to reproduce themselves. His hypothesis is far reaching enough to explain the recognized influence of trauma, age, sex, etc., as exciting causes, but has the fatal defect of not admitting that diseased cells of the body reproduce themselves by proliferation with increased morbidity, if impressed by the same diseases for a number of generations. The proposed hypothesis of degenerate cells transmitted through a long line of ancestry with an increased proliferative morbidity through degenerate gemmules causing malignant tumors, will correllate the proliferative theory of Cohnheim and the disassociation of cell life of Ribbert and admit all the recognized data of age, trauma, etc., as exciting causes. If the hypothesis which I propose will not stand the searchlight of science, the pathologists of the future must still hunt for the cause of malignant tumors.

To understand this subject better it is necessary to contemplate the modifications of reproductive gemmules in their histological makeup of the tissues of the organs of the individual through a long line of ancestry. In the lower animals where man has control this can best be exemplified. If puppies' tails are lopped off for four generations the gemmules of their caudal appendages are not reproduced and so they come stump-tailed. The untrained mind of the peasant is familiar with the form, size, and qualities produced in domestic animals through a long line of ancestry. The Jersey cow, for instance, has been developed for her milk qualities; the milk gemmules in her udder causing so much rich milk, have not been produced in one generation, but likely it has taken a thousand. It took England four hundred years to produce the beef Durham, giving him form, size, and beef qualities. This has been done through a line of ancestry stimulating the reproductive gemmules of the muscles. The large Durham cow is, however, such a poor milker that occasionally she will starve a calf to death. The reproductive gemmules in the udder have not been cultivated. Take, for instance, a little Spanish paint mare with red and white spots all over her, a glass eye, piebald, and stocking-legged; when she is crossed with a thoroughbred the colts will show a Spanish mark for sixteen generations, some will have a glass eye, others a paint spot, a blazed face or a stocking-leg, etc., and they will all partake of her wild nature, but after the sixteenth cross with thoroughbreds all the attributes of the Spanish are lost and the colts are called fullbloods. The house cat is the tiger under the control of man and the reproductive gemmules have been so modified by a long line of ancestry that unlike his ferocious prototype of Bengal he has been made the friend and playmate of the babe in the cradle.

The reproductive gemmules of the genus homo are susceptible to modifications through a long line of ancestry as much so as the lower animals, as exemplified by the different races of man. The corpulent man is a product of civilized life and is never seen in wild tribes; wild men are meat eaters, the corpulent man has been produced through a long line of ancestry from overstimulated nutrition by an amylaceous diet. His reproductive gemmules have been so impressed that he transmits these qualities to his offspring.

It is assumed the body is an aggregation of cells, healthy and degenerate, representing the equation of our healthy and diseased ancestry. Our ancestors form the working basis of life expectancy in insurance risks. The American mortuary tables stand exact. Our individuality is more influenced by four generations back of us than by our immediate parents; we represent their strength and weakness, health, disease, etc., through the qualities transmitted to the reproductive cells of the body through a long line of ancestry; we represent the degenerate cells transmitted from generation to generation, from disease, just as we do their healthy gemmules. Children are the legitimate product of their ancestors, both healthy and degenerate, so with the reproduction of the individual cells in their body they represent both healthy and diseased tissues of past generations. The gemmules of reproduction become degenerate from diseased organs through a line of ancestry; for instance, a chronic endometritis with cervical laceration and scar tissue for four generations will doubtless so modify

the reproductive gemmules as to cause degenerative cells in the histological makeup of this organ, and when metabolism is disturbed during the menopause and the harmony of the healthy and diseased cells is disturbed by nutritive changes the degenerate cells become parasites, losing their normal relation with other cells and derive their nutrition as parasites from other tissues, taking on an active embryonic proliferation. It should be remembered that cell proliferation is a normal process of the tissues in all wounds; healthy wounds are repaired by the healthy proliferation of cells, healthy cells proliferating healthy cells in the reparative process. It would be a logical postulate to assume that degenerate cells would reproduce themselves. In chronic inflammation we witness hyperplasia of the thickened tissues by the proliferation of healthy cells, causing a benign tumefaction. The diseased or degenerate cells taking on an active proliferation reproduce themselves in the form of a malignant neoplasm.

These tumors are parasites on the body. We witness the power of the organism to sustain these parasites by the degenerate cells of sarcoma, circulating in the blood currents and lodging as foci, forming multiple malignant tumors through active cell proliferation. The blood is an organized tissue and is capable of reproducing itself through degenerate cells as is exemplified in hemophilia through a long line of ancestry. The leucocytoid cells are degenerates circulating in the blood currents and take part in the formation of scar tissue. It is a curious clinical fact that the degenerate cells seek scar tissue for their development as is exemplified in a uterine carcinoma beginning in the scar tissue of a cervical laceration or an old cicatrix from a mammary abscess; the pyloric cancer from an old gastric ulcer or the scar tissue of the lower rectum from fissure, chronic ulcer, or hemorrhoidal tumors; the disease appearing in the face from a chronic eczema or in the scar tissue of the lip produced by chronic irritation from smoking, or about the gall-bladder and liver from chronic cicatricial tissue, from catarrh, or about the ovary from the cicatrix from a ruptured Graafian follicle, etc.

So if in my contention the postulate has been sustained in the hypothesis that all malignant tumors are due to the proliferation of degenerate cells in their primal origin, the scientific corollary follows that all other causes of malignant tumors are exciting causes only.

The tissues of the body are capable of sustaining parasites in an almost incredible way. We witness this in the form of a partly absorbed twin as an aggregation of cells nourished and sustained by the body. The blood itself is an organized tissue of the body and sustains many cells in the form of parasites, living sarcoma cells, balloon cells found in vesicles of herpes zoster, plasma cells, which are pathogenic, found in various mucous membranes and in lymphoid tissues. These migrating, polyplastic, undifferentiated, degenerate cells, no doubt, in the processes of karyokinesis represent the degenerate reproductive gemmules of our ancestors through a long line of chronic diseases. It is but rational to suppose that a line of ancestry, having premature arteriosclerosis, syphilis, tuberculosis, chronic nephritis, etc., would transmit weakened and diseased gemmules to their offspring and that these cells would become engrafted at suitable sites for their life and proliferation in the form of malignant tumors.

The contributions of exact data through the revelations of the microscope; the mortuary tables of life insurance, exemplifying the exact knowledge of financiers and clinicians, the accepted theories of biologists as to hereditary influence upon cell life modifying the gemmules of reproduction in offspring, the known power of the cells in all inflammatory processes, in efforts at repair to reproduce their prototypes in the formation of tissues as accepted by physiologists and pathologists are the working factors of interpretation entering into the logical postulate in the rationale of this hypothesis.

Since it is an accepted truth that heredity is a potent factor in the production of malignant tumors, and the bacteriologists assure us that the newly born babe has not a living bacterium in it, and pathologists are equally positive that weakened tissues are produced through the diseased gemmules of reproduction through a long line of ancestry, which only need slight exciting causes to produce positive disease, and the microscopist having failed to isolate the specific germ of cancer, the conclusion is almost irresistible that degenerate cells as parasites through primal hereditary tendencies and the exciting causes of age, sex, trauma, or disturbed metabolism from pathogenic bacteria, etc., are the links in the chain of morbid events accounting for the primal origin of malignant tumors.

EFFECT UPON THE EARS OF RAPID TRANSIT THROUGH THE HUDSON AND EAST RIVER TUNNELS.

By EDMUND PRINCE FOWLER, M.D.,

NEW YORK.

It is a common experience for passengers traveling through the submarine tunnels connecting Manhattan Island with New Jersey, and with Long Island, to notice a sensation of blocking of the ears during this part of their journey. Those who have felt the sensation naturally wonder if others are affected likewise, and usually have their curiosity satisfied a moment after the phenomenon occurs by seeing many passengers take hold of their respective noses with thumb and forefinger, forcibly expire into the nose, and thus relieve the disagreeable sensations.

It is apparent that the ears have become blocked by a change in air pressure, but the amount of pressure change, the mechanism by which it is occasioned, and the effect upon the ear, have not been heretofore investigated.

To determine the air pressures, I employed two very accurate and sensitive aneroid barometers, one in the hands of an observer in the forward, and one in the rear car of the train. On several occasions readings were also taken in the interior cars. Eight trips were made, and the barometric pressures noted especially as follows: Before the train started; while moving on the surface, rapidly, and slowly; on entering tunnel; descending; near middle of tunnel; ascending; emerging from tunnel; especially all extreme excursions of the indicator hand at any point of the journey.

The pressure changes varied greatly on different trips, owing mainly to the speed at which the train was traveling. The greater the speed, the greater and the more sudden the barometric fluctuations, and naturally also the effect upon the ears. Briefly, on entering the tube, the air pressure rose quickly, about 1/5 inch of mercury, in the forward car. In

the middle cars less, and in the rear cars usually a still smaller amount, the pressure even being lowered in the latter situation on several occasions. The pressure varied at several points, owing to changes in level, the rate of progress, and the proximity of ventilating shafts. The opening or closing of windows had a marked effect on the air-pressure changes. In the forward car I observed at no time a greater variation than 3/10 inch mercury.

In the rear car more marked changes were noticed, and on two occasions there was a fall of over 4/10 inch mercury within the space of about one second. This occurred on passing one of the exhaust shafts, and was due to the partial vacuum brought about by the combined action of the exhaust shaft and the rapidly moving train. The extreme range of pressures during a trip was equivalent to 7/10 inch mercury. This did not occur suddenly, there being many forward and backward excursions of the dial hand before it was accomplished.

I have given the data as variations, instead of actual readings of the manometer, as the latter would be confusing owing to the differing surface air pressures on the various days, and as it is with the changes, and not the height of the barometric readings with which we are concerned. Some allowance must be made for pressure changes due to the varying grade of the tracks, but this is of but small importance, as the grading is never abrupt, and the rails are more on a level than is generally appreciated.

A change of pressure of ½ inch mercury would, on first thought, appear to be but a trifling variation, but when one considers that it represents a pressure of about ¼ pound to the square inch it is apparent that no inconsiderable factor has to be dealt with.

Such a pressure brought to bear upon the drum membrane of the ear is surely more than enough to occasion symptoms of its presence, when, as I have shown some years ago, a fraction of a millimeter of change in pressure is easily dectected by the ears, not only as a sensation of pressure, but as a distinct inhibition of the acuteness of hearing. This occurs if the pressure is applied upon the external surface of the drum, and within a comparatively short space of time, as otherwise the air pressure in the middle ear will also increase by the way of the Eustachian tube, and the differing pressures on the two sides of the drum membrane will be equalized.

If the walls of the Eustachian tube are abnormally adherent to each other, or if the lumen is stenosed so that the physiological ventilation of the middle ear is prevented, any change in air pressure will be more definitely recognized than it would be otherwise, and the effect on the hearing will be greater. [illegible] in the middle ear [illegible] of changing air pressures [illegible] whether they interfere with [illegible] in reaching the [illegible] wall.

The principal factor to consider among the phenomena under consideration is the suddenness with which the changes occur. If the drum is subjected to lowered pressure the effect upon the ear is more marked than would be an equivalent increased pressure, and for the following reasons: Diminished pressures tend to suck the walls of the Eustachian tube together, whereas increased pressures tend to force them apart. The latter, therefore, tend to facilitate the equalization of pressures upon both sides of the drum membrane, and the former to hinder such equalizations. The greater the suction the closer are the tubal walls drawn together, and the more certain is the communication with the nasopharynx shut off.

As to any detrimental effect upon the auditory apparatus: it is apparent that subjection every day or twice a day to the extreme air pressure changes noted on some of my trips would be injurious, and especially to those suffering from certain tubal and catarrhal troubles. Unless the ear blockage is relieved within a few moments after it occurs, retraction of the drum membrane, and blocking of the tube is accentuated. Especially is this the case if the ears are exposed first to an increase, and then immediately to a sudden diminution in air pressure. (This frequently occurs in tunnel travel.)

To the normal ear no harm should result from air-pressure changes greater even than those experienced in the tunnels, for the voluntarily, or involuntarily excited act of deglutition, quickly relieves the ear block in such cases. Persons in whom the ordinary act of swallowing does not at once relieve the blocking, should consult an otologist, as they have received a significant warning that all is not right with their auditory apparatus.

In many cases instant relief and protection from future trouble may be obtained by simple means. The common practice of forcibly blowing into the nose (Valsalva's experiment) may work great harm, as it is wholly unphysiological and dangerous.

In suitable cases the author's method of middle ear inflation is all that may be required, and I recommend it for this purpose, not only because of its efficiency, but because it is always at hand. It is executed as follows: While the nostrils are tightly closed by pinching them together with the thumb and forefinger as near their free borders as is possible, gently increase the air pressure in the nose and nasopharynx by attempting to expire wholly through the nose, and, while maintaining this increased pressure, swallow. The result will be the inflation of both middle ears. This is brought about by the opening of the tubes during the increased nasopharyngeal air pressure, due to the patient's efforts and to the ascent of the soft palate. During the second stage of deglutition a negative pressure is avoided, because the primary increase in pressure and the bulging of the elastic lateral walls of the nose supply a sufficient amount of air reserve to enable the descent of the soft palate to occur without creating a partial vacuum in the nasopharynx. Until familiar with this method of inflation it is well to take a full breath preliminary to its performance. No instruments are required for its performance, and anyone with ordinary muscular control can easily learn to inflate the ear safely by this method.

616 Madison Avenue.

Observations and Experiments on Typhoid Fever.—A. Marrassini has studied the blood and feces of seventy patients suffering from typhoid or paratyphoid fever. He found in the feces a large number of forms intermediate between the typhoid bacillus and *Bacillus coli*. He also found at various periods of the disease in the same individual different types of microorganisms. It is suggested that from various influences or spontaneously there may occur a gradual transformation from one type of microorganism into another.—*Pathologica*.

MEDICAL RECORD.

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RECENT STUDIES ON THE NATURE OF MEASLES AND ON ITS EARLIER DIAGNOSIS.

THE widespread prevalence of measles, particularly at the present time, its persistently high mortality, and the frequency with which it leaves its victims a prey to other diseases, impart considerable interest to the investigations that have been conducted to determine the nature of this disease, and to the hypotheses that have been advanced as to its causation. The recent results accomplished by American laboratory workers in the inoculation of monkeys with this disease, has strengthened the belief in its bacterial origin, but this belief has never been confirmed by the actual demonstraton of the causative microorganism. The nearest approach to this demonstration was attained in 1903 by C. Giarrè and L. Picchi (*Lo Sperimentale*, 1903, Vol. 57), who isolated from the mucous membranes of patients ill with measles a microorganism which they designated the *Bacillus hemophilus*, which was not indistinguishable from the influenza bacillus, which could not be cultivated without the presence of hemoglobin in the culture medium, and which four years later Giarrè and Carlini isolated from the blood of the majority of cases of measles which they examined. But no etiological relationship between this microorganism and measles was established. In fact the former was found to exist among the bacterial flora present in the bronchial secretions of bronchitis, bronchopneumonia, and other infectious diseases.

Of more immediate importance than the actual isolation of the microorganism of measles is an improvement in the methods of prophylaxis. Belief in the aerial transmission of this disease has been gradually supplanted by that of contact infection, nevertheless in spite of the vigilance of health and school authorities there seems to be no diminution in the prevalence of measles. The essentials of efficient prophylaxis are early diagnosis and prompt isolation. Unfortunately the diagnosis of any individual case is not made until in many instances the infection has already been transmitted to others. The detection of the buccal spots enables one to make a diagnosis several days before the exanthem appears, but even this may be too late for efficient prophylaxis. Of greater value, particularly in the case of schools and institutions, would be the ability to make a diagnosis of measles during the period of incubation.

That this is possible has been shown by R. Hecker (*Zeitschrift für Kinderheilkunde*, Vol. 2, page 751), as the result of his researches into the cytology of measles. He found that the blood presents characteristic changes even from four to six days before the appearance of Koplik's spots. These changes consist of a distinct leucopenia, a relative and absolute lymphopenia, a shifting to the left of Arneth's blood picture, and a diminution in the number of eosinophiles. The leucopenia is interrupted by a leucocytosis four and a half days before the appearance of the eruption. There is a reversal in the relationship between the lymphocytes and the neutrophiles, the predominance of lymphocytes which is normally characteristic of the blood of the child is replaced by a predominance of the neutrophiles. During the period of incubation of measles, there is thus an extensive destruction of leucocytes, most pronounced in the case of the lymphocytes. The degree of this destruction fluctuates from day to day.

An interesting phenomenon in connection with the cutaneous reaction to tuberculin has been noted by von Pirquet (*Deutsche medizinische Wochenschrift*, 1908, No. 31). Children that ordinarily react positively to the inoculation, lose this power for a period of one week during an attack of measles. This temporary loss of cutaneous hypersusceptibility to tuberculin occurs in no other disease than measles. Hence if a child suspected of having measles gives a positive von Pirquet reaction, the diagnosis of measles may be definitely ruled out. Apparently during measles there is a disappearance of the antibodies which bring about the clinical reaction between tuberculin and the cells. Since the lymphocytes are regarded as being associated with the production of these antibodies, one can readily understand how the disappearance of the latter would go hand in hand with the destruction of the lymphocytes.

In the differential diagnosis between measles and other exanthemata there have been recently added new clinical and laboratory resources. About five years ago Simonini (*Rivista critica di Clinica Medica*, 1907, No. 23) observed that even in the mildest cases of measles there may occur an hepatic insufficiency, which manifests itself in a levulosuria. In severe cases of measles the impairment of liver function results in the excretion in the urine of urobilin, glucose, and an excess of indican. Still more recently Pach and von Reuss (*Zeitschrift für Kinderheilkunde*, Vol. 2, page 400) have noted that whereas urobilinuria occurs in the majority of cases of measles, it is not as pronounced as in scarlet fever, and lasts for a shorter time. Unfortunately for diagnostic purposes this reaction fails during the period of incubation and during the first part of the eruptive stage.

A most ingenious hypothesis as to the nature of measles, and one which nicely fits in with the known facts regarding this disease, has been advanced by Sittler in the *Münchener medizinische Wochenschrift*, 1909, No. 52. He believes that it is not improbable that the manifestations of measles represent the reaction of hypersusceptibility to a foreign body or toxin, analogous to the phenomena of serum sickness. He also believes that the toxin is set free by a *Staphylococcus albus* which is present

in the secretions of the respiratory tract of the infected individual. Thus the symptoms of measles which bear many points in common with those of serum sickness are regarded by Sittler as manifestations of anaphylaxis. In support of this view may be cited a number of observations recently recorded as to the occurrence of measles relapses. There has been little question that a child may pass through two or even more attacks of measles, but little has been known regarding true relapses, that is, attacks following one another at short intervals. In the *Archiv für Kinderheilkunde*, December 23, 1911, Feibelmann, in reporting a case in which there were three unmistakable attacks following one another at intervals of ten and nineteen days, respectively, presents a review of the five other instances reported in the literature of single or double relapses. He concludes from his analysis of these cases that it is impossible to decide whether the measles relapse represents a recrudescence of the original infection or an entirely new infection, and whether the immunity conferred by one attack is but of temporary duration. On the other hand, F. Corominas in the *Revista de Ciencias Medicas de Barcelona*, October, 1909, advances a plausible explanation of these relapses on the basis of anaphylaxis. The text of his study was furnished by three cases of measles that he observed about the same time in one family, of which cases two suffered relapses four and five weeks, respectively, after the primary attack. He believes that in these and in similar instances reinfection occurs during a period of anaphylaxis that persists for two months after an attack of measles, and that for this reason the individual convalescent from an attack of measles should be carefully guarded during this period from further infection. In support of his hypothesis, Corominas cites the fact that in all diseases in which immunity is produced there is a preliminary period of immunity.

MENTAL DEFECTIVES AMONG IMMIGRANTS.

THERE is no doubt that the most important feature of the inspection of immigrants is the medical examination. No matter how well qualified for entrance an alien may be in other particulars if he lacks proper physical condition he is undesirable. Of the various medical defects which the law properly aims to detect, certainly none is of more vital importance to the country at large than mental defects. The increasing recognition of this fact is evidenced by the popular agitation in newspapers and magazines looking toward more careful exclusion of mental defectives. The same interest is shown in current medical literature.

New York State is most vitally concerned in this question, as is well shown by T. W. Salmon[1] of the State Board of Alienists, since it receives 26 per cent. of the total immigration into the United States and is the destination of more than 80 per cent. of immigrants found on arrival to be insane or mentally defective. In the New York State hospitals there are more than 8,000 alien patients. Practically all of these enter through Ellis Island, hence the inspection at Ellis Island represents the essential line of defense against the incoming stream of mental defectives. The inspection here must of necessity be cursory and incomplete at present because of the lack of men and facilities available for the work. The incoming immigrants at the Island are sent down two parallel lines in single file. Each line makes a right-angled turn midway in its course. At this turn stands a medical officer who looks over each immigrant from the front, side, and rear as he passes and turns. At the end of the line a second medical officer examines eyes alone. All who present any evident defect or anything arousing suspicion are turned aside into the medical detention rooms for more careful examination.

Thus it is evident that the only chance to detect a mental defective is afforded as the immigrants pass in line before the medical officer. Under these circumstances it is small wonder indeed that so many feeble-minded children and insane adults escape detection. Diagnosis of mental disorder rests very largely on the conversation of the suspect. It is useless to expect a medical examiner to do effective work in this regard when he cannot even converse with the great majority of those he is examining, not knowing their language. As it is, having marked certain mental suspects on the line, he has an opportunity for more detailed mental examination through an interpreter in the medical detention rooms. But even here interpreters are not numerous enough and the same difficulty is met with in the immigrant hospital where mental cases are held for observation pending a careful diagnosis. It is easy to recommend sweeping and impracticable changes. To do so is to make a bad situation worse. But a perfectly feasible improvement, entirely aside from the difficulty of securing more medical officers and better facilities for their work is to supply more interpreters who should be detailed to the medical division exclusively. Interpreters should stand beside the first medical officer on the line inspection so that any or every immigrant as he passes through may be questioned in his own language. By this procedure alone, the chances of detecting insanity and feeble-mindedness would be enormously increased. More interpreters in the medical examining rooms and in the immigrant hospital would be equally valuable.

There is no question as to the great and increasing importance of detecting and excluding mental defectives among incoming aliens and the adoption of the suggestion here made would strongly aid in this object.

[1] Salmon, T. W.: "Insanity and the Immigration Law," N. Y. State Hosp. Bull., Nov., 1911.

EUGENICS AND GEOGRAPHY.

IN studying the geographical distribution of insanity in Massachusetts during the decade from 1901 to 1910, as determined by the number of commitments to the hospitals for the insane, E. E. Southard (*Boston Medical and Surgical Journal*, March 28, 1912), has reached a number of interesting conclusions. He has found that the Berkshire hills and some of the islands of Massachusetts contain a group of twelve towns which have a zero

rate of insanity production for this period. The towns with the highest commitment rates are largely grouped in the interior of the State and are neither west of the Connecticut River in the higher hill region nor on the seacoast. The census statistics of 1905 have shown that the towns that yielded the largest number of insane also had the greatest number of paupers and criminals, and gave greater evidence of the prevalence of disease.

Using these statistical findings as a basis for his study, the author applies to the two kinds of localities which are characterized by the favorable or unfavorable conditions as regards degeneracy, the terms "eugenic" and "cacogenic." The "eugenic" area of a state or country is one in which the forces of heredity are operating to produce a better human stock, or one in which the hereditary forces are engaged merely in the prevention of deterioration. A "cacogenic" area is one in which hereditary forces are instrumental in bringing about a social decline. The "eugenic" towns are those in which as a whole there are fewest social defectives, while in the "cacogenic" towns the general medical and social status is the worst. In comparing the twelve towns belonging to the former group with twelve belonging to the latter group, the author notes that the total population of the "eugenic" towns is far smaller than that of the "cacogenic" towns. The eugenic group has, however, a somewhat higher percentage of native-born parents, and a still higher percentage of native-born grandparents.

The significance of these studies lies largely in the emphasis they place on the fact that mental degeneracy is closely allied to physical deterioration, and that the stability of population tends to favor its mental and social superiority. If an "eugenic" program ("that extreme eugenic program which seeks to produce more and greater great men for the world by more effective mating") is to be carried out by society, then, as suggested by Sidgwick, intensive locality-studies will have to be made, with the collection of social statistics through every public and private channel.

WOMAN'S PLACE IN MEDICINE

It seems to be a common belief that woman's entrance into the field of medicine is of comparatively recent date. When the question of woman's rights is discussed the fair practitioner is frequently pointed out as an example of woman's progressiveness and achievement. The weaker sex has practised the healing art from time immemorial. In a recent work J. J. Walsh pointed out the prominent place achieved by women practitioners in the early days of medicine, and in the *Liverpool Medico-Chirurgical Journal*, March, 1912, H. Drinkwater presents an interesting discourse on this subject.

Hygeia, the goddess of health, was the daughter of Esculapius, the god of medicine. When Greece was at the height of her fame gynecology was almost wholly in the hands of female practitioners. Galen refers to a work on midwifery written by one Cleopatra. Aspasia was a Greek authoress who wrote on diseases of women. In Rome during the first century there were women who achieved distinction either as midwives or as general practitioners. During the Middle Ages women were welcomed into the healing art and in the University of Salerno in Southern Italy there were a number of women who were especially prominent members of the medical faculty.

Coming to more recent times, it is noted that Anna Morandi Mazzolian occupied the chair of anatomy at the University of Bologna about the middle of the eighteenth century. At this time the Italian universities generally admitted women students. Maria Maetellari graduated in medicine at Bologna in 1799 and Maria delle Donne took the medical degree at the same university in 1800. The University of Zurich granted this degree to a woman in 1807 and in 1809 the St. Petersburg Medico-Chirurgical Academy conferred the medical diploma on its first woman graduate. In 1858 Elizabeth Blackwell, an English woman by birth but a resident of America, was graduated from the medical school at Geneva, New York. In Great Britain women have had a hard struggle in obtaining recognition by the medical faculties, but at the present time there are only a few medical schools that are not open to women. In meeting the requirements demanded of medical students the women have done remarkably well and have shown that at least as regards passing examinations they are equal to the men. In July, 1888, of the thirteen women students who took the intermediate examination at London University, twelve passed, seven took honors, and one took honors in three subjects.

SANITARY PROGRESS.

ONE reads with interest in Forster's Life of Charles Dickens, by way of aftermath to the recent Dickens centenary, how in 1842 the great novelist, while traveling in "the States" noted the insanitary conditions of the prisons which he entered; the unhealthful condition of railway and canal boat travel in his day; our overheated houses; our aversion to fresh air; the simply ghastly spitting nuisance among our men, and much else that is most repugnant to our present-day sensibilities. In the intervening seventy years there has been a veritable revolution, at least in hygiene and sanitation, among us. In these regards Dickens would "hardly know us now." His erstwhile caustic pen would to-day simply drip complimentary honey. Especially would he praise our prisons like that recent French visitor, who saw prisoners in the United States better lodged and better fed than the greater part of the working people of France. Though our improvement in all other respects is not equal to that in our prisons, yet we have advanced mightily in decency and in wholesome living conditions. Our railway trains are getting to be quite cleanly, though they still remain deadly stuffy. So few of us travel on canals nowadays that they are not worth taking into account, except by artists and romantic people who like to turn canal boats into house boats. The fresh air propaganda, when it has the hoped for results, will practically turn our homes inside out so far as pure air is concerned. And who dare spit nowadays with the ever watchful sanitary police officer looking for his prey and the dollar fine for each offense a practical certainty, with incarceration a hideous possibility. He were indeed a hardy offender who would spit in the presence of a sign recently displayed: "Don't spit—remember the

Johnstown flood." Times have indeed changed since Dickens made his memorable visit in 1842, and greatly for the better. If they change as much more in the next seventy years we can then begin to consider ourselves a cleanly people.

Return Cases of Scarlet Fever.

Milne's claim that return cases of scarlatina may be prevented by persistent injections of oil of eucalyptus and strong carbolic acid swabbings of the throat has not been endorsed by some pediatrists who have been giving the method a prolonged test. Negative results might doubtless be explained by the persistence of the infecting germ in the nasopharyngeal space and the prolonged interval which may elapse before return cases develop. At a very recent session of the Verein fur innere Medizin und Kinderheilkunde, Berlin (*Munchener medizinische Wochenschrift*, March 12), Baginsky demonstrated forty-five return cases which had developed after at least forty-two days of hospital sojourn. In such cases the other members of the family do not necessarily contract the disease upon the first exposure. As a rule the return cases develop in from three to tendays. Heubner had seen return cases after the first cases had been kept in hospital seventy and eighty days. Return cases are doubtless bound up in the parasitic nature of the disease itself. Philipp thinks that with the same exposure one individual may develop scarlatina, another a streptococcus angina, a third erysipelas, a fourth nephritis, etc. A single family may show a certain incidence of streptococcus diseases. Bagisky stressed the curious fact that scarlatina in a child often kills the cells of the skin. He also stated that he had never been able to eradicate scarlatina from his diphtheria pavilions. There should be special convalescent homes or pavilions for both diseases.

News of the Week.

Tuberculosis Preventorium.—The new buildings at Farmingdale, New Jersey, will be formally opened on April 25 by Governor Woodrow Wilson of New Jersey. The Preventorium has been conducted during the past two years in two small frame houses on the 170-acre farm donated by Mr. Arthur Brisbane, and is the only institution in this country where children from tuberculous families are cared for if it is thought unsafe for them to be at home. It is estimated that there are some 40,000 children living in tuberculous families under improper conditions in New York City. The new buildings, which have cost about $150,000, will greatly increase the capacity of the institution but much additional endowment is needed in order that it may do the best work.

Coiner in Radium.—By the recent purchase of the only two radium mines at Joachimsthal which were owned by private individuals, the Austrian Government has practically cornered the radium market of the world. The purchase price is said to have been about $1,010,000. It is estimated that the two mines will yield annually about 3 grams of radium. Plans are under way for the development of Joachimsthal as a resort for the treatment of disease by radium.

Lord Lister's Will.—The will of the late Lord Lister disposes of an estate valued at $3,308,330. By it Lord Lister gives $50,000 each to the Royal Society, the King Edward Hospital, and the North London University College Hospital on the condition that his name shall not be associated with the bequests. The sum of $100,000 is also bequeathed to the Lister Institute for Preventive Medicine, London.

Famine Relief in China.—The American Red Cross on April 4 cabled through the State Department to Shanghai, China, the additional sum of $10,000 to be used for famine relief, making a total of $115,000 sent by the Red Cross for this purpose since the President issued his appeal to the country last January.

Dentists in the Navy.—The Senate on April 1 passed a bill adding a dental corps to the navy.

Fire in a Hospital.—The quick action of the staff of doctors and nurses at the Sayre Hospital, Mount Vernon, New York, saved the lives of some thirty patients who were in the hospital when a fire broke out at night recently. All of the patients were carried from the building on stretchers and cared for in neighboring houses. The fire was confined to the first floor and basement of the hospital building.

Naval Medical Reserve Corps.—The Senate Navy Committee recently recommended a bill providing for the creation of a naval medical reserve corps, its members to have the rank of lieutenant, junior grade. There are said a few medical editors and other incompetents who were not appointed to the army medical reserve corps who might be utilized in this new branch of the navy.

Measles at Yale.—Because of the danger of an epidemic of measles at some of the smaller dormitories used by the freshmen class at Yale University the University authorities recently sent seventy members of the class to their homes. A number of cases had developed within a very few days of the immediate vicinity of the dormitories.

Wheeler Milk Bill.—Governor Dix on April 2 vetoed the Wheeler milk bill recently passed by the Legislature with the following comment: "The amendment proposed by this bill is to the effect that a person who shall sell or exchange, or offer or expose for sale or exchange any milk actually produced by a cow or dairy, which is a fair sample of the milk produced daily by such cow or dairy, and to which nothing has been added and from which nothing has been taken, shall not be guilty of any crime on account thereof. Such a provision would be a long step backward in the fight for pure milk, and I think must have been adopted by the Legislature under misapprehension." The bill had met with great opposition among those especially interested in the milk supply of New York City.

Smallpox Quarantine Abolished.—The Utah State Board of Health has issued an order abolishing quarantine against smallpox. Houses in which smallpox patients are under treatment are to be marked with a flag, but its other inmates are to be allowed to move about freely. It is maintained that quarantine against the disease is ineffective and harmful in so far as it gives the public a false sense of security, discouraging resort to actual preventives.

Clerical Healers.—Some months ago in England a committee, of which the Dean of Westminster was chairman, was appointed to report upon the faith healing movement in all its aspects, with particular attention to the matter of obtaining closer cooperation between physicians and clergymen. The report recently made states that there is opportunity for cooperation between the two professions within clearly defined limits, "with a view to the alleviation of physical suffering through the mental or spiritual condition of the patient," but, con-

sidering the question from a standpoint rather unusual in these days, it adds the warning "that any attempt on the part of the clergy to enter into competition with the medical practitioner by any separate and independent treatment of the sick is to be strongly deprecated, not merely on practical but also on religious grounds. For there is a serious danger lest the association of the ministry should divert attention from the primary purpose of that ministry and prove injurious to individual faith."

Germs in Perspiration.—Somewhat of a sensation was created in Paris last week by Professor Poncet, who read a paper before the Academy of Medicine seeking to prove that the perspiration of tuberculosis patients contains tubercle bacilli. He considered that the sweat was of more moment in the spread of the disease than was sputum, and he urged strict disinfection of the skin as well as of body clothes. The possibility that the bacilli can be excreted by the sweat glands suggests that they may also enter the body through the skin, thus bringing into consideration another portal of entry in this disease. Professor Poncet detailed his experiments, which included making cultures from cotton wool impregnated with the perspiration of consumptives and the demonstration of tubercle bacilli which were pathogenic to guinea-pigs.

Chair of Eugenics.—Cambridge University, England, recently received a gift of $100,000 from an anonymous donor to be used for the endowment of a professorship of eugenics in the University, and for supplementary studies of and experiments in heredity. The new chair is to be called the Balfour Professorship of Genetics, as the donor received his first inspiration from Mr. A. J. Balfour. The offer of a further gift for the equipment of an experimental station at the University for the use of the Balfour professor, if such shall later be deemed desirable, is also made.

Radium in Cancer.—During a visit to the Middlesex Hospital, London, made recently by the Queen of England, Dr. Lazarus Barlow demonstrated to Her Majesty his discovery of radium in the cancer cells. By electrical methods Dr. Barlow claims to have proved both that radium is present, though in minute quantities in carcinomatous and sarcomatous tissues, and that it is absent from normal tissues. At least this is the report brought by cable to the daily papers.

To Vaccinate Regiment.—All of the 800 enlisted men and fifty-two officers in the Fifth New Jersey Regiment, at Paterson, New Jersey, will shortly be vaccinated against typhoid fever, the vaccine being supplied by the Medical Department of the U. S. A.

For Cleaner Cars.—At a meeting of the New York County Homeopathic Society held recently a resolution was adopted protesting against the uncleanliness and disregard for ventilation found in the surface cars in this city. It was voted that the society call the matter to the attention of the Department of Health and of the Public Service Commission.

Pasteur's Birthplace.—The Mayor of Dole, France, has received a gift of $10,000 from Mr. John D. Rockefeller of New York, to be used for the upkeep of the house in which Pasteur was born, in that town.

"Phossy Jaw" Bill.—The United States Senate on April 3 passed the so-called "Phossy jaw" bill, which levies a prohibitive internal revenue tax on matches in the manufacture of which white phosphorus is used. The House had already passed the bill, which was framed to accomplish indirectly what Congress was prevented by constitutional limitations from doing directly, that is, the protection of workmen in match factories against the bone disease known as "phossy jaw," caused by the poisonous fumes of white phosphorus. The manufacture of such matches will be made practically impossible by the levying of the tax. The bill now needs only the President's signature.

Galveston Quarantine Raised.—The national board of health of Mexico at the end of March raised the quarantine against the port of Galveston, Texas, which had been in effect for some time because of the prevalence of meningitis in that city.

Birth Decrease.—A meeting of the Guild of St. Luke, New York City, was devoted recently to a discussion of the decline of the birth rate throughout the country. It was pointed out that this decline was noted chiefly among those classed as Americans, and figures given for New York City showed that if the proportion of births among Italian parents were rated at 46, that among the Jews would be 35, among the Irish 25, and among the Americans 14. This decrease was not, therefore, among the poorer classes of the community, but occurred among the well-to-do, and could not properly be ascribed to economic conditions.

Kelly Memorial.—Friends of the late Dr. A. O. J. Kelly, assistant professor of Clinical Medicine in the University of Pennsylvania, have presented the sum of $1,000 to the trustees of the university as a permanent memorial of Dr. Kelly's services to the university, the income from which is to be given annually as a prize in clinical medicine.

Reciprocity in Medical Licensure in Pennsylvania.—The new Pennsylvania State Board of Medical Education and Licensure has completed an agreement with respect to reciprocity in the matter of license to practise medicine to be offered to other States. On licenses earned by examination reciprocity is to apply only to holders of diplomas from medical colleges recognized as in good standing by the licensing authorities of the State in which the candidate seeks the right to practise; the licensing authorities of either State are to follow the laws of their State in rating preliminary education. A regularly licensed practitioner applying for the benefits of reciprocity must have been in practise at least two years in the State from which he holds his license, but the licensing authorities of either State may in their discretion modify this requirement in any individual case. The applicant shall not have failed in any medical examination conducted by licensing authorities of the State in which he seeks to be licensed, and must appear in person before examiners, present satisfactory evidence of character and that he is not addicted to the intemperate use of drugs or liquors. Credentials as to personal and professional standing shall be required from the medical society of the county or State in which the applicant has been practising.

Dr. John H. Coughlin has been appointed Clinical Professor of Medicine at Fordham University School of Medicine.

Dr. G. A. Bading of Milwaukee, Wis., was elected mayor of that city at the election held on April 2, on the fusion ticket in opposition to the Socialists, who have held office for two years.

Dr. Edward H. Bradford, professor of orthopedics in Harvard University, has been nominated by the Harvard Corporation as the Dean of the

Harvard University Medical School to succeed Dr. Henry A. Christian, resigned.

Dr. George H. Mallett of New York has been appointed gynecologist to the General Memorial Hospital in that city.

Dr. Thomas McCrae of Baltimore was elected by the Board of Trustees of the Jefferson Medical College of Philadelphia on April 4 to fill the chair of medicine in that institution made vacant by the resignation of Dr. James C. Wilson. Dr. McCrae was graduated from the University of Toronto, Medical Department, in 1903, and has been connected with the medical faculty and with the hospital of the Johns Hopkins University since 1906.

Dr. Ernst Lederle, Health Commissioner of New York, recently addressed a large audience of Columbia University on the inspection of food supplies of the city. So far as the question of the milk supply was concerned the Commissioner thought that Pasteurization would undoubtedly prove to be the solution.

Dr. Maurice Victor Silbermark and Dr. Yetta Reissing will represent the Austrian Red Cross Society at the International Conference of Red Cross Societies which will be held in Washington on May 7 to 17. Dr. Silbermark will deliver lectures on the activity of the Austrian Red Cross, both in peace and war, and will demonstrate the latest sanitary appliances and improvements in use by the Austrian society. Dr. Yetta Reissing has been delegated to study and report on sanitary institutions for women.

Dr. John W. Russell has been appointed Medical Superintendent of Matteawan State Hospital, New York, at a salary of $3,500, to succeed Dr. James V. May, who resigned recently to accept the presidency of the State Lunacy Commission. Dr. Russell was formerly first assistant superintendent of the institution, and had been in charge since Dr. May's resignation.

Dr. E. C. Schroeder, head of the agricultural station at Bethesda, Maine, has been sent to Rome, Italy, by Secretary Wilson of the Department of Agriculture, as an official representative of this country at the Seventh International Congress on Tuberculosis, which meets on April 14. Dr. Schroeder has made many observations on the relations of human and bovine tubercle baccilli.

American Urological Association.—At the annual meeting of this association, held in New York City April 2, 3, and 4, 1912, the following officers were elected: *President*, Dr. Granville MacGowan of Los Angeles; *Vice-President*, Dr. J. Bentley Squier, Jr., of New York; *Secretary*, Dr. H. A. Fowler of Washington, D. C.; *Treasurer*, Dr. Homer G. Fuller of Washington, D. C.; *Executive Committee*, Drs. Carl L. Wheeler of Lexington, Ky., Oliver Lyons of Denver, Col., Gustave Kolischer of Chicago, Ill., Walter B. Brouner of New York, and Francis R. Hagner of Washington, D. C.

The Cartwright Lectures.—Professor Ludwig Pick, who holds the chair of pathology in the University of Berlin, has been selected to deliver the Cartwright Lectures of the Association of the Alumni of the College of Physicians and Surgeons for 1912. The lectures will be given on November 7, 8 and 9. Professor Pick numbers among his students many American physicians, all of whom will welcome him to this country.

The Illinois State Medical Society.—The annual meeting will be held in Springfield on May 21, 22, and 23.

The Alabama State Medical Association.—The annual convention will be held in Birmingham on April 16 to 18, under the presidency of Dr. Lewis Morris.

Rocky Mountain Health Association.—Under this title an organization succeeding the Colorado State Association for the Prevention of Tuberculosis filed articles of incorporation in Denver recently. The officers are as follows: *President*, Dr. Sherman G. Benney, Denver; *Vice-Presidents*, G. W. Vallery, Denver, and Dr. R. W. Corwin, Pueblo; *Secretary*, J. Foster Symes, Denver; *Treasurer*, C. S. Haughwout, Denver; *Chairman of Finance Committee*, Thomas Keely, Denver; *Board of Directors*, Dr. O. M. Gilbert, Boulder, and Dr. H. W. Hoagland, Colorado Springs, and the above-named officers. The new organization will retain the affiliation of the old with the American Red Cross and the National Association for the Prevention and Control of Tuberculosis, and will also affiliate with the American Public Health Association.

The New York Society of Anesthetists issues a call to all anesthetists in the United States and Canada to meet in Atlantic City, New Jersey, at the coming session of the American Medical Association, with the idea of forming a national organization. The organization will take place in June 4, at which time officers will be elected and committees appointed to determine the character of the organization. The Secretary of the New York Society is Dr. H. A. Sanders, 864 St. Johns Place, Brooklyn, New York.

Tennessee State Medical Association.—The annual meeting will be held this year at Chattanooga, sessions beginning on April 9.

Pawtucket (Rhode Island) Medical Association.—The annual meeting was held on March 21, when officers were elected as follows: *President*, Dr. J. E. V. Mathieu; *Vice-President*, Dr. Edward S. Kiley; *Secretary*, Dr. Charles H. Holt; *Treasurer*, Dr. James H. Haberlin.

The Clinical Society of the Jewish Maternity Hospital.—At a meeting of this society, held March 27, the following officers were elected for the ensuing year: *President*, Dr. A. Hymanson; *Vice-President*, Dr. Joseph Bakst; *Secretary and Treasurer*, Dr. Alex P. Kaplan. The program for the next meeting, to be held Wednesday evening April 24, will be "Tuberculosis in Infants," by Dr. A. Hymanson; "The Use of Fetal Serum to Cause the Onset of Labor," by Dr. A. J. Rougy.

Southeastern Kansas Medical Society.—The annual convention of this society will be held in Fort Scott on May 9.

American Society of Sanitary and Moral Prophylaxis.—A regular meeting of this society will be held at the New York Academy of Medicine, Thursday, April 11, 1912, at 8.30 P.M. The subject for discussion will be "The Social Evil." Papers will be read by Prof. E. R. A. Seligman of Columbia University, Florence Kelley of the Consumers League, and Dr. Howard A. Kelly of Johns Hopkins University.

North Pacific Surgical Association.—With the object of cultivating the art and science of surgery, uplifting the profession, promoting the highest ethical standards, and deprecating the secret division of fees, an association under this title has been formed in Portland, Ore. Membership will be limited to sixty. The following officers have been chosen: *President*, Dr. K. A. J. Mackenzie of Portland; *Vice-Presidents*, Dr. Meredith Jones of

Victoria, B. C., and Dr. A. C. Sharples of Seattle, Washington; *Secretary-Treasurer*, Dr. Otis B. Wight of Portland.

Obituary Notes.—Dr. ALBERT PLUMMER, formerly of Racine, Wisconsin, a graduate of the Dartmouth Medical School, Hanover, New Hampshire, in 1867, an assistant surgeon in the Tenth New Hampshire Regiment during the Civil War, and a member of the State Legislature in 1882 and 1883, died at the home of his son in Rochester, Minnesota, on March 23, aged 72 years.

Dr. T. J. MITCHELL of Griffin, Ga., a graduate of the Atlanta Medical College in 1850, and a member of the Georgia State and Spalding County Medical Societies, died at his home after a long illness, on March 17, aged 75 years.

Dr. CHARLES P. MARTIN of Jameson, Mo., a graduate of the University Medical College of Kansas City, in 1883, died at the Ensworth Hospital, St. Joseph, of peritonitis following an operation for appendicitis, on March 15, aged 50 years.

Dr. CHARLES BELL CONVERSE of Jersey City, N. J., a graduate of the Bellevue Hospital Medical College in 1871, a veteran of the Civil War, for thirty-six years county physician of Hudson County, and a member of the New Jersey State and Hudson County Medical Societies, died at his home on March 4, aged 60 years.

Dr. L. W. BROWN of Eugene, Ore., a graduate of the New York Homeopathic Medical College and Hospital in 1895, and a member of the Oregon State and Lane County Medical Societies, died suddenly of apoplexy on March 13.

Dr. MORRIS GUTH, medical superintendent of the Pennsylvania State Hospital for the Insane at Warren, Pa., died of heart disease on a street car in Erie, Pa., on March 27, at the age of 61 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1870. He was a member of the Warren County Medical Society, the Medical Society of the State of Pennsylvania, and of the American Medical Association.

Dr. JOSHUA W. SEIBERLING of Hyneman-ville, Pa., a graduate of the Bellevue Hospital Medical College, New York, in 1873, died suddenly at his home, on March 23, aged 65 years.

Dr. THOMAS N. MCLEAN of Fergus Falls, Minn., a graduate of McGill University Medical Faculty, Montreal, in 1882, a member of the American Medical Association and of the Minnesota State and Otterfail County Medical Societies, and formerly mayor of Fergus Falls, died in Chicago on March 21, aged 53 years.

Dr. TAFOR R. WASHBURN of Donnellson, Iowa, a graduate of the College of Physicians and Surgeons of Keokuk, Iowa, in 1901, and a member of the American Medical Association and the Iowa State and Lee County Medical Societies, died at his home on March 21, aged 43 years.

Dr. WILLARD EDDY of Waterloo, Iowa, a graduate of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, in 1803, died in a private sanatorium at Des Moines, on March 21, aged 78 years.

Dr. WILLIAM EDWARD HOLBROOK of Lynn, Mass., a graduate of the Harvard University Medical School in 1876, a member of the Massachusetts State and Essex County Medical Societies, and formerly city physician of Lynn, died at his home of acute indigestion, on March 23, aged 60 years.

Dr. CHARLES C. RAYBURN of Kewanee, Ill., a graduate of the University of Pennsylvania, Department of Medicine, in 1901, died of tuberculosis in Colorado Springs on March 20.

Dr. J. H. TIEDEMANN of Seattle, Wash., a graduate of the Long Island College Hospital, Brooklyn, N. Y., in 1894, died at his home on March 29, from hookworm disease, contracted, it is believed, while he was engaged in making tests for the same disease in San Francisco on soldiers returning from the Philippine Islands.

Dr. GEORGE RHOADS of Springfield, Mass., a graduate of the Hahnemann Medical College of Philadelphia in 1880, died at his home, on March 29, aged 53 years.

Dr. ANNIE M. TREMAINE of Fredonia, N. Y., a graduate of the Women's Medical College, New York, in 1899, died in the Willard Hospital, Willard, N. Y., on March 25, aged 47 years.

Dr. THOMAS J. BACKES of New York, a graduate of the Bellevue Hospital Medical College in 1895, died at his home on April 2, after a long illness.

Dr. AMOS GRAVES of San Antonio, Texas, a graduate of the Medical Department of the Tulane University of Louisiana in 1868, and a member of the Texas State and Bexar County Medical Societies, died at his home after a short illness on March 9, aged 70 years.

Dr. A. C. MCDOWELL of Lyndonville, Vermont, a graduate of the University of Vermont College of Medicine, Burlington, 1870, and a member of the Vermont State and Caledonia County Medical Societies, died at his home on March 2, aged 47 years.

Dr. N. E. METCALFE of Maplewood, Missouri, a graduate of the St. Louis University, School of Medicine, in 1902, died at his home on March 23.

Dr. WILLIAM E. HOAG of New York, a graduate of the New York University, Department of Medicine, in 1874, died at his home on April 2, aged 71 years.

Dr. WILLIAM T. MCNARY of San Jose, California, a graduate of the Hospital College of Medicine, Louisville, Kentucky, in 1889, died at his home on March 25, aged 64 years.

Dr. TIPTON A. GUNN of Lorraine, Virginia, a graduate of the Medical Department of the Tulane University of Louisiana, in 1900, died in the Virginia Hospital, Richmond, on March 3, aged 28 years.

Dr. GEORGE BANNERMANN MAXWELL, formerly of Attleboro, Vermont, a graduate of the Chicago Homeopathic Medical College in 1804, died at his home in Porters, Texas, on February 20, aged 52 years.

Dr. WILLIS M. WELLS of Fulton, New York, a graduate of the University of Vermont College of Medicine, Burlington, in 1874, and a member of the New York State and Oswego County Medical Societies, the Central New York Medical Association, and the Academy of Medicine, and physician to the Lee Memorial Hospital, died at his home on March 30, aged 61 years.

Dr. JAMES H. NOBLE of Eau Claire, Wisconsin, a graduate of the Hahnemann Medical College and Hospital of Chicago, a former Wisconsin State Senator, and a member of the Wisconsin State and Eau Claire County Medical Societies, died on March 1 at Roswell, New Mexico, aged 61 years.

Dr. DANIEL WINTER of Columbus, Kansas, a graduate of the Homeopathic Medical College of Missouri, St. Louis, in 1886, died at his home on March 24, aged 79 years.

Dr. CHARLES H. DAVENPORT of Fairburn, Georgia, a graduate of the University of Georgia,

Medical Department, Augusta, in 1891, an ex-mayor of his town and prominent in local affairs, died at his home on March 26, aged 46 years.

Dr. CHARLES S. SMITH of Campbell, New York, a graduate of the University of Buffalo, Medical Department, in 1890, died at his home of acute indigestion on March 29, aged 47 years.

Dr. GEORGE L. PLASLEE of Auburn, Maine, a graduate of the University of Vermont College of Medicine, Burlington, in 1883, died at his home after a short illness on March 31, aged 83 years.

Dr. DARIUS MASON of Spokane, Washington, a graduate of the College of Physicians and Surgeons, New York, in 1853, and a member of the American Medical Association and the Washington State and Spokane County Medical Societies, having served as president of the State Society in 1895, died suddenly of heart disease at his home on March 26, aged 82 years.

Correspondence.

THE PROPOSED INSANITATION OF THE CANAL ZONE.

To the Editor of the Medical Record:

SIR:—A recent telegram states that Colonel Goethals, chief engineer of the Panama Canal, advises that the jungles should be permitted to grow up in the Canal Zone after the completion and on the beginning use of the canal. The reason assigned for the permanence of this, to say the least, uncivilized condition, is that it would contribute greatly to the military defense of the canal. Without any expert knowledge upon this subject the writer is disposed to believe that the methods of modern warfare would soon overcome such fragile obstacles as the jungle might offer in opposing hostile invasion. The jungles, however, with all that belong to them, would create conditions so hostile to the maintenance of the health of the military force necessary to be quartered within the limits of the Canal Zone and of the official and laboring force which will be required to conduct the operations of the Canal that they would prove to be veritable "boomerangs," so to speak. The military force, the railroad and canal employees, with the officials, will constitute a permanent population of the Zone amounting to possibly 50,000, most of them brought there from climatic conditions very different from those indigenous to tropical regions. The climax of the great work of Colonel Gorgas in the maintenance of the health of those engaged in the construction work of the Canal would seem to be to make the Zone a great park—remove every vestige of the jungle, fill up or drain by sanitary methods the swamp areas, encourage healthful living by comfortable and sanitary house construction, destroy, so far as possible, every breeding and living place of the anopheles and stegomyia genera of mosquito by creating conditions hostile to their existence. Side by side with the military force, whose duty it will be to protect the Canal from hostile attacks, there must be a sanitary army composed of officers and men able and well equipped to wage persistent and vigilant warfare against the ever-present enemies—disease and pestilence. In this way would it seem possible to make the operation of the completed canal successful, as by such methods was its construction made possible.

J. EWING MEARS, M.D.

PHILADELPHIA, PA.

THE MODIFICATION OF COW'S MILK.

To the Editor of the Medical Record:

SIR:—Allow me to comment upon the formula given by M. A. Helfgott to modify cow's milk, and printed in the MEDICAL RECORD March 23, 1912. Dr. Helfgott desires to make a 20-ounce mixture to contain, as human milk does, proteids 1½ per cent., fat 4 per cent., and sugar 7 per cent.; and he recommends the following formula: Whole milk 7½ ounces, upper 4 ounces, of cream 2½ ounces, sugar 6½ drams, and water sufficient to make 20 ounces. By careful and accurate calculations we find the formula incorrect, as it gives an excess of proteids and a deficiency of sugar. The required percentage of proteids in 20 ounces is $20 \times 1\frac{1}{2} = 30$. What percentage of proteids do we get according to the formula? In 7½ ounces of whole milk we have $7\frac{1}{2} \times 4 = 30$; in 2½ ounces of cream, $2\frac{1}{2} \times 4 = 10$. Thus we get $30 + 10 = 40$ proteids, instead of 30 as required. In other words, we obtain $40 \div 20 = 2$ per cent. proteids—an excess of ½ per cent.

We will take now the carbohydrates. The required percentage in 20 ounces is $20 \times 7 = 140$. What do we get? $7\frac{1}{2} \times 4 = 30$; $2\frac{1}{2} \times 4 = 10$; 6½ drams sugar = 80. Thus we get a total of $30 + 10 + 80 = 120$. In other words the mixture contains $120 \div 20 = 6$ per cent. sugar, instead of 7 per cent. in human milk—a deficiency of 1 per cent. Let us take now Dr. Helfgott's own calculations. He begins with the proteids and says: "What percentage of proteids is required in 20 ounces? $20 \times 1\frac{1}{2} = 30$. How many ounces of whole milk will furnish it? $30 \div 4 = 7\frac{1}{2}$." Correct is the doctor so far. Further he says: "What is the percentage of fat required? $20 \times 4 = 80$. What percentage do we get from $7\frac{1}{2}$ ounces whole milk? $7\frac{1}{2} \times 4 = 30$. What percentage is missing? $80 - 30 = 50$. How many ounces of cream will supply it? $50 \div 20 = 2\frac{1}{2}$." Dr. Helfgott's fat computation is correct. The cream will supply the fat deficiency. But will it not supply also an additional 10 of proteids above that required to correspond to human milk?

In the carbohydrate calculation Dr. Helfgott made a mathematical error. He gives us the required percentage of sugar in 20 ounces correct, $20 \times 7 = 140$. But, computing the sugar missing, after taking 7½ ounces of whole milk, he says: Sugar supplied by the $7\frac{1}{2}$ ounces whole milk, $7\frac{1}{2} \times 4 = 30$; sugar missing $120 - 30 = 60$. And thus he wrongly figures the quantity of sugar to be added 6½ drams. Correctly, the figures are: Sugar required, $20 \times 7 = 140$; in $7\frac{1}{2}$ ounces whole milk, $7\frac{1}{2} \times 4 = 30$; missing sugar, $140 - 30 = 110$; sugar in $2\frac{1}{2}$ ounces cream, $2\frac{1}{2} \times 4 = 10$; still missing, $110 - 10 = 100$. An ounce of sugar is, therefore, to be added to make the required percentage. Of course, Dr. Helfgott may be right in ordering less sugar, as a child taking a mixture containing 4 per cent. fat and 2 per cent. proteids will probably get extra sugar in the form of starch. His calculations are, nevertheless, wrong.

Dr. Helfgott claims his formula to be easy to remember. By the physicians? No! It is much easier to remember Dr. Holt's formula: 12 ounces of 7 per cent. milk, or 12 ounces of the upper 16 ounces, than to remember $7\frac{1}{2}$ ounces whole milk and $2\frac{1}{2}$ ounces upper 4 ounces. Besides, a mixture containing 4 per cent. fat and 2 per cent. proteids does not suit every child, and we have

to resort to the formulas given in the text books to suit the condition and age of the child. As far as the mother is concerned, she will not remember anything. The physician must write out everything for her in plain letters and tell her to follow it closely while preparing the mixture. Dr. Helfgott's formula is also a disadvantage to the poor mother. She has to buy two bottles of milk, one for the whole milk and one to make the cream.

In conclusion I say Dr. Holt's formulæ are easy to remember and easy to calculate, and it is easy to vary the formula according to the need of the child, if the physician understands the fundamental principles—and every physician should understand the proper principle, logic and technique of the most important part in pediatrics, namely, the modification of cow's milk for healthy and sick infants.

Louis Monk, M.D.

332 Second Street, New York.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

INSURANCE, CONFERENCE OF THE COLLEGES AND UNIVERSITIES—THE HOSPITAL OUTLOOK, FEARS OF ADMINISTRATORS—HYDRONEPHROSIS AND X-RAYS—RENAL CALCULI—KARL PEARSON ON HEREDITY—NASAL CASTS AND HEREDITY—OBITUARY.

London, March 22, 1912.

Yesterday the projected conference between representatives of the universities and the medical corporations anent the Insurance Act was held at the Royal College of Physicians and was fully attended. The meeting unanimously agreed that considering there is remarkable unanimity of opinion within the profession as to the attitude its members should adopt toward the working of the act "this conference desires to place on record its general approval of the principles which inspire that attitude, and while conscious that there is some difference of opinion with regard to details, expresses its willingness to support the demand that these principles should be recognized by those who are responsible for the administration of the act before medical practitioners consent to work under it."

The outlook for the hospitals under the Act continues to excite the gravest apprehensions among administrators. Yesterday Lord Rosebery at the Ventnor Consumption Hospital remarked that he did not pretend to be versed in the Act and he commented on the steady decline in the mortality from consumption. But with regard to the report he had to confess that the income for 1911 was £500 less than in the previous year, and part of that came from one gift of £1,000 which was put to capital. The death duties had no doubt, he said, told on the legacies, which in 1911 were only £597 in place of £2,042 in 1910.

At the annual meeting of the Brompton Hospital Lord Cheylesmore (president) had to lament an increase of the debt to £10,000 and said that unless substantial help was forthcoming they must either close some wards or limit the work of their sanatorium. He found Mr. Lloyd George had promised so much for sanatoria that many people thought these institutions would be state supported, but that was far from the case. Unless revenue increased they would have to ask patients who were insured under the Act to contribute toward the cost of treatment at the hospital.

The council of the Hospital Saturday Fund has issued a special notice to all collectors for it, "it cannot be too clearly or too emphatically stated that the beneficent work done by the fund is not by any means covered by the Insurance Act."

The diagnosis of hydronephrosis is seldom made until considerable progress has been made with the lesion. At the earliest stage there may be no symptoms to excite suspicion and even when functional disturbance is pronounced the signs of commencing dilatation are obscure and variable. Practically a diagnosis is rarely made or only a suspicion is excited until a tumor appears in the loin. This being so it is encouraging to hear that the *x*-rays are available in these cases. Dr. Thomson Walker read a paper at the Medical Society of London in which he said this method of diagnosis consists in (*a*) finding an increase in the shadow thrown by the kidney; to recognize early dilatation in this way special measurements in a fixed position must be most carefully made. (*b*) Pyelography, *i.e.* filling the pelvis of the kidney with an innocuous fluid opaque to the rays (as collargol) and obtaining a radiogram. The dilated pelvis he found less sensitive than the normal to distention.

Early dilatation was indicated by clubbing and elongation of the calices and the pelvis becoming globular. The angle of union of the ureter with the pelvis was shown and kinking could be demonstrated. The position of a calculus was shown by a shadow of the stone and so with other obstruction, *e.g.* kinking of the ureteropelvic junction or an actively contracting ureter due to movable kidney.

With regard to calculi in the ureter (apart from hydronephrosis) Mr. Thelwall Thomas gave to the Liverpool Institute on the 7th inst. a tabular analysis of seventeen cases on which he had operated and he said the most reliable sign was the presence of well-marked shadows on the radiogram in the line of the ureter, but even this was not absolute in the lower inch or so of the duct. In all cases pain had been present, in ten hematuria, in about half pyuria (in some of these with hematuria), in three there had been neither of these.

Professor Karl Pearson gave a lecture on the 12th inst. on "Tuberculosis in Relation to Heredity and Environment." To show how phthisis may attach itself to a family for from four to seven generations he exhibited three pedigrees on the screen. He said this might be from (*a*) an inherited constitutional factor; (*b*) an environment factor (house or occupation); (*c*) direct infection. But pedigrees demanded careful analysis. In two of those shown (German) 62 per cent. of the tuberculous members lived to adult age, 45 per cent. married, and only 12 per cent. who married into these stocks were tuberculous. In the third instance a generation had twice been skipped and the stock (landed gentry) had lived in three different countries and sought by change of climate and occupation to escape the family curse. Such facts must be carefully studied. We must consider whether persons running the same risks have the same liability. The professor said nature had done more than art in reducing the death rate of phthisis. Studying the fall it was found to be taking place in urban and rural districts, with and without sanatorium and dispensary treatment; it was begun long before the introduction of such treatment and it had not been accelerated by the increase of medical knowledge. It seemed, therefore, that they must regard the fall as part of the natural history of man rather than due to his attempts to better his environment. Perhaps the professor had in view only civilized man, for he remarked that the

race had risen through suffering both physically and mentally.

Dr. A. M. Gossage has reported to the Clinical Section of the R. S. M. that he lately came across a family several members of which had been troubled with a persistent fibrinous discharge from the nose. It was noticed at birth and continued throughout life, causing very little discomfort if the nostrils were kept clear but otherwise a bad smell, never ozena. Specimens from the father and two children were found to be complete casts of the nostrils. They reformed in about twelve hours. Films showed polymorphonuclear cells embedded in a network of fibrinous matter. There were bacilli, diplococci, and short diplococci, but neither *B. diphtheriæ* nor *B. xerosis*. Attempts to embed and cut sections failed as the material was too friable. At least four generations had suffered, males and females equally. The children of persons with normal mates were roughly half normal and half affected. There was no record of offspring from normal members of the family. It is certainly curious to find a fibrinous exudation on a mucous membrane resulting from some congenital abnormality and not from an infective inflammatory process.

Sir Richard Brayn, formerly medical superintendent of the Broadmoor Criminal Lunatic Asylum, died on the 12th inst., aged sixty-two. He qualified at the two royal colleges here in 1873-4 and entered the prison medical service in 1875. He served on the committee on inebriate reformatories and as a governor of several prisons. He received a knighthood at the coronation. As an expert his opinion was held of the highest importance.

Dr. G. C. H. Fulton, J.P., Medical Health Officer for Eston, died on the 9th inst., aged fifty-four. He qualified as Glasgow University, M.B., C.M., 1883. He contributed reports on vaccination, infantile mortality, etc.

The administrative medical officer of Bloemfontein, Col. F. J. Lambkin, R.A.M.C., died there on March 8, aged fifty-eight. He took the double qualification in Ireland in 1880 and joined the army medical service the next year. During the South African war he saw much service, taking part in the relief of Ladysmith, including the actions at Colenso, Spion Kop and Vaal Kranz. He also took part in the operations on the Tugela Heights and the action at Pieters Hill. He received the Queen's medal with five clasps and the King's with two. He was made lecturer on orphilology at the Army College.

Dr. I. S. Shillingford, who died lately after above fifty years practice in South London, had served in the army as surgeon before then. He was in the Crimean War and present at Alma, Sebastopol, and Inkerman. He served also in the Indian mutiny at Cawnpore and later at Delhi.

Dr. H. Banks, late medical officer of Oxford prison and of the Provident Dispensary and the Lying-in Charity Home, died on the 20th inst. in his seventy-seventh year. He qualified in 1858 and took M.D., St. And., 1859.

Results of Salvarsan in Obstetrics.—Jeannin states that in the case of the syphilitic mother the action of salvarsan is as good as that of mercury, the injection causing a rapid improvement of the symptoms. The drug has no bad effects on the fetus, development going on as if nothing had been done. Abortion or premature labor is not induced. In cases of congenital syphilis the effort to treat the child through the milk of the mother is futile. But intramuscular injections of salvarsan have an excellent effect on the child.—*La Presse Médicale.*

REPORT OF THE MEETING OF THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE (*Continued*).

(From Our Manila Correspondent.)

HONGKONG, Jan. 27, 1912.

Fifth Day.

The first paper read was entitled "The Need for Physiological Standards in Clinical Research," by G. Duncan Whyte.

The next paper read was "The Care of Children in the Tropics," by G. Montagu Hartson.

The next paper was entitled "The Prophylaxis of Umbilical Tetanus at Saigon," by Dr. M. L. R. Montel. In this the author showed the desirability of making available for use sterile dressings with which to dress the umbilical stumps.

The next paper was entitled "Latest Researches Into Spotted Fever," by Dr. Fürth. In this paper the author gave a large series of blood examinations which had been made in connection with this disease, but without any tangible results.

The next paper was "Relapsing Fever and Its Treatment by Salvarsan," by Dr. W. V. M. Koch. This paper gave a series of cases in which salvarsan had been used with complete success in the treatment of this disease. After its administration no exacerbations of the fever occurred, and the remedy is undoubtedly the best that has yet been tried in this disease.

The next paper was entitled "Blood Pressure," by J. C. D. Allen. In this the author gave a résumé of the results which had been obtained by the use of the sphygmometer, and showed an instrument of special design which he had found satisfactory in his practice. In his opinion a continued residence in the tropics was responsible for an increase in the blood pressure. In the discussion which followed attention was invited to the experiments which had been made recently by Chamberlain and Vedder, in which, in a series of one thousand cases of periods of residence varying from a few months to ten years, the authors were of the opinion that the question of blood pressure depended largely on the manner in which the instrument was adjusted, and the personal equation, and, so far as their observations went, no distinct difference could be noted in individuals who had been but a short time in the tropics and those whose residence had been over a prolonged period of time.

Sixth Day.

The first paper was entitled "Malaria as a Factor in the Etiology of Biliary Calculi," by George A. Finlayson. In this paper the hypothesis was put forward that the malarial organism, or its product in the gall-bladder, served as a nucleus for biliary calculi.

The next paper, entitled "Remarkable Parasites in a Case of Tertian Malaria," by Captain H. M. Neeb. This paper was really additional evidence to support the contention which this author has heretofore made in connection with the parthenogenesis of the malarial parasites. The specimens which he exhibited undoubtedly showed the majority of the stages of the evolution of the parasite. The different forms could be clearly seen in the blood specimens which he exhibited to members of the Congress. The blood containing these parasites came from a young child. After the administration of quinine they promptly disappeared, thus eliminating kala-azar.

The next paper was entitled "A Demonstration of the Anopheline Mosquitos of India," by Major S. P. James. Major James brought with him a most complete collection of the various forms of the anopheline mosquitos and gave daily demonstrations of these at the bacteriological institute of the Department of Health at Hongkong.

The next paper, "Black Water Fever in Burmah," was by Lawrence G. Fink. This was read by title, and the next paper, "Mortality, Birth-rate, and Sanitation of Saigon," was also read by title.

The next paper, entitled "Town Planning and Sanitary Conveniences at Tsingtau," by Dr. Uthermann, was read by Dr. Fürth. In this the author showed a series of charts, tables, and maps, in which the sanitary improvements which had been made in Tsingtau since German occupation was graphically shown. The hygienic results showed to the best advantage among the German troops which were stationed there. A great reduction in venereal diseases among troops had been brought about by the prophylactic use of argyrol and calomel ointment. Water and sewer systems, garbage collection, and the other usual sanitary measures have also been carried out at Tsingtau with favorable results.

The next paper was entitled "Indian Native Coolie Immigration," by Sir Allan Perry. This paper was of considerable interest, in view of the success which has been had in Ceylon in preventing the introduction of dangerous communicable diseases, in spite of the close proximity of Ceylon to India and the large amount of communication there is between India and Ceylon owing to the coolie labor which is imported from India. The author invited discussion upon the best means of preventing the introduction of cholera. Dr. Heiser stated that the experience of the United States in connection with cholera which was brought to New York during the summer of 1911 would perhaps be of interest, in that the measures taken had proven completely successful, and had been much less annoying to commerce than those which had heretofore been employed. He stated that a rigid examination of stools of all steerage passengers had been made on vessels coming from ports in the Mediterranean, and that on the majority of vessels cholera carriers were found. These cases had been isolated until the disappearance of cholera vibrios from their stools, and in almost every instance it was possible to release steerage passengers who were negative after 36 hours of detention. The best test of the success of this method was probably shown by the fact that no introduction of this disease into the United States had occurred after these measures were adopted.

Dr. Sansom, of the Federated Malay States, stated that his experience had conclusively shown that in handling large numbers of coolies that were constantly coming into the Straits Settlements the ordinary quarantine period of five days against cholera was entirely inadequate; that numerous instances had occurred during the past year in which cases of cholera occurred eight days after the period of quarantine had begun, and he strongly urged that in cases where it was not possible to make microscopical examinations of stools the period of quarantine should be increased to ten days.

The next paper was entitled "The Necessity for Uniform Quarantine Regulations Among the Coast Ports of China," by Dr. Uthermann. The author invited discussion on the following points:

(1) The necessity for increasing the interchange of weekly news between the Northern and Southern ports.

(2) Ways and means to either obtain uniformity in the different Quarantine Regulations or to have the present regulations (especially as regards disinfection) acknowledged and agreed to. The necessity of this is shown by the following instance: During the outbreak of plague in the spring of 1911 steamers running from Dairen to Shanghai via Tsingtau had to be fumigated first in Dairen (by a special system of fumigation); two days later, on arrival at Tsingtau, again by means of the Giemsa Nocht apparatus, and once more on arrival in Shanghai (36 hours later) by means of the Clayton apparatus.

This led to the appointment of a Committee on Quarantine, the report of which will be given later.

Seventh Day.

The last day was taken up entirely with the business meeting, at which the resolution on beriberi, which had been passed on the second day, was modified and the following resolution was substituted: *Resolved:* That the accuracy of the opinion of this Association, recorded in 1910, has received further and more complete confirmation by investigators in Japan, China, French Indo-China, the Philippine Islands, Siam, Netherlands—India, the Straits Settlements, and the Federated Malay States, namely, that "Beriberi is associated with the continuous consumption of white (polished) rice as the staple article of diet." It is therefore again desired to bring this opinion to the notice of the various Governments concerned and to recommend international action.

After much discussion the following resolution upon quarantine was adopted: *Resolved:* That the resolutions adopted at the last conference be amended to read as follows:

1. To have a definition of the *Status Sporadicus* and a common standard for the term *Epidemic* when making reports to or imposing quarantine against each other. The following definitions were submitted for consideration: *Status Sporadicus,* in respect of any communicable disease, means the existence in a place within the next preceding fourteen days of a case or cases of that disease not definitely traceable to an imported case. *Status Epidemicus*: Plague, cholera, smallpox, yellow fever, typhus exanthematicus, trypanosomiasis, or other communicable diseases shall be considered to be epidemic in any port, place, or defined locality when after the first telegraphic report of the appearance or recrudescence of the disease any weekly report thereafter shall show the occurrence of an average daily number of three cases, exclusive of cases imported into or originating in a quarantine station.

2. To circulate weekly returns of plague, cholera, smallpox, yellow fever, typhus exanthematicus, and trypanosomiasis, and also of plague in rodents among the signatories; also telegraphic report on the first occurrence of any of these disease in a clean port or territory.

3. To issue a bill of health to all outgoing vessels proceeding to a port of another signatory. Such bill of health shall *inter alia* state the facts as to the existence and prevalence of quarantinable disease in the port, place, or defined locality, and further shall contain such other information as may be desired or deemed necessary by any signatory to enable such signatory to estimate the sanitary risk from

the arrival of the vessel in its (the signatory's) ports.

4. To report by telegram to the country concerned the departure of an infected or suspected ship (as defined by the Paris convention) which may intend to proceed to any port in the territories of another signatory; and to indorse the bill of health of the said infected or suspected ship with a full account of measures taken to disinfect or otherwise deal with the said vessel.

5. To meet point 22 raised by Dr. Othermann the following procedure is suggested: That in respect of any vessel leaving a plague-infected place or carrying persons or suspected cargo from such a place (a place where there is plague in man or rodents) it is considered that no subsequent disinfection or fumigation should be imposed on the vessel *at any port of call*, if it can be shown (*a*) that the vessel has been properly treated for the destruction of rats and other vermin, (*b*) that approved measures of inspection or examination and personal disinfection of effects have been carried out in respect of all persons on board such vessels, and (*c*) if specially objectionable classes of cargo (to be scheduled) have been rejected or properly disinfected before shipment. Provided further that it is understood that no evidence of plague is discovered on board in man or rodent at any port of call.

It was unanimously decided to accept the invitation of the French Government to hold the next meeting of the Congress at Saigon. Dr. Cleroq, Surgeon General of the French Colonial Medical Service, was elected *President*, Dr. Yersin was elected *Vice-President*, and Dr. M. L. R. Montel was elected *Associate Secretary* with Dr. Clark, who was again unanimously reelected for the position. Votes of thanks were passed and the other usual formalities carried out.

Members of the Congress were most kindly received by the residents of Hongkong, and all foreign delegates thereto were entertained in private houses of the residents of the colony. Theatricals, dinner parties, social functions, yacht trips, and other diversions were provided for the delegates in ample profusion, and all of them expressed their utmost gratitude for the hearty reception which they had been accorded and the facilities which had been extended them for acquainting themselves with the medical features to be observed in Hongkong.

Progress of Medical Science.

Boston Medical and Surgical Journal.

March 28, 1912.

The Masquerades of Chronic Cholelithiasis. A. E. Austin.
Note on the Geographical Distribution of Insanity in Massachusetts, 1901-1910. E. E. Southard.
Suturing as a Substitute for Splints after the Submucous Resection of the Nasal Septum. O. A. Lothrop.
Psychopathic Nursing. B. T. Ring.
A Warning in Regard to Intratracheal Insufflation Anesthesia; the Necessity of a Safety Valve. F. J. Cotton and W. M. Boothby.
A Method for Detecting Bile in Stomach Contents. H. W. Goodall.

The Masquerades of Chronic Cholelithiasis.—A. E. Austin states that in this condition the pain may be confined to the epigastrium and differ in no respect as far as location goes from the pain of gastric ulcer or nervous gastralgia. The jaundice, too, which is regarded as a cardinal symptom is often absent. On account of the ease with which a gastroptosis and a prolapsed right kidney can be found in women on account of their lax abdominal walls one is often apt to ascribe their attacks of pain in the upper abdomen to this cause; nothing could be more unjustifiable unless a careful investigation of the gall-bladder region is made. A prolapsed right kidney may not only simulate gallstone disease, and vice versa, but may actually be one of the exciting causes of such formation. A purulent gall-bladder may simulate a pyonephrosis.

Geographical Distribution of Insanity.—By E. E. Southard. (See "Eugenics and Geography," page 720.)

Suturing After Submucous Resection of the Nasal Septum.—O. A. Lothrop notes that many patients experience much discomfort for the first twenty-four hours after a submucous resection of the nasal septum. This is due in a large degree to the presence in the nares of splints, plugs, or packs commonly used to keep the flaps in approximation and to prevent the formation of a hematoma between them. Any foreign substance in the nose causes a local reaction and increases the nasal discharges. Such foreign substance also retains the secretions and favors the multiplication of bacteria. It was for the purpose of eliminating this discomfort to the patient after operation and to dispense with any packing whatsoever that the following procedure of suturing the flaps together was devised: The technique of suturing, after the resection has been finished, consists in passing a stitch preferably of plain catgut, No. 0, from one side of the nose completely through both septal flaps into the other side and fastening it so that the flaps are held tightly together at that point. Several points should be thus fixed throughout the resected area, so that the septum is given a quilted appearance. The ends of the suture thus passed through both septal flaps may be tied loosely over the columella. This method not only fixes the point of passage through the flaps, but causes the sutures to lie against the mucous membrane on either side like guy ropes. Thus, these sutures have a fan-shaped appearance, being tied at one point over the columella and spreading out to divergent points on the septum. The columella should be protected by tying the sutures not too tightly over a bit of cotton or other protective.

Safety Valve in Intratracheal Anesthesia.—F. J. Cotton and W. M. Boothby allude to the dangers of emphysema and of interference with the circulation (prevention of filling of the right heart) by excessive intrapulmonary pressure; the physiological literature gives ample evidence of all kinds that a pressure in excess of 10 mm. Hg. is unjustifiably dangerous. To prevent this danger Boothby, working with Ehrenfried, adopted the simple expedient of a mercury safety valve. The simplest form is a bottle containing mercury; in the cork are two holes—one for the passage of a glass tube connected with the air current near the mouth of the patient, which dips into the mercury a distance of 10 millimeters; the other hole is for the escape of the air from the bottle, which (to prevent the loss of mercury) can be filled with a short glass tube plugged with cotton. Any increase in pressure above 10 millimeters anywhere in the apparatus will escape by bubbling through the mercury. The tubing to the safety valve must be of as large caliber as that of the rest of the system so as to take care of any volume of air that the apparatus might suddenly deliver.

Detection of Bile in Stomach Contents.—H. W. Goodall states that the following method, which is based upon the oxidation of bilirubin with nitric acid, forming green biliverdin, is recommended as being delicate and easy of application. Half a test-tube of the fluid portion of the stomach contents is taken. If this amount cannot be obtained, or if the contents consist largely of solid material, they should be diluted with water, thoroughly mixed, and the fluid portion poured off or filtered. The fluid is then saturated by shaking one or two minutes with ammonium sulphate crystals, or, better, crystals which have been ground into a fine powder. About an inch in the bottom of the test-tube is usually sufficient. Then from 1 to 3 cubic centimeters of acetone (about a quarter of an

inch in the test-tube) are added, and the whole t[illegible] mixed by inverting the test-tube five or six tim[illegible] best not to shake the test-tube. After standing a [illegible] two the acetone rises to the surface of the fluid [illegible] bile pigment up with it. A drop of yellow nit[illegible] allowed to run down the side of the test tube [illegible] green reaction occurs in the acetone layer. Care [illegible] taken in adding the acid, as too large quantities [illegible] too rapid an oxidation and the green quickly pass[illegible] into a purple or reddish color. If the acetone does not promptly rise to the surface the liquid has not been thoroughly saturated with ammonium sulphate. If too much acetone is added the bile may be diluted to such a degree that the reaction is not distinct. This procedure is delicate enough to demonstrate bile in contents which macroscopically do not suggest its presence.

New York Medical Journal.

March 30, 1912.

Some Problems in the Chemotherapy of Cancer. W. J. Morton.
Recent Views on Inflammations of the Endometrium and "Endometritis." R. T. Frank.
Ionic Surgery in Cancer of the Rectum. G. Betton Massey.
Traumatism of the Eyeball. F. P. Hoover.
The Social Worker as a Factor in Solving the Dispensary Problem. S. H. Brown.
Postgraduate Work in Vienna and Budapest. F. McMorris.
A Plea for Use of the Metric System in Prescription Writing. H. Stieherman.
The Duty of One Physician to Another. A. J. Hues.
Sex Hygiene in Relation to Eugenics. P. Delany-Barlow.

Chemotherapy of Cancer.—W. J. Morton refers to the fact that he first drew attention nine years ago to the utility of the aniline dyes, particularly the fluorescent kind, in the treatment of cancer. The method he pursued was to saturate the patient, including his cancer tissue, with the dye, which, was administered by the mouth, and then to subject the cancer to the action of the beta ray either of the *x*-rays or of radium. In some cases his results were apparently favorable. He suggests that it might be possible to administer to the patient by the mouth separate drugs at separate times, counting upon their curative reaction within the cancer cell itself by chemical combination made within the body instead of outside of it. The cancer cell would correspond to the laboratory test tube.

Recent Views on Endometritis.—R. T. Frank notes that anatomical evidence of inflammation is demonstrable in less than half of all cases of endometritis. Many cases which anatomically show the presence of inflammation give no corresponding clinical symptoms. A majority of cases which show the conventional symptoms of endometritis (leucorrhea or bleeding) are wanting in demonstrable anatomical signs of inflammation. Therefore, in most cases one is obliged to search for other etiological factors to account for the symptom-complex hitherto called "chronic endometritis," and to devise for it a more logical treatment than curettage, intrauterine applications, or vaginal douches.

Ionic Surgery in Cancer of the Rectum.—G. Betton Massey, on the basis of seven successful results in fifteen unselected, or but partly selected, cases of carcinoma and sarcoma of the rectum and anus, extols the value of cataphoresis, or ionic surgery, in selected cases of these affections. The chief indications for the use of the method are found in cases involving the sphincter, conditions that interfere with successful eradication by excision, and in growths of the middle and upper rectum. In these it is possible to eradicate the disease without injury to the sphincter. The simplicity of this method in an inefficient case, with its bloodlessness and the short period of anesthesia required, should stimulate physicians to treat at once their so-called hemorrhoidal patients at once; in this may be done with great thoroughness by the [illegible]led finger. Should the examining finger detect an [illegible]nted internal pile, or an ulceration with indurated [illegible] the case should be regarded with suspicion at once. The growth may be syphilitic in rare instances and further investigation may be needed, but immediate destruction or removal will do no harm and may save the patient's life.

The Dispensary Evil and the Social Worker.—S. H. Brown states that the very poor who apply to the dispensary for treatment are not possessed of the happy faculty of evoking the kindly and courtly consideration that is due human beings, and they are likely to be hurriedly dismissed with a prescription of doubtful value in order to be disposed of as soon as possible. If their case or cases present features of unusual character, on the other hand, attention is carried to the other extreme and the treatment becomes more of a burden than the disease. Trivial affections in the very poor are of greater importance than the same class of ailments in the less unfortunate class of people because they are attended with grave fears and premonitions. Very frequently such patients are incapacitated for work by conditions that appear to the dispensary physician of no gravity; he dismisses the patient with more or less vague and often gruff explanations of the condition. Not so, however, with the better dressed and perhaps more polite, and doubtless better paid, dispensary patient. To the latter, the dispensary physician is frequently all courtesy notwithstanding that this particular individual represents the class that is doing most harm to the medical profession, and in himself constitutes the entire dispensary evil. The social worker can readily determine the home life, habits, salary, etc., of dispensary applicants, and after repeated visits, in most instances, the individual who is imposing upon the charity of the dispensary will voluntarily refrain from continuing to draw upon the dispensary for relief.

Journal of the American Medical Association.

March 30, 1912.

Sanitation of Panama. W. C. Gorgas.
The Present Status of Psychology in Medical Education and Practice. S. I. Franz.
The Value of Psychology in Psychiatry. A. Meyer.
Psychopathology and Neuropathology: The Problems of Teaching and Research Contrasted. E. E. Southard.
Content of a Course in Psychology for Medical Students. J. D. Watson.
The New Psychology and Therapeutics. M. Prince.
The Effects on the Heart of "Soluble Digitoxin, Cloetta." R. H. Hatcher.
Trachoma: Its Etiology and Treatment. L. W. Crigler.
A New Pneumoelectric Proctoscope and Sigmoidoscope. F. C. Yeomans.
Gastroenterostomy: Technique of the Operation With the Use of a New Instrument. A. G. Brenizer.
A Cutaneous Reaction in Gonococcal Infections. E. F. Irons.
Observations on the *Oxyuris vermicularis*, or Common Seat-Worm. P. A. Sheaff.
A Milk-Borne Typhoid Epidemic. H. H. Thompson.
The Value of Cystoscopy in Surgical Diseases of the Kidney. F. W. Griffith.
Acute Lymphatic Leucemia. Report of Three Cases. W. H. Bodenstab.
The Phenolsulphonephthalein Test of Renal Sufficiency. J. L. Whitney.

Sanitation in Panama.—W. C. Gorgas describes the conditions at Panama and gives the history of former conditions when the Isthmus was considered the most unhealthy spot in the world. During the construction of the Panama railroad the mortality was so great that the construction work had to be stopped several times. At one time the construction company imported 1,000 negroes from Africa, who all died within six months, and the same fate occurred to 1,000 Chinamen. The mortality rate was similar during the French work on the Isthmus, and the author estimates that they lost 40,000 laborers by death during that period. The mortality at the present time is 7.50. Malaria, from a maximum of 821 per 1,000, has been reduced to 187 per 1,000 morbidity; but, best of all, yellow fever has been completely banished. The general death-rate has been reduced during six years from a maximum of 40.04 per 1,000 to a rate for the year of 1910 of 2.18 per 1,000, which compares favorably with many parts of the United States. What the author particularly emphasizes, however, is that, while the great work done of late

years in tropical sanitation has enabled the sanitary department on the Isthmus to take a vital part in the building of the canal, this is not the greatest good that is hoped and expected will flow from this conspicuous object lesson. He hopes that our success at Panama will induce other tropical countries to adopt the same measures and thereby redeem the tropics and make them a suitable habitation for the white man.

Value of Psychology in Psychiatry.—A. Meyer states that psychology will become a much more real issue when it aims to guide students in the correct and critical recording of the plain facts of conduct and behavior and the mechanisms at work; when it puts the emphasis on what shows objectively as well as subjectively, namely, the conditions, types and results of mental activity; when it trains the student to see, in the special psychological methods, methods of accuracy and greater comparability; but above all, when the data can be formulated in terms of adaptations of a living functioning organism with the system of mental integrations, the conditions and structure of which are becoming increasingly better understood. The student should learn that psychology is the study of a certain type of reactions, of the conditions under which they occur, of what they do and how they can be modified and kept from miscarriage. How to use the reactions either as mere signs of broader disorders or as dynamic factors must be learned in the study of cases and by experimentation.

Trachoma.—I. W. Crigler states that trachoma is a disease of the conjunctiva in which there is a characteristic connective-tissue hyperplasia and a proliferation of lymphoid cells. The follicles formed by this proliferation tend to degenerate and become encapsulated by the new connective tissue. They become distended with fluid, push their way to the surface of the conjunctiva, degenerate and break down, and the conjunctiva is replaced by scar tissue. As a result of the chronic inflammatory process other changes take place leading to a general atrophy of the lid. The author emphasizes the fact that the disease is a chronic one, the acute malignant cases being the exception, and notes that it is greatly to be deplored that there is no diagnostic character to distinguish it to the general practitioner from chronic follicular conjunctivitis. One is compelled to wait until the second or hypertrophic stage before one can make a sure diagnosis and this is often only after months. Follicular conjunctivitis tends to spontaneous recovery, leaving a normal conjunctiva. Trachoma never does. The medical treatment has not advanced during the past decade, but it cannot be said that the remedies are without effect. The treatment with nitrate of silver and copper sulphate is painful and the patient discontinues them as soon as a little relief is obtained. Relapses then occur and the disease progresses. While a good many cases of true trachoma have been arrested, the author thinks a too large number are so credited and that all cases that respond to expression should never be called trachoma though they present the picture of this disease for a time. He speaks of the importance of the surgical treatment, which he considers the most successful means of combating the condition.

Cutaneous Reaction in Gonorrhea.—E. E. Irons notes that in recent experiments with glycerine extracts of the gonococcus he has found that a well-defined cutaneous reaction, similar to the cutaneous tuberculin reaction, occurs in cases of gonococcal infection, when the extract is introduced into the skin by the method of von Pirquet. In positive cases in from twelve to twenty-four hours, an area of hyperemia from 5 to 10 millimeters in diameter appears around the point of inoculation of the extract. Frequently a definite papule develops. The control inoculation, using a similarly prepared glycerine extract of the washings from the same number of uninoculated culture tubes, shows only the point of needle puncture. In normal persons, and in those suffering from non-gonococcal infections, the inoculation of the gonococcal extract produces no more reaction than the control inoculation, or at most a small area of redness 2 to 3 millimeters in diameter.

Cystoscopy in Surgical Diseases of the Kidney.—F. W. Griffith states that in cystoscopy there is a means of exact diagnosis which is not sufficiently utilized. There is no other renal disease in which the cystoscope is more useful than in renal tuberculosis provided the case is seen early. It is as necessary for the detection of an early lesion as is the stethoscope in early pulmonary tuberculosis. In nephroptosis the use of the cystoscope is chiefly in diagnosis and in the selection of cases for nephrorrhaphy. This condition occurs in about 20 per cent. of all gynecological cases. In nephrolithiasis the cystoscope is of especial value in corroborating the findings of the *x*-ray, in determining the presence of infection, and in estimating the absolute and relative ability of the two kidneys. As a rule it is neither difficult nor dangerous to catheterize a kidney and if made a routine practice this procedure will lessen the number of mistakes. There are many other conditions, such as pyogenic infections, malignant growths, and cystic kidneys, in which the use of the cystoscope is almost indispensable for diagnosis.

The Lancet.

March 23, 1912.

Paratyphoid Fever.—F. A. Bainbridge states that there is no real distinction between the disease caused by *Bacillus paratyphosus A*, and that caused by *Bacillus paratyphosus B*. The clinical symptoms and post-mortem appearances are practically identical; and in both cases the disease appears to be spread mainly, if not entirely, by human carriers. Both organisms usually give rise to an illness clinically resembling typhoid fever, although very ocasionally they set up acute gastroenteritis. The only important points of difference between infection by both paratyphoid organisms consists in the varying response of the patient as regards the production of agglutinins in his serum. Up to the present most of the carriers of the paratyphoid A bacillus which have been recognized have been of the acute variety, whereas the carriers of *Bacillus paratyphosus B* are chronic carriers. This apparent difference probably depends upon the special circumstances under which paratyphoid A fever in India has been studied.

Feeble-Mindedness and the Binet Method.—W. C. Sullivan refers to one of the limitations which is implied in the very description of the Binet method as furnishing a measure of the intelligence. It is designed *only* as a measure of the intelligence; it does not purport to enlighten one as to the affectivity or the will. In regard of feeble-mindedness, at all events as the question concerns the community, as notably with reference to the feeble-minded criminal, it is these latter factors of mind that are of most importance. Therefore the method is to that extent an instrument of limited value in the examination of the mentally defective. On the other hand, even in such cases, it is of no small assistance to be able to separate, as it were, this one factor of the intelligence, to measure it and to assign to its deficiency the due share in the individual's

inferiority. And, moreover as the factors of mind [illegible] after all intimately connected, many of the tests specially directed to the intelligence necessarily give one also some indirect indications touching emotivity and impulse.

Pharyngeal Suppuration.—G. W. Badgerow states that pharyngeal suppuration, according to its seat of origin, may be: (1) lymphoid; (2) submucous; (3) subaponeurotic; (4) prevertebral. Although suppuration arising in the lymphoid tissue of the pharynx is by far the commonest seat of infection, it is seldom that we find any large collections of pus in this layer of the pharyngeal substance. In acute lacunar tonsillitis the crypts may contain pus which either confines itself to the separate lacunæ or spreads as a false membrane over the tonsillar surface. Suppuration originating in the submucous tissue of the pharynx is the form which most often presents itself to the surgeon, and is best exemplified by peritonsillar abscess. The most prominent symptom in all submucous affections is dysphagia. This is due partly to the presence of the swelling, but mostly to the pain caused by pressure on delicate nerve endings. Trismus is also largely reflex in order to prevent pain. To suppuration occurring in the space between the pharyngeal aponeurosis and the prevertebral fascia some writers would confine the term retropharyngeal abscess. The term subaponeurotic suppuration would include not only an abscess originating in the deep cervical glands and presenting at the back of the pharynx, but also the particular form of submaxillary phlegmon known as angina Ludovici, while it would exclude an abscess the origin of which was due to caries of the cervical vertebræ or caseation in the postpharyngeal gland. Prevertebral suppuration is that with which the name of retropharyngeal abscess is almost always associated in the mind of the genefal practitioner.

Acute Myelitis with Optic Neuritis.—E. F. Clowes reports the history of a case characterized by an acute ascending paralysis, commencing with indications of meningitis in the form of acute pain and spinal rigidity. Vision was impaired on the following day, and on the day after this evidence of slight papillitis, more on the right side, was observed. The upper limit of hyperesthesia was one inch below the nipples. On the ninth day of illness the breathing was almost entirely abdominal, but the arms could be moved apparently without any loss of power. On the fourteenth day marked dysphagia set in, and the patient died while attempting to swallow fluid.

Dietetic Treatment of Diabetes.—P. J. Cammidge states that when working out a diet for a diabetic it is important to bear in mind that he must be supplied with approximately 34 or 35 calories per kilogram of his body weight, and that these must be contained in materials which experiment shows he can utilize. It is therefore necessary to ascertain, first, how much, and what kinds, of carbohydrate can be used with safety to supply the needful energy; secondly, what amount of protein is required to maintain nitrogenous equilibrium; and, thirdly, how much fat must be added to the diet to make up the balance of energy required. The amount of carbohydrate that can be safely allowed is worked out by adding known quantities of various carbohydrates to a carbohydrate-free diet and watching the effect on the urine. If the patient has a low coefficient of excretion, the output of ammonia is not high, and nitrogenous equilibrium is well maintained—that is to say, if it is a mild case—he should be put upon a diet containing about 3 ounces of bread, which corresponds to about 47 grams of added carbohydrate. If the urine is found to be free from sugar upon this, the daily amount of bread is gradually increased until glycosuria reappears. If, on the other hand, 3 ounces of bread are sufficient to cause sugar to appear in the urine, the amount is gradually reduced until either the glycosuria ceases or a carbohydrate-free diet is reached. In the former case, as in the first instance, the limit of tolerance for bread is that amount which just falls short of producing glycosuria. In any case it is generally advisable to place the patient on a diet containing no added carbohydrate for a week or two, when his tolerance is again tested. In most cases it will be found to have increased, and may in some instances approach the normal. It is now tested for other forms of carbohydrate by adding weighed quantities of these to the "carbohydrate-free" diet on separate days. Finally, a mixed diet containing a little less carbohydrate than has been found to be the toleration limit, and calculated to yield the requisite number of calories, is worked out from these data.

Immediate Results of Sanatorium Treatment.—J. A. D. Radcliffe states that with sanatorium treatment alone one can only reckon on 20 to 25 per cent. of all cases losing their bacilli as an immediate result of the treatment. When a combination of tuberculin with sanatorium treatment is adopted, at least 50 per cent. of the cases will lose their tubercle bacilli. The earlier the cases come under treatment the better the results. This is very strikingly shown in the tables in which the cases are considered in groups according to the stage of the disease. A comparison of the immediate results is so much in favor of tuberculin that it is difficult to understand the opposition to its employment, both in treatment and diagnosis

British Medical Journal.

March 16, 1912.

Serum and Vaccine Therapy in Connection with Diseases of the Eye. C. W. G. Bryan.
An Address on Cases Illustrating Some Intracranial Conditions of General Interest. S. Lodge.
A Fourth Report on Experiences with Spinal Analgesia in Reference to 2,354 Cases. A. E. Barker.
Subdural Abscess, Thrombosis of the Lateral Sinus, and Diffuse Osteomyelitis of the Skull Bones Treated with Vaccines; Recovery. T. H. Butler.
Nasal Obstruction Due to Osteomata of the Posterior Nares. F. P. Sturm.
Notes on Arthritis. J. R. Collins.
Boracic Acid Poisoning. J. H. Sanders.
A Case of Vegetable Gastrolith. P. S. Hichens and N. B. Odgers.

Vaccine Therapy in Diseases of the Eye.—C. W. G. Bryan states that in recent years the two most important methods of dosage which have been employed in using tuberculin in eye disease are: (1) Wright's method, commencing with a small dose, 1/80000 to 1/10000 milligram, gradually increasing the dose over a long period of treatment with about ten days' interval between each inoculation, the dosage being regulated by estimations of the opsonic index, and (2) von Hippel's method of treatment with tuberculin T.R., commencing with an initial dose of 1/500 milligram, repeating the inoculation on alternate days, increasing each time by 1/500 milligram until 1/50 milligram is reached; after this the dose is increased each time by 1/50 milligram up to 1/5 milligram; then by 1/10 milligram until a dose of 1 milligram is reached. During the treatment the temperature should not rise above 100° F.; if it does so, the previous dose, or a smaller one, is repeated until there is no rise of temperature after the inoculation. The author has used Wright's method, regulating the treatment partly by estimation of the opsonic index, partly by observation of clinical signs and symptoms, temperature, amount of pain and photophobia, effect on vision, and conjunctival injection. The results in the treatment of tuberculous conjunctivitis are good, provided the treatment is persisted in over a long period. The author has treated one case of tuberculous interstitial keratitis with excellent result. Others have reported favorable results in the treatment of scleritis, sclerokeratitis, and phlyctenular ophthalmia. In internal tuberculosis of the eye the results of treatment by vaccine are good, especially where the iris is the diseased tissue. The iris is favorable for treatment because it has a good blood supply. In tuberculosis of the fundus, where the supply is poor, treatment has to be prolonged and is less successful.

Some Intracranial Conditions.—S. Lodge reports a case of extradural abscess over both frontal lobes, resulting from traumatism. There was a Pott's puffy tumor over the right frontal region. Operation relieved the cerebral symptoms, but death resulted from chest complications. There is also reported a case of tic douloureux completely cured by extirpation of the sensory root of the Gasserian ganglion. The third case reported is that of congenital hydrocephalus in which recovery followed the drainage of both lateral ventricles. Another case was that of internal hydrocephalus simulating tumor of the right occipital lobe, cured by drainage of the lateral ventricle. In addition to other cases, the author reports five cases of hyperpituitarism. From the latter he concludes that partial hypophysectomy is indicated in all acute cases of acromegaly. The number of successful operations is now considerable, and acromegaly is rarely, some authorities say never, caused by malignant growths. In chronic cases of acromegaly, with considerable remissions and an absence of eye changes, the patients should be encouraged with the hope of a possible cessation of the disease; symptomatic treatment should be adopted; and, should eye changes occur in the chronic form, Cushing's internuscolotemporal method of decompression is indicated to avert the onset of blindness.

Spinal Analgesia.—A. E. Barker records the results of his experience with this method in 2,354 cases. The injection fluid consists of stovaine 5 parts, glucose 5 parts, and distilled water 90 parts, all by weight. It is as nearly as possible isotonic with the blood, and has a specific gravity of 1,023, as against that of the cerebrospinal fluid, which is 1,007. Injected slowly through the hollow cannula into the dural sac it remains, being heavy and slightly viscid, to a large extent unmixed with the cerebrospinal fluid, and seeks in a thin stream the lowest level it can find, where it pools and continues for a long time undiffused, as proved by experiment. The average dose of stovaine was 5 centigrams—that is, 1 cubic centimeter of the 5 per cent. solution. Very rarely was this raised to 6 centigrams; often it was reduced to 4 or even 3. Except for perineal and rectal cases, the lateral position was the rule, and great care was taken in regulating the curve of the spine, with the head raised on a small hard bolster made for the purpose of a definite height. In introducing the hollow needle the aim of the operator should be in every case to strike the dural sac exactly in the middle line. Moreover, the needle in entering the sac should always have its opening turned toward the patient's head.

Boracic Acid Poisoning.—J. H. Sanders reports a case of this condition resulting from the use of rectal irrigations of boracic acid solution in the treatment of dysentery. The symptoms were a rash resembling a bromide rash, delirium, and feeble pulse. This case illustrates the sudden onset of symptoms without any warning. It shows also the long duration of the rash after all drugs had been stopped, the delirium that accompanied the poisoning, the weakness of the pulse and danger to life if they are not recognized at once and stopped. The case shows also the possibility of mistaking the hard shotty papules for variola in its later stage, and also shows the inadvisability of any one out of reach of skilled medical advice using boric acid rectal injections for dysentery.

Deutsche medizinische Wochenschrift.

March 14, 1912.

Anaphylaxis and Internal Secretion.—Schittenhelm considers the relationship of these phenomena to proteid catabolism. In bacteria from without we see the source of a heterologous albumin, otherwise a toxalbumin, which produces the anaphylactic shock or reaction, etc. The question next comes up, are there circumstances in which the individual's own catabolic products are able to cause anaphylactic phenomena? A whole series of clinical phenomena may depend upon such a possibility. At present we think first in this connection of puerperal eclampsia, which possesses analogies with anaphylactic shock, yet seems to be due to homologous albumin, unless, indeed, it is somehow dependent on diet albumin, and this to some extent appears to be the case. It does not appear that unchanged albumin is at fault whatever its source; but with the first cleavage products, whether from heterologous or homologous albumin, we are dealing with toxic material. Peptones of any origin set up a characteristic syndrome of intoxication which closely resembles the anaphylactic reaction. Typical of the latter is spasm of the bronchi, and this may be induced at will in guinea pigs by merely injecting peptones. The bacterial toxins have usually been spoken of as albumoses, but before we can set down anaphylaxis straightway to albumoses or peptones it will be necessary to test all products of proteid decomposition in this respect. This has been summed up in the past under the familiar term ptomaine poisoning, and the syndromes caused by peptones and ptomaines have been largely the same. According to the author, the diamines, which are equivalent to ptomaines, cause no more nor less than peptone poisoning. Naturally the constitutional effects in so-called ptomaine poisoning must not be confounded with the irritant local effects of eating decomposed food, the latter representing the local shock, which is comparable with the local reaction in cholera, dysentery, typhoid, paratyphoid, etc. Under normal conditions toxic decomposition products are detoxicated largely by pairing; while an anaphylactic shock represents not one reaction, but a summation of many reactions, each due to some unsatisfied clearage product. Naturally an individual is seldom poisoned by his own catabolic products, but when this occurs the symptoms should not vary essentially from those due to heterologous albumin. In regard to hormones or internal secretions which are produced in certain organs and induce physiological and under certain conditions pathological changes in other organs these should consist of catabolic products of tissue albumin, and chemically these substances should be closely allied to soluble clearage products. While secretin has not yet been isolated, a substance with similar physiological action has been obtained in betaimidazolylethylamin from the ox's small intestine. In composition and action such substances resemble the active principle of ergot. In other words, analogies are at once apparent between the composition and activities of three great classes of substances: certain poisonous diamines or ptomaines, certain so-called internal secretions, and drugs having an arsenic component.

Inheritance of Disease.—Pick continues his studies along the line of Mendelian inheritance of disease and has aroused much interest among numerous colleagues. On the one hand, Mendelism must be studied from the viewpoint of familial diseases, the number of which is constantly increasing. Since many newly described diseases have a strongly familial incidence one might at first sight suppose that new types of disease originate in this manner. From quite another point of view we should study the incidence of disease in the progeny of known blood relatives, as well as in that of a mixture of races. A third study is double or bilateral heredity, which naturally stands in close relationship with consanguinity. The subject of equivalents complicates this study since a metabolic disease may be manifested in a number of different ways, as may also a psychoneurosis. In order to obtain data as to recessive qualities a very large material is necessary including not only three or four generations, but many individuals in the later ones. Even in tracing dominant characters many obstacles are encountered, such as a small number of offspring and the sex element. Once Mendelism can be proved in a stock which is suitable for analysis, its presence can be predicated in other stocks.

Insurance Medicine.

LIFE INSURANCE AND THE CONSERVATION OF HUMAN LIFE.*

By J. S. LANKFORD, M.D.,

SAN ANTONIO, TEX.

MEDICAL DIRECTOR SAN ANTONIO LIFE INSURANCE COMPANY.

Life insurance companies have been looking backward for three or four decades and insuring lives upon the estimates based upon the classified experience tables. These actuarial investigations and reports have been an invaluable aid in selection and great saving in mortality. Actuarial study should not only be continued, but prosecuted with increased vigor and intelligence. We should face about, however, and look to the future.

It seems strange indeed that life insurance companies with so much brains involved in their management, have so long overlooked the immense possibilities of prolonging the lives of policy holders and increasing dividends by attention to the conservation of human life. Stockholders want dividends and policy holders desire long life. Why not add to longevity and accomplish both? It can be done by proper control of sanitary conditions and by teaching policy holders how to live.

Scattered efforts have been made recently by some progressive companies, but there should be universal and united effort. This is preeminently a day of organization and a strenuous endeavor should be made to interest all sound and progressive companies until there is a general movement, and then all such work should be assembled and directed by a *life insurance board for the prevention of disease* to be established in Washington in close friendly relationship with the government departments, but in no way connected with the government. Such a board could be manned by great leaders in science, engineers, sanitarians, and competent clerical forces with proper equipment that would accomplish some marvelous results.

The duties of such a board would be deep scientific research in biology, pathology, and the cause of disease; careful study of the most scientific disposal of sewage and pure water supply in abundance; investigation of local epidemics by experts, and close cooperative efforts with constituted health authorities for relief; educating the public in sanitary matters by stereopticon lectures, reaching especially our twenty million impressible school children; cooperation will all organizations for the benefit of public health, and especially by teaching the policy holders of interested companies the laws of longevity by a well edited monthly publication.

One very easy and powerful method of education would be to keep several pleasing lecturers in stereopticon lecture work in schools, showing how typhoid fever, malaria, tuberculosis, hook-worm, and other infectious diseases may be prevented. These lectures are interesting and there is no difficulty in gaining access to the schools. Such valuable men as Hiram Messenger could be kept on the road investigating local conditions that affect human life and encouraging improvement. The field of usefulness of such an organized force would be continually revealing new possibilities. A plan could be easily worked out for an efficient force and proper equipment, and a limited amount per year, subscribed pro rata by interested companies according to their size, would bring back enormous returns in a few years in the saving of mortality.

It seems to me that the American Life Convention with its well known economy and progressive policy should be interested in such a proposition. Life insurance companies would become public benefactors, save much suffering, and add to the sum of human life and happiness, while operating in their own selfish interests.

For many years I have been interested in the prevention of disease for humanitarian reasons, but I have been impelled to present these thoughts in the interest of insurance after a personal investigation of the marvelous sanitary work done by Gorgas in the Canal Zone. Colon has a population of 10,000, but those in the city of the dead number 167,000. All of that part of the isthmus was formerly a seething mass of rottenness and death was undisputed king. Now this unhealthiest of all countries, under most adverse climatic conditions, has been made the healthiest known part of the world, with a death rate of less than four per thousand among white employees and at a cost of one cent per day a man for the prevention of disease.

This will indicate in a relative way what insurance companies might accomplish in promoting the longevity of policy holders by well directed efforts.

*Read at the midwinter meeting of the Medical Section of the American Life Convention, held in San Antonio, Texas, February 28-March 1, 1912.

French Statistics of Accidents to Workmen for the Year 1911.—In the *Journal Official* the following statistics regarding accidents in the various professions are given and may be of use for rating on hazardous occupations in life insurance: The total number of accidents registered was 6,463; 513 were fatal accidents, and of the others 24 per cent. produced permanent incapacity for work, and 5.91 per cent. caused partial permanent incapacity. The fatal accidents occurred in the following occupations: 67 deaths amongst miners and salt mine workers; 19 deaths in stone pits and quarries; 16 among employees in chemical manufactories; 28 deaths among metal workers; 101 in builders; 46 deaths from street accidents, etc.; 74 deaths among railway employees; 12 deaths in those employed in shipping and harbor work.

Operations on the Ear in Relation to Life Insurance.—F. Röpke notes that a great many expressions of opinion have been registered in regard to the important problem as to whether individuals who have undergone the radical operation should be recommended as acceptable risks. All observers are unanimous that no such applicant should be accepted until the primary ailment, namely, the aural suppuration, has been cured. Politzer is even opposed to the acceptance of cases that have been cured by means of the radical operation, on account of the danger of recurrences. On this point Bruhl points out that recurrence may take place many years after a case has healed. Further experience is necessary before the question can be decided whether cases radically operated upon can be accepted, at any rate, two years after the operation. Lermoyez and Boulay maintain that true bony recurrences are extremely rare. Most of the instances are cutaneous recurrences, which as a rule are quite harmless. These authors favor acceptance of the risk, provided the case has not been one of tuberculosis or of cholesteatoma. In the latter two instances they would require a postponement for two or three years after complete cure has resulted. Burger favors the acceptance of applicants who have submitted to the radical operation, but only at an increased premium. On the other hand, Marcioli and

Grunert favor an unconditional acceptance if complete cure has taken place. Zemann and Levy note that the various companies, according to their experience, take a varying attitude with reference to this subject. Zemann alludes to two cases that were rejected by one company but were accepted by another without increased premium.

In order to get more light on this subject the author addressed himself to Professor Florschutz, the medical director of the Gotha Life Insurance Company. The latter stated that just as carefully as the company regarded every case of aural suppuration and demanded that this should be definitely arrested, just as greatly, on the other hand, did it value the treatment by the otologist. Without further question, and at a normal premium, the company accepted an applicant who presented the aurist's certificate that suppuration had been arrested and that there was no prospect of future danger. This attitude was the same for all cases that had submitted to the radical operation, whether this was for an acute or for a chronic otitis media. The question now presents itself: What cases are to be regarded as cured? The author answers this by stating that cure has taken place in all cases in which smooth epidermization of the bony canal has occurred. The author does not hesitate to characterize those cases as cured from the life insurance viewpoint, in which, with an otherwise smoothly covered cavity, epidermization of the tubal orifice has not taken place. The accumulations of mucus starting from the Eustachian tube are easily set up, but have no significance so far as the outlook of life is concerned, principally because in the case of applicants for life insurance one has to deal almost exclusively with individuals belonging to the better classes, who would naturally be expected to keep the ear from becoming completely stopped up with the discharge. Naturally, a prerequisite to acceptance in these cases is that the individual is otherwise in good physical condition.

If at the radical operation it was necessary, on account of labyrinthine suppuration or intracranial complication, to enter the labyrinth or cranial cavity, this circumstance should not weigh against the acceptance of the risk, provided that the applicant has been completely cured, both subjectively and objectively. However, in this case, repeated and careful examination is necessary, particularly if one has not treated the individual before. It is also necessary to bear in mind that the applicant might minimize or even deny any subjective difficulties in order to be accepted. In borderland cases the companies protect themselves by granting short-term insurance or demanding an increased premium. In the case of simple operations on the ear, such as paracentesis of the drum membrane, the removal of polyps, and extraction of malleus or umbo, which operations are undertaken for the relief of acute or chronic suppuration, the broad rule applies: No acceptance until the discharge has been completely arrested.

Burger and Treitel have pointed out that high degrees of deafness may follow the radical operation, particularly if this has been performed on both sides, and that this deafness exposes the individual to the danger of accident, which danger must be considered in accepting the risk. Florschutz of the Gotha Life Insurance Company states that it is immaterial whether deafness has remained or not, since the company does not take account of all possible accidental dangers. In the case of operations undertaken for lupus or for a malignant growth of the outer ear the applicants are generally rejected, even though the disease has been circumscribed, and even though several years have passed without a recurrence.—"Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege."

Rheumatism in Relation to Social Condition and Occupation.—A. Grotjahn states that the rheumatic diseases have not received sufficient attention from pathologists, owing partly to the scarcity of anatomical lesions and partly to the slight menace to life in all cases excepting the acute infective forms and their sequelæ. Nevertheless, the rheumatic diseases, even in their mildest manifestations, have an eminent social significance, since they are the most common of disorders and for a longer or shorter time disable a countless number of individuals. Arthritis deformans with its crippling effects must be considered apart from the ordinary rheumatic affections. Particularly lamentable are the effects of this polyarthritis in individuals belonging to the working classes. The older clinicians were so impressed with this association that they designated the entire clinical picture as arthritis pauperum; although this disease is found in all classes of society, nevertheless the helplessness and misery accompanying it are most conspicuous among the poor. According to the Leipzig morbidity statistics, among 100,000 males who were insured and who were observed for a period of one year there were 590 cases of chronic articular rheumatism, of which four ended fatally, and there were recorded a total of 19,020 days of illness. Among a similar number of insured women there were 277 cases of chronic rheumatism, with two deaths, and a total of 9,970 days of illness. Classified according to occupation, the figures obtained for 100 cases of muscular and articular rheumatism were as follows:

	Age 15 to 34	Age 35 to 54
Stone masons	4	8
Brewery employees	4	12
Cement and lime workers	10	20
Employees in paper factories	7	11
Employees in wood industries	4	7

These figures show the greater morbidity at the higher age period, which is also the case in other social groups.

Articular rheumatism is responsible for considerable invalidity. In 1,000 cases of illness in men there were 62 cases of articular rheumatism and gout, while for women the figures were as high as 85. Muscular rheumatism, in spite of its relative harmlessness, incapacitates yearly an enormous number of individuals. The Leipzig statistics show that of 100,000 males observed for one year there were 3,316 cases of muscular rheumatism with a loss of 59,099 days of work. The figures for women were 1,816 and 38,708 respectively.

The nature of the rheumatic diseases is still almost completely veiled in obscurity, and the measures that have been taken to combat them are of doubtful efficacy. Rheumatic diseases are fairly evenly distributed throughout the different classes of society, so that it would appear as if the etiological factor is to be sought in some unknown constitutional predisposition. But the working classes suffer relatively more than the well-to-do, because of the absolute dependence upon the functional integrity of the muscles and joints.—"Soziale Pathologie."

Surgical Diseases of the Larynx in Relation to Life Insurance.—F. Ropke quotes Florschütz to the effect that life insurance companies look with suspicion on applicants who have been operated upon for neoplasms of the larynx. Even applicants who have been operated upon for new growths of the vocal cords, even though these have been proved to be benign both clinically and on pathological examination, must be subjected to prolonged postponement. If, after this time, the diagnosis of benignancy is confirmed, the risk may be accepted. Previous operations performed for acute diseases of the larynx furnish ground for rejection only if pronounced stenosis has remained. It goes without saying that applicants who have been operated upon for tuberculous disease of the larynx must be rejected—"Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege."

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON PEDIATRICS.

Stated Meeting, Held March 14, 1912.

DR. WILLIAM SHANNON IN THE CHAIR.

Intestinal Implantation of the Bacillus Lactis Bulgaricus in Certain Intestinal Conditions of Infants, with Report of Cases.—Dr. RALPH OAKLEY CLOCK read this paper, in which he stated that he had used buttermilk as a dietetic treatment for malnutrition, enteritis, etc., but that the results obtained had not been notably favorable. The beneficial effects of buttermilk as an infant food had been due to the large amounts of soluble proteid furnished in a finely subdivided form. The *Bacillus lactis bulgaricus* had been found to exert a most pronounced effect upon the putrefactive bacteria and was the only lactic acid bacillus known that would survive ingestion, reach the large intestine, and continue to live there creating nascent lactic acid. The author had experimented with various preparations supposed to contain the *Bacillus lactis bulgaricus*, but secured no definite results; most of the preparations on the market consisted of paralactic bacilli. A pure culture of the *Bacillus lactis bulgaricus* had been imported through Johns Hopkins Hospital and this culture was dried and mixed with milk sugar and compounded into a tablet. The writer reported the results obtained with this new method of treatment in bottle-fed babies. Although some of the cases were of the most severe type of gastrointestinal disturbance, a decidedly favorable result followed in every case. The gastric symptoms quickly disappeared, the toxemia subsided, and the mucus and blood disappeared from the stools. The indigestion was relieved and the stools became normal on the third or fourth day and no return of the intestinal condition followed in any case. The treatment consisted solely in the administration of the tablets containing the pure culture of the *Bacillus lactis bulgaricus*. The good results obtained by this treatment encouraged the writer to continue this treatment without changing the diet and thus test the reliability of the bacilli as a means of combating the intestinal putrefaction. The writer summarized as follows: The cases varied in age from five weeks to ten months. There were two cases of enterocolitis, 20 of gastroenteritis, five of which were mild, nine severe, and six toxic. The duration of the gastroenteritis was of from one to five days' duration prior to instituting treatment in the mild forms, from one day to two weeks in the severe types, and from one to two weeks in the toxic forms. The two cases of enterocolitis had resisted other methods of treatment, but quickly responded to the implantation method, and a decided improvement followed in every case within twenty-four hours after beginning treatment. By the end of a week, in spite of previous loss the weight had increased, on an average, four and one-half ounces. There was not a single failure or relapse. One of the great advantages of this method was that it was not attended by any untoward effects. Twenty tablets had been given in twenty-four hours to infants five or six weeks of age. Another advantage of the method was that it did not interfere in any way with the diet of the baby. The diets used during the treatment consisted of condensed milk, top milk formulæ, modified milk with Mellin's food, whole milk and barley water, peptonized milk, whey and dextrinized gruel, and modified milk with milk sugar. Vomiting invariably subsided on the second day. This was explained by the fact that after the putrefactive process in the intestine had been controlled, the reflex action in the stomach quickly subsided. The temperature which had been present in all the cases of toxic gastroenteritis and in the enterocolitis cases quickly dropped to normal under the implantation treatment. After the stools became normal, the dried culture was administered three times daily for a period of one or two weeks. The negative results previously obtained were unquestionably due to the small number of the true *Bacillus lactis bulgaricus* present in the tablets. The results obtained were entirely due to the action of the *Bacillus lactis bulgaricus* as no other therapeutic measures were employed, nor was the diet altered in any case.

Dr. WALTER LESTER CARR said that the paper was interesting because it contained many clinical suggestions. Buttermilk was valuable for a short time in feeding these babies, but then it became necessary to increase the number of calories by adding milk or cream. They had been making progress during the past few years in the use of the lactic acid bacillus and better results were being obtained. He could not, however, see any particular reason for continuing milk, a culture medium, when it was the source of the trouble. Some babies had an idiosyncrasy for milk when they were suffering from intestinal infections. He believed that the food that caused the disturbance should be cut off. The author of the paper had stated that the time required to treat these babies was about one week; in most cases the period was shortened by omitting the milk diet. Many cases would improve when only water was given after the intestines and stomach had been cleaned out. Dr. Carr was willing to assent to beginning the treatment of subacute and chronic cases with the lactic acid bacilli and with a limited quantity of milk, but he could not subscribe to the continuance of a diet that was the cause of the infection in an acute case. At the present time it was a difficult problem to get the best cultures; this was now a commercial affair and many of the preparations on the market did not come up to the standard.

Dr. THOMAS S. SOUTHWORTH said that at the present time their ideas might be said to be in a state of flux concerning summer diarrheas. They had two schools, those who would stop giving proteids and give carbohydrates, and those who would eliminate the carbohydrates and give massive doses of protoid casein; to these was added Dr. Clock's view that they might continue the customary diet provided they implanted lactic acid bacteria in the intestines to crowd out the putrefactive bacteria, but it was possible that the transformation of the carbohydrates by the lactic acid bacilli might tend to prevent their being split up into by-products which were more irritating to the intestine.

Dr. L. E. LAFETRA said that the paper was very suggestive and that he admired Dr. Clock's courage in continuing the use of the high fat mixtures in these cases of summer diarrhea. It seemed to him that the length of time the babies were under the lactic acid bacilli treatment was rather long when one considered the results obtained. He believed that other methods might be employed in addition, especially changing the diet. Dr. LaFetra asked Dr. Clock about the loss of weight in these cases and also how the lactic acid bacilli worked when given in condensed milk, which contained so much cane sugar. It was difficult to understand the effect of these tablets on the vomiting in some of the babies. At the Babies' Hospital several years ago implantation of the lactic acid bacilli in the rectum was used in connection with pure cultures given by the mouth. The results of this treatment were so bad that it was not continued the second year. Dr. LaFetra's impression regarding the advantages of the lactic acid bacilli was a most favorable one, but he had not used the same sort of culture as Dr. Clock. His experience with the lactic acid milk had been fairly satisfactory, but his results with the use of lactone milk, made at the hospital, had not been so favorable. He had obtained the best results in diarrheal cases from the use of protein milk. One could use lactic acid milk, made with pure cultures of the *Bacillus lactis bulgaricus*, and get good results in these cases.

Dr. GODFREY R. PISEK said that about five years ago he advocated the use of lactic acid bacteria in the treatment of diarrheas in which there were so many of the intestinal flora propagated. Now, after a thorough trial, he believed more in the old-fashioned method of treatment with calomel, castor oil, and the use of the temporarily restricted diet. Such a trial as Dr. Clock had made might be possible in hospital wards where scientific data could be obtained. He was surprised at the uniformly good results obtained which he would not have thought possible except in private practice. There was no doubt in his mind but that he had obtained some beneficial results by the implantation method, not in acute cases, but in the subacute and chronic ones, such as ileocolitis. By giving large quantities of lactic acid bacilli to these infants who had been previously starved the intestinal flora became changed and this might give the child a greater chance to make a recovery.

Dr. RALPH OAKLEY CLOCK, closing the discussion, said that the reason he had not changed the diet in these cases was to test the reliability of the *Bacillus lactis bulgaricus* as a means of combating putrefactive changes in the intestine. He presented the paper simply to show the results of his preliminary tests. In answer to Dr. LaFetra's question regarding the loss in weight, the Cuban case of enterocolitis had lost nearly two pounds in four weeks previous to the time when he first saw the child; during the time that the patient was under treatment with the lactic acid bacilli there was marked improvement and gain in weight, though there was an initial loss of three ounces. The favorable result that followed in the case fed on condensed milk was explained by the fact that the *Bacillus*

acidi bulgaricus flourished best in a medium containing carbohydrate medium, and although the sugar was not the same as that used to introduce the bacilli into the system, the two organisms were not antagonistic. As to the rapidity with which the gastric symptoms were relieved, the lactic acid bacilli, of course, had no direct action upon the vomiting, but after the putrefactive process in the intestines had been controlled the gastric symptoms which were reflex subsided.

The Pathology and Treatment of Chronic Stenosis of the Larynx Following Diphtheria.—Dr. Henry Lowndes Lynah read this paper in which he considered six different types of chronic laryngeal stenosis following diphtheria. (1) The nervous type which was accompanied by a marked element of fear and in which there was often a marked spasm which made extubation difficult. Frequently when the tube was raised it would slip off the jaw of the extractor and be sucked back into the larynx. When the tube was finally removed there would be a violent spasm necessitating reintubation. This condition was overcome by anesthesia, though the spasm might recur when the patient awoke. (2) The type in which there was spasm without the nervous element, a condition which was due to long-continued wearing of the tube, causing a temporary functional disuse of the intralaryngeal muscles, especially the separators or abductors of the vocal cords, the posterior cricoarytenoids. This condition did not come on suddenly as in the nervous type but usually after the patient had been returned to the ward breathing naturally, when four or five minutes later a spasm would occur which would necessitate reintubation. The spasm might be delayed for several days or hours or it might come on during sleep. (3) A type with marked polypoid growth at the base of the epiglottis and the ventricular bands, which fell together as the pressure of the tube was released and caused obstruction which might necessitate immediate reintubation. Clinically this type simulated the spasm type. These patients would breathe under anesthesia, though with difficulty. (4) The hypertrophic subglottic type, in which the stenosis was slow and gradual and which was accompanied by both inspiratory and expiratory dyspnea, and made reintubation necessary sooner or later. The contraction in these cases usually occurred at the cricoid cartilage and it might involve the entire lumen of the larynx. These slow contracting hypertrophic types were very difficult to reintubate and it was extremely dangerous to wait until grave stenosis supervened. (5) The cicatricial type, which was due to traumatic or surgical interference embraced the following classification: (*a*) Tracheotomy made imperative when it was impossible to intubate or when false passages had been made at the primary intubation; (*b*) tracheotomy to save life in the persistent autoextubation stage or in the extreme grade of hypertrophic contraction; (*c*) cicatrices resulting in chronic tracheal cannula cases, accompanied by atresia of the disused larynx above the cannula, and by polypoid hypertrophy about the cannula and on the posterior wall; (*d*) laryngotomies for the purpose of dissecting the hypertrophic connective tissue. (6) The atrophic type occurred in a few cases which had recovered after long treatment, but suffered with thick sticky mucocrusts which obstructed the larynx. In this type there was loss of voice and an extreme grade of dyspnea. The basis for the pathology of this condition was laid in the beginning with the acute diphtheritic exudation and the primary intubation. The tube virtually acted as a foreign body causing pressure on the laryngeal soft parts and as it rode up and down or anteriorly and posteriorly under the acts of coughing and swallowing, ulcerations were produced which added to the necessity for prolonged intubation. When these pressure ulcerations were of sufficient degree and occurred at the cricoid cartilage they caused necrosis with absorption of the whole of the cricoid ring with the frightful sequelæ of persistent autoextubation. Any involvement of the recurrent laryngeals was extremely rare. This autoextubation stage was one of the most frequent causes of subacute and chronic cases, and were it not for pneumonia, which usually carried off these patients, the percentage of chronic stenosis would be considerably greater than one per cent. The cicatricial types seldom occurred singly, and all required prolonged intubation in order to effect a cure. For the nervous and spasm types an extremely narrow-necked tube should be used that would allow for lumen. Dr. Lynah said that he had devised a tube by taking out the posterior portion below the head directly into the lumen; the patient was thus enabled to breathe and at the same time medicine was given to the cords and allowed the posterior cricoid arytenoid muscles to work by taking pressure off the muscle. When polypoids were the cause of spasm, a wider necked tube would have to be substituted in order to press out these masses. A tube with a large head was also necessary. For the hypertrophic type gradual dilatation with special tubes measured in millimeters with increasing diameters should be used. The tube should dilate antero-posteriorly as well as laterally; the writer's cigar-shaped tube accomplished this purpose. In some cases excessive dilatation would cause spasm. The treatment of the cicatricial type was also by dilatation, though when the tracheal fistula was low a special tube with the greatest diameter from the retention swell downward should be used. In cases of chronic stenosis from long wearing of the cannula and closure of the larynx above, dilatation should be accomplished from the tracheal fistula upward by means of sounds and then a suitable dilating tube introduced. The tube used in these cases should be a post tube which had a device that could be screwed into the tube to prevent its being dislodged during the act of coughing. The tracheal fistula should be curetted and all polypoid growth removed, the edges scarified and the wound closed about the post. This tube should then be worn for a month when it should be changed for a larger dilating tube. The author had abandoned laryngotomy in these cases for the reason that this operation added a pure cicatrix to the already complicated pathology. He had had fairly good results with these cases, though, owing to infection, the healing of the wounds was usually by granulation. The atrophic type with the thick mucous crusts should be treated by intralaryngeal medication after a cure had been effected. For this purpose he used Mandel's solution, iodine petrogen, or the internal administration of the iodides and steam inhalations.

Dr. William P. Northrup said he was present because he thought he was the oldest living intubationist. He said that he was doing autopsies at the Foundling Hospital at the same time that Dr. O'Dwyer was perfecting his intubation tubes, and he told of his association with Dr. O'Dwyer in this work. At that time Dr O'Dwyer, Dr. Brown, and Dr Northrup were the only ones doing intubation work. He had had the honor of reading the first paper on the subject, written by Dr. O'Dwyer, before the British Medical Association. Dr. Northrup expressed himself as greatly edified by the work done by the writer of the paper and said he felt that they all appreciated the value of this work.

Dr. John Rogers commended Dr. Lynah's work along this line. He said that few men understood the cause and the treatment of laryngeal stenosis. He thought that all of these cases could be cured by this treatment and that no case of stenosis of the larynx should be given up as hopeless. His experience with the metal tubes led him to look upon them as more or less dangerous, owing to their tendency to become coated with calcium material and to occlude the tube. He thought the time mentioned for treatment by Dr. Lynah was rather short. Where fibrous structures were involved he thought an average period of two years was sufficient.

Dr. Ira Van Gieson, referring to the inferior laryngeal nerve, said that its neurilemma would stand a certain amount of pressure and would accommodate itself to this pressure. However, in these instances there might be some lesion of the intramuscular twigs of this nerve while the condition of the trunk would be intact. The theory advanced by Dr. Lynah was excellent, but these were facts that should be taken into consideration.

Dr. Lynah, speaking in regard to the duration of his treatment of these cases, said that there must have entered an element of luck. Much had been written regarding the pathology, but nothing he had read had been to him at all convincing. It was a fact that the cricoid cartilage was the cause of the real trouble in these cases and not the condition of the vocal cords.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held March 18, 1912

The Vice-President, Dr. Ransford E. Van Gieson, in the Chair.

Removal of Uterus and Vagina for Complete Prolapse.—Dr. Herman J. Boldt presented a uterus and vagina removed four days previously from a patient 58 years old who, notwithstanding her advanced age, was compelled to undergo much physical exertion. Unlike most sufferers from this condition, she was the subject of considerable vesical disturbance. During the first two days the patient complained of hypogastric pain, which, in Dr. Boldt's experience, was unusual after such operations. At the present time she was doing well, and was up and about.

Ovarian Cyst with Complete Twist of the Pedicle.—

Dr. Bovee presented a second specimen, an ovarian cyst removed two days previously. The tumor, which was attached to the left ovary, had extended two fingers' breadth above the umbilicus. The interesting feature in connection with the specimen was that a complete twist of the pedicle existed without the patient's having symptoms. The tumor showed the effect of the twist in the dark color of its contents and the appearance of its walls. Yet the patient stated that she was entirely free from pain, nor was there any pain upon palpation of the abdomen when she was examined.

The Treatment of Bleeding from Gynecological Sources.—Dr. Bovee, in this paper, said that before deciding on any treatment it was necessary to first ascertain the source of the hemorrhage; otherwise one could not correct the condition intelligently. Commencing with external sources of bleeding, he mentioned varices, which he said, were a cause almost exclusively in pregnant women. Sometimes the hemorrhage was very profuse, and in two instances which he had met with the patients were almost exsanguinated. Here inspection at once showed the condition. Aside from pregnancy, bleeding could occur only from injury to a vein. This might result from scratching, and he had seen one case of this kind. Bleeding from erosion or ulceration of the vagina caused by pessaries could usually be remedied by the application of a silver nitrate solution after removal of the pessary. Having referred to bleeding in connection with senile atrophy of the vagina, he went on to speak of that due to carcinoma in this situation. Here the treatment would depend on how far the growth had advanced at the time of its discovery. If this was early, complete removal would be indicated; where this was impossible, palliative treatment. Thorough curetting should be done with a sharp curette, and afterwards acetone or iodine applied. Slight bleeding from the vaginal portion of the cervix, due to erosions, might occasionally occur after sexual intercourse, and was best treated by the application of a ½ of 1 per cent. solution of silver nitrate. Between syphilitic and tuberculous ulcerations it was difficult to distinguish except with the aid of the microscope. In the former, after the bleeding had been stopped by tamponing, specific treatment should be instituted. In tuberculous ulcerations the treatment was by curetting, followed by the use of the galvanocautery, if the ulcer were confined to the vaginal portion of the cervix. Myomata of the cervix were sometimes a source of hemorrhage. If large, their extirpation was a serious operation. If small growths were allowed to remain, the best treatment consisted of the use of copious hot douches and the internal administration of hydrochloride of cotarnine or ergot. To stop the bleeding from lacerations of the cervix resulting from delivery (the diagnosis of which could be made upon inspection and with the use of retractors) all that were necessary were one or two sutures. Hemorrhages from the body of the uterus might be divided into two classes, those in which the organ was of normal size and those in which it was enlarged. In the first of these was profuse menorrhagia without any definitely assignable cause, and this he was accustomed to treat by means of a strip of gauze medicated with 10 per cent. carbolic acid, and wrapped about an applicator syringe, which, after its introduction into the uterus, was pushed off with a forceps and allowed to remain for 12 hours. This plugging was removed by means of a string left attached to the gauze. In the second class we had hyperplasia of the uterus, which was first described by Pallea, some thirty-five years ago, under the name of "Fibrosis of the Uterus." In many of the cases nothing could be found in the endometrium. A good plan of treatment was the local application every third, fourth, or fifth day of pure phenol impregnated into an intrauterine gauze tampon, which was allowed to remain in the uterus for from eight to twelve hours. In obstinate cases a few drops of a 50 per cent. solution of zinc chloride might be employed in place of the phenol, an alkaline powder, as bicarbonate of soda, being used in the vagina to prevent corrosive action by any of the solution escaping from the uterus. For inflammatory conditions of the endometrium, curetting, followed by suitable local applications was of service. In the case of submucous myomata and of polypi of the uterus it was often almost impossible to make a diagnosis when these were of small size. When this could not be done otherwise, it was advisable to split up the cervix and make a digital exploration. If a moderate sized polypus were found, the cervical incision usually sufficed for its removal; if a myoma, the incision was extended, and the growth enucleated. Hydatid moles gave an impression of elasticity, feeling somewhat like a tight balloon to the touch. In ectopic gestation immediate operation was usually called for, and abdominal incision was always to be preferred to the vaginal. In premature separation of the placenta the patient was attacked with sudden faintness, sometimes amounting to collapse, and there was a rapid increase in the size of the uterus. The indication was to empty the latter as quickly as possible. In placenta prævia, where this was marginal, the patient, with the exercise of special care, could usually be carried to full term; but if it were central, or nearly so, the emptying of the uterus was called for. Sometimes we had to make use of tight tamponing until dilatation of the cervix could be accomplished, while in some cases vaginal or even abdominal cesarean section was indicated. When there was atony of the uterus, Momberg had recommended constriction of the trunk with rubber tubing, on the principle of the Esmarch bandage. If the patient had any heart trouble, however, this procedure was contraindicated. A myomatous uterus could be diagnosed after the expulsion of the child by means of bimanual examination. In rupture of the uterus if the rent were small, and the child still in the uterus, loose tamponing was preferable to abdominal section. With a large rent, abdominal section was imperative.

Observations Based Upon a Study of 139 Cases of Induction of Labor with the Modified Champetier de Ribes Bag.—Dr. George L. Brodhead, from a study of these cases gave the following general results. 1. Sizes Nos. 2 and 3 of the bag were most useful. 2. Accidental rupture of the membranes occurred in only 3 per cent. of the cases. 3. The great value of the bag was shown by the fact that in 90 per cent. of the cases labor was induced by the use of not more than two bags, while in nearly 70 per cent. one bag was sufficient. In only 6 per cent. was labor not induced by the bags; three of these cases being in private work and three in hospital. 4. Anesthesia for bag introduction was usually unnecessary, as shown by the fact that an anesthetic was used in only 14 per cent. of private cases and 16.6 per cent. of all cases, including hospital cases where the anesthetic was deemed advisable for clinical purposes. 5. In 31 per cent. of cases labor began at the time of the introduction of the first bag; in 70 per cent. within 12 hours after the insertion of the first bag, and in 88 per cent. within 30 hours of this. 6. The average length of time between the insertion of the bag and the onset of labor was, in primiparæ, 8 hours and 22 minutes; in multiparæ, 10 hours and 22 minutes, and in all cases, 9 hours and 41 minutes. 7. In all primiparæ the average duration of labor induced by the bag was 22 hours 9 minutes; in all multiparæ, 15 hours 52 minutes; in all cases, 18 hours 2 minutes. 8. Forty-nine per cent. of labors terminated normally and 70 per cent. normally or with the low forceps operation. 9. In 5 per cent. of cases the presentation was changed, but in only one case was the outcome affected because of this accident. 10. In 6 of the 139 cases, or 4.3 per cent., the cord presented or prolapsed, but it was to be remembered that in 63 cases labor was induced for contracted pelvis, relative disproportion, or hydromnion, and that, therefore, the accident, under any circumstances, was much more liable to occur. 11. The morbidity in private work was practically nil, and in hospital work very slight. 12. In private work the fetal mortality was about 5 per cent.; in hospital work, 11 per cent. This difference could be partly explained by the fact that private patients naturally received more individual attention, and necessarily the results were correspondingly better. 13. The maternal mortality from the use of the bag was nil. Dr. Brodhead described the technique of the introduction of the bag, and stated that of the 139 cases, 75 were at, or beyond, full term, 53 between 8 and 9 months of pregnancy, 8 between 7 and 7½ months, and 3 between 6 and 6½ months. The two chief causes for which labor was induced were contracted pelvis (41 cases) and toxemia, including albuminuria, nephritis, and eclampsia (27 cases). In one of the cases in private work in which the bags were not successful the cervix was dilated up to four fingers by means of two bags; then, as there were no pains, an attempt was made to introduce a bougie, which resulted in the accidental rupture of the membranes. Labor began in about two hours and the patient was delivered normally after a five-hour labor. In this instance the use of the bags undoubtedly greatly shortened the labor, although pains were not induced. In another case two bags dilated the cervix up to three fingers, but no pain followed until the expiration of a number of hours, when the membranes ruptured and labor began. The third case was that of a patient who had eclampsia at about 6¼ months. A bag was introduced into the uterus, and although traction was made intermittingly for some eight hours, no effect was produced. This patient was delivered by version, after *accouchement forcé*. The series of 139 cases included 75 private and 64 hospital or outdoor patients, while 48 of the women were primiparæ and 91

multiparæ. Of seven cases in which change of position occurred after bag introduction, four were in private and three in hospital patients. In the first of the private cases the position changed from L. O. A. to breech, and then to transverse, and the patient was delivered by podalic version. In the second case it changed from R. O. A. to transverse. By external version the vertex was brought over the brim of the pelvis, when the membranes were ruptured, and one hour later normal delivery took place. In the third case the change was from L. O. A. to transverse, and the same procedure was successfully employed. About twelve hours after the artificial rupture of the membranes the patient was delivered by the median forceps operation. In the fourth case a breech presentation became a transverse, but after this had been converted into R. O. A., normal delivery occurred. In one of the hospital cases, in which the child was stillborn, the change of position, from vertex to breech, was considered responsible for the death of the child, which was delivered by breech extraction. While, except in this instance, the change in presentation made no difference in the outcome, the speaker said that the possibility of the accident should be kept constantly in mind when one was using the bag method. In one of the 139 cases a curious accident happened, though fortunately no harm resulted. The patient was a multipara, and labor was induced at eight months for flat pelvis. At 12:30 p. m. a No. 3 bag was introduced, and one hour later the membranes ruptured spontaneously. No labor pains occurred, and when at 3:30 the following day the patient was examined, it was found that the bag had slipped up into the uterus, above the child's head. Traction upon the stem brought the bag down into the cervix, the first stage began at 4:30, and labor was completed normally in three hours. This accident would not have occurred if the stem had been tied to the vulva pad, as was the usual practice.

Septic Puerperal Infections.—Dr. JOHN O. POLAK read this paper. Puerperal infection, he said, was a wound infection, due to the entrance of organisms into wounds of the genital tract. It was primarily a local inflammatory lesion, which might or might not be attended by an invasion of microorganisms or their toxins through the lymphatic or vascular channels. When the invasion did take place we had a bacteriemia or an intoxication. If the patient recovered, it was because she was capable of overcoming and destroying the infecting agent. When we remembered that in the puerperal woman microorganisms were present at the vulvovaginal orifice, in the vagina, in the cervix, and even in the uterus itself, and that in a primipara the vulvovaginal orifice was almost invariably lacerated to some degree, that the vagina was frequently torn in the course of operative labors, and that the cervix remained for nearly three days a shapeless, traumatized, devitalized curtain, with its margin torn at many points, it was no wonder that infections took place. In his experience the high mortality in general practice, and especially the morbidity in puerperal sepsis, was produced by medical men, and was due to insufficient disinfection of the hands, together with a tendency to undertake operative delivery, often in the absence of any absolute indication, before complete dilatation of the passages was obtained. From midwives there was less trouble of this kind, for the reason that they did not attempt operative procedures. The primary focus in almost all postpartum and postabortal cases was within the uterus. An acute endometritis always involved the contiguous uterine muscle, with a resulting lymphatic metritis. Infection of the placental site resulted in a thrombophlebitic metritis, a dissecting metritis, an abscess in the uterine wall, or a thrombosis of the femoral or pelvic veins, with local or remote foci. Tubal infection, with resulting suppurative salpingitis, might be a complication. Fortunately, unless the infection were a mixed one in which the gonococcus played a chief part, tubal extension and ovarian involvement were comparatively rare. More frequently the infection extended, through the torn cervix, to the broad ligament cellular tissues, with a resulting parametritis; or a peritonitis might develop from extension by the lymphatics or through the tubes. Whether the infection was circumscribed or general depended on the variety and virulence of the infecting cocci and the quality, as regards resistance, of the soil into which they were introduced. When organisms were virulent, extension took place through the lymphatics or the blood channels. Lymphatic infection led to lesions in the uterine walls, pelvic connective tissue, or peritoneum. If the organisms invaded the capillaries and small vessels directly, a general blood infection would result, either as a septicemia or a bacteriemia. If they proliferated in the venous thrombi they were apt to be carried thence in septic emboli to various parts of the body, producing metastatic foci. Each case of puerperal infection should be studied individually, and an accurate diagnosis be made on the clinical, bacteriological and blood findings before any treatment was instituted. In this examination we should determine, first, whether the infection was confined to the genital canal; second, the site of the local lesions, whether in the uterus or beyond it; third, the nature of the intoxication present; fourth, what natural or individual resistance the patient had. A well-contracted uterus, with a closed cervix, should not, of course, be entered, but under other conditions a digital exploration should be made of the interior of the uterus to ascertain its contents. In putrid or saprophytic endometritis associated with a decomposition of the placental tissues, secundines, or blood clots within the cavity, and which produced general symptoms essentially toxemic in character, the uterine contents might (in pregnancies after the seventh week) be removed with the finger or a placental forceps. When the finger had demonstrated that the cavity was empty the uterus should be firmly packed with sterile gauze which previously had been soaked in pure tincture of iodine and squeezed to remove the excess of the latter. This pack was to be left in position for from twenty to thirty minutes, and after its removal no further intrauterine instrumentation or medication should be resorted to. If the cervix were found open and the body of the uterus empty and well-contracted, and if the endometrium were smooth, as was often the case, three or four days after delivery, the digital examination might be followed by a single intrauterine douche of normal salt solution. The principles of the treatment after the condition of the uterus and the extent of the adjacent local lesions had been determined might be summarized as follows: First, the destruction of the infecting organisms, or the diminution of the force of the invasion, at the site of the primary infection; second, stimulating the resisting power of the patient; third, the destruction of organisms in the blood stream; fourth, operative measures. In carrying out the first of these principles efficient drainage was a most potent factor, and it was therefore urged that the bed should be so raised that the patient would be kept in the Fowler position. In reinforcing the resistance of the patient, in addition to food and stimulation, fresh air and sunlight were of very great practical value. For the third point considerable reliance could be placed on vaccines. Polyvalent vaccine should be administered at once, and later autogeneous vaccines, which might be repeated at such intervals as the existing conditions indicated. Any operative measures which might be undertaken would, of course, be dependent upon special indications present. In conclusion, the speaker gave expression to certain axioms and mentioned certain observations which had guided him in the management of septic cases. Some of these were the following: Any intrapelvic or intrauterine manipulation made during the acute stage of a puerperal or postabortal sepsis always broke down and disturbed nature's protective barrier and permitted of the dissemination of the infection through freshly abraded or penetrated surfaces. He had learned from experience that the endometrium should never be curetted in streptococcic infection; it was only necessary to have drainage and firm uterine contraction, as the germs would be cast off with the necrosis and expulsion of the decidual remains. The curette here was distinctly mischievous, breaking down the protective wall and allowing the streptococci to penetrate the musculature and reach the parametrium and peritoneum. The danger from curettage became increased as the period of pregnancy advanced, and under no circumstances should the placental site be curetted. Digital exploration was the most rational method of learning the contents of the uterus, and instrumental evacuation of the contents of the cavity should be limited to pregnancy of eight weeks or under. After the uterus had once been thoroughly emptied the pelvis should be left absolutely alone, except for postural drainage, while every effort should be made to support the patient and increase her natural blood resistance. Exudative pelvic peritonitis might be considered as a sequel of untreated or badly treated endometritis. In the majority of instances nature was competent to localize and circumscribe the infection. Thrombophlebitis was a conservative process on the part of nature, and manipulation or examination tended to break off infected emboli and disseminate the infection to remote parts of the body. Enormous pelvic and abdominal exudates might disappear without operation, and in time enlarged ovaries, tubes, etc., were likely to resume their proper size and functions. As long as the patient's general condition improved, no surgery was advisable. If the blood serum was sterile, and the blood showed a leucocytic resistance to the infection by a relative white cell increase, the prognosis was favorable, no matter what form of cocci was found in the uterine cavity. A local exuda-

tive focus should never be disturbed postpartum as long as the patient was showing signs of improvement, unless there was definite evidence of a localized collection of pus. When such was the case the opening made should be by extraperitoneal incision. Extraperitoneal drainage of local foci should be chosen when possible, either by means of an incision just above Poupart's ligament or posterior vaginal section, and when this was impossible because of inability to determine the exact anatomical relations of the local foci, an exploratory laparotomy was justifiable in order to make an accurate diagnosis and determine upon the safest route for drainage. All operations were attended with less risk after the acute stage of the infection had subsided. Inoculations with autogenous vaccines would promise prompt results in staphylococcic and colon bacillus infections, but in that from the streptococcus, vaccine treatment was unreliable, being of value only when the virulence of the germ was attenuated or when nature had already developed some phagocytic defense.

Dr. HENRY C. COE said that it seemed to him that the tone of the papers which had been presented was too dogmatic. Experiences undoubtedly varied. Certain conditions which Dr. Boldt had described, and their treatment, were well recognized; but we met with many cases of hemorrhage, particularly in young women, which were dependent upon no condition that we were able to determine. In some such cases he had tried ligation of the uterine arteries, but this procedure had not proved of permanent value. In every instance the hemorrhage had recurred, and in one or two cases he had resorted to hysterectomy. He fully agreed as to the value of splitting up the cervix for making the diagnosis of myoma or polypus of the uterus. These were cases which gave great trouble to the general practitioner. As to the use of the modified de Ribes bag, he had not had the favorable experience of Dr. Brodhead, and he always approached this little operation with some degree of trepidation. While his mortality among the mothers had been nil, his percentage of deaths in the children was larger than that given in the paper, and in this connection he narrated two cases where the children were born dead. He conceded, however, that in some instances this method of inducing labor was essential. He could not altogether agree with some of Dr. Polak's contentions. At Bellevue Hospital they had many cases of sepsis following criminal abortion, and in most instances of this kind nature had built up such protective walls that they had no hesitation in invading the exudate present. He approved of Dr. Polak's conservative stand in regard to curetting and douching, believing his objections well taken. On the whole, however, Dr. Coe thought the reader of the last paper was somewhat too optimistic in his views.

Dr. J. CLIFTON EDGAR said he had employed Momberg's belt in three cases, and they had given him a warning. It required the utmost care to prevent syncope when the belt was withdrawn, as it caused enemia about the heart. He agreed with Dr. Polak that the physician was more apt to be responsible for puerperal sepsis than the midwife. His observations at the Jewish Maternity Hospital, where he was consulting obstetrician, had convinced him of this. He also agreed that polyvalent serum should be administered at once, on account of its sustaining effect, which gave a chance for the formation of antibodies. Autogenous vaccines could be given after the diagnosis had been established. Dr. Brodhead's experience had led him to prefer the use of the modified de Ribes bag to other methods, and probably most of us had also come to the conclusion that it was preferable. Some, however, advocated Krauss's method of introducing a catheter. As to the size of the bag or bags to be employed, he thought that Dr. Brodhead had taken the right position. While the Nos. 2 and 3 bags were not as efficient as the larger ones, with them there was less danger of a change in the position of the fetus occurring than when the larger 4 and 5 were used. The beginner in this method was apt to rupture the membranes, but with proper care there was but little risk of this. The bivalve speculum should be employed when making the introduction, and he rarely found it necessary to give an anesthetic, even in his clinic at the Manhattan Maternity. When the cervix was not sufficiently dilated to admit the bag, Krauss's method might be used, or gauze introduced, for causing dilatation. He did not believe in doing any injury to the cervix. While the uterus had been known to be ruptured by a Barnes bag, he had never seen any harm result from the rupture of a modified de Ribes bag. As to the life of such bags, some tests which he had made showed that four boilings were about all they could stand.

Dr. AUSTIN FLINT, JR., discussing the question of the induction of premature labor, said that the crux of the matter hinged on two points, namely, first, the period of pregnancy at which it was done, and, second, the condition of the cervix, irrespective of the period of pregnancy. Bags worked well in favorable cases, but not in unfavorable ones, where the time was more than a month before term or where there was a long, hard cervix. Here it was advisable to temporize, if possible, by introducing a bougie or leaving a gauze tampon in position for twelve hours or more before resorting to the use of the bag. The indications for employing the latter should always be borne carefully in mind. Unfortunately, however, these bags were now being more and more used for insufficient causes. So, too, was cesarean section done too frequently, and this was all wrong. He believed that Dr. Polak was right in urging that early exudates should be left alone; later we could open up freely. The use of iodine, as practised by him was new to him (Dr. Flint). Personally he had been in the habit of employing alcohol.

Dr. RALPH W. LOBENSTINE said that in the induction of labor in a primipara, with the cervix long and tough, and undilated, he did not think bags were as satisfactory as the introduction of the bougie into the uterus, combined with tight vaginal tamponage. In all other cases he was an ardent advocate of the rubber bag. He agreed with Dr. Flint that at the present time the induction of labor was practised entirely too frequently, and without adequate medical reasons. In resorting to this procedure in the case of a muscular woman, especially a primipara, with only a moderate pelvic dystocia, one should always keep in mind the fact that the unyielding cervical muscle, when nature had not as yet prepared it for labor, might cause more actual difficulty than the dystocia. After the complete premature rupture of the membranes he believed in starting up labor within 24 or 48 hours, as a longer delay would increase the dangers to both mother and child. One point of caution—when the bag was being filled one should always remember the possibility of pinching the cord. Speaking upon Dr. Polak's paper, Dr. Lobenstine said that the digital intrauterine exploration was undoubtedly of great value, provided that it could be carried out aseptically and with the utmost gentleness. Personally, he had been using the tincture of iodine for several years in the class of cases mentioned by Dr. Polak, and had found it more satisfactory than alcohol. He firmly believed in the value of an exploratory abdominal incision in certain doubtful puerperal pelvic infections. Without this, in some instances, an exact diagnosis as between an extraperitoneal and an intraperitoneal condition, was impossible.

Dr. SAMUEL W. BRICKNER, having referred to the small number of Dr. Brodhead's cases (6 per cent.) in which the bags failed to induce labor, and discussed what was best to be done in cases of this kind, stated that in general his own experience had been much the same as that of Dr. Brodhead. Of late he had been trying the rectal tube, as advocated by Little of Montreal, and had found it exceedingly useful. In septic puerperal infections his experience with vaccines had been different from that of Dr. Polak. Both with polyvalent and autogenous vaccines his results had been practically nil—he had not observed any benefit whatever from their use. Patients might get well, however, whether these agents were employed or not; so that it was somewhat difficult to know what value to assign to them. In cases of puerperal infection he believed that, except for vital indications, such as the removal of pus, the less surgical interference there was, the better off the patient would be.

Dr. W. H. W. KNIPE mentioned a case of gynecological bleeding which evidently depended on too much alcohol periodically. The patient had passed the menopause and he expected to find carcinoma of the uterus; but a careful examination and the use of the curette revealed nothing whatever. An extended study of the case showed that the bleeding came on whenever she indulged too freely in stimulants. In inducing premature labor his own plan of procedure was to commence with a large soft-rubber tube, inserted in a zigzag manner, and finish up with the bag, and this seemed to work very well. His results with these bags had been good, and he had found nothing to take their place. In cases of puerperal sepsis he was accustomed to employ gauze saturated with Churchill's tincture of iodine (one-half strength), which he left in the uterus for two to three hours, and follow this up with a 70 per cent. solution of alcohol. His impression was that after the germs had once got into the blood-serum we could do very little either with vaccines or anything else.

Dr. BRODHEAD, in closing, said that the reason why he took up the use of the bag was because he had ruptured the membranes (a very undesirable complication) so frequently with the bougie. He regretted that Dr. Coe had expressed himself so pessimistically. It was only by the study of a large number of cases that we could arrive at

any definite conclusion. When eclampsia or other emergency was present he was accustomed to employ both the rectal tube and the bag, but ordinarily the latter was sufficient. He believed that if induction of premature labor were resorted to in all suitable cases cesarean section would be much less frequent than at present. Earlier than the eighth month, however, the latter operation gave much the better results.

Dr. Polak, in closing, said that he made use of iodine in only one class of cases, namely, where the decomposing matter within the uterus had been removed by the finger. He never employed it in streptococcic infection or where the endometrium was smooth. The special point that he wished to make in the paper was that in every case a complete blood count and blood culture should be obtained.

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Modern Methods in Nursing. By Georginia J. Sanders. 881 pages, with 228 illustrations; cloth, price $2.50 net. W. B. Saunders Company, Publishers, Philadelphia and London.

L'Ophthalmologie du Praticien. By Dr. A. Cantonnet. 112 pages, with 50 illustrations; cloth, price 2 fr. Librairie O. Berthier, (Émile Bougault) Publisher, Paris.

Manual of Surgery. By Alexis Thomson, F. R. C. S. and Alexander Miles, F.R.C.S. Volume 1—General Surgery. 8?0 pages; with 297 illustrations; cloth; Oxford University Press, Publishers, New York.

Motive-Force and Motivation-Tracks. By E. Boyd Barrett, S. J. 225 pages; cloth; price 7/6 net. Longmans, Green & Company, Publishers, New York.

The Physiology of Faith and Fear. By William S. Sadler, M.D. 580 pages; illustrated; cloth; price $1.50 net. A. C. McClurg & Company, New York, Publishers.

A Treatise of Tumors. By Arthur E. Hertzler, M.D., Ph.D. 728 pages; with 538 engravings and 8 plates; cloth; price $7.00 net. Lea & Febiger, Publishers, Philadelphia.

Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege. By Drs. L. Katz, H. Preysing and F. Blumenfeld. 170 pages; illustrated; paper, price 12 M. Curt Kabitzsch, Publisher, Wurzburg.

International Clinics. Vol. I. 22d Series. By Henry W. Cattell, A.M., M.D. 304 pages; illustrated; cloth; price $2.00. J. B. Lippincott Company, Philadelphia, Publishers.

Autobiography of a Baby. By Thomas L. Bradford, M.D. 107 pages; illustrated; cloth; price 50c. David McKay, Philadelphia, Publisher.

Dr. J. H. Young's Rapid Calculation and Milk Modification Card. F. H. Thomas Company, Boston, Publishers.

On the Physiology of the Semicircular Canals and Their Relation to Seasickness. By Joseph Byrne, A.M., M.D., LL.B. 560 pages; cloth. James T. Dougherty, New York, Publisher.

The Treatment of Shortsight. By Prof. Dr. J. Hirschberg. Translated by G. Lindsay Johnson, M.D., F.R.C.S. 123 pages; illustrated; cloth. Rebman Company, New York, Publishers.

Practical Anatomy. Vol. I. By F. G. Parsons, F.R.C.S., and William Wright, M.B., D.Sc., F.R.C.S. 467 pages; illustrated; cloth; price $2.40 net. Longmans, Green & Company, New York, Publishers.

Practical Anatomy. Vol. II. By F. G. Parsons, F.R.C.S., and William Wright, M.B., D.Sc., F.R.C.S. 382 pages; illustrated; cloth; price $2.40 net. Longmans, Green & Company, New York, Publishers.

Sex Hygiene for the Male and What to Say to the Boy. By G. Frank Lydston, M.D. 304 pages; illustrated with 24 engravings; cloth. The Riverton Press, Chicago, Publishers.

Die Zuckerkrankheit (Diabetes), ihre Ursachen, Wesen, und Bekämpfung. By Dr. A. Sopp. 71 pages; paper, price 1.50 M. Curt Kabitzsch, Wurzburg, Publisher.

Spondylotherapy. By Albert Abrams, A.M., M.D., F.R.M.S. [illegible] pages; illustrated; cloth. Third Edition. Philopolis Press, San Francisco, Publishers.

Uber Py[illegible]en. By J. Jadassohn. Vol. I, No. 2. 60 pages; paper, price 1.80 M. Carl Marhold, Halle, Publisher.

Medical Items.

Menstruation During Pregnancy and Lactation.—A. Grosse believes that the so-called menstruation that sometimes occurs during pregnancy is really a hemorrhage, occurring at various epochs, often near the normal congestive period which would correspond to menstruation, and lasting for from a few hours to several days. The anatomical position of the ovum closes the uterine cavity in such a manner that menstruation cannot normally occur. Hemorrhage is caused by a separation of the ovum from the uterine wall, a pathological condition of the membrane resulting from low implantation of the placenta, or an endometritis. Lactation when efficiently established is never accompanied by menstruation. But menstruation does not necessarily impair the quality of the milk nor harm the child.—*Journal de Médecine de Paris.*

The Sweat Glands in Puerperal Infection.—S. Rebaudi, from a study of portions of skin taken from the axilla of cases that had died from puerperal infection, discovered a degeneration of the sweat glands concomitant with that found in the liver and kidneys. The predisposing cause of this condition is the puerperal state and the determining causes are toxins and the exalted virulence of the bacteria which, generally saprophytic, become virulent in cases of infection. All the emunctories of the body combine in an attempt to remove these poisons, and the sweat glands have an important part in this attempt. The result is a degeneration of the glands, beginning with vacuolization and ending with fatty degeneration and destruction of the epithelial lining. The same changes are found in all infected cases, the difference being only in the degree and not in the kind of lesion.—*Folia Gynecologica.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended April 6, 1912:

Places	Date	Cases	Deaths
CHOLERA			
India: Calcutta.	Feb 4-10	.	57
Madras	Feb 18-Mar. 2	35	26
Negapatam	Feb. 4 10.	..	4
YELLOW FEVER			
Brazil: Manaos	Feb. 26-Mar. 2	..	5
Pernambuco	Jan. 16-31	..	1
Mexico: Merida.	Mar 17-23.	2	..
Venezuela: Caracas.	Feb 1-15.	5	5
Macuto.	Mar 16-19	1	1
Maiquetia	Mar. 8-9.	2	1
PLAGUE			
Azores: Fayal.	Jan. 10	Still present[1]	
Terceira	Jan. 10	Still present[1]	
[1] Bulletin Sanitary Information, Brussels, Feb. 17, 1912.			
Brazil: Pernambuco	Jan. 16-31		2
Rio deJaneiro	Feb. 4-10	1	..
Chile: Iquique.	Feb. 24-Mar. 27	2	4
China: Hongkong.	Feb 11-17.	6	6
Egypt: Provinces—Assiout	Feb. 21-Mar 7	16	8
Assouan	Feb. 21-Mar. 6	3	3
Beni Souet.	Feb. 21-28	6	3
Garbieh	Jan. 25-Mar. 4.	7	2
Girgeh..	Feb. 28..	1	1
Kena	Feb. 22-Mar 7	15	8
Menouf.	Feb. 2-Mar. 7	3	1
Mineh	Feb. 2 25	8	..
India: Bombay	Feb. 11-Mar. 2	102	84
Calcutta.	Feb. 4-10.	.	26
Karachi.	Feb. 18 Mar. 2	141	119
Java Pasoeroean Residency	Feb. 11-17.	5	3
Mauritius...	Jan. 12-18	3	1
Peru	Mar. 6...	.	..
34 cases in the lazaretto at Trujillo			
South Africa: Durban	Feb. 12 21	3	2
Straits Settlements: Singapore.	Feb. 4 10	6	3
Venezuela: Caracas	Mar. 12.	1	..
West Indies: Trinidad	Apr. 3..	1	..
SMALLPOX			
Austria-Hungary: Tyrol	Feb. 11-17	2	..
Brazil: Pernambuco	Jan 16-31		64
Rio deJaneiro	Jan. 26 Feb. 24	11	..
Canada: Ottawa	Mar 19 23	7	..
Quebec	Mar 17-23.	4	..
Sarnia	Mar. 17-23.	1	..
China: Hongkong.	Feb 11-17.	53	38
France: Marseille	Feb. 1 29		1
Paris.	Feb. 27-Mar. 9	21	1
Germany	Mar. 10 16	9	..
Great Britain: West Hartlepool	Mar. 3 9	1	..
India: Bombay	Feb. 16-Mar. 2	171	82
Calcutta	Feb. 4 10.		1
Madras..	Feb. 18 Mar. 2	26	9
Italy: Leghorn	Mar 3 16.	3	..
Naples	Mar. 3-9	6	.
Palermo	Mar. 3-16.	124	40
Mexico: Mazatlan	Mar. 13-19 77	..	1
Mexico	Jan. 21-Feb. 17...	74	34
Porfirio Diaz	Mar. 17-23...	2	2
Portugal: Lisbon..	Mar 3-9.	2	
Teneriffe: Santa Cruz.	Feb. 26-Mar. 2	..	2
Russia: Odessa	Feb. 26-Mar. 2	6	..
South Africa: Durban	Jan. 28-Feb. 10...	2	
Spain: Valencia	Mar. 3-9.	31	1
Straits Settlements: Singapore.	Feb. 4 10.	3	1
Turkey in Asia: Beirut	Feb. 26-Mar. 9...	235	10
Turkey in Europe: Constantinople...	Mar. 3-13	.	8

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Original Articles.

REPORT OF A CASE OF ACUTE ENDOCARDITIS WITH RUPTURE OF ALL THE CHORDÆ TENDINEÆ OF THE ANTERIOR CURTAIN OF THE MITRAL VALVE.

By LEWIS F. FRISSELL, M.D.,

NEW YORK

ASSOCIATE ATTENDING PHYSICIAN ST. LUKE'S HOSPITAL; ASSOCIATE IN MEDICINE, COLUMBIA UNIVERSITY.

T. T., HOTEL MANAGER, 52 years of age, married, was admitted to the medical ward of St. Luke's Hospital, July 5, 1911, complaining of severe dyspnea. Until eight weeks before admission he felt perfectly well, but at that time noticed that his customary mode of life fatigued him and that he became short of breath on exertion. He has not noticed precordial pain or sudden exacerbation of symptoms. Gradually his dyspnea increased, confining him to bed, and of late has amounted to orthopnea. He has not been conscious of fever, but his wife thinks there has been some elevation of temperature in the last few weeks. There has been a little cough without expectoration. Urination frequent. His occupation required no severe physical work and his habits were inclined to be sedentary. Until the onset of his present trouble he had been remarkably free from illness since his childhood, in which he had suffered from measles, scarlet fever, diphtheria, and chicken pox. No history of venereal disease or rheumatic fever is obtainable. His personal habits are bad. He is a constant user of alcohol, five or six whiskeys or beers daily, with periodic sprees. Tobacco is used in moderation. Coffee, six cups daily. The family history is good; his father died of pneumonia and mother of apoplexy.

Physical examination: Patient is a fairly well developed and nourished man of 52 years, who appears moderately prostrated. There is some dyspnea and orthopnea. No jaundice or cyanosis. Skin and mucous membranes somewhat pale. Eyes: Pupils equal and react. Slight icteroid tinge to scleræ. Tongue: Moist, not coated. Pharynx normal. Teeth: In rather poor condition; a few missing. Neck: Visible venous pulsation. Chest: Well developed; expansion good. Heart: Lifting impulse general over precordium. At apex region is a thrill, diastolic in time. Diffuse visible and palpable apex impulse in fifth and sixth spaces, 5½ inches from median line. Left border 6½ inches out. Right border 2½ inches to right of median line. At apex heard over the whole precordium and transmitted to back is a loud systolic murmur, almost replacing first sound. This murmur has a maximum intensity at the apex; to left of sternum in fifth space, it is almost musical in character. Within nipple and to sternum a gallop rhythm is heard. Over base there is a soft systolic murmur. Both second sounds accentuated. Pulse: Regular, small, fair force, vessel wall palpable. Lungs: On right side posteriorly beginning just below scapula is slight dulness, increasing to base. At extreme base fremitus, voice and breathing sounds much diminished. An occasional râle heard at left base. Otherwise lungs are clear. Abdomen: Lax; liver percusses to free border, edge not felt, but liver region is somewhat tender on pressure. Spleen not palpable. No dulness in flanks. No masses. Knee jerks present. Considerable edema of lower extremities.

The day following admission there was noted a presystolic murmur of rather short duration but distinct crescendo character just within and above the apex, and at the apex a very faint diastolic murmur of a transitory nature as it disappeared not to reappear. The temperature was elevated, remaining between 102-101° the greater part of his stay in the hospital, but toward the end becoming subnormal. Repeated blood cultures failed to reveal the infecting organism. The physical signs in the heart did not change, though at one time the conduction time was increased owing to the effects of digitalis and the systolic murmur became more intense and musical. His hydrothorax and consequent dyspnea were several times relieved by thoracentesis, but after a long illness the patient died on October 5 of a terminal infarction of the lung. At no time did he complain of sudden, intense precordial pain nor did his dyspnea suddenly become aggravated.

Autopsy October 19, 1911, 2 P.M., by Dr. C. H. Bailey. Body of well-developed but emaciated adult male. Marked edema of hands, legs, and dependent portion of body. Slight general jaundice. Pupils, 3 millimeters, normal; conjunctivæ yellow. Peritoneum: About one liter of clear yellow fluid in abdominal cavity. Over anterior surface of liver, especially right lobe, are patches of firmly adherent organized exudate, also over surface of spleen, and a few patches on intestines. Firm adhesions join the omentum to the parietal peritoneum on the left side in the region of the splenic flexure and upper portion of the descending colon. Pleura: Pleural cavities contain together 2,300 c.c. clear yellow fluid. Somewhat more in right than left. Left lung firmly adherent at apex. Lungs: At the base of the right lung anteriorly is a roughly circular area of consolidation about 3 centimeters in diameter, deep red on section, slightly raised base surrounding surface, and with fairly sharply defined outlines. A branch of the right pulmonary artery leading to the right lower lobe is completely thrombosed. The thrombus extends from the root of the lung, where it protrudes into the auricle as a free tongue-like mass to the posterior portion of the left base. It completely plugs the vessel, is a little more than 1 centimeter in diameter at its upper part, is grayish in color with red mottling, and gen-

erally firm, but in places softened. The whole lung, especially the base, is congested and edematous, but the tissue surrounding this vessel shows no sign of infarction. No thrombosed vessel is found leading to the area of consolidation in the anterior portion of right base already described. Left lung: At left apex are two or three fibrous scars and one calcareous nodule about 2 millimeters in diameter. On anterior edge of upper lobe about 3 inches below apex is a roughly wedge-shaped area of consolidation, deep red on section, firm, and with rather sharply defined limits. At its apex is a thrombosed vessel about 3 millimeters in diameter. This thrombus is rather firmly attached to the vessel wall in places. A similar area is present in the anterior edge of the lower lobe. Pericardium: Contains about 50 cubic centimeters of clear yellow fluid. On surface of heart are numerous large irregular whitish areas of organized exudate, which are torn from the wall with some difficulty. The surface of these is generally smooth; one about 2 centimeters in diameter on anterior surface of left ventricle has an irregular, ragged surface.

Heart: Very large; weight, 570 grams. A tough grayish clot is firmly adherent to the musculi pectinati of the right auricle. Triscuspid orifice dilated 16.5 centimeters. Cusps normal. Pulmonary 11 centimeters normal. On opening the left auricle, the anterior cusp of the mitral, and its chordæ tendineæ are seen protruding into the auricle, the latter having been torn from their attachment to the muscles. On the auricular wall about 3 centimeters above the auriculoventricular orifice are a few small, rough, yellowish vegetations. The mitral orifice measures 14 millimeters. The anterior cusp, all the chordæ tendineæ of which are torn from their attachment to the heart wall, contain several nodular thickenings, but no recent process is apparent. The chordæ tendineæ attached to it are of apparently normal length, but enlarged, soft, and yellowish in color, and appear to have been recently ruptured. At the summit of the anterior papillary muscle is a small stump, which was evidently the point of attachment of one of the broken chordæ. There are two similar nodules in one of the cords of the posterior cusp near its attachment to the posterior papillary muscle. It is impossible to tell in the gross whether these are vegetations or former points of attachment of the ruptured cords. The posterior cusp also shows numerous nodular thickenings. Two hard, calcareous nodules, one nearly a centimeter in diameter, are felt in the substance of the cusp at its base. Over the larger of these at the point of junction of cusp and auricular wall is a small depressed area with rough surface. Over the other nodules the endocardium is smooth and glistening. The aortic cusps are normal—9 centimeters. Heart muscle appears normal. Right ventricular wall measures 2 centimeters. Coronaries normal.

Spleen: 255 grams. On surface are several patches of firmly adherent organized exudate. Capsule thickened. Very firm, deep red, trabeculæ prominent. Liver: Greenish yellow with thickly scattered deep red points ("nutmeg liver"). Gall-bladder: Contains large amount of very thick greenish red bile. Hepatic and common ducts admit passage of probe easily, and on dissection no calculi or other obstruction found. Pancreas: Normal. Kidneys: 195 grams. Capsules strip easily; tissue slightly yellowish and opaque; otherwise normal. Stomach and intestines: Normal. Bladder: Normal. Anatomical diagnosis: Chronic adhesive peritonitis; pericarditis; healed tuberculosis; double hydrothorax; thrombosis of branches of pulmonary artery; infarction of both lungs; cardiac hypertrophy; acute endocarditis; rupture of chordæ of anterior cusp of mitral; chronic passive congestion of liver and spleen. Bacteriological diagnosis: Culture from heart's blood; no growth. Microscopical diagnosis: Liver: Intense congestion about central veins with resulting atrophy of liver cells in center of acini. Many of liver cells about these areas filled with dark pigment. Pancreas: Slight increase of interstitial tissue. Kidneys: Capillaries congested; a few sclerosed glomeruli. Pulmonary artery: Branch shows occluding thrombus of fibrin, adherent to wall in places. Degenerated in center, undergoing organization at attachment to wall on one side. Another section shows occluding thrombus of large branch, extensively organized except in center, which consists largely of red blood capsules. Surrounding lung tissue infarcted. Lung: Area of infarction consists of extravasated blood and exfoliated cells of alveoli; over a large portion outlines of alveoli only roughly indicated by broken down connective tissue septa. Many of the exfoliated epithelial cells of the air vesicles are loaded with pigment. Two small vessels show partial obliteration of lumen by fibrin and red cells, partially organized. Heart: Muscle slight brown atrophy. Chordæ tendineæ show evidence of old chronic inflammation.

The case presented is of unusual interest on account of the rarity of the lesion, its mode of production, and the occurrence of a presystolic murmur in the absence of stenosis of the mitral valve. A review of the literature shows fifty reported cases, including eight ruptures of papillary muscles, a synopsis of which is appended to the present report. Many of them are old, some in the days before the use of refined methods of physical examination, and even that reported by so great a master as Laennec is difficult of analysis, owing to the incorrect views obtaining as to the production of the second heart tone, so that his statement that "the contraction of the auricle as long as that of the ventricle *donnait le bruit de soufflet*," leaves one in doubt as to his meaning. Presumably, as he regards the second sound of the heart as synchronous in time with auricular systole, the murmur heard was diastolic in time. As regards the cause of the rupture, the tendency of the early observers is to lay stress on physical effort and trauma, though if the cases be analyzed in many of them an endocarditis was obviously present, as proven by vegetation or valve change described in the autopsy reports. These changes were considered by some as secondary, but precisely on what ground it is difficult to see, except from the absence of symptoms prior to the trauma or strain.

On dividing the cases as reported it seemed wise to classify as follows:

1. Those cases due to severe traumata such as fractured ribs from violent compressions, falls from a considerable height, stab wounds, gunshot wounds; in one the kick of a horse. Of this group seven cases were found, resulting in four cases in a tearing of the papillary muscle rather than the chordæ themselves. The remaining three were due to stab and gunshot wounds and a fall from a window, respectively. That trauma of such severity in the region of the precordium could result in rupture of the chordæ will, I think, be admitted without comment.

2. Cases of ruptured chordæ in which the rupture

has followed efforts such as straining, lifting, excessive fatigue, and severe cough in which the autopsy disclosed no reported endocardial lesions in the heart. Of these five cases are reported, of which two showed blood vessel lesions, one an aortic aneurysm, and the other coronary sclerosis. Two cases also showed papillary muscle rupture, leaving only one case of actual chordæ rupture in hearts apparently free from any other lesion. This is the case of Dickinson. The patient, a young male, 21 years of age, had a severe pain under the left nipple while lifting a load of bricks, developed immediate signs of cardiac insufficiency, and died in two months. Autopsy carefully describes the valves as normal except for rupture of the chordæ attached to the posterior cusp of the mitral valve.

3. Cases of rupture said to be due to or preceded by strain, but in which endocardial or myocardial lesions were also found at autopsy. In this class nine cases are found.

4. Cases of rupture of the chordæ, in which endocarial lesion was found, but following no known history of strain or trauma. In this class are nineteen cases. Among these are a number in which no history was given or obtainable, these constituting a sub-class of mere pathological reports.

5. Reported cases of rupture in which data given are insufficient to determine the probable cause in which no autopsy has been made, and one ("Gilbin") whose report was not accessible. In this class are ten cases.

Obviously the cases with pathological change in the heart vastly outnumber the cases without, 28 to 12, and if we exclude the severe traumatic cases we reduce this latter group to 5, which may be still further reduced to 3 by excluding the 2 cases with vascular disease. Of the remainder 2 are ruptures of the papillary muscle, leaving but 1 pure tendon rupture. Overstrain alone would therefore seem to be an infrequent cause of this occurrence unless we regard the rupture itself capable of secondarily causing an endocarditis. This is the position of de Quervain, who reports a case of malignant endocarditis following a sudden muscular exertion. This contention he supports by quoting the production of endocardial lesion in animals by damaging the valves mechanically. Experimental evidence of the difficulty of rupturing the healthy chordæ is given by Barie, who, while able to produce aortic ruptures with pressures of 170 to 400 millimeters of mercury was able to produce rupture of the chordæ in only one case, and that at 1,085 millimeters of mercury, a pressure that is almost inconceivable in the ventricles and which apparently, under experimental conditions, is more liable to rupture the heart walls themselves than the chordæ. The ordinary pressure in the ventricle is but slightly higher than the pressure in the aorta, which may be taken roughly as its measure, maximal 3-400 millimeters. Libman reports in cases of subacute endocarditis such as are caused by his *Streptococcus viridans* the not infrequent localization of vegetations on the chordæ and occasional rupture, so that the number of ruptured chordæ may be greater than the reported cases indicate.

It seems fair to assume that the healthy chorda is rarely if ever ruptured by strain or exertion and that a preexistent endocarditis is necessary to rupture. That effort may rupture a diseased chorda is obvious. From the examination it is impossible in the reported case to state the date of the rupture of the chordæ. Probably, giving way one by one, the lesion dates from the onset of symptoms, the gradual increase in symptoms being due to the increasing insufficiency of his mitral valve. The symptoms of such a lesion are of course outspoken signs of mitral insufficiency with signs of cardiac insufficiency in proportion to the number of chordæ ruptured and the suddenness of the onset of leakage before the heart can accommodate itself. In a case where the patient is known to have had no cardiac signs, no enlargement of the heart, murmurs, or symptoms due to insufficiency, and where, following a straining effort in which the intraventricular pressure may be assumed to be greatly raised, a sudden severe pain is felt or a feeling as of something having given way, followed by severe dyspnea and signs of mitral leakage, a rupture of this sort may properly be suspected. On the other hand, when without history of strain a mitral leakage is found which gradually becomes worse owing perhaps to the consecutive giving way of the tendons, the lesion is indistinguishable from an ordinary mitral insufficiency, and this will be the case in the vast majority of such ruptures.

The origin of the presystolic murmur is less clear. Apart from complicating mitral stenosis or outspoken aortic insufficiency but three instances are reported of a murmur occurring in diastole. The doubtful case of Laennec previously alluded to makes a fourth. One of these, that of Barie, may be attributed to the perforation in the aortic valve producing a Flint murmur. The other two occurred in cases where the papillary muscle was torn off, leaving the flap with its tendons and muscles free to travel between auricle and ventricle respectively in systole and diastole. The murmur was described in one case as a systolic and diastolic murmur, in the other as a murmur in time presystolic, but not having a true presystolic character. "It was not soft nor was it a squeak." Our murmur was a fairly localized short murmur inside and above the apex, heard at times as far as the left sternal border and, though not intense, of a clearly rumbling crescendo character. As the anterior curtain of the mitral valve swung free it must have traveled from auricle to ventricle with each diastole, and the sound may conceivably have been due to the vibrations set up by the strong current of blood due to auricular systole. Much as a sail flaps in the wind when a fore and aft vessel comes about in a stiff breeze, so the increased strength of the blood current at this period of its cycle may have caused a murmur in the heart, due to vibrations of the free flap. A second possibility is that the abrupt termination of its course from auricle to ventricle brought it up with much the effect of cracking a whip.

SYNOPSIS OF PREVIOUSLY REPORTED CASES.

Portal: Observation concerning a case of rupture of two fleshy columns of the mitral valve. The lesion also involved the wall of the left ventricle.

Corvisart: Man 30 years of age, abuser of alcohol; transitory attacks of rheumatism; died soon after admission to hospital with symptoms of extreme dyspnea. Autopsy findings: Protuberant vegetations on margin of mitral valve and on semilunar aortic valves. The segment of the mitral valve in front of the aortic orifice was no longer attached by tendinous cords to the fleshy columns. The chordæ tendineæ were ruptured or detached, and it was barely possible to trace two of these cords at the level of one of the fleshy columns.

Corvisart also reports the case of a man 34 years of age who injured himself in trying to move unaided a barrel of alcohol; suffered from cough and palpitation of the heart; mitral valve studded with soft vegetations. In the examination of the pillars which support the mitral valve, two of them were seen to have been ruptured some time ago. The extremities of these two tendons were soft, smooth, and rounded at the site of rupture. It was not possible to locate on the border of the valve the exact spot where they must have been inserted before the rupture.

Corvisart reports a third case (Observation 40, page 263). The patient was a courier, 30 years of age, who was admitted to the hospital immediately after a horseback ride of one thousand miles, without any rest. He had crossed the Channel after this ride, and while at sea had felt a sudden great oppression, with hemoptysis. He died soon after admission, under symptoms leading, prior to the autopsy, to the diagnosis of an acute lesion of the heart, "undoubtedly a rupture of one of its parts." The left ventricle contained one of the large columns which support the mitral valves, floating free in the ventricular cavity. It had ruptured at its base, evidently quite recently, and a small clot was found near the site of the rupture.

Laennec: Man 35 years of age was admitted to the Neckar Hospital in Paris, with a history of heart trouble dating five months back. Thrill 5, 6, 7 spaces. The contraction of the auricle as long as that of the ventricle gave the bellows sound. Death soon after admission. Autopsy findings: The heart was enlarged, especially the left ventricle. One of the tendons which pass from the extremity of the columns to the free border of the mitral valve was ruptured towards its middle. The upper portion was smooth, and was folded under the mitral valve, but without adhesions. There were warty vegetations on mitral valve and left auricle.

Bertin: A consumptive girl, 22 years of age. A severe coughing fit led to rupture of one of the muscular columns in which the tendons of the tricuspid valve are inserted; at the autopsy this fleshy column was found to be broken, floating free in midst of the ventricular cavity.

R. Adams: Cheynes' case: A musician, 34 years of age, strong and well nourished, of irregular habits, was suddenly attacked with very severe pain in the left side of the chest, about the precordial region. The condition became steadily worse, with edema of the lower extremities, digestive disturbances, dyspnea, loss of strength, cerebral symptoms, and so forth. Death about two months after the onset of the symptoms. Autopsy findings: The most interesting feature consisted in the rupture of the chordæ tendineæ which attach the left auriculoventricular valve to the columnæ carneæ. This rupture concerned variable levels, four of these tendons being found floating by one of their extremities in the interior of the ventricular cavity. Excrescences on mitral and sigmoid valves.

Marat: A man, 44 years of age, laboriously rolling a very heavy barrel, suddenly felt something snap in his back, and was attacked by dyspnea and palpitation. Death, twenty months after the accident. Autopsy findings: One of the columnæ carneæ at which the tendinous cords of the mitral valve are inserted was entirely ruptured, and pulled out, as it were. The patient also had an aneurysm of the aorta; but he had never before complained of disturbances, which did not begin until the painful sensation referred to above.

Nicod: Autopsy findings, in case of a woman who had suffered from two attacks of suffocation, the last terminating in death: Rupture of two fleshy columns of the heart, at a distance from each other, of unequal length, with a different coloration of the ends.

Legendre: Autopsy findings in the case of a man who died under symptoms of dyspnea, soon after fracture of the ribs, from violent compression. On opening the left ventricle of the heart a large fleshy column, with tendons passing to the posterior segment of the mitral valve, was seen to be entirely broken and curled up on itself, entangled in two of its tendons.

Prescott Hewitt: A boy of 12 years fell from a height and died four hours after the accident. Autopsy findings: No external lesion on thoracic wall. Pericardium intact. Ecchymosis at point corresponding to upper portion of intraventricular septum; this bloody extravasate came from a small tear of the heart wall which extended to the upper portion of the septum and established a communication between the two ventricles. Two columnæ carneæ in the left ventricle were torn.

Williams: Policeman, age 27 years, habitual user of alcohol, lost flesh and strength for two years. Three months ago, on quickly mounting stairs, felt a very sharp pain in epigastrium; some days later, edema of lower limbs, dyspnea, etc. At time of admission, urine was scanty, blood-tinged, and slightly albuminous. Heart hypertrophied. Auscultation; systolic murmur loudest under left breast. Death a few days after admission. Autopsy findings: The two mitral cusps were found to be thickened and ossified, the chordæ tendineæ, inserted at the anterior valve, were ruptured at unequal heights, and the fragments were lined with soft vegetations. Posterior cusp was ossified, and its chordæ tendineæ were agglutinated.

Todd, R. B.: A man 31 years of age was admitted to the hospital with general edema, enlargement of the liver, marked dyspnea, and frequent cough. History of a stab wound three years previously in right side of chest, below nipple. Death ten days after admission to hospital. Systolic murmur apex and base. Autopsy findings: The valves were normal, with the exception of the tricuspid, which presented several interesting lesions. The anterior segment of the valve, namely that which separates the infundibulum from the auricular portion of the ventricle was suspended free in the ventricular cavity, retaining its connection with the heart only at the level of the fibrous auriculoventricular orifice. All the fibrous cords, inserted at the valve, were ruptured at different heights, leaving a fringed valvular border. The fleshy columns in which the cords originate were contracted and showed the rudiments of the broken chordæ tendineæ. The extremities of the latter presented small bulgings, similar to those seen at the end of the nerves in an amputation-stump.

Gordon: A woman 26 years of age admitted to the Whitworth Hospital with violent hemoptosis. The diagnosis of rupture of the chordæ tendineæ of the heart was rendered, on the basis of the sudden and violent pain in the region of the heart, followed by intense palpitation and weakness, as well as the decided character of the bruit, and *frémissement* at the root of the neck. She lived ten days after her admission and then sank. The immediate cause of death was pulmonary apoplexy. Examination showed very slight disease in the aortic valves, there was a slight deposit in the central valve. Sev-

eral of the chordæ tendineæ of the anterior portions of the mitral valve were ruptured, and covered with a soft, cheesy matter. There seemed to have been slight endocardial inflammation, followed by rupture of the chordæ tendineæ, and this, by the effusion of lymph, which lay in great quantities loose in the ventricle.

Allix: A prostitute, 25 years of age, was admitted to the St. Jean Hospital in Brussels, having become unconscious a few instants before during coitus. Patient complained of stifling; restless. Auscultation was impossible, heart sounds were confused and arrhythmic, but accompanied by a distinct vibratory thrill. Patient died one hour after admission. Thrill marked. Autopsy findings: Trace of an old endopericarditis, marked hypertrophy of the left ventricle. On opening the cavities it was seen that the chordæ tendineæ passing from the summit of the principal left columna carnea to the free border of the anterior segment of the mitral valve were ruptured in the middle; these tendons were very fragile and easily torn; their surface was found to present a large number of small round wart-like vegetations.

Lee, Charles A.: Man, aged 65 years, while driving a stake into the ground with a heavy piece of wood, felt something give way suddenly in the region of the heart, and immediately fell to the earth, gasping for breath, and laboring under excessive pain and dyspnea. He never was well again, but lived for about ten months afterwards, with increasing symptoms of heart disease. Autopsy: The endocardial membrane was much thickened from chronic inflammation, organized lymph was deposited beneath it. Several of the chordæ tendineæ of the mitral valve were ruptured, only their shriveled remains visible, while others, both of the tricuspid and mitral, were so contracted and adherent to each other as to contract the circumference of the valves to such an extent as almost to close their orifice, and of course to prevent entirely their healthy play.

Blakiston found the chordæ tendineæ shortened in 20 out of 46 cases of tricuspid regurgitation, in one of which he says: "One of the cords had apparently been broken, and was curled up into a nodule, like a pin's head."

Austin Flint: Woman 35 years of age, who had suffered for some years from heart disease. The interesting point connected with the specimen is not the contraction of the mitral orifice, which is common enough, but the presence of two vegetations of considerable size, one as large as a bean, the other somewhat smaller. The larger one is attached to the papillary muscle of the inferior curtain by what appears to be a small pedicle, which is a fractured extremity of one of the tendinous cords. The other concretion is upon another tendinous cord which has not been fractured.

Ransford E. van Gieson: Man aged 24 years was admitted to U. S. Naval Hospital, and presented hypertrophy of the heart, with tumultuous action, and a murmur with the first sound transmitted along the course of the aorta. Gradual aggravation, death about six months later. Autopsy findings in heart: On opening the left ventricle the aortic valves are found to be thickened, contracted and studded with tenacious fibrinous vegetations. The anterior portion of the mitral valve is also covered with similar vegetations. The chordæ tendineæ of the anterior portion of the mitral valve are all ruptured, shortened, and covered with tenacious fibrinous effusion. The free extremities which are expanded into small bean-shaped bodies when drawn with moderate force toward their original muscular attachment will not meet by a quarter of an inch. The chordæ tendineæ of the remaining portions of the mitral valve are healthy, presenting no traces of atheroma or ulceration.

Stokes, in his work "Diseases of the Heart and Aorta," details a case, extracted from the records of the Pathological Society, which in many respects is similar to the one observed by Van Gieson: "The cords of the anterior portion of the mitral valve were all broken across near to the fleshy columns; they were thickened, softened, and covered with beads of very soft lymph."

Pollock, J.: A woman, 42 years old, was admitted to King's College Hospital with severe pain, palpitation, dyspnea, and hemoptysis. Dr. Johnson diagnosed rupture of one or more of the chordæ tendineæ of the mitral valve. Post-mortem examination of heart: The pericardium contained four ounces of serum. The heart was large, the left ventricle being hypertrophied more than the right. One of the chordæ tendineæ of the mitral valve was ruptured. Mitral valve was diseased, and the orifice contracted. Aortic valves much thickened.

Kelly: Description of specimen derived from a woman aged 49 years. Symptoms of heart disease for about two months prior to death. Autopsy: Left ventricle, somewhat dilated, aortic valves healthy; slight atheroma of ascending aorta. The anterior curtain of the mitral valve was fringed on the auricular side with some fibrinous beads, and some were found on the tendinous cords also. The posterior curtain was found lying loose; all the chordæ tendineæ were ruptured, and many were much shorter than usual; some had a small bead of fibrin on their free extremity; all broke off close to a fibrinous deposit. It is probable that they were not all ruptured at once, as in some the fracture seemed quite smooth, while in others there was a little fibrin on the free extremity.

Dickinson: Patient, male, age 21 years. Perfectly well until four months previously, when he suddenly felt pain under left nipple while lifting heavy load of bricks. Unable to work since, became worse in hospital, and died after two months. Diagnosis of laceration of chordæ tendineæ in mitral valve was confirmed by autopsy findings. The chordæ tendineæ attached to the lower edge of the posterior flap of the mitral valve were all broken close to their insertion into the fleshy columns, excepting that one or two cords remained entire at one corner of the curtain. A solitary tendinous cord which was attached at the base of the flap near its center remained entire. The segment of the valve of which the cords had been broken appeared to have lost all valvular action, and must have swung uselessly from its base. The broken cords hung with loose ends, which had become somewhat thinned. The free edges of the mitral valve had become somewhat thickened and opaque.

Bristowe: Patient, man, age 62 years, died under symptoms of heart disease, which came on almost suddenly about three weeks before his admission to hospital. Autopsy findings: One of the tendinous cords attached to the posterior flap of the mitral valve was ruptured, the cord was much swollen, and of an opaque yellow tint; this change was most marked in the situation of the rupture. The lower portion of valve was dilated into a pouch and had a deep, rugged notch. Mitral was normal in all other respects. Aortic valve was perfectly healthy. Coronary arteries, calcareous.

Hanot: The patient, a man 37 years of age, was admitted with all the signs of mitral insufficiency; systolic murmur at apex, edema of lower limbs, enlarged liver, signs of bronchitis, etc. After three weeks' stay in the hospital he was suddenly attacked by oppression and breathlessness; the face was livid, the body covered with clammy sweat; irregular heart action, rapid death. Autopsy findings: Aorta, intact; valvular lesions of mitral valve; also three valvular tendons, about one centimeter long, whitish and thickened, were found to be ruptured and floating in the ventricular cavity.

Le Piez: A woman 24 years of age died suddenly, in syncope, no abnormal sounds in heart, on getting up out of bed, a fortnight after the onset of symptoms pointing to heart disease. At the autopsy the heart wall was found to be friable and in a state of fatty degeneration. One of the fleshy columns of the heart was ruptured, cut in two, at the junction of the two lower thirds and the upper third. The segment where the chordæ tendineæ are inserted was displayed between the two mitral valves. One rather large-sized tendinous cord was completely ruptured; it did not belong to the ruptured column.

Gilbin: Personal observation of a case of rupture of the tendons of the mitral valve. (Records not accessible).

Foot, A. W.: Man aged 23 years, who had died suddenly while in the act of getting into bed. (All the physical signs of regurgitation through the mitral valve had been present.) The cords, which were found broken across about the middle of their course, were two or three of those attached to the musculus papillaris, which regulates the larger curtain of the mitral valve, and were those nearest to that portion of the curtain which is adjacent to the interventricular symptom. The broken cords were studded with warty nodules of fibrin, both the ventricular and auricular surfaces of the principal curtain of the valve were covered with vegetations of a similar character, and continuous with those creeping along the chordæ tendineæ.

Willard Parker: The patient lived several years, suffering with heart disease. There were also fibrinous granulations upon the cords. This author also reports the following case: Sudden rupture of the chordæ tendineæ in a man occurring while running to a fire. Death occurred a few months afterwards.

Dalton, J. C.: Quotation of Dalton's case, September 14, 1859. A man aged 40 whose previous history was unknown, was found in his room comatose and died one hour later. Autopsy: The mitral valves were covered with several small vegetations. Two of the tendinous cords attached to the inner portion of the anterior curtain of the valve were ruptured. The rupture was at the point of attachment of the cords to the valve. The free ends of the cords were covered with fibrin, giving them a bulbous shape.

Alonzo Clark: There were vegetations on the broken ends of the cords, and upon the valves connected with them. There were vegetations on the cords of three or four other specimens which had been presented to the Society. In one case there was a thinning of the cords, ending in rupture; in other cases the cords were thickened, but softened. Chordal inflammation is apt to be followed by vegetations, softening, and rupture.

Metcalf, J. T.: Man, age 23 years, became rheumatic after an injury to the side and exposure to cold; developed dyspnea, edema of face, ascites, anasarca. Rough systolic murmur over mitral valves, effusion into pericardium and both pleuræ; albuminuria. Death from exhaustion. Autopsy: Several chordæ tendineæ were ruptured. The aortic valves were studded with fibrin, and insufficient; there was a large white clot in the heart.

Lionville: Case of an old woman, in whom the columns of the mitral valve were ruptured in consequence of a fall from a window on the third floor.

Terrillon: Man, age 48 years, gunshot wound of chest, penetrating the seventh rib; death twelve hours later. Autopsy showed extensive ecchymoses in the paricardium and myocardium of the anterior wall of the left ventricle; no solution of continuity; rupture of individual trabeculæ and mitral tendons.

Potain: Also quoted by Barié: A young woman died rapidly in the Pétié Hospital of Paris, with symptoms which were referred to puerperal endocarditis. At the autopsy all the tendinous cords of the flaps of the mitral valve were found to be ruptured, so as to produce a true acute insufficiency.

Barié: Woman, age 56 years; history of articular rheumatism, followed by symptoms of heart disease; mitral systolic murmur; thrill; death one week after admission to hospital. Autopsy: Heart not enlarged, cavities small, walls of left ventricle slightly thickened. The mitral valve was whitish and somewhat thickened; on testing with water, it was found that the posterior valve did not fit against the anterior valve, but floated in midst of the fluid, in consequence of rupture of four of its tendons. These tendons were broken about the level of their middle portion; they were somewhat thinned, but on examination presented no inflammatory changes. The aortic valves were normal. The tricuspid valve was intact and sufficient.

Potain: A man, 72 years of age, had died with symptoms of mitral insufficiency. The autopsy showed the presence of rupture of one of the tendons of the great mitral valve. The tendon had given way close to its insertion, and either floated in the ventricle or became interposed between the flaps of the valve, preventing their accurate junction, and giving rise to intermittent mitral insufficiency.

Sharples, C. W.: Laborer; systolic and presystolic murmur, latter not characteristic in quality. At the autopsy of a man 45 years of age there were found lesions of auricular endocarditis and a rupture of the chordæ tendineæ, which were changed in appearance and character, being all that were attached, most anteriorly and nearest the center of the valve, with only one remaining on the left, thus leaving the valve to flap back and forth without its normal control. The longest chordal fragment on the valve was three-fourths of an inch long. It was softened, thickened, and beaded, smooth over most of its length, with one hanging vegetation. Attached to another broken chorda was a mass half an inch long and one-eighth in diameter, fastened by a narrow, small, short pedicle. Otherwise it was free to flap about in the ventricle. The other chordæ presented no peculiarities, except that they were thick, soft, and very friable. One of the transverse bands connecting two chordæ near their origin presented a large vegetation.

Huchard, Degny: Man 42 years of age; mitral insufficiency, also aortic insufficiency. The tendinous cords inserted at the posterior pillar (angle of septum and ventricular wall) were adherent to the posterior commisure of the great mitral (cardioaortic)

valve. These parts were rigid and calcified, on one arterial surface. Analogous lesions were noted at the summit of the anterior pillar and the anterior commisure of the great mitral valve and the connecting chordæ tendineæ. But here the chordæ tendineæ were ruptured, one large tendon in particular being broken off about one centimeter from its insertion at the valve, so that this anterior portion of the great mitral valve, being free from all tendinous cords, had become displaced upwards, into the left auricle.

Hallé: In the case of a man 63 years of age, who had died from bronchopneumonia, after suffering for two months from symptoms of heart disease, the autopsy showed the rupture of several tendons and chordæ tendineæ on the left pillar of the mitral valve; two of these small tendons floated free in the auricle.

Poupon: A man 41 years of age had died from a ruptured gastric ulcer. The mitral valve was found to be insufficient and the seat of peculiar changes. A softened vegetation, probably a band attached to the lower border of the anterior pillar, floated free in the cavity, toward the cardiac apex, and therefore in the direction of the bloodstream. The flaps of the mitral valve were extremely thick and hard, with scattered calcified spots. The anterior pillars of the second class were connected by fibrous bands; one of these pillars presented an ulcer with calcified margins. All the constituents of the mitral valve and its pillars were considerably hypertrophied. The emboli found at the autopsy were attributed to the rupture of a tendinous band of a pillar of the mitral valve; the band itself was interpreted as the result of an old endocarditis. Murmur at apex. Time undetermined.

Henry: Rupture of the posterior papillary muscle, 2 cm. in length (one in thickness) of the mitral valve, in a young, robust male, known to be in good health two years previously. Death after about eight months, after transitory improvement following upon traumatism (a kick from a horse directly on precordium). The clinical picture showed a complicated recent cardiac affection, with the sole symptoms of disatolic-systolic murmurs and dilated heart (ox-heart), which were explained by the free floating papillary muscle; this hung suspended from the chordæ tendineæ, and was necessarily thrown constantly from the ventricle into the auricle, and back again through the bloodcurrent and the cardiac contractions.

De Quervain: Man, age 35 years, in good health, experienced a sudden painful sensation in the chest when holding up a very heavy barrel; this was followed by epistaxis and bloody expectoration. Later cyanosis, increased frequency of pulse-rate, and cardiac distress. No findings early on auscultation, but three weeks later a rough systolic murmur was heard at the mitral valve. The general condition became worse, and seven weeks after the accident the patient died under symptoms of cerebral embolism. Autopsy findings: Circumscribed thickenings at free margins of anterior mitral flap, 1½ cm. long, 1 cm. wide, irregular and friable. The valve in this area presented no chordæ tendineæ, but there was the stump of one. Microscopically the thickening was interpreted as a fresh endocarditis proliferation, in part ulcerative in character.

Schmidt: A man 85 years old fell out of the window from the second floor, landing on the left side of the thorax. Autopsy findings in heart: Posterior aortic valve presented a rupture through its entire thickness. There was also a tear 2 mm. long at the lower surface of the anterior mitral flap. The simultaneous rupture of the mitral valve is explained by the author in such a way that after the aortic rupture the sudden back-flow of the aortic blood struck the open mitral valve, thrusting it up, and partly tearing it away from its support, the chordæ tendineæ. The rupture had occurred immediately above the insertion of a tendinous cord of the second class, which is inserted at some distance from the free margin, on the surface of the valve. Otherwise the mitral valve and its tendinous cords, as well as the right-sided valves were unchanged. The heart was slightly atrophic; no degeneration of the myocardium.

Buchanan: Male. Symptoms cardiac insufficiency with fever four years before. Systolic murmur over cardiac area toward axilla and over vessels of neck. Autopsy: Mitral admits 3 fingers; anterior curtain presents an irregular fringe of ruptured chordæ, 8 in number. Free extremities bulbous and granular from endocardial thickening. One papillary muscle soft pale atrophied, is completely severed from tendon. A few vegetations on margin of curtain freed by rupture.

Hawthorne: Male gave up rowing 3 years before death on account of "weakness." No definite mitral insufficiency. Presystolic thrill and murmur at apex. Systolic over whole precordium. Autopsy: Mitral stenosis. Anterior flap projects into and half closes orifice. Three tendons are torn. Endothelium granular and swollen. Free edge of curtain studded with vegetations.

Barié: Case showing presystolic thrill and presystolic and systolic murmur at apex. Also diastolic at base. Autopsy: No mitral stenosis. Two chordæ of anterior valve ruptured, mitral calcareous. Hole in posterior cusp of the aortic valve.

Gordon: Rupture of the chordæ tendineæ. (Not accessible.)

Jayle: Systolic murmur at apex. Autopsy: Rupture of the tendon at anterior flap.

Norris: Signs of mitral disease following lifting effort. Examined before. No signs. After effort, systolic murmur at apex. Suspicion of presystolic. Diagnosis made of ruptured chorda. No autopsy.

For assistance in looking up the literature I wish to express my appreciation of the services of Dr. F. Robbins.

BIBLIOGRAPHY.

Portal: Académie des Sciences, 1784.
Corvisart: "Essai sur les maladies du cœur," 1811. Léction, page 218.
Corvisart: Ibid, page 267.
Corvisart: Ibid. Observation 40, page 263.
Laennec: "Auscultation Médiate." Tome II, page 626. (1819.)
Bertin: "Traité des Maladies du Cœur et des Gros Vaisseaux," Paris, 1824.
Adams, R.: Dublin Hospital Reports, 1827, page 404.
Marat: *Journal de Médecine Contemporaine.* Tome VI., page 587.
Nicod: *Journal Hebdomadaire du Progrès des Sciences Médicales.* IV., 1834, page 42.
Legendre: Société Anatomique, 1839, page 195.
Hewitt, Prescott: *London Medical Gazette,* 1847.
Williams: *London Medical Gazette,* 1847.
Todd, R. B.: *Dublin Quarterly Journal of Medicine,* 1848.
Gordon: *Dublin Medical Gazette,* I., 1854, page 123.
Allix: Annales Société Anatomique et Pathologique de Bruxelles, Vol. I, 1850.
Lee: Charles A.: *American Medical Gazette,* Vol. XI., Sept., 1860, page 641.
Blakiston: (Cit. Lee.)
Flint, Austin: *New York Medical Times,* March 29, 1862.

Von Gieson, Ransford E. *The Medical and Surgical Reporter*, Vol. VIII, 1862.
Stokes: "Diseases of the Heart and Aorta." (Cit. v. Gieson.)
Pollock, J.: Transactions of the Pathological Society of London, Vol. XVI., 1805, page 82.
Kelly: Transactions London Pathological Society, XX., 1869, page 153.
Dickinson: Transaction London Pathological Society, XX., 1869, page 150.
Bristowe: Transactions London Pathological Society, 1873, page 22.
Hanot: Société Anatomique, 1879, page 807.
Gilbin: "Thèse de Paris," 1873.
Le Piez: "Thèse de Paris," 1873.
Foot, A. W.: *Dublin Journal of Medical Science*, Vol. 58, 1874, page 254.
Parker, Willard: Transactions New York Pathological Society, I, 1876, page 98.
Parker, Willard: *Ibid.*
Dalton, J. C.: Transactions New York Pathological Society, I, 1876, page 97.
Clark, Alonzo: Transactions New York Pathological Society, I, 1876, page 98.
Metcalf, J. T.: Transactions New York Pathological Society, I, 1876, page 97.
Lionville: Recueil de Mém. de Med. de Chir. et de Pharm. Milit., 1878, p. 377.
Terillon: *Le Progrès Médical*, 1879, page 237.
Potain: Cit. Barié, *Revue de Médecine*, 1881, page 318.
Potain: *L'Union Médicale*, 1881.
Barié: *Revue de Médicine*, 1881.
Potain: *L'Union Médicale*, 1891, page 277.
Sharples, C. W.: *Medical News*, March 12, 1892, page 295.
Huchard, Degny: *Journal des Praticiens*, 1898, page 164.
Hallé: *Journal des Praticiens*, 1898, page 143.
Poupon: Bulletins de la Société Anatomique de Paris, 1885, 7, 201.
Henry: *Korrespondenz Blatt für Schweizer Aerzte*, Vol. 37, 1907, page 761.
De Quervain: *Semaine Médicale*, No. 21, 1902, page 169.
Schmidt: *Münchener medizinische Wochenschrift*, No. 38, 1902, page 1565.
Buchanan: *Glasgow Medical Journal*, 1894, XLII, 65-67.
Hawthorne: *Glasgow Medical Journal*, 1894, XLII.
Barié: *Revue Médicale de l'Est*, Nancy, 1885, XVII, 374-378.
Gordon: Proceedings Pathological Society Dublin, 1875.
Jayle: Bulletin de la Société Anatomique de Paris, 1893, LXVIII, 170-172.
Norris: *Intercolonial Medical Journal of Australasia*, Melbourne, 1884, page 242.
Libman and Celler: *American Journal of the Medical Sciences*, 1910, 140, 516.

113 East Fifty-sixth Street.

CAMPHOR AND PNEUMOCOCCI.*

By AUGUST SEIBERT, M.D.,

NEW YORK.

PROF. OF PEDIATRICS, NEW YORK POLYCLINIC; ATTENDING PHYSICIAN, ST. FRANCIS HOSPITAL.

Since the publication of my first report on the action of large doses of 20 per cent. camphorated oil injected hypodermically in pneumococcic pneumonia (*Münch. med. Wochenschrift*, No. 36, 1909), some further observations have been made which are of sufficient importance to warrant publication.

The blood culture work of the last decade has shown (1) that the pneumococci enter the blood (in pneumonia) at the time of the initial chill, in fact, cause it; (2) that they remain there till after the crisis, and (3) that they there cause the toxemia, the life danger, and, in fatal cases, the death of the patient. Therefore a successful treatment of the pneumonic must consist in either binding the toxin by a serum or in destroying the vitality of these organisms, directly or indirectly, by chemotherapy.

Roemer's antipneumococcic serum, introduced ten years ago (*von Graefes' Archiv*, Heft, 54, 1902), has since been tried extensively in Germany. The reports of twelve clinics up to the close of last year are conflicting. Following the suggestion of Neufeld und Handel ("Arbeiten aus dem Kaiserlichen Reichsgesundheitsamt," vol. 34) Beltz gave 400 units in twenty-two cases intravenously every twenty-four hours in the Augusta Hospital in Cologne (*Deutsch. med. Woch.*, No. 1, 1912), with the result that ten patients recovered within four days by crisis.

The first attempt to reduce the vitality of pneumococci in the blood of a patient by introducing large doses of camphor was made by the author in September of 1906, in the case of a young woman brought to St. Francis' Hospital on the third day after the initial chill with the symptoms of severe toxemia (unconscious, temperature 105.5° F., pulse 130, and respiration 40) and involvement of both lower lobes. An extended experience (since 1889) with the action of large doses of camphoric acid in influenzal infections suggested the use of large doses of camphor in this desperate case, and so 12 c.c. (instead of 1 or 2 c.c. used till then for stimulating purposes) of the 20 per cent. camphorated oil were injected hypodermically every twelve hours, resulting in *gradual* improvement and recovery by the fourth day, without a crisis. Only the alveolar exudate in the lung did not disappear until the tenth day after the chill.

In the following twenty cases of pneumococcic pneumonia these camphor injections invariably reduced the toxemia gradually until practically normal conditions were reached three or four days after the first injection, while the alveolar exudate remained, to be absorbed later on. This phenomenon and the *absence of a crisis* were noticed in every case.

In these twenty-one cases (reported on in my first paper) 12 c.c. of a 20 per cent. camphorated oil were injected every twelve hours in adults, and 6 c.c. in children (the youngest being four years of age), irrespective of the size and weight of the patient, the intensity of the toxemia, and the extent of the local process.

In four of the next sixteen cases the limitations of this treatment were observed. A sudden rise of temperature in two patients on the second and third days of treatment, respectively, proved to be due to pneumococcic nephritis, promptly subdued by appropriate doses of urotropin, while the camphor injections were continued and resulting in speedy recovery.

In two cases of severe pleuropneumonia from the onset (aged thirteen and twenty-eight respectively) the camphor reduced the general toxemia markedly, but did not prevent the accumulation of pus in the pleura, necessitating rib resection in the one on the fourth, and in the other on the eighth day after the initial chill, pneumococci in pure culture being found in the exudate, and both patients recovering.

This proves that the camphor brought into the blood cannot prevent the as yet living organisms, constantly entering the blood current from the affected alveoli, from colonizing in the renal and pleural tissue. Considering the fact that the camphor but gradually reduces the vitality of the pneumococci, nothing else could be expected, no more than that the very small amount of camphor, reaching these bacteria already established in the kidney or pleura, could inhibit a pneumococcic nephritis or pleuritis.

The one death among the thirty-seven cases of pneumonia so treated occurred in a man 68 years of

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age, weighing 200 pounds, with fatty heart, attacked by pneumococcic invasion of both lower lobes, marked toxemia, and copious bloody sputum. Although early camphor injections had the usual good effect on the sensorium, the temperature, and the respiration, his flabby heart began to give out on the fifth day, resulting in fatal pulmonary edema on the sixth.

This experience caused the author to consider the possibility of (1) increasing the strength of the camphor oil, and (2) the addition of some other chemical with the object of insuring a prompter action.

The next few patients were given 10 c.c. of a 30 per cent. camphor solution in sesame oil to every 100 pounds of body weight every twelve hours in unilateral pneumonia with average toxemia, and every eight hours in bilateral involvement with a severe toxemia. This plan proved effective in so far as to decrease the temperature, pulse, and respirations more markedly, but nevertheless requiring at least three days to practically reach normal conditions.

The pneumococcus is a unique parasite, on account of its capsule, through which the endotoxin enters the blood of the patient. If a more aggressive chemical, added to the oil, could cooperate with the camphor, not alone the blood serum might be changed to an unsuitable culture medium (as is done no doubt by the camphor) but also the organisms could possibly be damaged directly by destroying their capsules.

During the last four years I had made many hypodermic injections of 10 per cent. salicylic acid solutions in 20 per cent. camphor oil in rheumatics, and had observed the prompt destruction of meningococci in the blood of a two-year-old patient by a 3 per cent. salicylic acid solution in a 30 per cent. camphor oil, 5 c.c. being injected every forty-eight hours.

Three years ago Dr. Hensel, assistant pathologist at the German Hospital, in a series of experiments made at my request, found that 1 to 10,000 part of camphor added to the usual culture media inhibited the growth of pneumococci, while the controls all thrived. At the same time Dr. J. C. Welch, pathologist of the Lying-in Hospital, found that 1 c.c. of 20 per cent. camphorated oil, given hypodermically in rabbits and repeated every twelve hours after a fatal dose of pneumococcus emulsion had been injected intravenously, inhibited the fatal outcome, but one animal succumbed out of six. (Reported in my first paper.)

To test the action of the 30 per cent. camphorated oil against pneumococcic toxemia in rabbits, and to compare this with the action of the same oil to which salicylic acid had been added, Dr. G. A. Rueck, assistant pathologist of St. Francis' Hospital, at the request of the author, made twenty-seven experiments, of which the last twenty shall be mentioned here, as the others were of a preparatory nature.

Rueck first injected 2¾ c.c. of a pure culture of pneumococcic emulsion intravenously into a rabbit weighing 2,325 grams, the animal dying promptly after 36 hours. From the heart blood the organism was isolated and used for the following experiments to insure sufficient virulence:

One c.c. of a 24 hours' broth culture of pneumococci introduced intravenously in a rabbit weighing 1,500 grams proves fatal in from 24 to 36 hours, according to numerous experiments. But in the first 8 experiments of Rueck 1½ c.c. of this culture was injected intravenously, irrespective of the weight of the animals, 6 hours before the camphor oil, with or without an addition of from 1 per cent. to 3 per cent. of salicylic acid, was given hypodermically in doses of 2 to 5 c.c., and repeated every 12 hours, with the result that the animals weighing but 1,000, 1,065, and 1,165 grams respectively, died within 48 hours; two others weighing 1,345 and 1,445 grams respectively, but having been given

TABLE No. 1.

EXPERIMENTS WITH THREE FATAL DOSES OF PNEUMOCOCCI.

Weight of Animal	Amount of Inoculation	Time of Inoculation	Time of First Camphor Injection	Quantity of Oil Injected Every Twelve Hours	Temperature of Animal Before and After Inoculation	Result
1000 G.	1½ c.c.	4 P.M.	10 P.M.	4 c.c. of 30 per cent. Camphor Oil + 2 per cent. Salicyl. Acid,	102° 106° F.	+ in 28 hours
1065 G.	1½ c.c.	4 P.M.	10 P.M.	3 c.c. of 30 per cent. Camphor Oil + 2 per cent. Salicyl. Acid,	103° 105.8° F.	+ in 24 hours
1165 G.	1½ c.c.	4.15 P.M.	10.15 P.M.	5 c.c. of 30 per cent. Camphor Oil	101.4° 104.6° F.	+ in 30 hours
1325 G.	1½ c.c.	4.30 P.M.	10.30 P.M.	5 c.c. of 30 per cent. Camphor Oil	101.4° 104.6° F.	Recov'd in 4 days
1345 G.	1½ c.c.	4.45 P.M.	10.45 P.M.	2 c.c. of 30 per cent. Camphor Oil + 1 per cent. Salicyl. Acid	102° 101.2° F.	+ after 4 days.
1445 G.	1½ c.c.	5 P.M.	11 P.M.	2 c.c. of 30 per cent. Camphor Oil + 2 per cent. Salicyl. Acid	102.2°—106.8° F.	+ after 5 days
1635 G.	1½ c.c.	5.15 P.M.	11.15 P.M.	5 c.c. of 30 per cent. Camphor Oil + 2 per cent. Salicyl. Acid	101° 103.6° F.	Recov'd in 4 days
2030 G.	1½ c.c.	5.30 P.M.	11.30 P.M.	3 c.c. of 30 per cent. Camphor Oil + 3 per cent. Sacliyl Acid	101° 104.6° F.	Recov'd in 3 days
2175 G.	1½ c.c.	3 P.M.	9 P.M.	5 c.c. of 30 per cent. Camphor Oil	103.8° 106.8° F.	+ in 5 days.
1275 G.	1 c.c.	3.15 P.M.	9.15 P.M.	5 c.c. of 20 per cent. Camphor Oil	102.8° 105.2° F.	+ in 4 days

TABLE No. 2.

EXPERIMENTS WITH FATAL DOSES OF PNEUMOCOCCI.

Weight of Animal in Grams	Amount of Inoculation	Time of Inoculation	Time of First Camphor Injection	Quantity of Oil Injected Every Twelve Hours.	Temperature of Animal Before and After Inoculation	Result
1000	¾ c.c.	3 P.M.	9 P.M.	5 c.c. of 30 per cent. Camphor Oil	103.2° 105.6° F.	Recov'd in 4 days.
1160	¼ c.c.	3.15 P.M.	9.15 P.M.	4 c.c. of 30 per cent. Camphor Oil + 1 per cent. Salicyl. Acid	103.6° 105.2° F.	+ in 4 days.
1335	1 c.c.	3.30 P.M.	9.30 P.M.	4 c.c. of 30 per cent. Camphor Oil + 1 per cent. Salicyl. Acid	103.6° 105.4° F.	+ in 4 days.
1425	1 c.c.	3.45 P.M.	9.45 P.M.	5 c.c. of 30 per cent. Camphor Oil	102.8° 105.6° F.	+ in 4 days
1455	1 c.c.	4 P.M.	10 P.M.	3 c.c. of 30 per cent. Camphor Oil + 1 per cent. Salicyl. Acid	101.2° 106.2° F.	Recov'd in 4 days.
1455	1 c.c.	4.15 P.M.	10.15 P.M.	5 c.c. of 30 per cent. Camphor Oil	102.2° 106.2° F.	Recov'd in 5 days.
1600	1 c.c.	4.30 P.M.	10.30 P.M.	5 c.c. of 30 per cent. Camphor Oil	103.8° 105.6° F.	+ in 3 days.
1600	1 c.c.	3 P.M.	9 P.M.	3 c.c. of 30 per cent. Camphor Oil + 1 per cent. Salicyl. Acid.	101.2° 106.8° F.	Recov'd in 4 days.
2025	1½ c.c.	3.15 P.M.	9.15 P.M.	5 c.c. of 30 per cent. Camphor Oil + 1 per cent. Salicyl. Acid	103.6° 106.2° F.	Recovered in 5 days.
2050	1½ c.c.	3.30 P.M.	9.30 P.M.	5 c.c. of 30 per cent. Camphor Oil	102.6° 105.8° F.	Recovered in 4 days

but 2 c.c. of salicylated camphor oil, lived 3 and 4 days respectively, and that the remaining three animals weighing 1,325, 1,635, and 2,030 grams respectively, the first treated by 5 c.c. of the 30 per cent. camphor oil, the second with the same plus 2 per cent. salicylic acid, and the third with 3 c.c. of the 30 per cent. camphor oil plus 3 per cent. salicylic acid, recovered within 5 days.

That the first 3 undersized animals were killed by the amount of toxin which had formed in the 24 hours' broth of this overmortal dose was evident from the low temperatures found in the rectum of these rabbits on the day after inoculation (98°, 90.4°, and 101.4°).

The next two animals, weighing under 1,500 grams, responded to this overdose of pneumococcic broth by rectal temperatures of 106.6° and 107.4° F. respectively, and being treated by but 2 c.c. of 1 per cent. and 2 per cent. salicylated camphor oil, lived 5 days, 3 days longer than if they had not so been treated.

The 3 remaining animals survived this overdose of pneumococcic broth (1) on account of their size (weighing 1,325, 1,635, and 2,030 grams respectively), and (2) because the first was treated by 5 c.c. of the 30 per cent. camphorated oil, the second by the same dose plus a 2 per cent. addition of salicylic acid, and the third by 3 c.c. of this oil with a 3 per cent. salicylic acid addition.

In the second series of 12 experiments the amount of pneumococcus emulsion was graded to the rule of 1 c.c. to 1,500 grams of animal weight, but the amount of camphor oil injected was not graded, varying between 3 c.c. and 5 c.c. per dose.

Of these 12 animals 6 recovered within 4 to 5 days, 3 of the 7 treated by pure camphor oil, and 3 of the 5 treated by the same oil plus 1 per cent. salicylic acid. Of the 6 animals which died 1 lived 3, 4 lived 4, and 1 lived 5 days after the inoculation. The rectal temperatures of the animals were taken daily at 8, 12 and 6 o'clock, before and after inoculation.

In looking over Rueck's report on his last 12 experiments the author finds that of the 6 animals which succumbed in his experiments 3 rabbits weighing but 1,425, 1,335, and 1,275 grams respectively had been given the full fatal dose of pneumococcic broth for an animal weighing 1,500 grams. The immunizing ability of 75, 165, and 225 grams of body tissue deducted from an animal of 1,500 grams body weight is no trifling matter in pneumococcic infection.

Again, a fourth animal weighing 2,135 grams was inoculated with 1 1/3 c.c. of the virulent pneumococcic broth culture, a fatal dose for a rabbit of 2,840 grams. 705 grams of body tissue deducted from 2,840 grams of body weight may change the ultimate result in an experiment. These figures prove that Dr. Rueck, who was given a free hand in these experiments, made no efforts to produce favorable results of the camphor treatment in pneumococcic toxemia.

It also must be kept in mind that in injecting pneumococcic broth into the blood current an unknown quantity of toxin is introduced with the organisms, the action of which may decide the issue.

Many parasites produce more toxin than few. The question of quantity is of importance not alone in judging the severity of an infection but also in determining the amount of the curative drug.

Summing up we find that in 17 out of 20 animals inoculated with the fatal dose of pneumococci, death was retarded from 2 to 5 days by camphor oil injections in 8, and entirely prevented in 9.

As the first three animals were given at least twice the fatal amount of pneumococcic broth that in all reason they should have received, it is but fair, in estimating the action of the camphor treatment, to leave their career out of account.

Comparing the results of Morgenroth and Levy in the Pathological University Institute in Berlin (*Berlin. klin. Woch.*, Oct. 30, 1911), who injected the fatal pneumococcic dose into the peritoneum of mice, and 5 to 6 hours later 0.75 c.c. of 0.75 per cent solution of aethylhydrocuprein (an alkaloid of the quinine group) and saved 12 out of 22 animals, Dr. Rueck can be satisfied when considering that in his experiments the fatal dose of pneumococci was in the blood current from the start.

These attempts to interfere in human and animal pneumococcic infections with camphor have established the following facts: (1) That 10 c.c. of a 30 per cent. camphorated oil (equal to 36 grains of pure camphor) injected hypodermically to 100 pounds of human body weight every 8 to 12 hours, do not produce symptoms of poisoning, in fact are harmless; (2) that much larger doses (to the body weight) in rabbits are equally well borne, and (3) that *these quantities of camphor materially assist in overcoming pneumococcic toxemia;* and (4) that the earlier this treatment is resorted to the better the results.

Want of material has so far prevented me from comparing the action of the 1 per cent. salicylated with that of the pure 30 per cent. camphorated oil in pneumonia sufficiently to venture a conclusion.

The injections are best made along the outer thigh. A Luer syringe of 10 or 20 c.c. capacity (without rubber washer) must be used. The oil must be sterilized in a large-mouthed bottle with the loosely fitting stopper in a boiling waterbath, and drawn from it (not poured) into the sterilized syringe.

The point of injection is best rendered sterile by a few drops of the tincture of iodine. While injecting, the skin with the subcutaneous fat must be well drawn up, so as to deposit the oil below (not into) it.

In fat patients it is practical to inject the requisite quantity in two localities. In lean persons 20 c.c. can be deposited without discomfort.

Abscesses are due to faulty sterilization, and sloughing of the skin to faulty technique.

114 East Fifty-seventh Street.

GERIATRICS.*

By I. L. NASCHER, M. D.,

NEW YORK.

SPECIAL LECTURER IN GERIATRICS, FORDHAM UNIVERSITY SCHOOL OF MEDICINE.

The branch of medicine for which I suggested the term "geriatrics" is neither a fad, a hobby, nor a recent innovation in medicine. As a philosophical study senility engaged the minds of Cicero and Seneca. Senile diseases are mentioned in the works of Hippocrates and Galen. The alchemists of the middle ages studied the senile organism and the senile changes and made their panaceas to prevent those changes, for according to the second of the three articles of faith laid down by Jaffir El Gebbir, there existed a red elixir which would cure diseases, re-

*Read before the Medical Society of the County of New York, March 25, 1912.

juvenate the aged, and prolong life. Bacon and Descartes wrote treatises on old age. The best known of recent philosophical writings are those of Jean Finot and Metchnikoff, although the works of the latter are really philosophical deductions from scientific research. The earliest medical work dealing specifically with the diseases of old age is Floyer's "Medicina Gerocomica," published in London in 1724. There are several other works of the eighteenth century dealing with this subject, but the earliest work to leave any marked impress upon the medical profession was Canstatt's "Krankheiten des höherem Alters und ihre Heilung" (Diseases of Advanced Age and Their Cure), which appeared in Erlangen in 1839. While this is the first of the scientific treatises on diseases of old age the ground had been well prepared by earlier writers. In Bichat's work, "La Vie et la Mort" (Life and Death), which appeared in 1800, there is a description of the physiological changes that go on in the process of aging. Cruveilhier's monumental work on pathological anatomy contains descriptions of the pathological changes that are found in diseases of the aged. Pinel in his lectures delivered more than a century ago in the Salpetrière, the home for aged women in Paris, and later in his work on clinical medicine, described diseases of the aged. Landre-Beauvais, Rostan, Hourmann, and Dechambre, all prepared the ground for Canstatt and for Prus, who in 1840 presented to the French Academy of Medicine a monograph entitled "Recherches sur des Maladies des Vieillards" (Researches into Diseases of the Aged). Since then the principal French writers on this subject were Beau, Gillette, Durand-Fardel, Brown-Sequard, Charcot, Demange, Rauzier, whose "Traité des Maladies des Vieillards" (Treatise on Diseases of the Aged) appeared in 1909, and Pic, whose work, "Précis des Maladies des Vieillards" (Summary of the Diseases of the Aged), appeared a few months ago. The principal German writers since Canstatt were Geist, Mettenheimer, Friedmann, and the latest, Schwalbe, whose "Lehrbuch der Greisenkrankheiten" (Textbook on Senile Diseases) appeared in 1909. Schwalbe had the collaboration of many of the most eminent men of Germany, men like Ewald, Naunyn, Grawitz, Hoppe-Seyler, Hirsch, Oertner, Siemerling, Sternberg of Vienna and men of like caliber. Schwalbe's work contains references to 446 authors, of whom 68 are French, 24 are English, 8 are Italian, and but 6 are American, and 3 of these 6 are really German physicians. The paucity of American literature on this subject is more forcibly brought out by the fact that there is not a single work on senile diseases by an American writer except what can be found in journal literature. In 1881 a work, "Diseases of Old Age," by Charcot and Loomis, appeared in Wood's Medical Library, but that was merely a translation of Charcot's work which first appeared in 1869, to which were added a few lectures by A. L. Loomis, and in 1890 in one of Wood's monthly monographs there appeared a lengthy article by Seidel of Berlin.

The cause for the general neglect of this subject in this country is readily explained. Here the desirability of men and things is gauged by their practical value. The senile are economically worthless, their idiosyncrasies rob them of sympathy, their unesthetic appearance robs them of interest. The physician dealing with them realizes the hopelessness of ultimate success, and where failure is a foregone conclusion it is not in human nature to exert oneself to the utmost even if there is a possibility of temporary improvement. Under such conditions the physician will prefer to devote his time and energies in a more fruitful field. But the medical profession has as its fundamental principles, sympathy and science; sympathy to relieve distress wherever it may appear, science to study life and how to prolong it, and in no other branch of medicine can these be carried out to the same extent as in geriatrics. I need not speak of the humanitarian aspect of geriatrics. From the scientific standpoint there is no branch presenting problems more interesting, possibly of more profound import, than this. Take the basic problem why do we age. May there not be some controllable factors underlying the senile processes? There is undoubtedly a determining factor, perhaps an inherent property in all living matter which limits its growth and causes the senile processes which end in death. It may be a series of evolutionary changes in the cells such as I described in a paper on tissue cell evolution as a theory of senescence. There are contributing factors which retard or hasten the senile changes, as the senile stoop with its consequent compression of the lung and impaired hemic aeration, more pronounced in those accustomed to slouch than in those accustomed to an erect bearing, and in women who never wore corsets than in those accustomed to stays. Pneumokoniosis is rarely found in old sailors, but is rarely absent in old city dwellers. May we not find among these contributing factors some which are controllable and through the control of which we may be able to defer or retard the senile processes which we call degenerative, though they be the normal physiological processes of advanced life? Is it not possible to stimulate the aged organs and tissues to the extent that mental and physical activity are temporarily restored, thereby producing a true though momentary rejuvenescence? I have worked for some years upon this problem, but the results have not been brilliant; they have been mostly failures. Still, it has been possible in a few cases to so stimulate mental and physical energy and vigor as to restore temporarily the working capacity and the economic usefulness of the individual. I believe more extensive research with this end in view will bring to light measures or methods by which we shall be able to increase the waning powers of the aged individual and thus bring about a true though temporary functional rejuvenescence. In the paper of Seidel to which I have referred he says: "Mistakes are made daily in the treatment of the aged, and the normal mortality of advanced life is considerably increased as a consequence of the hitherto neglected study of the anatomical and physiological peculiarities of the senile organism." That holds as good to-day as when it was written twenty years ago.

To this ignorance of the senile state I will add a universal error, a wrong conception of disease in old age. The senile degenerations are natural, normal, and physiological at that period of life. Occurring at an earlier period they are unnatural, abnormal, and pathological. If we take a hale, hearty man of seventy we will find a number of degenerative changes, yet the degenerated organs functionate harmoniously and give no manifestations of disorder. The functions are performed less actively than in maturity, the secretions and excretions are diminished, the circulation is weaker, respiratory capacity and activity are lessened, there is less physical power, nerve responses are slower, the mental

powers are deteriorated, and the whole organism is depressed. In comparison with the healthy individual in maturity every organ and tissue is diseased, but if we look upon senility as the pediatrist looks upon childhood, as a physiological entity entirely apart from maturity, we must consider this old man in perfect health. Taking this view, disease in old age is not a perversion of function or growth from the norm of maturity, but from the norm of senility. The senile form of arteriosclerosis, if not excessive, is natural and normal, and nothing we may do can make it more normal or lessen it. We may be able to relieve disagreeable symptoms, but we cannot improve the condition. If under treatment there is an improvement then we have had a pathological condition due to a disease cause and what remains after the limit of improvement has been reached is the normal senile arteriosclerosis. If we accept the view that senility is a physiological entity like childhood, we will get a new conception of the diseases of old age. We will then consider the so-called diseases of metabolism which prevail almost exclusively in advanced life, as diabetes, gout, chronic rheumatism, postclimacteric obesity, and the diseases which occur in the aged alone, as paralysis agitans and atrophic emphysema, as perversions in the process of senile involution; and the perversions in cell growth, as in hypertrophied prostate and perhaps in carcinoma, will fall under the same head. The pathogenesis of such diseases might be explained by the theory of tissue cell evolution, but I have not had the opportunity to verify this theory.

Ignorance of the anatomical and physiological peculiarities of the senile organism gives rise to errors in diagnosis through faulty observation, faulty interpretation, and faulty deduction from senile manifestations. Cases present manifestations of senility which simulate diseases, as the contracted liver, which may be mistaken for cirrhosis of the liver. Sometimes the manifestations of normal senile changes are so pronounced as to mask the symptoms of a grave disease as when the senile emphysema masks the symptoms of a senile pneumonia. The symptoms of a grave disease may be so obscure as to be unnoticed or uninterpretable and this frequently happens in cases where death resulted without clearly defined symptoms. We say death from old age, but in most of these cases a post-mortem examination reveals a pulmonary congestion and edema. Pathologists frequently report the finding of chronic interstitial nephritis at autopsies of aged persons who gave no evidence of this condition during life. It is probable that in these cases the pathologist fails to distinguish between the kidney of chronic interstitial nephritis and the normal senile contracted kidney which shows the histological change first described by Jos. P. Walsh, of Philadelphia: a gradual progressive increase in connective-tissue growth between the aspices of the pyramids which goes on from birth. Complications that are rare and generally curable in maturity are frequent in senility, and unless dealt with in time they are often fatal. In many senile cases we find a number of symptoms which appearing in maturity form a pathognomonic symptom complex. In senility if each symptom is traced to its source we will find an entirely different condition from that which the symptom complex would indicate. The senile climacteric has as one of its most marked manifestations a pronounced change in mentality and lack of recognition of this transitional period between old age and senility, a period lasting several months, leads to errors from which may arise grave judicial wrongs.

In a paper so general in its scope as this little attention can be given to detail, yet I will mention a few diagnostic points in senile cases. Mouth temperature may be two degrees or more lower than rectal temperature. A temperature of 103° or more indicates a grave, probably acute inflammatory, disease, but such a disease may be present with little or no elevation of temperature. Atrophic emphysema and aortic regurgitation are present in almost every senile case and we must disregard these symptoms when examining the chest. Radial arteriosclerosis is usually more pronounced on the right side. The difference between the two sides makes the pulse and radial blood pressure misleading. Aches and pains often diagnosed as rheumatism are generally due to the senile hardening of cartilages and tendons and stiffening of joints and will not respond to medical treatment. Diseases usually painful in maturity as the serous inflammations, gout, pneumonia, etc., may be present in the aged yet produce little distress. Neither pulse, pain, nor temperature is of much service in determining the diagnosis, the personal history as given by the patient is often unreliable, and unconscious mimicry often gives rise to symptoms for which no pathological condition can be found.

Faulty diagnosis naturally gives rise to faulty treatment, but even when a correct diagnosis is made the aged are frequently improperly treated through our ignorance of the action of drugs and other therapeutic agents upon the senile organism. Assimilation is slow, cumulative action is frequent, and the secondary action of drugs is often more pronounced than the primary effect. The danger from the opiates lies in the secondary effects upon the respiratory centers. In the popular aloin, strychnine, and belladonna pill the action of the belladonna which inhibits peristaltic activity destroys the desired action of the aloin which is a peristaltic stimulant. The only rule for dosage in old age that we now have is the ancient dogma that children and the aged cannot stand large doses and doses are reduced without rule or system. Ask yourselves if you have any other rule for diminishing doses in old age than a rough guess. Yet in a great majority of senile cases, and with most drugs, doses must be increased. Take senile constipation for example. This is due to atony and waste of the muscular fibers of the intestines, and the remedy is peristaltic stimulants. In the beginning small doses may suffice, but as the atony and waste proceed larger doses will be required, and if we change the drug the new drug must be given in correspondingly large doses. The rule for dosage in old age is to increase the dose of stimulants and diminish the doses of depressants, beginning with the average dose of maturity and adding correctives to counteract secondary effects of depressants. At the same time we must remember that excessive stimulation of an organ increasing its activity, increases its waste, and hastens its degeneration. For this reason we must save the organs when possible, supplying secretions instead of forcing the secreting organs to increased activity, supplying for example the bile salts instead of using hepatic stimulants. Lessen the work of the lungs by supplying the denser and clearer atmosphere of the seashore. Lessen the work of the heart by rest and freedom from excitement. Lessen the work of the brain by removing sources of worry, irritation, and mental activity. In maturity nature cures, in

senility nature kills. A perversion of function or anatomical relation in maturity has a tendency to return to the norm of health if the cause is removed. In senility a pathological state of an organ hastens the degeneration of that organ, and if left to itself it will cause death. Active measures must be taken even in slight ailments, for they will involve allied organs which cannot accommodate themselves to functional derangement in another organ owing to their own degenerated condition. The neglect of these minor ailments, which are generally dismissed with the verdict "old age" is responsible for many deaths which might have been prevented if a more sensible diagnosis had been made and acted upon. The physician's verdict of old age is now virtually a death sentence when it might in many cases hold out some hope for prolonged life and continued usefulness.

The home care and institutional care of the aged have received little attention, yet they involve problems affecting the health and comfort of the aged individuals. So simple a thing as the shape of the chair has an influence upon the person's welfare. Seated in an ordinary chair the hands fall into the lap and the upper part of the chest is slightly compressed. Seated in an arm chair with the arms upon the rests, the upper part of the chest is slightly expanded without effort. This may appear insignificant in maturity, but in senility anything which will tend to aid in the expansion of the chest without increased physical effort is beneficial. There are many other similar apparently insignificant factors which are ignored in the care of the aged. The recreations, diet, clothes, sleep, should all be considered when dealing with this class of cases. Of the greatest importance is the early observation and interpretation of deviations from the accustomed routine of life, and especially of such symptoms as lassitude, headache, constipation, urinary difficulties, loss of appetite, and dyspnea. Mumbling during sleep may be a low muttering delirium and the family's diagnosis of failing rapidly is often the rapid exhaustion which accompanies senile pneumonia. Time does not permit me to go further into my subject. I have touched upon but few of the many factors which must be considered when dealing with the aged. I have merely scratched the surface, yet I hope that I have uncovered some things new to you in the realm of medicine. It is a source of gratification that one medical school has considered geriatrics, this neglected branch of medicine, of sufficient importance to include it in its curriculum.* I will be well satisfied if I have been able to impress the reader with its importance and to arouse in him an interest in the aged that he may apply to them those noble principles of our profession, sympathy and science, sympathy to relieve them of their ailments, science to study and prolong their lives.

*Since this was written I have received an invitation to deliver a course of lectures on Geriatrics at the College of Physicians and Surgeons of Boston and also at the Bennett Medical College, Chicago.

Neuroses and Gynecological Affections.—Lanfrognini describes various hysterical manifestations associated with gynecological disorders, especially inflammatory ovarian troubles occurring during the puerperal state and congenital alterations in the form and position of the uterus. The treatment of these lesions with a view of re-establishing the uteroovarian functions had an excellent effect on the nervous phenomena. Aside from the reflex effect of these lesions it is believed that the perversions of ovarian function are probably accompanied by a general autointoxication due to perverted internal secretions.—*La Riforma Medica.*

FREE POSTGRADUATE MEDICAL INSTRUCTION.

BY GEORGE MANNHEIMER, M.D.,

NEW YORK.

THE subject of postgraduate medical education formed an important topic in the general session of the last International Medical Congress, held at Budapest in 1909, and the following resolutions formulated by Professor R. Kutner, of Berlin, were adopted:

"A medical education should not be considered finished at the end of the university course. The constant progress of science requires of the physician an equally unremitting effort in the direction of further study. Physicians must be given opportunities to supplement their knowledge without great material sacrifice on their part. These opportunities must be offered the physician free of expense, and, furthermore, at time and place most convenient to him. In all large cities there should be created educational centers for which the local hospitals could be utilized and in which physicians capable of teaching may act as instructors. While at present lectures and courses given in scientific institutions and hospitals must be accepted as the best form of continued study, it should be our aim in future to create as many institutions as possible, serving exclusively the purpose of medical postgraduate education."

In accordance with these resolutions an International Committee on Postgraduate Education was formed, with the view of co-operating along such lines, which, by concerted action, can be advantageously furthered. For instance, organization of postgraduate instruction in the different countries; widening opportunities; calling the attention of the profession to institutions existing for the purpose; giving information as to the relations of medical colleges to postgraduate study; as to teaching facilities; as to opportunities for wider special postgraduate study; exchange of instructors to enlighten physicians on new important subjects; statistical inquiries; establishment of tours for medical study in foreign countries. This International Committee is to meet in connection with the International Medical Congresses. The American delegation consists of the Surgeons-General of the Army and Navy, Dr. Thayer, of Johns Hopkins, and Drs. Miller, Quintard, and Kast, of the New York Postgraduate Medical School. This subcommittee has not yet been heard from, but is preparing through its secretary, Dr. Kast, a report on the situation of postgraduate instruction in the United States and a plan of action for the next International Congress on Hygiene and Demography to be held in Washington, September, 1912.

I trust that my efforts here to-night may ultimately aid the American delegation.

That there is a demand for postgraduate instruction is abundantly proved by the existence and flourishing condition of the postgraduate schools in this country, the oldest of which was founded in this city nearly thirty years ago.

Let us at the outset define the attitude of the existing postgraduate schools toward this movement. That they are not antagonistic is evidenced by the fact that three members of the American Committee are affiliated with one of the postgraduate schools. These schools cater generally to a class of out-of-

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town physicians, who give up practice for a period of weeks or months and devote themselves exclusively to postgraduate study. The course at the school is arranged accordingly. They also cater to such as wish to specialize, or wish to become proficient in the technique of cystoscopy, ureter-catherization, *x*-ray or other special work. Those physicians will have to devote their entire time to the various aspects of their particular specialty, and will be obliged to pay for tuition. In Berlin, for instance, paid courses flourish directly adjacent to the courses which are free. The American postgraduate schools have the great advantage of controlling and maintaining well equipped hospitals and laboratories in conjunction with the school, whereby administration and teaching work hand in hand. The hospital is founded and maintained for the purposes of instruction. Their standard of teaching is not higher than that in the fourth year of a first-class medical college. Similar institutions founded for this purpose exist in Germany, Russia, and Great Britain. Tuition is both gratuitous and paid.

In many countries physicians holding public medical offices are required to report for regular postgraduate courses arranged by the Government. Our Army and Navy surgeons are obliged to attend at stated intervals courses at the Army and Navy Medical School in Washington.

Dr. John B. Murphy of Chicago, at this writing President of the American Medical Association, has in his inaugural address even gone so far as to suggest that a license to practise should be granted only for a period of say five to ten years, and at the expiration of this time, physicians should be required to pass an examination or to take a prescribed course of study. Many American physicians go abroad from time to time to continue and extend their studies.

I am sure that all of us at times have felt the need of a brushing-up, and many a practitioner is spending a spare hour in the lecture halls of our medical colleges, side by side with undergraduates. And well may our universities here in New York contribute their share toward the work of postgraduate education. They are well endowed, have ample incomes and every facility for the best teaching available; they have taught many of us and are instructing our sons and daughters; they have the use of city and private hospitals for their students, whereas we physicians and permanent residents of this city are deprived of these privileges. By teaching physicians, university teachers will readily observe whether their undergraduate teaching has fallen on fertile soil, or whether it needs reformation and in what direction. Undergraduate and postgraduate teaching is correlated and should work harmoniously. University teaching and university teachers should never lose the life-giving contact with the practice of medicine.

It is true we have our full quota of medical societies, both private and public, and continue to learn at their meetings. True also we have numerous medical journals, which chronicle the progress in the medical world, as well as original papers—and it is frequently more profitable to peruse such papers at leisure than to listen to them. The American Medical Association, it is true, since 1907 has arranged a four years' postgraduate course of study for County Societies, which covers the entire field of medicine and surgery and is followed by about three hundred and fifty County Societies throughout the United States. While this is a praiseworthy effort, it does not fill the need, and is furthermore not applicable to such large societies as ours.

In our neighboring city of Philadelphia some attempt along this line has been made. There has been in existence for a decade a bi-weekly clinic at the Pennsylvania Hospital open to practitioners; the entire morning is devoted to this clinic, the first half to medical, the second half to surgical work.

Still we have the satisfaction of seeing in our own city examples of the kind of instruction we really need—the Harvey lectures; lectures and demonstration of skin diseases given at the New York Skin and Cancer Hospital by Dr. Bulkley; lectures and demonstrations of orthopedic diseases at the New York Orthopedic Hospital by Drs. Shaffer and Hibbs; clinical conferences at the New York Neurological Institute; demonstrations of newer diagnostic methods of gastrointestinal diseases at the Ward's Island Institutes by Dr. Kemp; demonstration of the neurological material of Lebanon Hospital to physicians of the Bronx by Dr. Leszynsky. Almost all hospital surgeons send out cards to their friends, inviting them to operations personally performed. Some of the courses mentioned above are extremely popular with the profession; some have been abandoned; some, and there may be more than I am cognizant of, are not adequately brought before the medical public to be sufficiently appreciated. They are almost uniformly the result of private initiative.

The Rockefeller Hospital has recently instituted clinical demonstrations to groups of from forty to fifty physicians of such diseases which they are investigating, with the object in view of acquainting the profession with the problems upon which they are working.

Now, let us consider what a city like New York could render to the cause of postgraduate instruction. I feel positive that many physicians have not witnessed an autopsy since leaving college. The greater majority see very little pathological material. We all acknowledge, however, the enormous educational value of post-mortem as compared with bedside findings. This anomalous state of affairs could easily be corrected in our city by utilizing the wealth of pathological specimens to be found in every hospital as well as the enormous autopsy material which is constantly pouring into such institutions as the Russell Sage Institute of Pathology or the city morgue.

An occasional tour of inspection of the hospitals for contagious diseases at the foot of Sixteenth street, of North Brothers Island, of tuberculosis hospitals and sanatoria, would greatly increase our ability to recognize and manage such diseases, and further impress upon us the value of special therapeutic measures, such as the open-air treatment, this merely to mention one instance.

A visit to the quarantine station of our port would illustrate the latest and most approved methods of disinfecting living quarters and clothing. Moreover, such of us as are interested in tropical diseases would frequently find excellent opportunities for observation.

The Rockefeller Institute is the Mecca of every foreign medical visitor. How little comparatively do we New Yorkers know concerning the important original work accomplished within its walls. We could learn there the scope and methods of modern research and see the development of such epoch-making work as the transplantation of organs, the cultivation of tissues outside the living body, intra-

tracheal insufflation anasthesia, the vaccine treatment of meningeal infections, etc., etc.

The Division of Laboratories of our Health Department could teach us new and valuable methods of examining sputum, blood, cerebrospinal fluid, as well as the preparation of vaccines and sera.

The physiological and pharmacological departments of our medical colleges are continually engaged in experimenting with new apparatus and with new and old drugs to test their applicability to practical medicine. A demonstration of results attained would furnish us many a practical hint.

How little is given to the profession of the ever increasing knowledge of mental diseases. Would it not benefit us, and through us the community, to see the material of our island asylums and the psychopathic ward of Bellevue, that great receiving and sifting station for the insane? The enormous clinical material of our asylums, our homes for chronic invalids and incurables, is practically wasted as to its educational possibilities.

Why should not our vast dispensary material be used for postgraduate teaching? That material covers general medicine and surgery, as well as the specialties. It comprises the class of cases which come to our private consulting rooms. These patients generally do not object to repeated examinations. Physicians working in dispensaries are prone to fall into slipshod habits and treat symptoms rather than make a diagnosis. They would quickly awaken to their duties and accomplish far better work if observed and quizzed by fellow practitioners.

However, the main and most important centers of teaching must be our hospitals, both public and private. Our hospitals have heretofore been monopolized by a favored minority, while the rank and file of the profession have been deprived of the incalculably great benefit of hospital experience. This benefit will be especially apparent when the family physician who sent a patient to the hospital, and may have to continue the treatment after the patients' discharge, has an opportunity to discuss the case with the hospital physicians during rounds. At present this is occasionally granted as an act of courtesy on the part of the attending towards individual members of the profession. Why should this courtesy not be extended to all physicians as a matter of just privilege? No one will be the loser, but on the contrary all will gain by such a procedure.

As it is, patients are used in many places for undergraduate teaching. They would surely not be handled less considerately by physicians than they are by students; on the contrary, they would frequently derive some benefit from an interchange of opinion between the attending and the visitors. Furthermore, this material cannot be valued and appreciated by the undergraduates in the same degree as by the practitioners. The house staff will have to do more detailed and more painstaking work on the cases; the nurses will be obliged to attend to their various duties more assiduously. Records will be kept in better and more accurate condition. The attendings will be stimulated to study and read up about their cases. As a consequence the entire work and standing of a hospital will be raised to a higher plane of efficiency. As it is, some hospital physicians are teaching colleagues from other states without compensation; some are teaching undergraduates without compensation; many are only too willing to begin teaching, thereby improving themselves and coming into friendly contact with their brother practitioners. I feel sure that very few physicians connected with hospitals, dispensaries, laboratories, and asylums, would refuse to serve gratuitously as teachers to their local confrères.

This plan has been in operation in many European countries, and is most completely organized in Germany, where it has been in existence since 1900. There the governing agencies have recognized the potent fact that it is to their advantage and for the best interests of the community at large to have physicians as well trained as possible and to keep them in training. The department of education, which controls all schools and universities, supports the movement. Local committees arrange the details of postgraduate work, which is strongly assisted by a special organ, *The Journal for Medical Postgraduate Instruction*. This journal announces the time, place and scope of lectures and courses; prints important lectures, thus making them accessible to those who are prevented from attendance and publishes every detail pertaining to the movement. A Central Committee for the Empire assists the local committees, stimulates the formation of new local unions, collects all available material on postgraduate instruction and acts as a central bureau of information. It conducts its affairs from a large special building, the "Kaiserin Friedrich Haus," in Berlin. This building contains, besides offices, information bureaus and meeting rooms, a large auditorium and laboratories for practical courses in the auxiliary branches of medicine; furthermore, a collection of instruments and material used in medical teaching, such as charts, drawings, wax models, mannikins, projection apparatus, etc., which are loaned to local organizations; also exhibition rooms rented to manufacturers of instruments, appliances and technical products, intended for use in the practice of medicine.

The various states and municipalities give moral and financial support to the movement. The universities open their clinics and laboratories. Everything is gratis to the physician, excepting perhaps in some cities, where a nominal fee of about $1 is charged to the participants for an entire session. The expenses are low, because institutions already existing, hospitals, asylums and laboratories, are used for the purpose, and the visiting physicians give their services gratis.

There is no valid reason why we could not follow this example in our country. It is left to the American delegation of the International Committee to organize this movement throughout the land. I appeal here to-night to the physicians of New York to organize for the purpose of free postgraduate instruction. We have only to decide whether we require and desire it. We need only to remind those upon whose cooperation we depend how important it is that all practitioners recognize promptly and handle properly all forms of communicable diseases. For instance, many physicians have never seen a case of smallpox. Should we not all recognize it and see it again from time to time? Or take tuberculosis. To reduce its ravages and the enormous economic loss entailed by it, we must all be perfectly familiar with the earliest signs and symptoms, must know the value of tuberculin tests, of *x*-ray examinations, and the best methods of percussing the apices—for even in this elementary matter changes and improvements are continually taking place. These details must be demonstrated to the practitioner on the prolific material of special hospitals and sanatoria.

Communities and nations are vitally interested in cutting down their frightful rate of infant mortality. As a campaign measure, physicians must be given opportunity to observe what is best in the ever changing methods of infant feeding and infant care.

Our State Department of Labor requires us under penalty of a fine to report cases of lead, arsenic, and phosphorus poisoning, anthrax, and compressed-air sickness. How many practitioners can now recognize caisson disease, anthrax, or chronic arsenic and phosphorus poisoning? Let the State Department of Labor furnish us an opportunity to see and study such cases as they appear in public institutions, and we shall then be able to cooperate in stamping out industrial diseases.

I am sure the public will welcome and support this movement, realizing fully that it is to their best interests for the practitioners to keep in constant training. There seems to be no serious barriers or obstacles to be overcome. The benefits to all mutually concerned are obvious.

A tentative plan is proposed herewith. A central committee for postgraduate instruction is formed by this society. This committee considers and selects all institutions which can be used for postgraduate teaching. It then appeals to the lay and medical boards of said institutions and enlists their support for this movement. The institutions which agree to cooperate elect a special committee of their own, which arranges the work of teaching in the home institution and confers with the central committee. The latter publishes the time, place, and scope of the demonstrations and lectures with the regular monthly notices on the bulletin board of the Academy and in the medical weeklies, which will undoubtedly open their columns for the cause. The difficult part of the problem is how to accommodate the five thousand or more physicians of this county. It is impossible to predict how many will avail themselves of this opportunity. It is proposed to divide the boroughs of Manhattan and Bronx into districts, and allow physicians who desire to participate to register at the institutions situated in their district. This will gain them admittance in larger or smaller groups according to the subject taught, and in proportion to local facilities. Institutions wishing to present subjects of general interest can give them to the entire profession on their own premises, providing they have spacious auditoria or in the halls of the Academy. The central committee reports on the progress of the movement at the monthly meetings of this society and receives suggestions. Further details may be left to the work of committees.

In conclusion let us bear in mind these fundamental facts so well expressed by Professor Kutner: Medical science is progressing by leaps and bounds. We cannot keep pace with the flood of medical literature. The subdivision into specialties has about reached its limits. Specialism, fruitful as it may be, has a trend to one-sidedness and narrow-mindedness.

Postgraduate instruction, as here propounded, does not propose to train specialists, but to enable the general practitioner to perform his work in the best way possible, by giving him from time to time those modern achievements of our science and art which have been thoroughly tested and accepted. Postgraduate instruction will thus not only benefit the physician in his scientific and economic struggle, but will also enable him to fulfil his high mission of preserving and protecting the health of the nations.

116 East Seventy-sixth Street.

GONORRHEA IN WOMEN.

By MAUDE GLASGOW, M.D.,

NEW YORK.

Gonorrhea has been demonstrated a disease of Protean character; modern methods of research having shown its latency, chronicity, and resistance to treatment after the first stage has been passed; and since Neisser's discovery of the gonococcus, the microscope has proved a first aid in establishing a diagnosis in doubtful and suspected cases.

The gonococcus occurs in groups of two, four, and eight cocci, which are found in typical cases, enclosed within the pus corpuscle, but which are also frequently discovered hanging on to the edge of the epithelial cells, the number of germs present corresponding to the activity and virulence of the infection.

This organism may be stained by any of the basic aniline dyes, and is differentiated from other micrococci of like appearance by its distinctive property of being decolorized by Gram's method of staining, and taking up the counter-stains.

In chronic cases the germ may be very difficult to locate, for while the gonococcus but rarely penetrates to the deeper tissues, it is not evenly distributed, but occurs in circumscribed areas, scattered over the surface of the infected region; the intervening portion being entirely free from this particular germ, though millions of others closely resembling it may be present.

In these chronic cases, therefore, it is necessary to make frequent examinations and to stain several slides. In doubtful cases it is well to have a test specimen on hand, for the purpose of comparison, and if still in doubt, cultures of the organism may be made. The most favorable time for finding the gonococcus is just before or immediately after the monthly period, as the germ multiplies rapidly at this time. Chronic cases are stirred into activity by sexual intemperance, alcoholic stimulation, overexertion, or any excess.

The number of gonococci is vastly increased during the puerperium, and a specimen taken about the fifth day will show large numbers, although before labor their presence may not have been suspected. The youth of the patient always seems to be a factor in the virulence of the disease.

The specimen is obtained by means of a platinum loop, sharp spoon, or even a medicine dropper, the patient being instructed not to urinate until afterwards, as the act of urination washes out the urethra. When absent from other parts of the urethra the germ may be found lurking in the glands of Skene; the vulvovaginal glands also provide a hiding place; and when the infection has apparently disappeared from other parts of the genital tract, it will be found entrenched here, and capable of causing, in a new culture ground, a virulent infection.

The gonococcus is rarely found in the vagina, except in cases of secondary infection, or in children and very young girls, or when the secretions have become mixed with discharges from the cervix and uterus.

When obtaining a specimen from the cervix, all tenacious and glairy discharges must be removed, and the specimen taken from the lining membrane of the canal. When the discharge is scanty it may be difficult or impossible to obtain a specimen, unless some agent is employed to dilute the discharge. For this purpose sterile water may be employed, or a solution of mercuric chloride.

The gonococcus finds its home in epithelial tissues, and when suppuration occurs in connective tissues, associated with gonorrheal activity, it is probably due to mixed infection. Any part of the genital tract may be attacked, but infection occurs in order of frequency, in the urethra, cervix, uterus, vulva, vagina, and rectum, locating in some definite spot.

Inflammation of the endometrium may be confined to the cervix, where it may remain for an indefinite time or until the stimulation afforded by the puerperium, or unwise interference in the way of treatment, may cause the infection to extend further. Bumm believes that the gland structures in this region may escape infection altogether, and it is the opinion of the same authority that in the vulva, when the glands of Bartholin are attacked, the infection may remain confined to the mouths of the glands, unless a mixed infection is present.

The tendency of the gonococcus to occur in spots scattered over the infected regions is very noticeable. These scattered areas of infection are found in the cervix, in the endothelium of the uterus, in the bladder wall, and in the urethra, and it is in the inflamed spots of the latter that the germs when present are to be found.

A. Palmer Dudley points out that while the vaginal mucous membrane is not susceptible to infection, yet the microscopic picture shows minute red spots, from which a grayish discharge issues on the mucous membrane of the posterior vaginal wall: probably due to secondary infection of the uterus.

Even when no secretion is visible germs may still be present. Infections occur after treatment and apparent cure, and the infected individual transmits infection at one time and not at another.

Gonorrhea is not merely a local disease, for it may cause a general toxemia, manifested by undefined recurring pains in the pelvis, lack of energy, anemia, debility, and general invalidism. It may also attack any organ or joint in the body, but metastases are most likely to occur during, or following the puerperium. The menstrual function is interferred with, the periods become painful, irregular, and profuse; leucorrheal discharge is a frequent symptom, there may be irritation of bladder and rectum, while pelvic tenderness and pain are common symptoms of the disease.

The gonococcus is very tenacious of life, and may remain quiescent for very long periods still retaining its vitality, so that when stimulated into activity by the usual causes, or when passed through a new culture ground, it manifests all its pristine vigor and virulence. It frequently happens, therefore, that when a man marries, who believes himself cured of gonorrhea, he infects his wife, who in turn reinfects her husband with the germ he gave her, which now runs the course of a new infection.

The vitality of the gonococcus is so marked that it has been obtained in secretions, contained in infected clothing, six months after the original infection. Even when the germ has apparently disappeared from the tissues and is not found in the secretions, it cannot positively be stated that the gonococcus is not present.

A legacy the germ is likely to leave behind as a mark of its former presence is a change in the appearance of the meatus urinarius, which assumes a red and pouting appearance like a caruncle; while small, red, inflamed spots remain for years to mark the mouths of the glands of Bartholin.

An attack of gonorrhea runs an acute course of from six to eight weeks, after which it passes over into the subacute and chronic forms. The vulvovaginal glands which are frequently attacked may escape for weeks or months, one being affected first to be succeeded by the other. When the cervix is invaded, the disease may remain latent indefinitely, and in a certain number of cases the infection does not extend above the internal os; and when the uterus is attacked, the tubes may not be reached, under ordinary circumstances, for months or years, although they have been reached in as short a time as two weeks.

A latent infection becomes active in the puerperal state, when, after her long months of patient endurance and the agony of parturition, the woman pays the price of her maternity in future sterility and perhaps invalidism as well, in many cases. Instrumental interference may also rouse a latent infection, and cause its rapid extension, or the infection may be carried to other parts directly by the instruments used.

When the uterus and appendages are infected, when there are frequent exacerbations in which the patient suffers acutely, when rest in bed and prolonged hot douches give but temporary relief, the only remedy is ablation of the diseased organs, a price the woman is so often finally forced to pay. After years of ill-health and suffering, when she finds herself a feeble, worn-out nervous wreck, and life a burden, then she seeks the dreaded operating table, and leaves it a deformed multilated, sexless creature, an object of commiseration to all who know her history. Castration in man is regarded as a humiliating, degrading operation, tending to embitter the subject of it against society, and is not resorted to even in the case of criminals. But women are every day castrated who are not criminals, but the very flower of womanhood, and they are compelled to undergo this unsexing operation not for their own shortcomings but for those of others.

If women voluntarily exposed themselves to disease which would result in sapping the husband's vitality, energy, and strength, making him a dependent invalid, or subjecting him to the surgical shock of an operation with consequent multilation, or in some cases even death itself, would men be willing to continue to so suffer, and would they invoke the aid of the medical secret to protect women in the exercise of this so-called freedom which cost their partners such a heavy price? Viewed in the cold light of reason and logic, if the so-called medical secret permits and conceals these ghastly crimes, making of the physician an accessory after the fact, can men of sound judgment and clean lives permit themselves to be governed by it? Would they be so governed if their own lives were so played with?

A disease so insidious in onset and so difficult to eradicate has naturally been subjected to many and divers methods of treatment, and from the number of remedies suggested and the various methods of their application, it is easy to infer the results of treatment. In women there is often entire or partial absence of symptoms in the first stage; but when seen in its incipiency, which is not very often, the consensus as to treatment is the adoption of conservative measures. Frequent but misdirected efforts in the way of examinations and applications to urethra and cervix, through instruments and otherwise, are more likely to cause the disease to extend than to remove it. Rest in bed is most im-

portant at this stage; the patient is kept on a bland unstimulating diet, the bowls kept freely open, and the bladder and urethra well flushed out—not by irrigations, but by copious draughts of diluent drinks. The vagina should be kept flushed out with hot alkaline douches, and it may be added that at any stage of the disease, the results of treatment will be more satisfactory if the physical condition of the patient is intelligently cared for.

The subacute and chronic forms admit of more active treatment; astringents and antiseptics are in order at this stage. Infected areas in the urethra, but not the whole surface, are treated with the usual remedial agents through an endoscope, special attention being directed to the glands of Skene. The ducts of the vulvovaginal glands are cauterized when necessary, and, in case of abscess, excised and drained. When the cervix has been attacked and its glands infected, the latter must be destroyed. This can be done by cauterization, with the actual cautery, or pure lactic acid may be used and applied in successive treatments.

When the uterus is infected, any intrauterine application or curettage, unless in case of hemorrhage, is likely to carry the infection to the appendages. It is impossible to reach every part of the uterine surface by curette, and the parts left unmolested may be those where gonococci most abound. If even local treatment to an infected uterus, applied to the vaginal vault, will provoke an exacerbation, one can conceive the grave danger which may result to the patient by the use of the curette, or the intrauterine applicator, as a routine procedure.

Infection of the rectum, which is found in about eight per cent. of cases, is treated by the applications of the silver salts in conjunction with opium; to be followed by treatment with astringents. The value of the vaccine treatment in gonorrhea has not yet been established, but there are many favorable reports of it. It is not difficult to administer, and in certain selected cases will no doubt be of great benefit.

Gonorrhea is one of the most prevalent of diseases, besides being one which menaces the life and health of many innocent women. It is one from which the state affords her no protection, though unlike man she is in most instances unable to protect herself from the contagion.

As a very large percentage of men have at one time or another suffered from gonorrhea, and many of those have not been cured of the disease, and as most infections arise from these chronic cases, it is evident how futile the treatment of gonorrhea in women must be, unless the infected members of the other sex also receive treatment; for if a man is continually reinfecting his wife with fresh germs, treatment of the latter can be of but little benefit.

In Hamburg no matter to what social class a man belongs, if he is accused of infecting a woman with venereal disease, he is obliged to undergo official examination, and if diseased is obliged to receive appropriate treatment, either in the hospital or elsewhere.

The Scandinavian countries have taken the lead in instituting measures for the protection of their citizens from venereal disease. Here the authorities, by means of notification, are kept constantly informed of the extent and fluctuation of those disorders, and veneral disease is dealt with as other contagious diseases are. The treatment of any kind of a communicable disease is regarded as a sanitary question, and dealt with accordingly.

These measures have been as remarkable as they are gratifying in their outcome, and they have resulted in a very marked diminution of venereal disease. Gratuitous treatment is provided, and made easily accessible to all. Probably it is but a question of time when the methods of Scandinavia will be introduced into all civilized countries.

110 East Eighty-first Street.

THE MOVEMENT FOR INTERNATIONALISM IN MEDICINE AND HYGIENE.

By KARL M. VOGEL, M.D.,

NEW YORK

ASSISTANT PROFESSOR OF CLINICAL PATHOLOGY, COLUMBIA UNIVERSITY; ASSISTANT ATTENDING PHYSICIAN, ST. LUKE'S HOSPITAL.

One of the results of modern conditions in the industrial world has been to compel those conducting large enterprises to devote more and more attention to securing efficiency of organization. The ordinary details of production having been developed to the highest possible pitch, success or even continued existence requires that the various units composing the body of a business shall be so correlated as to work in harmony and accomplish results with the least possible reduplication of effort and the maximum of cooperation, while the larger the scale of the operations the more essential does it become to have the mechanism of production and distribution work with a minimum of lost motion. Although the problems of intellectual progress are of course hardly comparable to those of commercial affairs, something of an analogy does exist, and it is very evident that as at present carried on "science," using the term in its broadest sense, is being managed in a highly wasteful and inefficient manner. The activity of individuals is enormous, but their energies are often misdirected and expended uneconomically through the absence of an adequate scheme of coordination. The benefits in this direction that have resulted through the efforts during recent years of such centralizing organizations as the American Medical Association, the American Association for the Advancement of Science, the American Public Health Association, and the American Chemical Association, require no comment, but there is no doubt that a further development of the same principle through a closer and more authoritative association of international societies is imperative. This idea is of course not new, but steps toward putting it into practice are of comparatively recent date and for those who have not followed its growth it is astonishing to learn how much has already been accomplished. There are in existence over six hundred international societies of the most varied interests, and international congresses are held annually by the score, but the results are far from commensurate with the labor expended—chiefly through the lack of any sort of systematic supervision or correlation. The work of the International Peace Tribunal at The Hague is familiar to every one, but it is not so widely known that in the same city there has existed for several years another organization which is perhaps of no less importance in its bearing on international relations and is certainly more concrete in its aims. This is the "Fondation pour l'Internationalisme," intended to meet the need which has just been indicated. The development, objects, and achievements of the foundation are described in detail in two volumes published under its auspices: "L'Internationalisme Médical" and "L'Internationalisme Scientifique," written by Dr.

P. H. Eijkman, director of the Foundation and president of the Netherland Röntgen Ray Society. Two international supervisory bureaus have already been in existence for some time, the "Bureau de la Commission Permanente des Congrès Internationaux de Médecine," established in 1909, and the "Bureau Permanent de la Federation Internationale de Pharmacie," established in 1910, while a third the "Bureau Permanent de l'Institut International de Statistique," has recently been added.

This movement for securing greater efficiency of organization is of especially vital interest to the medical profession, for the science of medicine is undoubtedly international in its scope, development, and needs to a greater degree than any other branch of learning. Medical research is being pursued more intensively and by greater numbers of workers than is the case in any other field of investigation and thorough familiarity with the most recent advances in all quarters of the globe is so essential both in the laboratory and at the bedside that the subscription lists, and in many cases the editorial boards, of all the great medical publications have a truly cosmopolitan character. It is not astonishing, therefore, that though the last twenty-five years have seen the formation of great numbers of international organizations of the most varied sorts, they are by far most numerous and active in the domain of medicine. Indeed there has been what might almost be termed an over-production in this direction, an excess of zeal, that has to some extent defeated its own ends, and through lack of systematic cooperation has led to waste of time and energy, or at least to their inefficient application. That this is so has been demonstrated by the universal recognition of the utility of the Bureau Permanent des Congrès Internationaux de Médecine, established at The Hague for the supervision of future congresses by the international congress held in 1909 at Budapest, and the progress that has been made in this direction has revealed the desirability, in fact the necessity, for the extension of its field of action by the foundation of a central organization that shall serve in a governing or advisory capacity for all the international societies concerned with medicine or allied subjects. It is true especially of projects depending upon international support that they can be carried on successfully only if they meet a distinct need and if the conditions under which they are to exist have been adequately considered. The "Fondation pour l'Internationalisme" has now been in existence a sufficient number of years and has given the subject of internationalism in medicine such exhaustive study as to ensure the wisdom of the methods by means of which it seeks to bring about efficient international cooperation in this field.

It is to the French that the credit must be given for having organized the first international medical congress, held in Paris in 1867. Since that time sixteen in all have been convened in fifteen different cities, and from their modest beginnings they have grown until the one at Budapest in 1909 comprised no less than twenty-one sections. In addition to these reunions on a large scale, however, others pertaining to almost every conceivable special branch have been organized in constantly increasing numbers, so that now international associations holding regular sessions may be counted by the score. Gratifying as this development of international scientific comity has been, it in a way represents a waste of energy, for the unwieldy proportions to which the general congresses have grown tend to make the smaller organizations with their simpler executive machinery more attractive and more useful to their participants, while to some extent the latter meetings also work to the detriment of the former. The need for a centralized bureau to harmonize and simplify the details of organization, to supervise the programs, and by its equipment and experience to lessen the labors of the local committees is manifest, and it is this function that the Bureau Permanent des Congrès de Médecine has assumed. In addition to the medical bureau, that of pharmacy, and that of statistics, already founded, it is now desired to establish bureaus of hygiene, pure sciences, and technology. So far all the expenses of the foundation have been borne by the Dutch government, but as the work develops it is incumbent upon the other powers to follow the enlightened example set by the enterprising people of the Netherlands by contributing material support. Within the scope of the bureau as planned would come such highly important functions as the establishment and publication of an international system of bibliographical records, the organization of concerted action against such evils as the anti-vivisection movement and irregular forms of medical practice, the encouraging of cooperation among medical journals, the appointment of commissions to investigate special questions or the outbreak of epidemics, the consideration of matters pertaining to medical education, nomenclature, the material aspects of professional life, etc.

Undoubtedly under the direction of such a central bureau the number of different organizations would diminish, a most desirable result, for those remaining would gain in strength and utility, while at the same time a wider range of subjects would be represented. The plan as projected provides for the formation of a central bureau having as its nucleus the present Bureau Permanent des Congrès Internationaux de Médecine, 10 Hugo de Grootstraat, The Hague. This will be aided by national committees formed under the auspices of the various local academies of medicine, the faculties of the universities, and especially the medical societies, both general and special. These national committees will send delegates to the international committee which will then deliberate on the matters previously studied and propounded by the national committees. Commissions will be appointed, a bulletin in several languages be published, and the organization of international meetings will be managed by the local committees of the country in which the session is held, under the guidance of the central committee as regards the questions to be discussed, etc.

The international bureau of hygiene which the Foundation hopes to establish shortly is to be organized on similar lines and will serve the purpose of systematizing the work done in the numerous and varied fields that are now integral parts of the study of sanitary science. Public health problems are particularly international in their scope, and it would be highly desirable to have the International Congress of Hygiene and Demography which meets in Washington next September take definite action in support of the project. The cooperation of the most prominent hygienists has already been secured and it is to be hoped that American men of science will take an active interest in furthering a movement whose objects are at once so intensely practical and so intimately associated with the general advancement of knowledge.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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ULTRAMEDICAL OR ULTRASURGICAL TREATMENT FOR ECLAMPSIA?

A VERY few decades ago puerperal eclampsia was regarded on all sides as an affection with a practically guaranteed high average mortality under any any every plan of treatment. The large number of theoretical viewpoints as to the nature of the disease seemed to justify the employment of the most diverse measures of treatment. The fact that seemingly moribund patients recovered under many plans of management has been responsible for their continuance even in the absence of sound theory and perhaps at times in opposition to all tenable theories. But whenever any plan was tested on a sufficiently large material, and year in and out, it became apparent that the disease varies much in severity with the particular locality and year, and it began to appear that any real advances in therapeutics must necessarily be extremely hard to appreciate. There can, however, be little doubt today that the mortality of eclampsia has slowly been brought down by strict adherence to two completely opposed plans of treatment, which may be termed the ultrasurgical and the ultramedical. To whatever degree eclampsia may depend on a general pregnancy toxicosis it is recognized that its efficient cause is really labor itself or better the uterine contractions which comprise the latter and which may precede or follow it to a certain extent. Both this fact and the possibility that the fetus and placenta may be the source of toxic material appear to demand the immediate evacuation of the uterus. This was accomplished at first by the simpler means of hastening labor and eventually by accouchement forcé in the widest application of the term, even including vaginal and abdominal hysterotomy and hysterectomy. There seems no good reason to doubt that much life, maternal and fetal, has been saved by these heroic measures. Surgery has not stopped here, for in certain cases where renal stasis seems to prevent the hope of recovery the kidney itself is attacked by the operation of decapsulation. Comparatively recently the mammary glands as a probable source of the toxemia have been excluded provisionally from the circulation by a subcutaneous operation.

At a recent meeting of the Berlin Gynecological Society (*Berliner klinische Wochenschrift*, March 18, 1912) the veteran Olshausen spoke very pessimistically about eclampsia. We know nothing, he said, of its nature and hence have no rational treatment. Rapid evacuation of the uterus, an empirical measure, has secured about one-third better results than were obtainable before its introduction. We have allowed a valuable resource of the past to fall into disuse; this is bleeding up to 500-600 c.c. In discussion it was suggested that the benefit derived from cutting operations was due really to the coincident loss of blood.

The medical treatment has been tested only on a relatively small material, but has been followed up for years in certain localities with enough betterment in mortality percentages to startle those who have never seen the reports. Stroganoff has now treated about 400 cases with his narcotic method, which aims solely at jugulating the convulsions by a graduated use of morphine and chloral so given as to seem the greatest possible economy in dosage. The patients are also strictly isolated from the outer world in every possible way. The mortality at his hands has been but a fraction over 6 per cent. In the United States some of our leading obstetricians are depending upon the use of veratrum viride which by lowering the high blood-pressure which appears to underlie the convulsions serves also to suppress the latter. Low death percentages have been secured under this plan. The only criticism of these figures is found in the claim that in certain favored localities eclampsia is much less malignant than in others.

If puerperal eclampsia is really an example of anaphylaxis and not an ordinary toxemia the rational treatment should be somewhat modified. In an anaphylaxis the patient is not menaced by a large amount of toxic material which necessitates all sorts of meddlesome eliminative procedures. She has simply become sensitized during an earlier pregnancy or during the early stages of the present pregnancy to substances normally present in all gravidæ. Whether or not an anaphylactic shock proves fatal will depend in part on factors entirely beyond our ken. The naturally high mortality of the analogous affection in cows has been practically wiped out by insufflation of air into the milk ducts. The German farmer no longer troubles to send for the veterinary but inserts a turkey quill into a milk duct and by means of his bicycle pump forces air into the latter. But in the cow, at least in the severe type of eclampsia, convulsions do not occur, but instead a collapse or, as it is commonly termed, a paralysis. From all points of view the convulsions seem to be the real object of treatment in mankind. The uterine contractions beget the convulsions. If these be made to cease by rapidly evacuating the uterus the prognosis is good. The earlier in the history of the convulsions the uterus is emptied the better the results. On the other hand, it may be possible to control the convulsions without greatly interfering with labor. This may be effected by keeping down the blood-pressure (by veratrum or copious venesections) or by so benumbing the reflex activity with narcotics that convulsions no longer occur. There are other pernicious factors aside from blood-pressure and convulsions which are reached by neither the ultrasurgical nor the ultramedical plans of treatment. But it will doubtless be found that cases of this sort

occur largely in those patients who have exhibited pregnancy toxicosis long before term. Some of these women, if not most of them, could have been saved by early interruption of pregnancy.

THE GRADGRIND VIEW OF EXISTENCE.

A State Board of Health recently estimated the value of a baby at $1,000—a rash proceeding in a governmental office, such as depends for its existence upon the will of the citizen body; for what native parent would estimate his offspring at any such ignoble figure, or at twenty-fold such figure? A college professor held the above money estimate to be too low; that a baby—the supremest cosmic product—is worth at least $150,000; while another college professor held the value of a man to be but $20, upon which humiliating basis dealing in babies at $4,000 apiece would be a decidedly losing investment. These extreme differences in estimate seem to have been by reason that they were founded upon statistics—one of the most faulty and illogical methods of arriving at any conclusion. For, as everybody knows, any opinion, no matter how perverse or extreme, can somehow get itself backed up, to the satisfaction of its promulgator at least, by statistics.

But if such conclusions based upon statistics are vague, the method of evaluating human life recently proposed by a German scientist is both simple and accurate beyond peradventure. Assume a body to weigh 150 pounds; our Teutonic confrere puts down its fat content as worth $2.50. Of iron there is in such a body hardly enough to make an inch rail. But there is something more worth while when we come to lime; while we have sufficient phosphorus for the making of 2,200 matches, and enough magnesium to set off a very fair display of fireworks. In a 150 pounder there is as much albumin as may be found in 100 eggs, besides a small teaspoonful of sugar and a pinch of salt. On such computation the average man or woman should come up to $7.50; some of us would come up to more than that—even to $10; while a 300 pounder might be worth the price of an overcoat; that is, late in the season when garments are marked down. We are not informed whether the investigator made his calculations according to German trade standards (which are lower than ours), or whether he computed according to the average of prices over a long range of years or according to the present high cost of living.

Of course, all this is absurd; and one does indeed feel ridiculous to learn that he is worth considerably less than the clothes he has on—less, indeed, than just an ordinary suit of "hand-me-downs." Why, again should one seek to fix the value of a baby in dollars and cents; one excuse for this procedure seems to be in order to explain that so many infants' lives are lost (or saved as the case may be) and then to multiply the number by some such arbitrary amount as $4,000, thus showing the commercial profit and loss. And yet there seems to us something very seriously wrong with a civilization which would put a money—a Gradgrind—value upon entities which it were essentially impossible to evaluate upon any material basis. Whether the agitation is for pure milk, or for safety appliances in industry, or for tuberculosis prophylaxis, it seems to be assumed that the body politic cannot be suitably impressed unless the matter is presented in monetary terms.

Now, if it is really true that humankind cannot be got interested in human welfare unless the saving in money can be figured out and presented, there would seem to us to be something very wrong. This new procedure (some speak of it as a habit) of interpreting humanity in money values is on reflection downright coarse and unutterably mean. Besides, it is surely a fruitless procedure; for what normal mind would be impressed by arguments based on such evaluation. How futile is it to represent that every death from consumption means a loss of so much money; or that every child over the age of two has a capital value of so many thousands of dollars. What every consumptive's death really means to any wholesome mind is the extinction of a precious life, the blighting of living hopes and ambitions, the closing of a human account written in nights of despair and in broken and anguished hearts. On the other hand, every child's life over the age of two or of any age really means an actual sentient existence, expanding to the possibilities of a Lincoln or a Milton or a Florence Nightingale.

OPIUM TAKING IN THE FAR EAST

In the temperate zone opium is regarded as a dangerous poison and one which should be used only as a drug. The addiction to opium rapidly develops into a serious vice from which the unfortunate victim is rarely able to escape. The case is altogether different with the Oriental, who uses opium in the same way as the white man uses tobacco. Small quantities of the drug are used daily and in the great majority of cases there is no desire to increase the dose. For example, Dr. Adrian Caddy, in a paper dealing with life insurance in India and read before the Life Assurance Medical Officers' Association on March 6, 1912, stated that in India the confirmed opium fiend is less frequently encountered than is the drunkard in European countries. Opium is most frequently used by people in India after the age of forty-five. It is almost invariably eaten. In China the drug is smoked and there is a difference of opinion as to which is the more injurious habit.

S. B. Neill, actuary of the China Mutual Life Company, read a paper on opium smoking before the opium commission sitting at Shanghai in February, 1909. His figures dealt with 13,336 lives under observation and 549 deaths. The summary of his result was as follows: (1) The mortality experienced by opium smokers is heavier than that experienced by non-opium smokers. (2) Opium smoking is more injurious in tropical than in subtropical or temperate climates. (3) Though it would be difficult to trace any particular death to opium smoking, nevertheless it is probable that the digestive organs are primarily affected by the habit and the smokers become emaciated and lose weight.

Vincent Richards, as the result of an investigation of the opium problem in Balasore, Orissa, found that one in twelve or fourteen of the population used

opium. Of 613 opium eaters examined by him the average age at which the habit was begun was from the twentieth to the twenty-sixth year for men and from the twenty-fourth to the thirtieth year for women. Of the total number 143 had eaten opium for ten to twenty years, 62 for twenty to thirty years, and 38 for periods longer than thirty years. The majority took it daily, morning and evening, the dose varying from 2 to 46 grains daily, the average dose being 5 to 7 grains daily. In the case of large initial doses there was usually a gradual increase, but when the initial doses were small there was usually no increase in the size of the dose. The increasing dosage was usually prompted by a belief in the aphrodisiac power of opium, in its efficacy in the treatment of malaria, dysentery, rheumatism, hemoptysis, and elephantiasis. Richards concluded that the moderate use of opium caused no appreciable ill effects beyond a weakening of the reproductive powers.

GOUT WITHOUT PAROXYSMS.

The apparent infrequency of gout in the United States may be explained in various ways. First, it may be claimed that it is not infrequent but only appears so; and that if a large material of miscellaneous subjects was examined carefully for evidences of gout the latter would be forthcoming. Again, it may be stated that since gout is a metabolic disturbance closely allied to other conditions, the latter may appear as gouty equivalents in the shape of glycosuria, eczema, and such like evidences of retarded metabolism. The statement is also made at times that actual gout is of common occurrence, but is miscalled, the diagnosis being some form of articular rheumatism or other arthropathy. It is not unusual to see tophi in the ears of subjects not known to be gouty. Finally, it may be asserted with plausibility that gout occurs frequently, but in such mild atypical forms as to indicate simply a diathesis and not a frank disease.

The latter appears to represent the views of some German clinicians as to the occurrence of gout in their country. At a recent session of the Hufeland Society, Berlin (*Berliner klinische Wochenschrift*, March 4), Goldscheider outlined these mild atypical forms, which he believed to be of very common occurrence. Virchow made the same claim in 1884, and recently His has revived the opinion. In this form of gout paroxysms or crises are absent. A characteristic symptom is creaking joints. The latter behave as if they had sand in their bearings, which, as a matter of fact, is literally the case, for the condition results from a minimal deposit of uratic sand. Small tophi may be found in certain localities, as the olecranon process. Arteriosclerosis not only coexists, but is itself an expression of the gouty state. When all other causal factors in the genesis of arteriosclerosis may be excluded the condition may be set down forthwith as of gouty origin. Chronic nephritis with a history or evidences of gravel, is also significant of gout. In the absence of nephritis the combination of obesity and gravel has the same significance. Of additional value as a hint in the same direction is abdominal plethora. Evidences of secondary neuropathy in a subject not of neurotic temperament are highly significant, and there is a special disposition to angioneurotic paroxysms. Hence these subjects tend to suffer from migrainous attacks, neuralgias, spells of insomnia, and depression. Finally these subjects come of stock which presents the same symptom complex.

Nature of Dermatitis Herpetiformis.

When Duhring first described the disease sometimes designated by his name, conservative dermatologists who objected to the introduction of new disease concepts were inclined to look upon the affection as an aberrant form of pemphigus, and, despite the manifest differences between the former and the grave forms of the latter, this assertion may, in the absence of a known efficient cause, still be regarded as unanswered. At a recent meeting of the Aerztlicher Verein of Marburg (*Münchener medizinische Wochenschrift*, January 23), Hübner reported two cases which presented themselves at about the same time. One patient improved remarkably under Fowler's solution, his disease thereby showing notable analogy with pemphigus; for in the main Duhring's disease does not benefit much by arsenic. The author was then moved to test the disease with salvarsan by intravenous injection. The immediate result was brilliant but short lived. An intramuscular injection was then given, with the consequence that the patient underwent steady improvement. He was not cured, but the bullous element of the affection vanished, leaving only an itching erythema or urticaria. As is well known, the eruptions may begin in this fashion before blebs develop, and the milder lesions may also coexist with the latter. The author states that the bullæ which appear in Duhring's disease resemble exactly those of pemphigus, and that practically they occur in no other disease. The prompt response to arsenic, as seen in the author's cases, is a further point of agreement. It therefore seems possible to associate the two affections more closely than has heretofore been done.

Serotherapy of Typhoid Fever.

Typhoid fever is one of the numerous family of bacteriotoxemias in which theoretically there is little to be expected from the use of antisera. The success of vaccinoprophylaxis in this affection has also aroused hopes that it will soon be possible to eradicate it by immunizing those most exposed to it. Nevertheless the effort to discover and prepare efficacious sera for diseases of this character seems to be more earnest than ever before. As an example Lüdke of Würzburg announced at a recent meeting of a local medical society (*Berliner klinische Wochenschrift*, March 11) that he had succeeded in preparing a serum which behaved specifically in typhoid. His first step was to secure the bacteriotoxin. The culture had grown for about two weeks in alkaline bouillon. It was then filtered out, triturated, and digested with pepsin and hydrochloric acid. A highly toxic fluid was thus obtained, and by immunizing goats and small laboratory animals with small doses an antitoxin was obtained. He next prepared a bactericidal serum by treating the animals with living cultures and combined the two sera. The mixed serum was tested on twenty-nine typhoid patients. Leaving out of consideration fifteen advanced cases there were fourteen tested relatively early. In ten of these the disease seemed to

have been fairly aborted, as permanent defervescence supervened in from two to four days. The theoretical requirement thus seems to be borne out, for it has generally been asserted that only a mixed serum of this character, injected very early in typhoid fever, could be expected to modify the course of the disease.

News of the Week.

A Meeting Hall in Washington.—The U. S. Senate, on Monday of this week, agreed to Senator Root's bill setting apart the old Pennsylvania railway station site at Sixth street, N. W., and the Mall as a site for a George Washington memorial building to be used as a "gathering place and headquarters for patriotic, scientific, medical, and other organizations." The bill retains to the Smithsonian Institution the control of the building when it is erected and prescribes that the building shall cost not less than $2,000,000 and be erected by the George Washington Memorial Association after plans to be approved by the Committee of Fine Arts. It will have an auditorium with a seating capacity for 6,000 persons and a permanent endowment of $500,000.

Reciprocity in State Licenses.—The Pennsylvania State Bureau of Medical Education and Licensure recently completed an agreement on medical licenses to be offered to other States. The basis for reciprocity is as follows: Licenses earned by examination; reciprocity is only to apply to holders of diplomas from medical colleges recognized as in good standing by the licensing authorities of the State in which the candidate seeks the right to practise; the licensing authorities of either State are to follow the laws of their State in rating preliminary education; a regularly licensed practitioner applying for the benefits of reciprocity must have been in practice at least two years in the State from which he holds his license, but the licensing authorities of either State may in their discretion modify this requirement in any individual case; the applicant shall not have failed in any medical examination conducted by licensing authorities of the State in which he seeks to be licensed; the applicant must appear in person before examiners, present satisfactory evidence of character and that he is not addicted to the intemperate use of drugs or liquors; credentials as to personal and professional standing shall be required from medical society of the county or State in which applicant has been practising. The examination of candidates for State licenses was ordered to begin on June 24 at Philadelphia, Harrisburg, and Pittsburgh. The examination for second year medical students was changed from May 24 to June 27.

Medical Examinations in Illinois.—The State Board of Health of Illinois reports that during 1911, 432 licenses to practice medicine in the State were granted, the number of examinations being 646, and the percentage of failures 33. This is the highest percentage of rejections in the history of the board and indicates an increase in the requirements. Of the 179 osteopaths and other followers of "drugless healing" who appeared for examination during the year, only 61 were successful. Osteopathy has no official recognition in the State, and the examination given them by the board is the same as that given to other so-called "drugless healers" and embraces no form of treatment, the subjects covered being physical diagnosis, pathology and bacteriology, hygiene, chemistry, anatomy, and physiology. The board also reports that licenses were granted to only 47 midwives out of 178 who were examined.

"Health Day."—At the instigation of the Women's Temperance Union the Governor of New Hampshire recently proclaimed a "Health Day," the object being to interest every individual to improve sanitary and hygienic conditions and to emphasize right methods of living whereby the health of the community might be permanently benefited. The response was gratifying; the newspapers published health articles, programs were given in the public schools in furtherance of the idea, and the results have convinced the originators of the value of setting apart such a day.

Texas Quarantine On.—In accordance with annual custom the Governor of Texas issued a proclamation declaring a quarantine, effective on April 1, on the Gulf Coast and Rio Grande border, applying to all vessels, railway trains, persons, or things, coming from places infected with yellow fever, smallpox, bubonic plague, or cholera. All places south of 25 degrees latitude are considered as infected until proof to the contrary is furnished.

Unreported Births.—A house to house census enumeration of the infant population of Louisville, Ky., now under way, has disclosed a laxity in reporting births to the Registrar's office. In three days forty unregistered infants were found, and the names of the physicians failing to report them have been sent to the State Board of Vital Statistics.

Albany Express Held.—The health officials of Springfield, Mass., held up the Albany express for nearly two hours on April 9 while a thorough examination was made of a child who was suspected to be suffering from smallpox. The sixty passengers in the car in which the child was traveling were locked in until it was decided that the disease was chickenpox.

Gas Well Bought.—The State of New York recently acquired the last of the gas well properties north of Saratoga, the pumping of which seriously threatened the existence of the springs at Saratoga. The Legislature provided some time ago for the purchase of all the springs by the State.

Vacancy in Illinois State Service.—On May 17, 1912, the Illinois Civil Service Commission will hold in Chicago an examination for the position of factory physician in the State service. The examination is open to citizens of the United States, both men and women, over twenty-one years of age. The salary is $125 a month and traveling expenses. The examination will comprise: training and experience, 3 points; and special subjects, including medicine, occupational diseases, pediatrics, and gynecology, and its relation to factory work, 7 points.

Children's Bureau.—President Taft on April 9 signed the bill creating in the Department of Commerce and Labor a children's bureau, thus establishing Federal supervision over child welfare.

Nurses Graduate.—Thirty young women received diplomas as trained nurses on April 8 at the commencement exercises of the Margaret Fahnestock Training School of the Post-Graduate Hospital, New York. Dr. Wendell C. Phillips, president of the State Medical Society, presented the diplomas and addressed the nurses.

Bellevue Post Vacant.—The position of general medical superintendent at Bellevue Hospital, which has been temporarily filled by Dr. George O'Hanlon, has been declared open for an appointment. The post carries a salary of $5,000 a year and household accommodations. The Municipal Civil Service Commission has prepared a list of those eligible for appointment.

Farm for Inebriates.—The Board of Estimate of New York City recently considered the report of a committee appointed to select a site for the proposed city farm for inebriates, but took no action. The committee recommended a tract near Smithtown, Long Island, consisting of 523 acres, which is held at $225 an acre. The board laid the matter over until a farm in Orange County, consisting of 640 acres for $75,000, could be investigated. The water supply of both sites was also under consideration.

Seaside Hospital.—The Association for Improving the Condition of the Poor has offered to erect and equip, at a cost of $250,000, a hospital for children suffering from non-pulmonary tuberculosis, on condition that the City of New York provide a seashore site and own and maintain the hospital when it is completed. It is desired to build the hospital at Rockaway Park on land recently acquired by the city, and tentative plans have been drawn so that if approved by the Board of Estimate construction can be begun at once. The association estimates that between 4,000 and 5,000 children of the poor in this city suffer from tuberculosis of the bones or glands, and the Sea Breeze Hospital, which it has maintained since 1904, is now inadequate to meet the demands made upon it.

Addition to Hospital.—Houston Memorial Ward of the Chester, Pa., Hospital was formally presented to the managers on April 10 by Mrs. Margaret A. Houston, widow of Charles B. Houston, and mother of former Mayor Howard H. Houston. The ward is intended for the care and treatment of children up to the age of 12 years. The new building is octagonal in shape and connected with the main institution by an overhead sun parlor, which communicates with the second floor, designed as a play-room and dining-room.

Volunteer Hospital.—Through its president, Ballington Booth, the Volunteer Hospital of New York reports a successful year, during which the present quarters at 93 Gold street have proved to be inadequate. A fund to provide for the erection of a new building has therefore been started.

Oneida County Hospital.—Governor Dix recently signed a bill providing for the maintenance of a general hospital for Oneida County, New York, which will be open to all citizens of the county whether able to pay or not. The control of the hospital will be vested in a board of managers, who will have entire charge of the hospital subject to the Board of Supervisors, who will provide the funds. Heretofore the only public hospital in Oneida County has been operated in connection with the Almshouse.

Charitable Bequests.—By the will of the late Captain Louis Hillebrand of Philadelphia the Pennsylvania Hospital and the German Hospital in that city each receive the sum of $1,000. Harvard University has announced an anonymous gift of $5,000 to establish the Lawrence Carteret Fenno memorial free bed in the Collis P. Huntington Memorial Hospital. The University of Texas has under consideration an offer from Mrs. John Sealey of Galveston of a sum of money for the erection in that city of a new building for the medical department of the university. It is understood that the offer is for $50,000 and that it will be accepted. By the will of the late Thomas W. Haldom of Philadelphia, the sum of $5,000 is bequeathed to the Children's Hospital for the endowment of two free beds. A residuary bequest is made to the Pennsylvania Hospital of $5,000, also for the endowment of a free bed.

Dr. William C. Gorgas, chief sanitary officer of the Isthmian Canal Commission, will be the principal speaker at the annual commencement exercises of the Johns Hopkins University, Baltimore, in June.

Dr. Henry A. Christian has resigned the post of physician-in-chief to the Carney Hospital, Boston, and expects to go abroad on April 30 to study Epropean clinics. Dr. Christian was recently appointed chief physician to the new Peter Bent Brigham Hospital of Boston.

Class Reunion.—The 20th anniversary banquet of the class of 1892 of the New York University Medical College was held at the Hotel Martinique, New York, on April 3. The class originally numbered 162, 9 of whom have since died. Dr. Robert E. Coughlin of Brooklyn acted as toastmaster at the banquet, and at the close of the dinner a toast was given to the Old University, its professors and teachers, and the absent members of the class.

University of Virginia Medical Society.—A society of this name has been established by medical men residing in New York City who have studied medicine at the University of Virginia. The object is both scientific and social, and also to promote the interests of the Alma Mater. The officers are: *President*, William B. Trimble; *Secretary and Treasurer*, B. P. Riley; *Executive Committee*, W. B. Trimble, B. P. Riley, and R. G. Reese.

The Bronx Medical Association, Dr. Charles Graef, president, will hold its next meeting on Thursday evening, April 25, at 8.30 P. M. A symposium on Abortion will be followed by a general discussion. The subject will be introduced by Dr. Herman J. Boldt, A. C. Vandiver, Esq., and Dr. Charles Edward Nammack.

Cumberland County (N. J.) Medical Society.—At the annual meeting held at Millville on April 10 the following officers were elected for the ensuing year: *President*, Dr. John W. Wade of Millville; *Vice-President*, Dr. Leslie Cornwell of Bridgeton; *Secretary*, Dr. H. Garrett Miller of Millville; *Treasurer*, Dr. Joseph Tomlinson of Bridgeton.

The New York Medico-Legal Society will discuss the question of "old age, its legal responsibilities and obligations" at its regular meeting April 24, 1912, in the parlors of the Waldorf-Astoria Hotel. Papers will be read by Drs. Nascher, Crothers, Lambert, Snow, and others. The discussion will be opened by Judge Francis of Newark, Judge Platt of White Plains, N. Y., and others. The public is invited.

Hartford County (Conn.) Medical Society.—The following officers were elected at the annual meeting held in Hartford on April 2: *President*, Dr. Samuel W. Irving of New Britain; *Vice-President*, Dr. John F. Dowling of Hartford; *Secretary-Treasurer*, Dr. Paul P. Swett of Hartford.

McLean County (Ill.) Medical Society.—At the annual meeting on April 4 the following officers were elected: *President*, Dr. W. H. Gardner of Bloomington; *Vice-President*, Dr. E. B. Hart; *Secretary-Treasurer*, Dr. T. D. Cantrill of Carlock.

Miss Clara Barton, one of the organizers of the International Red Cross Society, and the founder of the American Red Cross, of which she was president for twenty-three years, died at her home in Glen Echo, Md., on April 12, in the ninety-first year of her age. Miss Barton became interested in relief work first during the Civil War when she went to the front as an army nurse, but it was in 1869, while in Switzerland that she took part in the convention which resulted in the formation of the International Red Cross, and it was largely through her representations that the United States in 1881 became a party to the international treaty guaranteeing protection to wearers of the Red Cross upon the battlefield. Appointed first president of the American Red Cross by President Garfield, Miss Barton extended the scope of the society to include, in addition to work on the battlefield, the relieving of suffering in times of great national calamity, and from the Michigan forest fires in 1881, through the famine in Texas in 1885, the earthquake in Charleston in 1886, the Johnstown flood in 1889, and the Spanish War down to the time of the tidal wave at Galveston, her activities as leader and organizer of relief through the Red Cross were unceasing. Under her management also the American Red Cross rendered valued aid in foreign countries in times of disaster, and Miss Barton had received decorations from many of the old world governments. She resigned the presidency in 1904 and had lived in retirement since that time.

Obituary Notes.—Dr. HAROLD F. JEWETT of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1893, formerly president of the Bushwick Hospital and obstetrician to the Long Island Hospital, gynecologist to the Bushwick and Swedish Hospitals, and a member of the New York State and Kings County Medical Societies, the Brooklyn Medical Society, and the Associated Physicians of Long Island, died at his home of pneumonia on April 12, aged 42 years.

Dr. M. WALLACE CULP of Union, South Carolina, a graduate of the Medical College of the State of South Carolina, Charleston, in 1881, and a member of the South Carolina State and Union County Medical Societies, died suddenly at his home on March 30, aged 55 years.

Dr. JOHN H. BRADLEY of Macon, Georgia, a graduate of the Louisville, Kentucky, Medical College in 1897, and a member of the Georgia State and Bibb County Medical Societies, died at Blue Ridge, Georgia, on March 28, aged 36 years.

Dr. OSCAR H. HALL of St. Paul, Minn., a graduate of the University of Buffalo, N. Y., Department of Medicine, in 1868, formerly president of the Minnesota State Homeopathic Society, and a member of the State Examining Board, died at his home after a lingering illness on April 2, aged 70 years.

Dr. HENRY O. WALKER of Detroit, Mich., a graduate of the Bellevue Hospital Medical College in 1867, and a member of the American Medical Association and the Michigan State and Wayne County Medical Societies, died at his home after a brief illness of pneumonia on April 5, aged 69 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE QUEEN OPENS NEW CANCER CHARITY—HEART FAILURE—COST OF SMALLPOX HOSPITALS—INSTITUTE OF PHARMACOLOGY—SMOKE ABATEMENT AND COAL TROUBLES—OBITUARY.

LONDON, March 29, 1912

THE Queen drove to the Middlesex Hospital on Wednesday and opened the Barnato-Joel Cancer Charity which constitutes in effect a new cancer hospital and research institution. There are 43 beds, a home for 59 nurses, bedrooms for 20 servants, an out-patient department, operating theatre, electrical and research laboratory. The old cancer charity of this hospital has been completely remodelled, so that the two combined have 90 beds, 58 for female and 32 for male patients. All the floors, partitions and flat roofs of the new buildings are fireproof. They adjoin the older cancer department of the hospital on the west side of which they stand and are connected by corridors, subways and a garden approach. They have been erected and endowed with funds bequeathed by the late Henry J. Barnato (in memory of his brother and nephew) for cancer patients and cancer research. A gold key made for the purpose by the goldsmiths' company and bearing an inscription of the date and occasion was handed to the Queen by Prince Alexander of Tech and Her Majesty unlocked the barrier dividing the new from the old buildings and declared the new charity open. An inspection of the operating theatre and the electrical department followed. Here Dr. Lyster gave a demonstration in which the Queen evinced no little interest. The sisters' and nurses' quarters, the research block and hospital wards were also visited. Here Her Majesty showed that kindly interest in the patients she has so often evinced in hospital visits.

The special research laboratories of the Middlesex were established in 1900 and you know that much good work has been done in them. The new extension, with its complete equipment, cannot fail to give further opportunities for investigation to the zealous workers who will continue their efforts under the improved conditions.

Heart failure was the subject set for this year's annual debate at the Chelsea Medical Society, held at St. George's Hospital. Sir Clifford Allbutt undertook to open the discussion and I said to myself, now I may get an answer to the question that has puzzled me—what is heart failure? But this master in Israel had to acknowledge at the conclusion of a most able discourse that he had done little to solve the riddle set for physician and pathologist alike. But he was impressed with the idea that these two observers might help us by some correlation of their work instead of acting like scouts on the opposite side of a hedge. The simile is at least a change from the parallel lines of which we have heard so much, but though he indicated the need of co-operation he did not say how it was to be effected and the hedge is not removable. He did, however, give us most valuable criticism, some of it frankly destructive and all of it deserving of full consideration.

The physician will give you, he said, data in plenty and his opinions which are decisive, but he can neither predict heart failure nor prevent it. So the pathologist with a heart before him from a case of sudden death will confidently show us why with such a lesion it could not go on, but put be-

fore him another specimen with the same disease further developed and tell him that went on for many years and the possessor died of something else and he declines to guess at clinical conundrums. Yet mutual counsel and comparison might be advantageous.

Sir Clifford Allbutt did not dwell much on valvular diseases, as they are to some extent explicable and mechanical and do not usually end in sudden death. Dilatation is no gauge of the condition of the myocardium and the physical signs are equivocal. The syncopic phenomena which often accompany cardiac default are just as uncertain, for they are present in too many other conditions. Even the pulse is no sure guide, its variations may mean little, though two of them may be still held to be ominous. The pulsus alternans is still regarded as a herald of myocardial defect, but it is not a common feature and so an inconstant criterion. But the second variation of pulse—a permanent change of rate—is of greater import whether it be of acceleration or retardation. The tract of Tawara may be profoundly marred without affecting the pulse; a normal pulse, too, is consistent with profound impairment of the left myocardium. Yet Sir C. Allbutt declared himself strongly impressed that permanent change of rate is ominous of failing heart. Let a man, he said, whose habitual rate is known to be 70, at rest 65-70; let this later have become habitually 85-90, on slight movements rising to 100 or more, let it show no alteration under prolonged rest, *i.e.* let it never fall below 80-85, under tranquility of mind and body, then heart failure is in the offing. Moreover, if with this acceleration there be attacks of faintness or of slight dyspnea on moderate effort, the failure of the heart's' muscle is at hand. Possible nervous influences must, of course, be allowed for and so coffee, tea, tobacco, etc., which often become less easily tolerated in later life. Speaking of nerves is it by their influence that a heart in advanced disease may be so efficient as to deceive the clinical observer outright? The heart is so beset with nerves and ganglia that the harmony of the circulation must depend intimately on their integrity, though our recent interest in other points has diverted research from these nervous governors, and besides the intracardial we have the extracardial nerve structures, vagus, and bulb, not to mention those psychical influences which are supposed to possess peculiar potency. One might guess that a cardiac failure attributable to these influences may be a cortical disturbance, propagated through the vagus. Further, the vasomotor system has degrees of reinforcement or default of which we have little notion. There are probably many subtle agents which enter alone or in combination into the nice poises of life and alterations in molecular constitution invisible even to the ultramicroscope. An old rubber band to the eye showing no change displays loss of elasticity on attempting to use it—dies suddenly. There is a world within the visible of which little or nothing is known: osmoses, surface tensions, reaction potentials, viscosities, differential pressures and so on.

The expenditure on smallpox hospitals excites some attention. The asylum board has three, none of them at present with patients, but there are 128 members of the staff to keep and other expenses. During the last eight years the patients accommodated have averaged 10.3 per annum, while the cost has been £183,000. Heating and lighting one hospital last year cost £4,000. Some time ago it was proposed to replace one of the hospitals, which is a wooden structure, by fireproof materials, the highest cost of which was estimated at £12,675; the lowest £6,650. At the board's' meeting last week it was urged that this enormous expenditure ought to be stopped and they should not rebuild until after the next epidemic. The committee had reported in favor of gradually rebuilding in permanent material, and eventually it was resolved to accept this report and begin with two wards. Of course, it was better for the wards to be empty and to hold them prepared as a form of insurance was advocated. But it does seem as if they might not be to some extent utilized and that the full staff need not be kept up for all three hospitals.

The Institute of Pharmacology constitutes the second section of the new buildings in course of erection by University College. It will accommodate 100 students and consist of a lecture room, research laboratories, a room for practical work, and buildings for housing animals. The cost is estimated at £5,500, of which £5,000 has been presented by Mr. A. Carnegie. The institute will be on one side of the Institute of Physiology and on the other there is to be a similar building for anatomy. Together with the older parts of the college, the medical institute when complete will exercise a great influence in the scientific and preliminary departments of medical education and, of course, will continue closely associated with the hospital for clinical work.

An International Smoke Abatement Exhibition is being held here by a society which is devoted to the object of preventing or diminishing London's annual soot fall, estimated at 70,050 tons. At the opening luncheon Sir W. Ramsay spoke of a plan he had been thinking over of doing without coal-burning at the spot where heat was wanted. In the midst of our coal strike, of which you will have learned the facts, any such idea naturally attracts attention and it is being said in many quarters that science is sure to meet the difficulty and miners are warned that their calculation of holding up the nation may redound to their own destruction. Sir William said the ideal of things would be to burn the coal *in situ*, conduct the gas to the surface, convert the power into electricity which could be conveyed anywhere and used for heating at a much less cost than coal fires or furnaces. He told the miners they had better pause before they lost their work altogether for if the system he had sketched failed in any particular, the resources of science were by no means exhausted.

It is with sincere sorrow I have to report the death of Dr. Pennell of the Mission Hospital at Bannu Worth, West Frontier India. He was a personal friend from his student days and I have watched his career with the deepest interest. As a student at University College he carried off gold medals, eight or nine in number, and other distinctions. At the University of London he graduated B. Sc., 1886, M. B., B. S., 1890. taking the same year the diplomas of the two Royal Colleges and the Hall. The next year he proceeded to M. D. and the next took the F. R. C. S. Eng. The residential offices at his hospital he also filled with assiduity for he had all along been determined when fully equipped in every way to take up work as a medical missionary. The Church Missionary Society gladly accepted his services and chose him to establish the station at Bannu where he began in 1803, opened the hospital which has been a great success,

became the trusted friend of the wild tribes on the frontier, whose propensities toward violence he often restrained and was said to be worth more than a regiment or two to the British Government which gave him the Kaisar-i-Hind, second class in 1901 and the first class in 1910. At the request of members of his university and college a memorial service is being held this afternoon at St. Pancras Church. He died on Saturday, the 23d, aged 45, from septicemia, according to the cable message. He leaves a widow who is also M. B. and B. S., London. He wrote "Among the Wild Tribes on the Afghan Frontier" and another volume on Northern India.

Dr. W. H. Barnett of the Bannu Mission Hospital died there on the 20th, aged 32. He was a Bart-o'-man, took M. B., B. S., London, in 1905, and filled resident offices at Radcliffe Infirmary, Oxford and at Macclesfield. He entered the medical mission field and was appointed to assist Dr. Pennell who was overworked at Bannu. He proved a very valuable colleague. He married in September, 1910. In a single week the medical mission service in general and India in particular sustains the double loss of Theodore L. Pennell and William H. Barnett.

OUR LETTER FROM THE PHILIPPINES.

(Special report to the MEDICAL RECORD.)

CEBU'S WATER SUPPLY—QUININE AND MALARIA—SEGREGATION OF LEPERS—PHILIPPINE HEALTH EXHIBIT—ASSEMBLY OF PHYSICIANS AND PHARMACISTS OF THE PHILIPPINES—DELEGATE TO THE ROME CONGRESS.

MANILA, P. I., February 28, 1912.

THE rapid advance which is being made in the Philippine Islands in the matter of sanitary betterment is well illustrated by the opening, during the past week, of the new water system for the city of Cebu, which is situated in the Visayan group on an island of the same name. Cebu, in round numbers, has a population of about 40,000, and is the second city in the Philippine Islands. It is the shipping center for the islands of Negros, Bohol, Leyte and northern Mindanao, as well as for the island of Cebu. From a sanitary standpoint it is of considerable importance because dangerous communicable diseases may be widely disseminated by the extensive shipping which the port enjoys, and for the same reason it is readily susceptible to infection when the provinces with which it trades become infected. Up to the present time there has been no water available except that of a brackish variety which was obtained from shallow wells, or that which was collected in cisterns from the roofs of buildings. As the death rate from intestinal diseases has always been high in Cebu, it will be interesting to observe whether the same satisfactory reduction in the death rate will be brought about there as occurred in Manila after the introduction of the new water supply. At a distance of about 12 kilometers from Cebu, a retaining wall was built, which is capable of damming up 400,000,000 gallons of water which collects upon an uninhabited watershed. The water is then conducted in large steel pipes to a point about four kilometers from Cebu, into a settling and distributing basin, which has a capacity of 480,000 gallons. From there, it is conducted by a system of pipes to the city, and on arrival there has a pressure of about 120 pounds to the square inch. It is estimated that the consumption, at the beginning, will be, approximately, 200,000 gallons per day. The system was formally inspected by the Governor-General and other government representatives and thrown open for use with appropriate ceremonies on February 17, 1912.

In the latter part of 1909, the Bureau of Health, with a view to relieving distress and the hope of reducing the death rate from malaria in the province of Ambos Camarines, distributed gratuitously one-half million five-grain doses of quinine sulphate. It is interesting to note that the death rates from malaria before and after the quinine distribution were as follows:

1907.		1908.	
First quarter	189	First quarter	137
Second quarter	269	Second quarter	225
Third quarter	208	Third quarter	159
Fourth quarter	321	Fourth quarter	232
	987		753
1909.		**1910.**	
First quarter	168	First quarter	129
Second quarter	160	Second quarter	133
Third quarter	247	Third quarter	168
Fourth quarter	202	Fourth quarter	131
	777		561

In 1911, when there was no further gratuitous distribution of quinine, it is interesting to note that the deaths from malaria immediately following the discontinuance of the free distribution of quinine, were as follows:

1911.	
First quarter	170
Second quarter	196
Third quarter	142

which shows a decided increase over that which had obtained before. It was rather a crude experiment, and it is, of course, impossible to say whether the distribution of the quinine influenced the death rate as favorably as the figures seem to indicate, or whether it has been due to other causes operating during that time. There is no doubt, however, that an enormous amount of distress and suffering were relieved.

The collection of lepers throughout the Philippine Islands has been steadily carried on since it was first begun in 1906. During the year 1911, 1076 lepers were collected, as against 785 for 1910, 1323 for 1909 and 1554 for 1908. In view of the fact that the great majority of the cases which are encountered now are seldom far advanced, it is reasonable to infer that the cases which are being discovered now were unrecognizable, at least by clinical means, a few years ago. Practical experience in this work has shown that, even with the full cooperation of the people, many years must necessarily elapse before the disappearance of this disease among the Filipinos can be reasonably expected. It is not too much, however, to expect that from now on, owing to the great reduction in the number of human foci, that a rapid decline in the number of new cases will take place from year to year. Since the beginning of the collecting of lepers on a systematic plan, in 1906, a total of 6481 lepers have been collected. Of this number 3043 are still alive, so that, in a period of six years, the mortality has been 46.95 per cent.

During the early part of February an Exposition was held in Manila which had for its object the placing before the people the products and manufacture of all of the provinces of the Philippine Islands. The Bureau of Health took advantage of this opportunity to make a health exhibit which proved to be of considerable educational value. Samples of rice were shown in order to illustrate the kinds which would cause beriberi. There were a number of models of sanitary houses. One large model which attracted particular attention was that

showing a section of Manila before streets were cut through the congested districts. The other part showed the district as it is today, with its houses on street lines, the level above the tide, the sides of canals walled, drainage for wastes and other simple improvements so rare in oriental cities. There was a good model of an artesian well in actual operation. The mosquito exhibit was particularly instructive and the breeding of mosquitoes was actually carried out. An experienced physician was constantly in charge who could speak the various dialects and lecture on the exhibit.

From February 3rd to February 9th, the first annual meeting of the newly organized Assembly of Physicians and Pharmacists of the Philippine Islands was held. The membership is composed entirely of Filipinos. There were over 400 members in attendance. The Director of Health, Dr. Victor G. Heiser, by special invitation, read a paper entitled "Typhoid Fever in the Philippine Islands from the Sanitary Standpoint."

Dr. Vicente de Jesus has been appointed by the Governor-General to represent the Philippine Islands at the International Congress on Tuberculosis.

GREATER DETAIL OF A RECENTLY SUGGESTED METHOD FOR THE EARLIER DIAGNOSIS OF UTERINE CANCER.

To the Editor of Medical Record:

Sir:—From a hasty perusal of our notes on an earlier diagnosis of uterine cancer and the cause of cancer in general (Medical Record, May 20, Sept. 9, Sept. 30, 1911; Jan. 20, 1912), the impression is frequently gathered that the coexistence of maximum health, weight, and strength is indicative of incipient uterine cancer. Such is not the conclusion to be drawn from a careful study of the research. A woman in perfect health is by no means necessarily the victim of malignant disease; but the uterine cancer patient will have been in apparently the same state of perfect health previous to the onset of recognized symptoms.

In taking a history of a uterine cancer patient for the purpose of studying the health conditions in the incipient stage of the disease, the physician may expect to find: (1) maximum weight; (2) maximum strength; (3) best health; also (4) increased sensibility to pain, noticed in the dentist's chair, etc.; (5) an abnormal sleepiness. The patient will have found it agreeable to retire early, not from fatigue, but from sleepiness; this extra sleep will not have interfered with her sleeping soundly all night through until time to rise; she will not have been easily disturbed. She may confess to dropping off to sleep at church, or at an entertainment, or in a chair; the last, particularly right after her evening meal. She may even answer in the affirmative your question as to whether or no she has ever been *teased* for being such a sleepy-head. (6) An increasing apathy or weariness, not fatigue. Apathy about doing things or going to places. The patient in the incipient stage of uterine cancer "can, but don't want to." The woman with other uterine diseases or disorders "wants to but can't." (7) Forgetfulness; the patient will have put things away and forgotten where she put them, or will have forgotten names which she would have every reason to remember. (8) An inclination to let things go, and not to worry. An increasing carelessness. Indifference to erstwhile pleasures and casual or unnecessary duties. Procrastination.

The above mentioned symptoms of the incipient stage of uterine cancer would account for the tardy consultation of a physician by a woman afflicted with the malady. Medical journals repeatedly deplore this unconcern on the part of the patient and publish appeal after appeal for an earlier diagnosis of the disease.

In carrying on the study it is desirable, first, that the data should be collected from patients possessing at least a fair amount of intelligence; second, that histories should be taken in every case possible by the physician himself, or by an interne who is interested in his work and has a knowledge of the exact information sought. Slight, as well as severe forms of ill health must be studied, and to be advantageously studied must be supplied by patients understandingly, hence they must come from women of the upper classes. The poor woman in the lower walks of life considers she is in good health and strength as long as she is able to work and lift heavy articles. She seldom weighs herself, and hence data in regard to weight, the condition which can be most definitely determined, are unavailable. She considers childbirth hard only when it lasts a very long time or instruments are required. Data collected from women of intelligence will alone be of real value in the research. These women are usually of the upper class, and therefore private patients whom the physician will not permit anyone but himself, or assistant, to interview; all such desirable cases will be lost to the study, unless physicians and surgeons, recognizing their obligations to science, contribute to her need. Many of these patients may satisfactorily fill out their own history sheets if encouraged to take the pains and time to recall their past as accurately as possible. The blanks used in the study in question are prepared expressly for this purpose.

The progress of the disease may be divided into three stages: incipient, early, advanced. The latter stage will not be considered. In it the patient is frequently incapable of giving thorough attention to the questions on account of her nervous, weak, and painful condition; her mind has become apathetic and her memory weak. Patients in the incipient stage are not recognized as victims of the disease, hence no opportunity of interviewing them offers. Patients in the early stage are therefore the ones from whom we may hope to obtain information which may be of value in throwing some additional light upon the cause of malignant cell-proliferation.

E. Atlee.

Philadelphia.

HOW TO AVOID "TAKING COLD."

To the Editor of the Medical Record:

Sir:—Everyone "catches cold"—that means everyone at irregular intervals suffers from a simple cold to a severe pneumonia. A simple cold with acute nasal congestion is an unmitigated nuisance, while a severe pneumonia is one of the tragedies of physical life.

I believe I have found a way by which most "colds" can be conquered if fought at their birth. Some years ago a friend said to me, "when I feel a strong draught blowing on my bald head I always rub it hard—that brings the blood back, and so I avoid taking cold." Later on, I noticed that sneezing is always followed by congestion of the face, especially in those who sneeze heartily—that is "Nature's way of bringing the blood back," said

I, remembering my bald-headed friend. Acting on this principle, I have experimented sufficiently to know that "bringing the blood back" does drive away "colds," and that sneezing is Nature's way of restoring (or trying to restore) the normal circulation when a surface anemia has been caused by surface chilling.

Therefore, when the nasal mucous membrane is first congested, and one feels he is "taking cold," let him bend the body forward (as in picking up a pin from the floor and "strain" gently till the face is red, then (in the erect position) try to breathe through the partially occluded nostrils; repeat this process till the nostrils are freely open. Of course one should exercise and take hot drinks till that chilly feeling disappears, but that does not drive away the nasal congestion which so often introduces a severe cold.

This new method of avoiding "colds" by bringing on forced nasal hyperemia, and following this by patient nasal respiration till the nostrils are freely open, "sounds silly," but after three years of practical experience, I have decided to publish this brief statement.

RICHARD ELLIS, M.D.

64 IRVING PLACE, NEW YORK.

Progress of Medical Science.

Boston Medical and Surgical Journal.

April 4, 1912.

Visceral Purpura and Angioneurotic Edema. C. F. Withington.
A Short Account of the Early History of Suprapubic Cystotomy. C. G. Cumston.
Freud's Psychology as Applied to Children. W. E. Paul.
Memorials to Oliver Fairfield Wadsworth, M.D. C. J. Blake, J. J. Putnam, and M. Standish.

Visceral Purpura and Angioneurotic Edema.—C. F. Withington states that the group of essential purpuras is usually divided into four classes: (1) simple purpura, affecting the skin; (2) purpura rheumatica, or Schoenlein's disease, involving the skin and joints; (3) Henoch's purpura, involving skin, joints, and gastrointestinal mucous membrane, and (4) purpura hemorrhagica, or morbus maculosis Werlhoffii, which is painless and characterized by hemorrhage from all mucous membranes. A sub-variety of this form is the so-called purpura fulminans. There is a group of cases in which purpura is associated with angioneurotic edema. In Henoch's purpura the cutaneous eruptions and joint swellings are followed by colic, vomiting, intestinal hemorrhage, pain, and moderate fever. The question of the operative interference with many of these cases has presented itself and has been differently answered. Obviously, if the abdominal condition is simply one of localized edema, or of purpura, it can be generally trusted, as in the cases reported by the author, to do without surgical interference. These conditions may, however, have produced other abdominal changes such as are everywhere recognized to be the proper subject for surgical operation. Especially marked among these is intussusception, which, there is reason to believe, is in many cases produced by a local edema involving a portion of the intestine which sets up violent peristalsis, so that the swollen portion of the bowel is invaginated into the portion next below, thereby producing serious obstructive symptoms. This last group of cases indicates the extreme gravity which may occasionally attach to Henoch's purpura. In the group of operative cases, some of the operations were apparently unnecessary, but on the other hand there may develop grave lesions which would have been fatal if unrelieved, and the final group of cases, in which no operation was performed, showed similar lesions which did prove fatal. These facts make it evident that the question of surgical treatment in Henoch's purpura is a very important one and, while one should probably in the majority of cases recognize that the lesion is one which will subside in the intestine, as it usually does in the skin and other mucous membranes, one is not to assume that surgical interference may not, in certain cases, be urgently and promptly required.

Freud's Psychology as Applied to Children.—W. E. Paul states that according to Freud the infant is born with latent sexual impulses of which thumb sucking or even normal sucking are manifestations. The period of child life in the Freudian psychology is largely that of the beginnings of psychic events that later develop into hysteria, obsessions, and complexes of psychoneurotic character. Not that psychanalysis always delves back in adults to the child stage, but some elements of psychical trauma always date from early life. One is reminded of the emotionality and impressionability of even very young children. Their imaginations are active and their memories retentive. Their feelings overwhelm them, and careful parents soon begin most harmfully to impose restraint and teach the child to react artificially instead of naturally. Information is withheld and mystic fancies rouse emotions with complex potentialities. Repressions are grafted on to their behavior and the children begin psychically to take on the characteristics of their environmental associations. For example, the mother's fear of a thunderstorm is instilled into the child. In a thousand ways the child is subjected to molding psychical forces beyond analysis.

New York Medical Journal.

April 6, 1912.

Sex Mutilations in Social Therapeutics. G. F. Lydston.
Diet in Nervous Disorders. T. A. Williams.
The Regulation of Fees. H. Hays.
Report of Three Cases of Pubiotomy. A. J. Rongy.
Alcohol and Spirit of Camphor as Surgical Dressings. B. Robinson.
Torsion of Uterine Annexa in the Hernias of Nurslings. A. V. Moschcowitz.
Further Observations on the Surgical Treatment of Hallux Valgus and Bunions. W. L. Keller.
A Contribution to the Study of the Physiology and Pathology of the Skeleton on the Oral Extremity of the Thorax (Stethographic Method). C. M. Desvernine.

Sex Mutilations in Social Therapeutics.—G. F. Lydston notes that Indiana was the first State in the Union to put the sterilization idea into actual practice, only so far as it relates to criminals. Castration, in the author's opinion, is the logical treatment for the rapist. The emasculated rapist is an object lesson for prospective sexual criminals. Individuals whose physical or moral status is such as to insure the unfitness of their prospective progeny should have the alternative of submitting to sterilization as the only condition upon which matrimony is legally permissible.

Diet in Nervous Disorders.—T. A. Williams states that among the factors that are associated with a suitable diet the most important is enjoyment of the food. It must be cooked and served appetizingly. But even this is not enough: the psychological surroundings must be favorable. Dejection or anxiety is most detrimental to proper digestion. The frequent ingestion of food is detrimental to those persons susceptible to alimentary poisoning and its nerve inadequacy. Some of the food at least should be of firm consistency, so as to demand vigorous mastication in order to stimulate salivation. This prevents the bolting of food, a habit to which nervously impulsive persons are liable. Most epileptics are benefited and many cured if, before it is too late, a diet is imposed which minimizes the work of the metabolism of proteins. Empirically, it has been known how favorable to such patients are an abundance of fruit and vegetables and a restriction of meat. But failures in the application of this diet occur unless other proteins than meat are not restricted also; and unless the fruits and vegetables are chosen for their saline quality. The chlorides of the average diet should be restricted. They are apparently harmful to those prone to epilepsy, for although the hopes aroused by the first recommendation of

their deprivation have not been realized, yet many arrests of fits have occurred under a salt-free diet. A potent cause of nervous inadequacy is arterial hypertension. The rôle of diet in producing this seems to be important. Both purins and excessive nitrogen seem to lead to the formation of pressor substances.

The Regulation of Fees.—H. Hays emphasizes the following points which the physician should keep in mind in regard to the regulation of his fees and the collecting of these fees: (1) Fees should be regulated according to the character of the work done and the time consumed in doing it. (2) There should always be a maximum fee for the rich patient which can be scaled down to nothing for the poor patient. (3) The high cost of living should make one aware that it is time that the size of this maximum fee should be made higher, so that the physician's income will be commensurate with increased expenditures. (4) The family physician or general practitioner should receive more consideration than he does at present from his patients in regard to payment for the work he performs.

Pubiotomy.—A. Rongy believes that pubiotomy has a definite field in neglected cases of labor or cases that have been misjudged. In these cases pubic section will meet the indications when cesarean section is ruled out. When the mother and baby are in good condition and the chances for infection are not likely, although in the obstetrical sense the case is not a clean one; in such cases a competent surgeon should perform pubiotomy in the interest of the child.

Alcohol and Spirit of Camphor as Surgical Dressings.—B. Robinson recommends as a local application for wounds, bruises, sprains, etc., alcohol, or spirit of camphor and water in the proportion of one part alcohol or spirit of camphor to three parts of water. The alcohol may even be applied pure. On open wounds one or the other is preferable to bichloride of mercury or any other antiseptic.

Journal of the American Medical Association.

April 6, 1912.

Contribution to the Surgery of Bones, Joints and Tendons (to be continued). J. B. Murphy.
The Chorus-Girl's Vocal Troubles. C. P. Grayson.
The Therapeutic Use of Citric Acid and the Citrates. H. B. Hemenway.
Infantile Eczema. C. A. Simpson.
Chronic Constipation. A. C. Reed.
The Study of Tropical Diseases in the Philippine Islands. A Summary of the Work Performed During the Last Two Years by the United States Army Board. W. P. Chamberlain.
The Diagnosis of Pain in the Upper Abdomen. J. Daland.
Acute Mastoiditis, Sinus Thrombosis, Superficial Brain Abscess, Recovery. F. T. Hopkins.
The Value of the Loeffler Method of Sputum Examination. C. S. Williamson.
An Emergency Cannula. Transfusion in a Thirty Six-Hour Old Baby Suffering from Melena Neonatorum. B. T. Bernheim.
A Simplified Technique for the Application of the Glyoxyltryptophan Test to Gastric Contents. F. Smithies.
A Simple Method for Making Carbon Dioxid Snow. M. B. Ahlborn.
Report of a Case of Simulated and One of a True Maxillary Empyema, Both of Dental Origin. M. R. Baer.
A System of Electric Wiring for Using Direct Street Current in Laboratories. D. F. Jackson.
A Slide-Drying Attachment for Centrifuges and an Albuminuria Staining Dish. W. Krauss.
Pipette Filler. L. Weber.
Acute Articular Rheumatism Treated by the Rectal Administration of Sodium Salicylate. L. G. Heyn.

The Surgery of Bones.—J. B. Murphy states that the periosteum, when fully detached from the bone and transplanted into a fatty or muscle tissue bed in the same individual, may, in a young person, produce a lasting bone deposit, but this rarely occurs if transplanted into another individual of the same species and not at all in another species. Periosteal strips raised at one end from the bone, if turned out into muscle or fat, regularly produce bone on their under surface for the greater portion of their length. Transplanted into other individuals and brought into contact at one end with exposed or freshened bone, such periosteum rarely produces new bone even to a slight extent. Bone with its periosteum transplanted into muscle, fat, etc., in the same individual without bone contact practically always dies and is absorbed, except in the very young. In another species it is always absorbed. Bone transplanted without the periosteum always dies and is absorbed in the muscular or cellular tissue, but with or without periosteum and in contact with other living bone at one or both ends it forms a scaffolding for the reproduction of new bone, though the transplanted fragment itself is always absorbed. Bone covered at the ends by cartilage and on the sides by periosteum, even when in touch with living bone denuded of periosteum, dies and is absorbed. When the graft is covered with periosteum at the point of contact with living bone regeneration fails, but if the periosteum of the gratt is split up into shreds regeneration may take place. The indications for bone transplantation are to correct deformities resulting from defective development; to produce union in ununited fractures; to replace bone removed by destructive infections; to restore or supplant bone tissue dislodged or destroyed by fractures; and to replace bone removed for non-malignant neoplasms, and bone removed for encapsulated malignant diseases, such as sarcoma.

Therapeutic Use of Citric Acid.—H. B. Hemenway calls attention to the therapeutic use of citric acid and the citrates in conditions due to excessive viscosity of the blood. The condition of brawny swelling thus produced is relieved by the citric acid reducing the viscosity, bringing fresh leucocytes into action, and helping the gorged and crowded ones out of the way. Viscosity of the blood is due to its colloid constituents and is distinct from coagulability. While they may be coincident they are independent and one may be high while the other is low. The obstructed circulation from viscosity favors thrombosis.

Chronic Constipation.—A. C. Reed states that a peculiar form of constipation is due to spasmodic contraction which occurs in lead poisoning and in neurasthenic and melancholic individuals. Belladona is the best antispasmodic for these cases and oil enemata are also useful Chronic habitual constipation, however, is mainly of two types—first, loss of normal irritability or motile irritability, and, second, loss of normal stimulus. The first of these may be due to an abnormality in the mucosa, musculature, or nervous mechanism. Lesions of the mucous membrane occur in chronic intestinal catarrh and in atrophy of the mucosa, which may of itself be an independent infection. Peritoneal inflammation can also involve the intestinal muscle and paralyze it. Muscular insufficiency without inflammation calls for stimulating tonic treatment. Decreased normal stimulation of the intestine is largely due to an overconcentrated food supply and diet, lacking in substances that exercise a mild irritant action, such as are found in the indigestible parts of the food, such as coarse vegetable fibers.

Pain in the Upper Abdomen.—J. Daland states that pain in this region is usually due to gallstones or to duodenal or gastric ulcer. Pain due to uncomplicated gallstones comes and goes suddenly, without warning, at intervals of hours, days, months, or years. Gallstones may, however, exist in the gall bladder without symptoms. The pain and its duration and intensity depend on the size and position of the calculus and the amount of obstruction that it can produce. Slight attacks may occur from swelling of the ducts, masses of mucus, or overdistention. A friction fremitus heard over the gall bladder containing gallstones has been described. In suppurative cholangitis, diffused dull pain in the hepatic region with local tenderness and daily intermittent fever, simulating malaria, may occur. Adhesions may be produced causing obstruction and pain. The pain of biliary colic may be simulated by hyperchlorhydria or hyperacidity, or both. Chronic ulcer of the stomach causes burning, boring or gnawing pains, relieved by food and drink or alkalies and recurring two to five hours after meals. The attacks may persist for weeks, followed by intervals lasting for months or years. Hematemesis and

melena are important signs of gastric ulcer, but their absence is not of diagnostic importance. Chronic indurative or indolent gastric ulcer usually occurs in the pyloric region and is marked by the long interval of comparative good health between the attacks which masks the diagnosis and leads to a belief in a cure. The ulcer is, however, most dangerous and should receive surgical treatment. Medical treatment is only palliative. The pyloric region is a favorite site of ulcer and cancer. Chronic duodenal ulcer is more common than the gastric form and seems to occur more frequently in males. It presents the same difficulties of diagnosis and dangers of prognosis as pyloric ulcer and requires the same prompt surgical treatment. Duodenal kinking may cause pain like ulcer and a radiograph will reveal the condition. Gastric carcinoma in more than half of the cases starts on the site of an ulcer. It may be painless even in advanced cases and its detection may be easy, difficult, or impossible.

The Lancet.

March 30, 1912.

Meat Poisoning.—F. A. Bainbridge states that *B. suipestifer* and *B. enteritidis* (Gaertner) are rarely found in the healthy human alimentary canal. Their usual habitat is the intestine of certain of the lower animals: *B. suipestifer* occurs chiefly in pigs and at times in mice, whereas *B. enteritidis* (Gaertner) is found frequently in rats, occasionally in cattle, and rarely in other animals. In outbreaks of meat poisoning caused by *B. suipestifer* the meat has usually become infected after death; in the majority of cases it is derived from pigs. Intravital infection also occurs. In outbreaks caused by Gaertner's bacillus the meat has frequently been obtained from animals which were ill when slaughtered. In some cases the contamination of the meat doubtless occurs after death. In sixteen out of twenty-four outbreaks the meat was derived from cattle. There is but little evidence that ptomaines play any important part in meat poisoning; the majority of the outbreaks are due to meat infected either with Gaertner's bacillus or with *B. suipestifer*.

Classification in Gynecology.—W. E. Fothergill presents the following classification of gynecological affections: Developmental errors, vascular changes, mechanical lesions, results of infection, progressive conditions, and retrogressive conditions. Developmental errors must, for gynecological purposes, contain two sub-groups: (*a*) congenital errors, and (*b*) errors in development at puberty, for the reproductive organs have two phases of development, one embryonic and fetal, the other occupying the year immediately preceding and following puberty. Vascular changes include active and passive hyperemia as recognized at first by symptoms and later by hypertrophy and fibrosis respectively. This group also includes varicosity of the veins in the pelvis and hemorrhage into the pelvic organs, the pelvic cellular tissue, and the peritoneal cavity. Mechanical lesions form a large and obvious group containing injuries, displacements, and hernia. Results of infection should be subdivided according to the organisms present in each case. In this group the few cases of primary pelvic parasitic disease may be included without impropriety. Progressive conditions include overgrowths, cysts, and new growths. Perhaps this group should be divided. But it is hard to draw the line between hypertrophy and adenoma of the endometrium or between innocent and malignant new growths. Retrogressive conditions occur mainly in connection with the menopause, but the reproductive organs share in the general changes of senility.

Postural Treatment of Abscess of the Lung and Liver.—W. E. McKechnie reports the case of a boy fourteen years old who had coughed up pus to the extent of a teacupful daily for five years. From the character of the pus, the practically aseptic condition, and the physical signs, the author diagnosed liver abscess with perforation of the diaphragm and pleura and secondary abscess in the base of the lung, with adhesion of lung, liver, and pleura to the diaphragm in the neighborhood of the perforation; with intermittent partial evacuation of the cavities in the liver and lung via the bronchi and trachea. The author made the boy hang suspended over the edge of a table, head downward, the whole body hanging vertically upside down, the legs and thighs lying on the table at right angles to the body and thus supporting him. In this position he was made to cough. The result was efficient evacuation of the abscess cavity. This treatment was carried out five or six times daily and at the end of six weeks resulted in a complete cure.

Pulmonary Embolism Following Diphtheria.—D. Stewart reports the case of a girl aged four years who was admitted to the hospital with mild faucial diphtheria, and progressed favorably until after a fortnight's residence in hospital, when she became moderately feverish and very restless, and presented signs and symptoms pointing to pulmonary trouble. Alteration of the respiratory murmur was made out over the right upper lobe, though from the increasing restlessness examination was difficult. Pneumonia was provisionally diagnosed, but the child grew very rapidly worse, with increasing lividity, restlessness, and respiratory embarrassment. Death took place within twenty-four hours of the first appearance of symptoms. Noteworthy points in the case were the mildness of the primary angina and the suddenness of the onset of the fatal sequel, the pulse rate rising from 108 to 140, and the respiratory rate from 24 to 40 in an hour. Also the temperature was not raised proportionately to the pulse and respiration rates. These points and the quick fatal issue combined to make the author doubt the accuracy of the provisional diagnosis, especially as thorough auscultation had been impossible. At postmortem examination a large infarction implicating the upper right lobe was found. Some dilatation of the right side of the heart was present, but no gross valvular lesion.

British Medical Journal.

March 23, 1912.

Heart Failure.—Sir T. Clifford Allbut discusses the extreme difficulties which confront the clinician and pathologist in trying to discover in any given case the causes of heart failure or in seeking some method by means of which impending heart failure may be recognized. In no organ is this lack of concord between the signals of life and death so disconcerting as in the heart. In all living structures there is a factor of safety, that potential which in the heart we call reserve, but in none, perhaps, is it so capacious as in the heart. Yet of this reserve, of what the heart can do in case of need, we have no scientific measure; the microscopist cannot detect it, the clinician has no valid tests for it. The author knows of no evidence

that mere hypertrophy depends upon any encroachment on the normal reserves of the heart. So far as evidence yet goes, an hypertrophied myocardium is as good as a normal muscle. Dilatation is no gauge of the histological condition of the myocardium; in some cases, as in acute rheumatism for instance, an impaired ventricle may be attended with dilatation; in others, as for instance in diphtheria, no such correlation may be found. A fagged or anemic patient may without any grave affection of the heart nevertheless present for a while the defects of impulse and the quality of sounds which in another might truly signify such a flaw. These equivocal physical signs, then, are not criterions. Syncopic or vertiginous phenomena often accompany cardiac default; but, whether from dyspepsia, slight labyrinthine disturbance, vasomotor atony, or other obscure cause, we are too familiar with this kind of symptom to rely upon it as crucial in the diagnosis of failing heart. It has been asserted again and again that the profounder changes in the myocardium are betrayed by an irregular pulse; but as experience of cardiac disease has widened we have learned that in the rhythms we have rarely any criterion of cardiac values. In another way the pulse may signify decay of the myocardium—namely, by a persistent change of rate, whether of acceleration or of retardation; though here, again, we have not a constant but an inconstant criterion. Of the many other and more familiar symptoms of heart failure, such as dyspnea, slight edema, slight albuminuria, cyanosis of ears and lips, fullness and tenderness of the liver, pulmonary crepitations, arrhythmia perpetua, the author states that more or less sudden heart failure is frequent without any of these features; and in any case they usually signify late phases of the malady. Sphygmomanometrical observations have as yet proved to be of no use in the detection of myocardial disease. The part which the nerves play in cardiac function is very obscure. Besides the intracardial nervous structures there are also the extracardial, the vagus and the bulb; not to mention those psychical influences which on the heart are supposed to have a peculiar potency. Again, the vasomotor system has degrees of reinforcement or default of which we have little notion. One should also remember the chances of sudden death by fat embolism, nerve toxins, pulmonary embolisms, and so forth; or possibly, by increases of the specific gravity of the red corpuscles. Then there is the world of chemical reactions in the heart; the ionic motions and substitutional interchanges of which we know little.

The Estimation of Heart Power.—W. Russell states that in taking hemomanometer observations three factors of clinical importance have to be considered, namely, (1) blood pressure; (2) structural changes in the wall of the artery; and (3) hypertonus of the muscular coat. Upon the correctness of one's estimate of these separate factors will depend the correctness of one's conclusions, and will determine the real value of this instrument in clinical work. There is no escape from the exercise of discretion and judgment when using this instrument; the significance and value of each point have to be determined in every case.

Berliner klinische Wochenscrift.

March 11, 1912.

"Vital Staining" and Chemotherapy.—Schuleman announces the results of some experiments on the relationship between tinctorial quality and therapeutic effects. The selective action of stains may imply selective therapeutic effects. Staining is believed to indicate that a chemical reaction occurs between the coloring matter and the protoplasm. The entire problem of the relationship between chemical constitution and physiological action is naturally here involved. The author endeavored to vary the molecule of trypan blue. This contains numerous side chains of known therapeutic efficacy—hydroxylons, amido groups, methyl groups, etc. The coloring matter benzopurpurin which is devoid of hydroxyl groups was tested for control, as were also other principles which contained no amido and methyl groups respectively. It appeared that these side chains did not confer the desired properties on the molecule. Varying the sulfonic acid groups was also without effect. The tinctorial quality did not depend on the size of the molecule. The author had to abandon for the time being the molecular constitution of the stain. How does the staining principle get inside the cell? It cannot dissolve the lipoids of the cell membrane. It may, however, be in a peculiar state of colloidal division, in virtue of which it passes between the fat particles. The azo and sulfonic acid groups are believed to stand in direct relationship with the colloidal properties, the presence of hydroxyl and amido groups being much less significant in this respect. In studying simple mineral dyes points of analogy may be seen. The stain does not seem to depend absolutely on the chemical constitution, but rather on the so-called chromophore group, and the latter owes its activity to some physicochemical property such as ability to form certain colloidal suspensions. If the author's conclusion is just, there is nothing therein to oppose Ehrlich's chemotherapeutic teachings, but a new element should be superadded to the latter.

Diagnostic Value of the Leucocyte Inclusions in Scarlet Fever.—Kretschmer refers to an article on this subject by Döhle, who in thirty cases of scarlet fever of various stage and intensity found inclusions in the polynuclears. They are naturally at a maximum during the leucocytosis at the onset of the disease, and begin to vanish by the end of a week, persisting for a variable interval, which may amount to four weeks or more. There is evidently no connection between this phenomenon and later developments, for it does not reappear with relapses and complications. There is no claim made as to specificity, for Döhle found the inclusions in other miscellaneous conditions, in which there is no constancy of incidence. The author has studied the phenomenon in nonscarlatinal conditions and in the healthy; and in seventy of the most heterogeneous cases found the inclusions in four, or about 6 per cent. There is therefore a presumption at the outset that the phenomenon has to do with the *Streptococcus pyogenes*, and, as a matter of fact, this view was borne out in every one of the positive finds. On the other hand the author has not only found the inclusions in all the scarlatina cases investigated by him, but was even able to recognize the existence of the disease in an exposed child before it was seized by the latter. Moreover, he has excluded scarlatina in the early days of acute angina, Vincent's angina, and diphtheria. The author has been able to pick out the inclusion cases in nonlabeled specimens. Several stains may be used, but the author prefers the so-called Manson's procedure, in which methylene blue is used. The inclusions are about the size of ordinary cocci.

Nature of Mouse Tumors.—Apolant, representing Prof. Ehrlich, announces that the mouse tumors are veritable cancers despite all assertions to the contrary. It is conceded, however, that notable biological differences exist between these growths and human cancer, which may be sufficient to negative the prodigious efforts of the past decade in seeking a line of rational treatment for the latter affection. Wassermann has stated that he is now able to produce the disappearance of mouse tumors by chemotherapeutic methods, and it is, of course, highly desirable that we have no illusions in respect to analogous power over human cancer. The argument at present seems to revolve about the analogies between mouse tumors and human cancer of the breast. The author states that the former are histologically typical mammary cancers, while von Hansemann holds the opposite view.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

OBESITY AN ABNORMAL CONDITION.—The expression "fat and healthy" is familiar and also misleading but believed in by laymen who are usually at a loss to understand why some ruddy, corpulent individual is refused as a risk or offered a policy on a different plan than the one applied for. The prevalent idea that fat serves as a reserve fund to draw upon in the case of emergency or illness is easily disposed of when studying the wide experience of life insurance companies. And yet obesity has not always been regarded as an indication of health, for far back in the early part of the seventeenth century Francis Bacon came near to the truth in his History of Life and Death, when he wrote that "fatness in youth pointed to a short span of life."

In obesity, as in other morbid conditions, a given exciting cause has a more injurious effect in some individuals than in others. Thus, some persons however much they eat or drink never become fat, while in the case of others everything taken turns to fat though they have not particularly good appetites and are not indolent. The defective state of the metabolic functions which, in association with a *relative* excess of food, leads to obesity, may be due not only to hereditary influences, want of exercise and habitual disturbance of the metabolic functions from alcoholic drinks, but also occasionally to incidental causes which are sometimes only transient. For instance obesity often follows typhoid and other fevers and accompanies certain nervous conditions and disorders of the sexual organs.

Causes of Death	Over weights	Under weights	Combined Experience
General Diseases—Acute.	9 67	9 28	8 90
Typhoid fever.	4 00	3 06	3 94
Malarial fever	1 27	1 21	1 24
Influenza	1 47	2 04	1 00
General Diseases—Chronic	13 07	24 59	19 56
Tuberculosis.	2 93	16 98	12 42
Cancer	4 40	5 57	4 18
Diabetes	3 40	0 65	1 25
Diseases of the Nervous System	19 08	12 16	17 44
Cerebral Congestion and Hemorrhage Cerebral Softening, Paralysis.	14 11	8 47	12 52
General Paralysis and other forms of mental alienation	1 80	0 84	1 56
Diseases of the Circulatory System	16 01	11 69	14 8
Organic diseases of the heart	12 94	8 54	10 76
Diseases of the Respiratory System	8 54	15 78	11 86
Pneumonia.	6 87	12 54	9 03
Diseases of the Digestive System	10 61	8 54	10 19
Cirrhosis of Liver	3 47	0 65	1 00
Diseases of the Genitourinary System	12 01	7 42	8 7
Bright's Disease and Nephritis	11 07	5 30	6 66
Diseases of Skin and Cellular tissue	1 20	0 47	50
Old age	None	2 04	1 00
Violent causes.	7 07	5 57	7 42
Casualties	4 20	3 47	5 21
Suicides	2 87	2 14	2 21
Ill defined	2 60	2 50	98

TABLE OF DISEASES PECULIAR TO OVERWEIGHTS AND UNDERWEIGHTS.—In order to ascertain the causes from which overweights and underweights die, Dr. Brandreth Symonds (MEDICAL RECORD, September 5, 1908) studied the death claims of 1,499 overweights and 1,078 underweights taken from the records of the company he represents. The figures obtained are compared with the entire mortality in the same company in the following table, and will serve to illustrate the remarks appearing in these columns on the subjects of overweights and underweights, as it gives quite a good idea of the malign influence at work in these cases. The figures represent the percentage of deaths from different diseases, those in the first and second columns referring to overweights and underweights and those in the third to the general experience of the company as set forth in its mortality statistics from 1843 to 1898.

EFFECTS OF OBESITY ON LONGEVITY.—By referring to the table in the section on "Maximum and Minimum Weights" in a previous number giving the percentage of mortality in overweights, it is seen that the mortality rises rapidly among moderate and excessive overweights as the age advances. Up to the age of about 29 overweight seems to indicate a certain hypernutrition and robustness that is favorable to subsequent life. This is indicated by the figures given, from which it may be concluded that overweight in an individual below 29 years of age is not harmful even up to 30 or 35 per cent. above the standard, provided the weight does not increase with advancing years. This holds good for the actual weight, not the relative weight, for the standard increases with advancing age; so that an excess of 33 per cent. at age 22 is practically the same as 20 per cent. at age 45 and the subject in such a case has, therefore, just succeeded in keeping out of the undesirable class of overweights. After the age of 29 overweight universally shortens life irrespective of sex or nationality to a marked degree, the mortality running as high as 160 per cent., a most excessive rate and one which no company conducted on safe and conservative lines can afford to allow. A slightly better mortality is exhibited in the table for persons between 57 and 70 years of age than for those between 43 and 56. This is probably due to more care in the selection of elderly risks.

For very good reasons, then, no good insurance office will accept an individual at ordinary rates, if at all, whose weight bears more than a certain proportion to his height, for it is notorious that such persons bear accidents badly and succumb to illnesses that would be much more often survived by healthy subjects. Furthermore, it is agreed among those who have given any study to the subject that these risks are poor not only because they are in an abnormal condition, less able to withstand shock and seldom reach an advanced age, but also for the reason that they are particularly prone to develop Bright's, heart disease, arteriosclerosis, apoplexy, diabetes, and cirrhosis of the liver.

OVERWEIGHT WITH EXCESSIVE ABDOMINAL MEASUREMENT.—These are particularly bad cases as a class. Rejection of the risk is the only safe plan to pursue when the abdominal measurement comes within a half inch or exceeds that of the expanded chest, both taken on the bare skin in accordance with the suggestions already offered in these columns. The increase in mortality in these cases is 10 to 15 per cent. over heavy weights without excessive abdominal measurement, and runs even higher when the abdominal measurement greatly exceeds that of the expanded chest.

OVERWEIGHT AND TUBERCULOSIS TENDENCY.—The mortality of overweights is not so poor when there are long lived family histories, those in which neither parent has died below the age of 70. While that of the young overweight remains good, as expected, the gain is sufficient in mature moderate overweights to keep the mortality well below 100 per cent. In all other classes, however, the mortality remains bad.

If the family history is an average or short lived

one, the mortality will be increased. Under these circumstances the young moderate overweights still retain a fairly good mortality, but the young excessive overweights show mortality increased to about 100 per cent. The other classes are rendered just so much worse.

A tuberculous family history seems to have about the same effect as a short lived family history. In the young it certainly has no worse effect and, on the whole, it may be said that overweight tends to counterbalance the predisposition to tuberculosis to such a marked degree that the amount of fatal tuberculosis in these cases is less than one-quarter of that which is found in general experience and hardly one-sixth of that occurring among underweights.

Life Insurance in India.—A paper was read on the above subject at a recent meeting of the Life Assurance Medical Officers' Association of London by Adrian Caddy. The records were commenced by Coulton and Arnold Caddy in 1892, and since Coulton's retirement in 1904 Adrian Caddy has assisted his brother in their compilation. The paper read by Caddy is really a lengthy and exhaustive report, entering into somewhat minute details of all questions bearing on the matter. According to the author the differences between cases in India seem much more trivial than in Europe. The population of India is about 300 millions, of whom about 100 millions are in Bengal, Eastern Bengal, and Behar. Most of the work referred to in the paper has been with the Bengali race and its neighbors; thus it may be considered that the figures deal chiefly with about one-third of the population of India.

As for height and weight of Europeans in India it appears that below 5 feet 6 inches the average weight is above the normal, and over 5 feet 6 inches the average weight is less than normal. This may be ascribed to the influence of medical selection before arrival in India, or it may be put down to the more active and open-air life enjoyed in India; exercise improving the physique of persons under weight and tending to diminish obesity in the stout. Contrary to general belief the average native weight corresponds very closely to the European standard. The average height of Indians was found to be 65.85 inches, while the average height of Europeans examined come to 67.95 inches. The following table shows the percentage of each group that were either declined or were insured at a higher premium:

Disease	Europeans (1,799)	Bengalis (3,483)
Inferior physique..	1.55 per cent.	5.36 per cent.
Obesity	2.11 "	5.34 "
Glycosuria	.61 "	3.24 "
Albuminuria	1.22 "	1.98 "
Consumption	.44 "	.91 "
Consumptive family history	1.38 "	.77 "
Bad family history.	.5 "	.93 "
Syphilis	1.0 "	.34 "
Heart disease.....	1.05 "	.86 "
Sundry diseases...	3.39 "	4.06 "
Elephantiasis	.... "	.22 "
Alcoholism	.72 "	.22 "

The vast majority of the natives of India are believers in vaccination or inoculation, and the remainder have generally had smallpox. Hydrocele is fairly common among the Bengalis. The general conclusions arrived at are in the main as follows: The European does not acclimatize in the tropics, that is to say, he is not able to rear healthy, strong children in India, and he is not able to continue for a long period in the same state of health as he was on arrival in the country. Quite apart from the effects of tropical diseases, the European gets debilitated by residence in the tropics, and at least every four or five years requires a change to a temperate climate. The children of Europeans who have been sent home when four or five years old for their education are generally not so fine physically as their parents. The chief proof that the European does not acclimatize in the tropics is his inability to withstand the tropical sun without any head covering.

Summarizing the various points of the paper the author thinks that he has shown:

1. The native of India is usually a shorter man than the European.

2. Height for height, the native weighs the same on an average as the European; there is no evidence to show that his tissues are any lighter than those of a European.

3. The native is very subject to glycosuria, due probably to his carbohydrate diet.

4. He is subject to hydrocele, the reason for which is not evident.

5. Opium and hemp drugs are not commonly consumed by the insuring classes.

6. The author thinks that it will be proved in the future that the use of these drugs is not so innocuous as has been believed.

Cripple Insurance.—Rokotnitz proposes a system of insurance which would diminish the economic loss caused by the existence in society of crippled persons. His scheme provides for the payment for most advanced medical and surgical procedures which offer hope of diminishing the disability caused by the crippling lesion. In case this is impossible he proposes an insurance which would make up for diminution of earning power in case of the birth of a cripple in a family. He thinks that such insurance can be well combined with the usual life and accident insurance.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, March 1, 1912.

Mortality in Various Trades.—From an exhaustive study of the mortality among bookbinding trades in Vienna Dr. S. Rosenfeld concludes that even apparently related trades may show quite dissimilar mortality figures, not only in relation to total death rate, but likewise in relation to the death rate for certain specific diseases. It is, therefore, inaccurate to gather many related trades together in studying mortality rates. These differences are due to very small differences in the circumstances and environment of the different artisans. In the study of mortality among trades as many subdivisions must therefore be made as possible, and detailed figures obtained. Moreover, increased mortality from some one disease must not be necessarily explained by the trade circumstances, but may be due to some quite extraneous and subtle factors. Moreover, only relative and not absolute figures give a correct conception of mortality, and therefore mortality figures in a trade in one town cannot be fairly compared with such figures in another town; other elements of population in the same town should be taken for comparison.—*Wiener klinische Wochenschrift*, February 1, 1912.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS

BOARD OF MEDICAL EXAMINERS OF MARYLAND

December 12-15, 1911.

ANATOMY.

1. Describe the occipital bone.
2. Name the carpal bones.
3. Name varieties of articulations—give example of each.
4. Give origin and distribution of great sciatic nerve.
5. Give origin, insertion, and nerve supply of quadratus lumborum, brachialis anticus, orbicularis palpebrarum and sartorius.
6. Describe the epithelium of the pharynx.
7. What glands are in the small intestines and where located.
8. Describe a villus. What is its function?
9. What arteries form the circle of Willis?
10. What and where is the pituitary body?

PHYSIOLOGY.

1. What is meant by the physiological effect of a drug?
2. Into what general classes are foods divided? (*b*) Give examples of each.
3. What effect has starvation upon the proteins?
4. What is animal heat? (*b*) What relation exists between the temperature of the body and the pulse? (*c*) What is the difference between warm and cold blooded animals?
5. What is meant by nerve cells and nerve fibers? (*b*) Define afferent, efferent, trophic, inhibitory, motor, and vasomotor nerve fibers.
6. What is meant by diffusion and osmosis?
7. What is meant by absorption and nutrition?
8. Which organs of the body secrete and which excrete?
9. Describe the method of producing artificial respiration?
10. What is the composition of: Saliva, gastric juice, blood, and urine?

MATERIA MEDICA.

1. Iodine; how obtained. (*b*) The official preparations.
2. What is black wash? Yellow wash? (*b*) What are wines? (*c*) What is the difference in the preparation of lozenges, tablets, and triturates? Name some of the official lozenges.
3. What is the difference between anesthetics and anodynes? Name some of each most generally used? (*b*) What is the difference between liniments and lotions? Name some of the official.
4. Give the average dose of tincture of aconite, tincture of nux vomica, tincture of digitalis, tincture of opium, tincture of veratrum.
5. To what class of drugs does bismuth belong? What are the official preparations and doses?
6. What is the difference between irritants and counter-irritants? Name the most important.
7. Name six preparations of iron and their doses. (*b*) What are the incompatibles of iron?
8. Write a prescription containing: Iron, arsenic, strychnine, and quinine, using the official terms and state when best administered.
9. Write a prescription containing: Tincture of aconite, sweet spirit of niter, spirit of Mindererus, using the official terms.
10. Silver: its official preparations and doses. What are the incompatibles of silver?

THERAPEUTICS.

1. Give therapeutics of hypodermoclysis and method of administration.
2. Write a prescription in Latin, without abbreviation, containing four ingredients which you would use for an acute bronchitis and give directions for using same.
3. Write a prescription in Latin, without abbreviation, containing three ingredients which you would use for diarrhea and give directions for using same.
4. Give the therapeutics of eserine and usual method of administration.
5. Give therapeutic uses of three zinc salts and name antidotes for zinc poisoning.
6. Name the official preparations of oxygen and give their therapeutic uses.
7. Give the therapeutics of three preparations of ammonium and name them.
8. What is meant by a "gastric tonic" or "stomachic?" Give indications for use and mode of action.
9. Give the therapeutics of H_2O, hot and cold.
10. Give the physiological action and therapeutics of aconitum.

CHEMISTRY.

1. Define: (*a*) reagents; (*b*) valence; (*c*) crystalloid, (*d*) colloid; and (*e*) atom.
2. Give the chemical name and composition of "laughing gas," how it is obtained, and what are its properties?
3. Give one chemical antidote for each of the following: (*a*) antimony; (*b*) lead acetate; (*c*) cocaine; (*d*) morphine; and (*e*) phenol.
4. Describe in detail the examination of a sample of urine for the detections of bile, sugar, and albumin.
5. (*a*) What are metals? (*b*) What are nonmetals? (*c*) What are amalgams? and (*d*) What are indicators?
6. Give the chemical formula of each of the following: (*a*) Nitric acid; (*b*) boric acid; (*c*) sodium bromide; (*d*) zinc oxide; and (*e*) calomel.
7. What is glycerine? What is its source in nature? How is it obtained and what are its properties?
8. (*a*) What is an alcohol; (*b*) what is an alkaloid; (*c*) what is a salt; and (*d*) what is a hydrocarbon?
9. Give the "Law of constancy of composition."
10. Complete the following equation:

$NH_3 + HCl =$
$MgO + H_2SO_4 =$
$2KOH + H_2SO_4 =$
$NaOH + HCl =$
$Na_3PO_4 + 3AgNO_3 =$

PATHOLOGY.

1. Ascaris lumbricoides; describe briefly life cycle and characteristics; mention two or more dangerous conditions brought about by infection with this parasite.
2. Mention at least four varieties of ulceration seen in the gastrointestinal wall. Describe the gross appearance of an amebic ulcer.
3. What are the dangers inherent to diseased tonsils?
4. What is meant by active congestion? Passive congestion? Give an example of each.
5. Trace the probable course of events which follow chronic obstruction of the urethra.
6. Given a slide supposed to be smeared with gonorrheal pus: How would you proceed to establish the fact?
7. On what principle does vaccination against typhoid fever depend? How is the vaccine prepared?
8. Describe the process of repair in an uninfected fracture of bone.
9. Describe the exudate in a pneumonic lung in the stage of red hepatization.
10. Define, explain, and give examples of exudate and transudate.

PRACTICE.

1. Define: (*a*) Von Graefe's sign, (*b*) uremia, (*c*) arteriosclerosis, (*d*) cirrhosis of the liver, (*e*) angina pectoris.
2. Define: (*a*) dysphagia, (*b*) hematuria, (*c*) hemoptysis, (*d*) laryngismus stridulus, (*e*) pertussis.
3. What diseases most commonly occur in the right inguinal region?
4. Differentiate neuritis and rheumatism.
5. Differentiate diphtheria and acute follicular tonsillitis.
6. Differentiate rubella, rubeola, and scarlatina.
7. Differentiate intestinal colic, uterine colic, and renal colic.
8. Give treatment of angina pectoris.
9. Give treatment of lobar pneumonia.
10. Give treatment of acute dysentery.

OBSTETRICS.

1. Name the sutures of the fetal head.
2. What precautions should be taken against septic infection during labor?
3. Indications for use of forceps and mode of application.
4. What are the objections to the use of ergot and stimulants in labor?
5. How would you prevent perineal tears during labor and delivery?
6. What are the varieties of placenta prævia?
7. Outline the care of the navel.
8. Describe some of the best substitutes for mother's milk.
9. What are the different forms of endometritis?
10. Mention the varieties of vaginitis and their treatment.

SURGERY.

1. Name the varieties of fractures of vault of cranium. Prognosis and treatment.

2. Name the different varieties of fractures, their etiology, symptoms, and complications.

3. Give a classification of dislocations with the etiology, predisposing cause, and anatomic peculiarity of each.

4. Give indications for operative treatment of fractures.

5. Give the early diagnosis of exophthalmic goiter.

6. Differentiate between obstruction of common and cystic ducts.

7. Describe glaucoma: Give signs and treatment.

8. Define hematoma, aneurysm, thrombus, and embolus.

9. Indications and contraindications for salvarsan in treatment of syphilis. Technique of your method of administration.

10. Causes and treatment of acute otalgia

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF MARYLAND.

December 12-15, 1911.

ANATOMY.

1. See Cunningham's Anatomy (1900), page 108; or Gray's Anatomy (1910), page 70.

2. *The carpal bones* are arranged in two rows, those of the upper row (enumerated from the radial to the ulnar side), are: Scaphoid, semilunar, cuneiform, and pisiform; those of the lower row (enumerated similarly) are: Trapezium, trapezoid, os magnum, and unciform.

3. VARIETIES OF ARTICULATION. 1. *Diarthrodial*, or freely movable; as hip and knee. 2. *Amphiarthrodial*, or slightly movable; as symphysis pubis and joints between bodies of vertebræ. 3. *Synarthrodial*, or immovable; as ethmoid with vomer and parietal with frontal.

4. *The great sciatic nerve* arises from the sacral plexus, and passes out of the pelvis through the great sacrosciatic foramen, below the pyriformis muscle; it extends down the back of the thigh, passing between the great trochanter of the femur and the tuberosity of the ischium; at the lower third of the thigh it divides into the internal and external popliteal nerves. It supplies the hip-joint and the biceps, semitendinosus, semimembranosus, and adductor magnus *muscles*.

5. QUADRATUS LUMBORUM. *Origin*: From iliolumbar ligament, crest of ilium, and transverse processes of three or four lower lumbar vertebræ. *Insertion*: Into lower border of twelfth rib and transverse processes of four upper lumbar vertebræ. *Nerve supply*: Anterior branches of lumbar nerves. BRACHIALIS ANTICUS. *Origin*: Lower half of outer and inner surfaces of the shaft of the humerus, covering insertion of the Deltoid, and intermuscular septa. *Insertion*: Rough depression on the anterior surface of the coronoid process of the ulna. *Nerve supply*: Musculocutaneous and musculospiral.

ORBICULARIS PALPEBRARUM. *Origin*: Internal angular process of frontal bone, from frontal process of superior maxillary bone, and from tendo oculi. *Insertion*: It surrounds the orbit. *Nerve supply*: Facial nerve.

SARTORIUS. *Origin*: Anterior superior spine of ilium, and part of notch below. *Insertion*: Inner side of tibia near tubercle. *Nerve supply*: Middle cutaneous, or branch from anterior crural.

6. See Cunningham's Anatomy (1909), page 1037; or Gray's Anatomy (1910), page 1233.

7. See Cunningham's Anatomy (1909), page 1061; or Gray's Anatomy (1910), page 1290.

8. See Cunningham's Anatomy (1909), page 1062; or Gray's Anatomy (1910), page 1292.

The function of a villus is to absorb the digested food.

9. The *Circle of Willis* is formed: In front by the two anterior cerebral arteries (branches of the internal carotid), which are connected by the anterior communicating artery; behind, by the two posterior cerebrals (branches of the basilar artery), which are connected to the internal carotid on each side by the posterior communicating artery.

10. The pituitary body is a ductless gland consisting of two distinct portions which differ in structure and also in function. It is situated on the sella turcica of the sphenoid bone.

PHYSIOLOGY.

1. By the *physiological effect* of a drug is meant the effect that the drug exerts upon the various bodily organs or tissues in health.

2. *Foods are divided into*:

I. Inorganic { Water. / Salts.

II. Organic { Non nitrogenous { Carbohydrates / Fats. / Nitrogenous Proteins.

Examples of each: *Carbohydrate*, sugar and starches; *Fat*, fat of meat, and butter; *Protein*, flesh of animals, and white of eggs; *Salt* sodium chloride, and calcium phosphate.

3. *Effect of Starvation on the proteids*. At first the body lives on the proteids derived from previous food; then on the proteids of the tissues. The nitrogen excreted rapidly falls in amount, and soon reaches a minimum. When the fat of the animal has been used up, there is a rise in the nitrogen excreted, and this is followed by a rapid fall, as death approaches.

It is believed that the proteids (during starvation) pass into solution in the blood and are thus used to nourish the body and to supply the heat necessary to maintain the body temperature.

4. *Animal heat* is the heat produced in living organisms by the processes of oxidation. Normally a body temperature of 98° F. corresponds to a pulse of 60; 99° F. to a pulse of 70; and in most cases a rise of 1° F. is attended by an increase of 8 to 10 pulse beats per minute.

Warm-blooded animals are such as have a fairly constant body temperature independently of the temperature of the medium in which they live.

Cold-blooded animals are such as have a body temperature which varies according to that of the medium in which they live.

5. *A nerve cell* is the cell body of a neuron.

A *nerve fiber* is a process of a nerve cell, which conducts impulses.

An *afferent nerve* is one that conveys impulses from the periphery to the brain (or the center).

An *efferent nerve* is one that conveys impulses from the brain (or the center) to the periphery.

A *trophic nerve* is one that conveys efferent impulses which govern the nutrition of some organ or tissue.

An *inhibitory nerve* is one that conveys efferent impulses which restrain or inhibit the action of some organ.

A *motor nerve* is one that conveys efferent impulses to muscles, thus causing and regulating their contraction.

A *vasomotor nerve* is one that conveys efferent impulses to the muscular tissue of blood vessels, thus regulating the amount of blood conveyed to a part.

6. "The term *diffusion* has long been applied to the regular mixing of the molecules of two gases when brought into contact in a confined space. More recently it has been applied to the mixing of the molecules of two solutions when brought into contact. If, however, the two solutions are separated by a membrane, permeable to the solutions, diffusion will still occur. To this form of diffusion the term *Osmosis* has been applied in the case of water, and *Dialysis* in the case of diffusible substances. All bodies can be divided into two groups, *crystalloids* and *colloids*. To the former group belong bodies having a crystalline form, which readily go into solution in water. All such bodies are diffusible (dialyzable), their power of dialysis, however, varying considerably. To the second group belong such bodies as have no crystalline form (amorphous). These are generally bodies with a large molecule, which form colloidal suspensions in water, and are only slightly or not at all diffusible. An exception to this second group is hemoglobin, which has a very large molecule but is crystalline and is diffusible"—(Kirkes' *Physiology*.)

7. *Absorption* is the process by which the products of digestion are conveyed to the circulation. *Nutrition* is the sum of the processes by which the body digests, absorbs, and assimilates suitable materials brought into contact with it.

8. (*a*) *Structures of excretion*: Lungs, kidneys, intestines, skin. (*b*) *Structures of secretion*: Serous and synovial membranes; mucous membranes (glands in mouth, stomach, and intestines); salivary glands and pancreas; liver; mammary glands; lacrymal glands; kidneys; skin; testes.

9. See Rose and Carless' Surgery (1911), page 949; or Da Costa's Surgery (1911), page 1106.

10. *Saliva* consists of water and solids (mucin, ptyalin, a protein, potassium thiocyanate, sodium chloride, sodium carbonate, calcium phosphate, calcium carbonate, magnesium phosphate, potassium chloride.

Gastric juice contains: Water, pepsin, rennin, hydrochloric acid, chlorides (of calcium, sodium, and potas-

sium), and phosphates (of calcium, magnesium, and iron).

Blood is composed of plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and morganic salts).

The *white corpuscles* consist of water and solids (proteids, nuclein, lecithin, histon, etc.).

Urine is composed of: Water; urea, uric acid, urates, hippuric acid, kreatin, kreatinin, xanthin, hypoxanthin, sulphates, chlorides, and phosphates of sodium and potassium; phosphates of magnesium and calcium; nitrogen, and carbon dioxide.

MATERIA MEDICA.

1. *Iodine* is obtained from the ashes of sea weed or kelp. Kelp contains iodine in the form of sodium iodide. This is treated with sulphuric acid and distilled with manganese dioxide:

$$2NaI + 2H_2SO_4 + MnO_2 = MnSO_4 + Na_2SO_4 + 2H_2O + I_2$$

The *official preparations of iodine* are: The tincture, the compound solution, and the ointment.

2. *Black wash* is a lotion containing calomel in lime water.

Yellow wash is a lotion containing corrosive sublimate in lime water.

Wines are liquid preparations containing the soluble principles of medicinal substances dissolved in wine.

Lozenges contain mucilage of tragacanth or adhesive paste.

In *tablets* the adhesion of the particles is due to the use of a volatile liquid like alcohol.

In *tablets* the basis is generally powdered sugar.

In *triturations* the basis is sugar of milk.

Official lozenges: Troches of tannic acid, of ammonium chloride, of cubeb, of gambir, of glycyrrhiza and opium, of krameria, of potassium chlorate, of santonin, and of sodium bicarbonate.

3. *Anesthetics* destroy sensation; *anodynes* relieve pain by depressing the centers of sensation in the cerebrum or by impairing the conductivity of sensory nerves. The *anesthetics destroy* sensation (for a time); *anodynes diminish* sensation.

Anesthetics: Ether, chloroform, nitrous oxide, ethyl chloride, cocaine, eucaine, ice.

Anodynes: Opium, morphine, cannabis indica, acetanilid, aconite, veratrin, phenol, chloral hydrate.

Liniments are solutions of medicinal agents in oily liquids or in alcoholic liquids containing fatty oils.

Lotions contain medicinal agents, usually in water, with (sometimes) alcohol or glycerin.

Official liniments: Linimentum ammoniæ, L. belladonnæ, L. Calcis, L. camphoræ, L. chloroform, L. saponis, L. saponis mollis, and L. terebinthinæ.

There are no official lotions.

4. AVERAGE DOSE: Tincture of aconite, 10 minims; tincture of nux vomica, 10 minims; tincture of digitalis, 15 minims; tincture of opium, 8 minims; tincture of veratrum, 15 minims.

5. *Bismuth* is classed as an astringent.

The official preparations (with doses) are: The citrate, dose 2 grains; bismuth and ammonium citrate, 2 grains; the subcarbonate, 7½ grains; the subgallate, 4 grains; the subnitrate, 7½ grains; and the subsalicylate, 4 grains.

6. *Irritants* are substances which, when applied to the skin, produce vascular excitement; when used to produce a reflex influence on some part remote from the site of their application they are called *counterirritants. The chief are:* Mustard, capsicum, chloroform, iodine, oil of turpentine, croton oil, cantharides.

7. *Six preparations of iron, with their doses:* Reduced iron, 1 grain; ferrous sulphate, 3 grains; pills of ferrous carbonate, 2 pills; tincture of ferric chloride, 8 minims; Basham's mixture, 4 drams; pyrophosphate of iron, 4 grains.

Incompatibles: Acids, acid salts, alkalies and their carbonates, and vegetable astringents.

8. ℞. Arseni trioxidi, gr. ss.
Strychninæ sulphatis, gr. j.
Ferri reducti, ℈ss.
Quininæ bisulphatis, ℈j. M.
Fiat massa in pilulas no. xxx dividenda.
Sig: Take one after each meal.

9. ℞. Tincturæ aconiti, ℥iij.
Spiritus ætheris nitrosi, ʒiij.
Liquoris ammonii acetatis, q.s. ad ʒvj. M.
Sig: Take two teaspoonfuls in water every three hours.

10. SILVER. *Official preparations and doses:* The nitrate, dose 1/5 grain; the oxide, 1 grain; and the cyanide, moulded nitrate, and mitigated nitrated, which are not taken internally.

Incompatibles "Incompatible with the *nitrate* are: Acetates, alkalies, alcohol, antimony salts, arsenites, bromides, carbonates, chlorides, chromates, creosote, cyanides, copper salts, ferrous sulphate, glucose, hypophosphites, iodides, morphine salts, oils, manganous salts, organic substances, phosphates, sulphides, sulphates, tartrates, vegetable astringent infusions and decoctions. Incompatible with the *oxide* are: Antimony and arsenic sulphides, salts of bismuth, copper, iron and mercury, creosote, iodine, organic substances, phosphorus, tannic acid."—(Potter's *Materia Medica*, etc.)

THERAPEUTICS.

1. "Hypodermoclysis is a method of supplying fluid to the body to replace that lost through excessive purging, as in cholera, or in cases of hemorrhage. Further, it may be used to wash from the body various impurities circulating in the blood and lymph, and to flush the kidneys. In other instances it may be used to supply the body with liquid when the stomach will not permit liquid to be swallowed, as in vomiting, or gastric ulcer, or after abdominal operations. It consists in the introduction into the subcutaneous tissue of normal saline solution, which is rapidly absorbed by the vessels.

"When hypodermoclysis is employed after hemorrhage the results are often extraordinary. It is of great value in the collapse of cholera. The cyanosis decreases rapidly, the pulse improves, and respiration is no longer difficult. Some physicians have used hypodermoclysis with very good results in the treatment of uremia, and it is believed that not only are the poisons washed out of the system by this method, but, in addition, that the dilution of the poisons prevents them from acting so severely. In septicemia, diabetic coma, and similar states this method of treatment should be employed and the results carefully recorded. When general dropsy is present it is manifestly useless. Hypodermoclysis has also been used with great advantage in the treatment of severe burns to overcome shock and toxemia. In cases of surgical shock warm saline fluid used by hypodermoclysis is often of great service."—(Hare's *Therapeutics.*)

For *method of administration* see Rose and Carless' "Surgery" (1911), page 280; or Da Costa's "Surgery" (1911), page 265.

2. ℞. Ammonii carbonatis, ʒj.
Spiritus chloroformi, ʒj.
Syrupi pruni virginianæ, ʒj.
Misturæ glycyrrhizæ compositæ, q.s. ad ʒviij. Misce.
Signa: One tablespoonful every three hours.

3. ℞. Acidi hydrochlorici diluti, ℥iij.
Tincturæ nucis vomicæ, ℥iij.
Tincturæ gentianæ compositæ, q.s. ad ʒiij. Misce.
Signa: One teaspoonful in water three times a day, after meals.

4. *Eserine* causes increase of saliva and of perspiration; increased peristalsis; it increases and then diminishes blood pressure and heart action; it causes the pupil to contract; and depresses the nervous system. It is used in flatulence, dilatation of stomach or intestines, tetanus, epilepsy, chorea, respiratory troubles, and as an antidote in strychnine poisoning.

It is used largely in ophthalmic practice. "In a solution of gr. ij to the ounce of water dropped into the eye it is efficient in breaking up or preventing adhesions of the iris, diminishes intraocular tension, prevents suppuration after operations, contracts the pupil, diminishing the entrance of light in photophobia, and empties the vessels of the eye. It is very useful in keratitis, glaucoma, strumous ophthalmia, and neuralgia of the eyeball."—(Potter.)

5. *Therapeutics of zinc salts:* "The sulphate and acetate are used as astringent injections and applications in gonorrhea, leucorrhea, gleet, otitis, conjunctivitis, etc., and the others, in powder or ointment, are employed in a great variety of conditions where a mild astringent effect is desired. The ointment of zinc oxide is perhaps more widely used than any other in the treatment of acute skin diseases. Internally the sulphate is a serviceable emetic in narcotic and other poisoning, and it and the oxide are used in digestive derangements, diarrhea, dysentery, etc. The oxide has been given for the night sweats of phthisis and in various nervous diseases."—(Wilcox's *Materia Medica.*)

Antidote for zinc poisoning: The stomach should be washed out; then milk, white of eggs, or tea, or infusion of bark should be given; then the stomach should be washed out again.

6. The official preparations of oxygen are: Water and solution of hydrogen dioxide.

For *water*, see below, QUESTION 9.

"*Hydrogen dioxide*, in fresh solution, is one of the most powerful oxidizing agents known, by reason of the facility with which it parts with oxygen to oxidizable substances brought in contact with it. It is consequently a powerful yet non-toxic antiseptic, destroying morbid products and organized ferments to which it is applied. In contact with a suppurating surface it generates a white foam, as the result of its action on the pus. This soon subsides, leaving the subadjacent tissue cleansed of all morbid secretions. One part added to 1000 of water containing sewage or infectious microbes is sufficient to destroy the various organisms if allowed to act thereon for twenty-four hours."—(Potter's *Materia Medica.*)

7. *Ammonium carbonate* is used as a cardiac and gastric stimulant, also as an expectorant, and in the cure of alcoholism.

Ammonium chloride is used as an expectorant, in neuralgias, hepatic disorders, rheumatism, and alcoholism; externally it is used in inflammatory conditions of mucous membranes.

Solution of ammonium acetate is used as a diaphoretic and diuretic in fevers, chronic nephritis, dropsy, and alcoholism.

8. *Stomachics or gastric tonics* "are agents which increase the appetite and promote gastric digestion. They include a number of substances, dietetic and medicinal, some acting by stimulating the production of gastric juice, others by stimulating the local circulation, and several by exciting the activity of the nervomuscular apparatus of the stomach. The first indication is met by the use of dilute alkaline solutions before meals; the second by administering any of the pungent carminatives, as the aromatic oils, pepper, mustard, etc., or by alcohol and ether in small doses, or by the aromatic bitters, as gentian, orange, etc., or the simple bitters, as calumba; while the third desideratum is secured by the use of such agents as nux vomica, hydrastis, arsenic, the dilute mineral acids, and the volatile oils."—(Potter's *Materia Medica.*)

9. *Therapeutics of water:* "Cold baths are employed in the treatment of febrile diseases, more particularly typhoid fever. It is important that frictions should be maintained all the time the patient is in the water. Various modifications of the full cold bath are also employed. Ice-water baths are of great service in sunstroke or thermic fever, and cold water may be injected into the bowel when the skin is cold but the central temperature high. Large injections of cold water are also useful in dysentery. Ice bags are sometimes applied to various parts of the body for the purpose of controlling inflammatory action and also for the hemostatic effect of the cold. Warm baths are employed to soothe pain, alleviate muscular and mental fatigue, promote sleep, and relieve spasmodic conditions and internal congestion. Hot baths and the hot pack are useful in renal disease and uremia, and in commencing colds, on account of the free diaphoresis they induce. Localized hot baths aid in the same way as general ones, but are less pronounced in their effects. In various painful affections of the eye much relief may be afforded by the application of hot water on cotton pledgets frequently renewed, or by allowing the water to drop continuously on the eye. Internally water is of great service in keeping the urine diluted, and its free use tends to prevent the formation of gallstones, as well as of gravel or urinary calculi. A glass or two of water swallowed upon rising often has the effect of causing an evacuation of the bowels. Tepid water, sometimes with the addition of mustard, is very commonly used as an emetic.—(Wilcox's *Materia Medica.*)

10. ACONITE. *Therapeutics:* For fevers, some inflammatory conditions, in high arterial tension, in nervous palpitation of the heart, and congestive dysmenorrhea; also externally for neuralgia, pruritus, herpes, chilblains, etc. *Physiological action:* First stimulates and then paralyzes heart and also sensory nerves; lowers blood pressure; dilates peripheral blood-vessels, is a respiratory sedative; reduces body temperature; is a diuretic and diaphoretic.

CHEMISTRY.

1. *Reagent* is an agent used in making a chemical reaction.

Valence is the combining power of an atom of an element as compared with that of an atom of hydrogen.

Crystalloid is a substance which when in solution can pass through an animal membrane.

Colloid is a substance which when in solution cannot pass through an animal membrane.

Atom is the smallest part of an element which can enter into chemical action, or that can enter into the composition of a molecule.

2. *Laughing gas* is nitrogen monoxide, N_2O. Its molecule is composed of two atoms of nitrogen and one atom of oxygen. It is obtained by heating ammonium nitrate:

$$(NH_4)NO_3 + \text{heat} = 2H_2O + N_2O.$$

It is a colorless, odorless gas with a sweetish taste, heavier than air, moderately soluble in water and in alcohol; when inhaled it produces exhilaration, loss of consciousness, and anesthesia.

3. *Chemical antidote:* For antimony, tannic acid; for lead acetate, magnesium sulphate; for cocaine, amyl nitrite; for morphine, caffein; for phenol, alcohol.

4. First of all, test for the *albumin*, as follows: The urine must be perfectly clear. If not so, it is to be filtered, and, if this does not render it transparent, it is to be treated with a few drops of magnesia mixture, and again filtered. The reaction is then observed. If it be acid the urine is simply heated to near the boiling point. If the urine be neutral or alkaline it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of HNO_3.

If albumin is present it should be removed. The urine is then tested for *sugar* and for *bile*, as follows. For *sugar:* Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid in two test tubes. To one test tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color.

Test for *bile:* Put 3 c.c. HNO_3 in a test tube, add a piece of wood, and heat until the acid is yellow; cool. When cold, float some of the urine to be tested upon the surface of the acid. A green band is formed at the junction of the liquids, which gradually rises, and is succeeded from below by blue, reddish-violet, and yellow.

5. A *metal* is an element which is capable of replacing the hydrogen of an acid to form a salt.

A *non-metal* is an element other than a metal.

An *amalgam* is a substance composed of mercury and some other metal or metals.

An *indicator* is a substance used in chemical analysis to show the completion of a chemical reaction.

6. Nitric acid, HNO_3; boric acid, H_3BO_3; sodium bromide, NaBr; zinc oxide, ZnO; calomel, Hg_2Cl_2.

7. Glycerine is a triatomic alcohol with the formula $C_3H_5(OH)_3$. Its source in nature is from palm oil and other vegetable oils. It is obtained by the saponification of fats by boiling with sodium hydroxide:

$$\underset{\text{Glyceryl oleate}}{C_3H_5(C_{18}H_{33}O_2)_3} + 3NaOH = \underset{\text{Sodium oleate}}{3NaC_{18}H_{33}O_2} + \underset{\text{Glycerin}}{C_3H_5(OH)_3}$$

Glycerin is a colorless, viscid liquid, with a sweet taste; its reaction is neutral, and it mixes readily with water.

8. An *alcohol* is the hydroxide of a hydrocarbon radicle, which reacts with acids to form esters.

An *alkaloid* is a basic, nitrogenous, organic substance of alkaline reaction and capable of uniting with acids to form salts in the same way that ammonia does.

A *salt* is a substance formed by the substitution of a basylous or electropositive element (or radicle) for part or all of the replaceable hydrogen of an acid.

A *hydrocarbon* is a substance which contains carbon and hydrogen only.

9. *The law of constant proportions:* The same compound always contains the same elements and in the same proportions.

10. $NH_3 + HCl = NH_4Cl$

$MgO + H_2SO_4 = MgSO_4 + H_2O$

$2KOH + H_2SO_4 = K_2SO_4 + H_2O$

$NaOH + HCl = NaCl + H_2O$

$Na_3PO_4 + 3AgNO_3 = Ag_3PO_4 + 3NaNO_3$

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), page 509; or Osler's "Practice of Medicine" (1909), page 38.

2. See French's "Practice of Medicine" (1910), pages 794 and 255; or Osler's "Practice of Medicine" (1909), pages 501, 470, and 3.

3. Diseased tonsils may give rise to: Laryngitis, cervical cellulitis, quinsy, suppuration or hypertrophy of tonsils, mouth breathing, adenoids, rheumatism, endocarditis, phlebitis, diphtheria, tuberculosis, or other infection.

4. In *active congestion* there is an increase in the quantity of arterial blood in the part affected, with distention of the capillaries. The condition is one of active hyperemia.

In *passive congestion* there is an increase in the amount of venous blood in the part affected; there is faulty exit of the blood, with retarded flow.

Active congestion is seen in inflammation.

Passive congestion is seen in the swollen finger produced by tying a moderately tight band around it.

5. See Rose and Carless' "Surgery" (1911), page 1202; or Da Costa's "Surgery" (1911), page 1359.

6. To demonstrate *gonococci:* On a cover-glass make a smear with the discharge as thin as possible, and let it dry in the air; cover it with a freshly made solution of anilin-oil-gentian-violet for one or two minutes; wash it in distilled water; leave it in Gram's solution for two minutes; wash it in 95 per cent. alcohol until decolorized; wash it in distilled water; counterstain with a dilute carbolfuchsin without heat, or with a saturated aqueous solution of Bismark brown; wash in distilled water, dry with filter paper, mount, and examine with an oil-immersion lens. The gonococci will appear as *diplococci within the leucocytes,* which have been *decolorized by Gram's stain,* and have taken the counterstain.

7. The object of vaccine therapy is to produce an active immunity, and to bring about an increased bacterial destruction with the liberation of an increased amount of endotoxin. As a result of inoculation with vaccines there may be found antitoxins, antiendotoxins, lysins, agglutinins, precipitins, opsonins, and other allied products. Wright prepares the typhoid vaccines from 24-hour cultures grown upon the surface of agar, and, after emulsification, standardized to contain 1,000 millions of typhoid bacilli in every cubic centimeter. Sterilization is effected by heating for half an hour at 56° to 58° C., and ½ per cent. lysol is afterwards added. The dose is 500 or 1,000 millions of bacilli.

8. See Rose and Carless' "Surgery" (1911), page 471; or Da Costa's "Surgery" (1911), page 528.

9. See French's "Practice of Medicine" (1910), page 155; or Osler's "Practice of Medicine" (1909), page 170.

10. "In health the so-called serous cavities of the body contain very little fluid. In pathological conditions large accumulations of fluid may be observed, not only in the serous cavities, but also in the areolar connective tissue, beneath the skin, and beneath the muscles. When due to circulatory disturbances or a hydremic condition of the blood such accumulations of fluid are spoken of as *transudates;* while the term *exudates* is applied to similar accumulations of inflammatory origin. Clinically it is frequently difficult to distinguish between transudates and exudates.

"*Transudates* are usually serous in character, when they present a light straw color; at times, however, owing to admixture of blood, they have a reddish tinge, and are then said to be hemorrhagic; in rare instances they are colorless.

"*Exudates* may be serous, serofibrinous, hemorrhagic, seropurulent, purulent, putrid, chylous, or chyloid. Of these the seropurulent, purulent, and putrid types are manifestly of inflammatory origin; while in the case of the serous, serofibrinous, and hemorrhagic forms it may at times be difficult to determine whether the fluid represents a transudate or whether it is an exudate."—(From Simon's *Clinical Diagnosis.*)

PRACTICE.

1. *Von Graefe's sign:* The upper eyelid does not follow promptly the downward movement of the eyeball; found in exophthalmic goiter.

Uremia: A form of autointoxication occurring in some cases of nephritis and in anuria.

Arteriosclerosis: A thickening and hardening of an artery due to a fibrous overgrowth of the intima and degenerative changes in the middle coat of the artery; the artery loses its elasticity and contractility.

Cirrhosis of the liver: A condition in which the parenchymatous cells of the liver are atrophied or degenerated, while the interstitial connective tissue is hypertrophied.

Angina pectoris: A severe constricting pain in the thorax radiating from the heart down the left arm, sometimes into the back, and accompanied by a severe cardiac oppression and a fear of impending death.

2. *Dysphagia:* Difficulty in swallowing.

Hematuria: Passage of blood in the urine.

Hemoptysis: Hemorrhage from the lungs or bronchial tubes.

Laryngysmus stridulus: A spasmodic closure of the glottis, lasting a few seconds and followed by a noisy inspiration.

Pertussis: Whooping cough; an acute infectious disease characterized by recurrent and spasmodic attacks of coughing followed by a deep and noisy inspiration.

3. *Diseases most commonly occurring in the right inguinal region:* Appendicitis, inguinal hernia, fibroid tumors, hematoma, pyosalpinx, ovarian cyst or abscess, psoas abscess, foreign bodies, floating kidney, and cancer of cecum.

4. See French's "Practice of Medicine" (1910), pages 1012, 1014, 225, and 228; or Osler's "Practice of Medicine" (1909), pages 909, 1003, 225, and 395.

5. In *diphtheria* the onset is more gradual; the temperature rises to about 102° to 103° F.; the tonsils are not much enlarged; there is an exudate of a thick, grayish membrane which is very adherent, is removed only with difficulty, and leaves a bleeding surface; this membrane soon re-forms and may be found on the fauces and pharynx as well as on the tonsils; in the exudate the Klebs-Loeffler bacilli may be found. In *follicular tonsillitis* the onset is more sudden; the temperature may be a little higher than that of diphtheria; there is no membrane, but the tonsils are red and swollen, and in the crypts are seen white, cheesy spots or plugs, which consist of broken-down epithelium and are easily brushed away; Klebs-Loeffler bacilli are never found.

6. *Scarlatina:* Period of incubation, from a few hours to seven days. Stage of invasion, twenty-four hours. Character of eruption, a scarlet punctuate rash, beginning on neck and chest, then covering face and body; desquamation is scaly or in flakes. The eruption is brighter, is on a red background, punctiform, and is more uniform; the temperature is higher, the pulse quicker; the tongue is of the "strawberry" type; the lymphatics in the neck may be swollen, and there is sore throat; Koplik's spots are absent. *Rubeola:* Period of incubation ten to twelve days. Stage of invasion, four days. Character of eruption, small, dark red papules with crescentic borders, beginning on face and rapidly spreading over the entire body; desquamation is branny. The eruption is darker, less uniform, more shotty; the temperature is lower, pulse slower, the tongue is not of the "strawberry" type; coryza, coughing, and sneezing may be present; Koplik's spots are present. *Rubella:* Period of incubation ten to seventeen days. Stage of invasion, one day. Eruption appears on first day, is most intense on second day, consists of red papules, often fades from face before it is seen on the limbs. The pulse is not much accelerated, all the symptoms are slight. Desquamation is very slight. There may be slight sore throat and swollen cervical glands. Koplik's spots are absent.

7. *In renal colic:* The pain is in the region of the affected kidney, it radiates down the thigh; there are intense rigors; retraction of the testicle may be present; also history of previous attacks or of calculi; the urine may be scanty, suppressed, or bloody.

In intestinal colic: The pain is generally around the umbilicus; the abdomen is tympanitic; there are no rigors; there may be a history of indiscretion in diet.

In uterine colic: The pain is in the pelvis, and is associated with menstrual disorders; in fact, it is a dysmenorrhea.

8. See French's "Practice of Medicine" (1910), page 637; or Osler's "Practice of Medicine" (1909), page 842.

9. See French's "Practice of Medicine" (1910), page 171; or Osler's "Practice of Medicine" (1909), page 189.

10. See French's "Practice of Medicine" (1910), page 258; or Osler's "Practice of Medicine" (1909), pages 6 and 246.

OBSTETRICS.

1. See Jellett's "Midwifery" (1910), page 113; or Hirst's "Obstetrics" (1909), page 394.

2. See Jellett's "Midwifery" (1910), page 148; or Hirst's "Obstetrics" (1909), pages 732, etc.

3. See Jellett's "Midwifery" (1910), pages 1031, 1033, etc.; or Hirst's "Obstetrics" (1909), pages 809 and 811.

4. *The use of ergot:* "The routine administration of ergot after the birth of the child is not to be recommended. No remedy should be administered in any condition unless there is a direct indication for its use. In primipara and strong multipara the uterine contraction should be strong enough to effectually empty the cavity of the womb and obliterate the venous channels. In such cases the ergot is useless or even dangerous in that it may cause an irregular hour-glass contraction of the uterus, with retention of clots, membranes, and débris, and at the same time has a retarding influence upon the development of the milk. Then again, if given before the birth of the child, serious or even fatal asphyxia may result from the tetanic contractions induced by the drug. The danger of laceration of the cervix, perineum, and vaginal wall as well as of rupture of the uterus is increased by the use of ergot. There is, however, a suitable class of cases in which the use of ergot is indicated in appro-

priate doses. This includes all forms of uterine exhaustion and inertia during the late second and third stage and after delivery has been completed."—(Dorland's *Obstetrics.*)

5. See Jellett's "Midwifery" (1910), page 344; or Hirst's "Obstetrics" (1909), page 335.

6. See Jellett's "Midwifery" (1910), page 714; or Hirst's "Obstetrics" (1909), page 574.

7. See Jellett's "Midwifery" (1910), page 1145; or Hirst's "Obstetrics" (1909), pages 345 and 377.

8. See Jellett's "Midwifery" (1910), page 1154, etc.; or Hirst's "Obstetrics" (1909), page 928, etc.

9. *Forms of endometritis:* Acute and chronic; congestive, gonorrheal, tubercular, septic, senile, decidual. (There is no recognized classification.)

10. *Forms of vaginitis:* Superficial, simple, granular, senile, emphysematous, bacterial (such as gonorrheal diphtheritic, tuberculous, syphilitic, chancroidal). (There is no recognized classification.) *Treatment* consists in rest, cleanliness, douches, the application of soothing lotions, and removal of any cause; salines and anodynes are also indicated.

SURGERY.

1. See Rose and Carless' "Surgery" (1910), pages 744, 748, 749, and 752; or Da Costa's "Surgery" (1910), pages 807 and 808.

2. See Rose and Carless' "Surgery" (1910), pages 405, 470, 478, and 481; or Da Costa's "Surgery" (1910), pages 517 to 528.

3. See Rose and Carless' "Surgery" (1910), page 611, etc.; or Da Costa's "Surgery" (1910), page 664, etc.

4. *Operative Treatment of Simple Fractures:* "In certain cases it is found impossible to bring the fragments into accurate apposition or to retain them there. This may be due to the obliquity of the fracture, as, for example, in the bones of the leg; to the interlocking of fragments, as occurs frequently in epiphysial separations; to the traction of powerful muscles on one of the fragments, as in fracture of the patella or olecranon; or to the interposition of soft tissues between the broken ends. Under such circumstances it may be necessary to expose the fracture by operation, and after reducing it to fix the fragments together by wires, pegs, staples, or screws. Operative interference is usually delayed till about a week after the injury, by which time the effect of other measures will have been estimated, and accurate information obtained by means of the *x*-rays regarding the nature of the lesion and the position of the fragments. Such operations, however, are not to be undertaken lightly, as they are difficult, and if septic infection takes place the results may be disastrous. Arbuthnot Lane advocates a more general resort to operative measures, even in simple and uncomplicated fractures."—(Thomson and Miles' *Surgery.*)

5. See Rose and Carless' "Surgery" (1910), page 1008; or Da Costa's "Surgery" (1910), page 1235; or French's "Practice of Medicine" (1910), page 558; or Osler's "Practice of Medicine" (1909), page 766.

6. See Rose and Carless' "Surgery" (1910), page 1076; or Da Costa's "Surgery" (1910), pages 1034 and 1035.

7. *Glaucoma* is a diseased condition of the eye, produced by increased intraocular pressure, and resulting in excavation and atrophy of the optic disc, and blindness. It is due to increase of the contents of the eye, hypersecretion, retention, old age, gout, rheumatism, nephritis. *Symptoms:* Visual disturbances, increased ocular tension, hazy and anesthetic cornea, sluggish and dilated pupil, shallow anterior chamber, ciliary neuralgia, cupping of optic disc, blindness. *Treatment:* Myotics, such as eserine or pilocarpine, massage of the eyeball; mydriatics are contraindicated; operative treatment may include paracentesis, iridectomy, or sclerotomy.

8. *Hematoma:* A blood tumor, or circumscribed hemorrhage with the blood lying in a distinct cavity in the tissues.

Aneurysm: A pulsating sac containing blood and communicating with the lumen of an artery.

Thrombus: A blood clot formed in the heart or a blood-vessel during life, and remaining at its point of formation.

Embolus: A similar clot, but brought from a distance and plugging up a blood-vessel.

9. *Salvarsan is indicated* in: "(*a*) Early cases of syphilis in which contagious manifestations are appearing in rapid succession, in spite of efficient mercurial medication. (*b*) Cases in which, for family or social reasons, it is of special importance to limit the production of infective material or cause the disappearance of symptoms in the shortest possible time. (*c*) Cases in which the symptoms are recalcitrant to the action of mercury, or in which, from idiosyncrasy, that drug cannot be exhibited in sufficient dose. (*d*) Cases of syphilophobia and syphilomania, whether showing symptoms or not; its psychic action in these instances being of greater importance than its therapeutic effect. (*e*) Very early cases of the sequelæ of the luetic infection, before organic changes have occurred."

Salvarsan is contraindicated in: "(*a*) Cases that are doing well, *i.e.* in which the disease is pursuing its normal mild course under ordinary medication. (*b*) Cases with serious organic lesions of the eyes, kidneys, heart, or other internal organs. (*c*) Cases with postsyphilitic or parasyphilitic disease of the internal organs, more especially of the nervous system."—(*Progressive Medicine.*)

For *method of administration* see Rose and Carless' "Surgery" (1911), page 159.

10. Otalgia is earache. *Earache* may be due to a wide variety of causes—in the meatus, cerumen, furuncle, or dermatitis; in the middle ear, acute catarrh, or suppuration, acute or chronic. It may be referred from a carious tooth, or from disease of the tongue, or may be due to Eustachian obstruction secondary to pharyngitis and frequently to adenoids. For a satisfactory treatment a correct diagnosis is essential; and, if possible, the cause must be removed.

To relieve the pain: Apply dry heat; or drop into the external meatus a few minims of equal parts of tincture of aconite and tincture of opium; or similarly apply ten drops of a 2 per cent. solution of phenol; or spray over the tympanic membrane a 4 per cent solution of cocaine, and force a little of the same into the Eustachian tubes by letting the patient inhale the spray, and then expanding the tubes by Valsalva's method; this repeated every three minutes is said to be a sure method of cure.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held March 25, 1912.

DR. CHARLES GILMORE KERLEY IN THE CHAIR.

Bills in the Assembly.—Dr. E. ELIOT HARRIS, Chairman of Committee on Legislation, read an act introduced by Mr. MacGregor, read once and referred to the Committee on Judiciary. This was an Act to incorporate the Doctor J. H. Dye Medical Institute. The objects of this corporation were the manufacturing, compounding, and vending of medicines and medical and medicinal preparations, consultations and prescribing, consultations and operations in surgery, etc. This corporation might advertise its compounds, preparations, and medicines, its manner of treatment, and the fact that it had in its employ and maintained physicians and surgeons who would consult with and prescribe for patients. The amount of the capital stock of said corporation shall be $100,000 and the existence of said corporation shall be perpetual.

Dr. Harris read an Act introduced by Mr. Bush, read once and referred to the Committee on Public Health. This was in relation to amending the public health law regarding operations for the prevention of procreation. Immediately after the passage of this Act the Governor shall appoint one surgeon, one neurologist, and one practitioner of medicine, each with at least ten years' experience in the actual practise of his profession, for a term of five years, to be known as the board of examiners of feeble-minded, criminals, and other defectives. If in the judgment of the majority of said board procreation by such persons would produce children with an inherited tendency to crime, insanity, feeble-mindedness, idiocy, or imbecility and there was no possibility that any such person so examined would improve to such an extent as to render procreation by the person advisable, the said board should appoint one of its members to perform such operation for the prevention of procreation as should be decided by the said board as most effective. The criminals who would come within the operation of this law should be those that had been convicted of the crime of rape or of such succession of offenses against the criminal law as in the opinion of the board should be deemed to be sufficient evidence of confirmed criminal tendencies. No surgeon performing an operation under the provisions of this Act should be held to account therefor.

Except as authorized by the above Act, every person who should perform, encourage, assist in, or otherwise permit the performance of the operation for the purpose of destroying the power to procreate the human species or any person who should knowingly permit such operation to be performed unless it was a medical necessity, should be guilty of a misdemeanor.

Bills in the Senate.—Dr. HARRIS read an Act to amend the public health law in relation to cadavers.

Dr. Harris read an Act to amend the domestic relations law, in relation to the issuing of marriage licenses. This was introduced by Mr. Duhamel. No license to marry should be issued except after each party to the contract has presented to the clerk a certificate from a doctor of medicine stating that he had examined such applicant for a marriage license and that such applicant was not afflicted with any communicable venereal disease. A person procuring such a license by fraud, false representation, or pretense, a doctor of medicine issuing such a certificate knowing the statements therein to be untrue or without having examined the applicant, a license clerk issuing such a license knowing the certificate to be false or untrue or in violation of the provisions of this article, a person solemnizing a marriage knowing that the provisions of this article had not been complied with, was guilty of a misdemeanor.

It was moved, seconded and carried that these matters be referred to the Delegates of the Medical Society of the State of New York for action.

SCIENTIFIC SECTION.

DR. BROOKS H. WELLS, VICE-PRESIDENT, IN THE CHAIR.

Geriatrics.—Dr. IGNATZ L. NASCHER read this paper. (See page 752.)

Dr. JAMES J. WALSH stated that they knew many things which were not so. The Egyptians rarely partook of meats or alcohol. In the consideration of old age at least three factors should be thought of, overwork, overindulgence in liquor or tobacco, and the conditions which accompanied the so-called strenuous life.

Dr. HEINRICH STERN said that Dr. Walsh had just stated that "we know many things which are not so." When he mentioned less than a minute ago that the old Egyptians hardly ever partook of meats or alcohol he uttered one of those things which were not so. Without wishing to go into details, because these did not at all pertain to the subject under consideration, he could not refrain from recalling the soldier caste in old Egypt. The military hereditary classes in the land of the Nile subsisted almost entirely on meats and alcohol. Their fierceness of character, their brutality, their warrior nature were produced by this food; meats and alcohol were purposely prescribed for them in order to develop the highest possible military qualifications. We knew that the Pharaohs belonged to the warrior caste, and we knew that they and their vast households did not thrive on an exclusive diet of dates and sugar water. He was glad that one man in this country had taken and given a name to the subject of "geriatrics." He had listened very carefully to what Dr. Nascher had to say to-night, and he had carefully perused all he had written on this subject for the past two or three years. The author had not offered any original thoughts upon the subject, but it was sufficient that he had called attention to a long neglected field which belonged to the general practitioner. This neglected branch of medicine would soon receive due consideration from the profession, even if only on account of the happy name which Dr. Nascher had coined for it. The statements to-night did not convey the exact standpoint of Dr. Nascher on the question of senescence and senility. It seemed that he had not made it clear to himself that we had diseases of old age and diseases in the aged. The former were pathological conditions which were consequent upon senile alterations. They comprised the specific affections of old age. The latter were nothing but modifications of the usual diseases which were apt to occur at any period of life. In a book on senility and its diseases, the conditions resulting from the senile changes *per se* should occupy the principal parts thereof. The modifications of ordinary diseases as they occurred in advanced life should occupy second place only. On no account must geriatrics become a specialty; it ever was and must remain part of the domain of the general practitioner or the internist. Healthy old age, of course, was a physiological condition. It was what Cannstadt in 1839 had denominated as "senile involution." Senescence was merely a phase of life in which we were confronted with reduced functional activity of the organism. To consider it a disease, as some had done, was sheer nonsense. It might be compared in a certain sense with normal childhood. In this period physiological activity was as yet not fully developed, the individual had not as yet matured; in senescence physiological activity was on the decline, the individual was beyond the zenith of life. It should be the foremost endeavor of the geriatrist to establish what one might call "the hygiene of old age." He should seek to prevent pathological changes which were the consequences of the period of diminished functional activity; he should try to maintain the metabolic and catabolic equilibrium; he should foster the interactivity, the vicarious function of the various cells, tissues, and organs, and, though all the functions were more or less declining, he should try his utmost to avert any and all decompensations which were prone to be followed by disturbances of the systemic equilibrium. His work should really start with the thirty-fifth year of an individual; it should be entirely based upon the biological conception of senility, *i. e.* the normal and slow decline of the organism. And again, the geriatrist must never lose sight of the one great fact: that all wanted to grow old, but that none of us wanted to be old. All wished to live through a green old age.

Dr. ROBERT ABRAHAMS said that Dr. Nascher deserved to be called "the old man's friend." For a long time he had put forth all his fine literary energies with one single purpose in view, namely, to interest the medical profession in the welfare of those who were bowed down with age. One had but to enter a home of the aged to realize the meaning of the psalmist's prayer. "Cast me not off in the time of my old age; forsake me not when my strength faileth." And yet it was true that from time immemorial the old and decrepit were the care of charity instead of the problem of the physician. In the face of this, Dr. Nascher's plea for the serious study of senile conditions merited more than a respectful hearing. Dr. Nascher complained of the paucity of literature on the subject of diseases of old age. This was not quite so since in his paper he referred to books and monographs on diseases of old age enough to fill a five-foot shelf. He did not see the unmixed intellectual joy in the multiplicity of books on one subject. Perhaps many of them wished that there were as few books on pediatrics as on geriatrics. Dr. Nascher found fault with the American physician who neglected the study of senile changes. Reference to American authoritative works on medicine and surgery, reference to American works on physical diagnosis would measurably contradict this assertion. And if after this they were still charged with the neglect of the old man they could trace the fault to an evil which was deep rooted in unreasonable prejudices against autopsies. One might by strenuous argument, threat, or subterfuge secure the permission of an autopsy on a young person, but never on an old one, for the answer was, "What's the use, the man died of old age." Dr. Abrahams said he had been visiting a home for the aged for more than fourteen years and had never yet performed an autopsy on one of the many hundreds who sailed to the eternal shore. This prejudice was unknown in civilized and enlightened European lands, and that accounted for their being in this respect ahead of this country; the remedy lay with the education of the people. "What constituted old age," or to put it differently, "when was a man old?" There was a great deal of truth in the remark that age did not depend upon years, but upon temperament and health; some men were born old and some never grew old. Psychologically temperament was an index to old age. A man or woman who was rarely at peace with the world, who was forever irritable and grouchy, and who was never without a chip on the shoulder, whether forty or twenty, was a nutritive medium for the microbe of old age. The crusty old maid and the cranky old bachelor were examples of this. Physically they had to fall back for signs of old age on the cardiovascular system and some of the other internal organs. The study of the arterial system compelled them to divide senility into two types, the normal and the abnormal. Normal senility began at eighty, until then it was only a matter of advancing years. The abnormal might begin at twenty. If arterial changes were a criterion of a man's age, then he would say that this abnormal type of senility was very much on the increase both in men and women, young and middle aged. To his mind it was quite clear that the individual who was the victim of a slowly developing degenerative process in the heart, lung, kidney, liver or any other important organ was a prey to premature senility, and in effect it was the same senility seen in the man or woman of eighty, though the sufferer might be less than forty. Young people were more likely to show the effects of lesions of the heart than old people. In this connection he begged to dissent from Dr. Nascher's dictum that aortic insufficiency was the almost universal valvular disease of old age. In an experience covering many hundreds of cases carefully examined aortic insufficiency was the rarest of all the valvular deformities in the aged. The lesions of the valves most common were aortic stenosis and mitral insufficiency. A very important sign of senility either in the young or middle aged was impotency. The occurrence of sexual incompetency was not only an index

of abnormal senility, but its psychological effect tended to grieve, worry, and age the unlucky individual. Conversely the continuance of the sexual function into and beyond the allotted years was a cheerful omen of healthy vigorous old age. They would have to visit a home for the aged to verify the correctness of his observations. There they would behold men of eighty, and some older, strut around like roosters with fine feathers casting amorous glances at the shrunken, shriveled and loveless old women. He had never noticed the reverse even with sufficient allowance for modesty. Such men, though possessing years, died young.

Dr. L. F. Bishop thought the blessing that had accrued to old people was the use of the automobile; its use gave them plenty of fresh air and a wide range of observation, promoted their health, and made them better in many ways. It seemed to him that every one who reached old age so-called was exposed more to autointoxication and the approach to old age depended largely upon the development and progress of this intoxication. With regard to blood pressure there should be established a certain standard and one which in these people should not be interfered with.

Dr. A. Jacobi said that if the use of an automobile meant an early death, he was going to die young. So far, however, as arteriosclerosis was concerned, they were all in the same boat except those who had not reached the age of thirty-five; that was the age at which arteriosclerosis began. In elderly people the temperature should not be taken by the mouth, for the readings could not be relied upon; it should be taken in the vagina or in the rectum, and, if they would compare their findings with the temperature taken by the mouth, they would find very different readings. In the paper read he said it was not mentioned that age began in the cells and not in the tissues of the body; the organs in a normal old man were smaller because the cells were shrunken and, therefore, the tissues became flabby. In an old man the skin could be raised anywhere, but this was not so in an infant. The cells that first disappeared in old men were the sexual cells; it was seldom found that a man of seventy or eighty had a normal semen. With regard to arteriosclerosis the condition of the aorta and the blood-vessels of the lower extremities differed; in the aorta there were marked changes in the intima; in the lower extremities the changes were more marked in the arteries of the muscles. It seemed as if there was an intermittent claudication, as it were, which appeared in fairly early life, among those of about thirty or forty years of age.

Free Post-Graduate Medical Instruction.—Dr. George Mannheimer read this paper. (See page 755.)

Dr. Arpad G. Gerster said that we were all getting post-graduate instruction every day. He had been connected with post-graduate schools for fourteen years and came in contact with medical men who sought instruction—they were seekers after information, but he found that few of them really knew just what they needed. They did not comprehend the importance of a knowledge of the fundamental principles which pertained to the art and practice of surgery; teachers should teach more of these fundamentals, because these man lacked especially in anatomy, physiology, and pathology. To teach these men the fundamentals should be the chief function of post-graduate schools.

Dr. Emily Lewi said that it had become quite the fashion to talk of the passing of the general practitioner; as a matter of fact we had of our own accord ushered in the day of prophylactic medicine by enlightening the layman to such an extent that the family practitioner felt the change of attitude and increased intelligence. These signs of the times, together with the almost universal limiting of families, was one side of the story. On the other hand, when the time should come that a layman who had a cough immediately procured a specialist, one who had a pain in the orbital region, a neurologist, and one who had a dry throat, a laryngologist, when that time came, it would be time enough to relegate the family doctor to the régime of the past. The ranks of the general practitioner had been depleted by those who had affiliated themselves with laboratories, health boards, or had gone into specialties, while the general practitioner, in a city like this, had not the stimulus to resourcefulness and versatility which in the experienced country doctor was such a factor in his usefulness. It seemed a duty to place the patient in the hands of those who worked with greater skill. Therefore in the fields of activity left to them they demanded better educational opportunities in order that they might better serve the public which still made demands upon them. In the last two decades they had practically been overwhelmed by the turn of medical events, each new event dramatically exploited by its devotees. The general practitioners needed post-graduate education in order to keep their balance amid what at times seemed confusion almost to chaos. They thought that they were entitled to a judgment as to the value of group work as done in the hospitals. They desired to know to what extent the real and honest deductions of the average laboratory elucidated and clarified clinical data. They needed this post-graduate education in order to renew their faith in the value of their eyes, ears, and finger tips, and to increase their usefulness notwithstanding the adjuvants of the past decade. Again, the closer affiliation between practitioners and hospitals would give the internes and attendings knowledge of end results, the real end results. They had to listen to reports of appendectomies discharged cured in nine days when the general practitioner had cared for the patient with chronic peritonitis for five months. Subsequently they saw the patients with "cured ulcers" quickly die of carcimona. To follow up afterwards and to throw light on the previous history of patients would be one of the delights of the new régime. It might become possible for the general practitioner to become acquainted with the laboratory work connected with his practice in the nearest hospital laboratory. In fact, this might become a necessity if the general practitioner of the future was to continue laboratory work throughout his career. Again, if more thorough work was to be done and cases were to be interpreted for the profession, discussion to be held, etc., it would be physically impossible for one physician to do justice to more than one hospital appointment, and this would give opportunities to a larger number of physicians. The practitioner would furthermore be able to form a more rational judgment as to the physician who could honestly be of value as a consultant, who had a larger outlook, a comprehensive biological view. If there should be any fountain heads thus brought to light they would all know where to drink. Therefore they asked the cooperation of directors with attending physicians in order that those who had the chosen places might use their influence for the rank and file of the profession who to-day were meted out a mere tolerance and too often an antagonism not deserved. All of the brains, talent, and industry were never concentrated in one class and the experienced practitioner had a distinct value even to the hospital; they asked that this value be recognized and enhanced.

Dr. Mannheimer moved that a committee be appointed for the purpose of ascertaining what institutions would be available for post-graduate instruction along the lines laid down in the paper. This was seconded.

Dr. Arpad G. Gerster offered an amendment that a committee be appointed to consider the question and report back at a later meeting. This amendment, with the consent of Dr. Mannheimer, was seconded and carried.

Camphor and Pneumococci.—Dr. Augustus Seibert read this paper. (See page 750.)

Dr. Robert Coleman Kemp referred to an article which he had published November 30, 1911, in the *Boston Medical and Surgical Journal* on "Colon Bacillus Infections, with a Report of Double Pneumonia and Purulent Bronchitis (Colon Infection) with Recovery." The patient was forty-four years old and was operated on by Dr. Frank Hartley for a right inguinal hernia, and many subsequent infections followed, all due to the colon bacillus. There occurred a double pyelitis, cystitis, double pneumonia, purulent bronchitis, two attacks of colitis, and a myocarditis. Dr. Hartley operated on March 2. On March 11 the patient complained of pains on the right side of the chest, and on the following day a slight dry pleurisy was noted. On March 14 Dr. Kemp found a small pneumonic area at the right base. On March 16 the patient had a sudden attack of heart failure, and he was nearly pulseless, in spite of heroic stimulation and oxygen. Digitalis, caffeine, sodium salicylate, strychnine, and other stimulants were administered every two hours. In addition he had hypodermic injections of camphor, hourly doses of five grains for sixteen hours, in all 80 grains during this time. The patient's chest was kept thoroughly oiled to prevent blistering and boiling hot stupes were used every three minutes over the heart and thorax for seven and one-half hours, with renewals later. Twenty-four hot stupes were applied for twenty hours. Dr. Kemp believed that the continuous extreme heat and the camphor injections were the chief factors in saving the life of this patient in his acute heart failure attack. The patient was given 40 to 50 grains of camphor daily for some days by hypodermic injection. Resolution of the right lung was very slow; there was little expectoration, but abundant colon bacilli were found in the sputum.

Dr. Joseph H. Bainton said that during the last few months he had been in the habit of giving from 50 to 90 grains of camphor in these cases of pneumonia, but it

should be borne in mind that this agent could not cure all cases, for some of them were profoundly toxic and the myocardium was so damaged that they would fail to get well. This, however, was no argument against the treatment by any means. In many of these cases the temperature would fall by crisis and not by lysis. Camphor in small amounts, caffeine, and fresh air acted against any paralysis of the vasomotor centers. The use of camphor in lobar pneumonia was perfectly rational and the question under discussion seemed to be the dosage. These patients usually needed small doses.

Dr. George Mannheimer said that he had treated forty-four cases of lobar pneumonia with camphor and wished to report but one interesting case. A few minutes after 12 c.c. of the solution of camphor was administered the patient went into tonic and clonic convulsions and lost consciousness. Within one hour all this disappeared. She had never had epilepsy or other convulsions. Camphor he believed to be the ideal stimulant and he had used it for years in advanced cases of tuberculosis. There had not been one fatal case reported in the literature resulting from the use of this drug. One could use it with perfect safety.

Dr. Charles I. Proben reported four cases in which he had given camphor, 72 grains a day, and the patients got well within five or six days. Camphor could be used in large doses. Even 40 or 50 grains a day could be used without producing depression or any bad symptoms.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Sixth Annual Meeting, Held at Albany, April 16, 17, and 18, 1912.

(Special Report to the Medical Record.)

HOUSE OF DELEGATES.

First Day.—Monday, April 15.

The President, Dr. Wendell C. Phillips of New York City, in the Chair.

Report of the President.—Dr. Wendell C. Phillips of New York said that he had not prepared the usual address but believed that his time had been spent to better advantage in the reorganization of the society. He said that for some years the conviction had been growing upon him that, while the general management of the State Society was well-nigh ideal and that all of the business departments were conducted on a high level, they had not kept pace with their scientific programs, and thereby had missed unusual opportunities for advancement and for making their annual meetings the clearing house for all departments of medicine, surgery, humanitarian institutions, and public health. On the other hand the attendance at the annual meetings had dwindled and there was a manifest lack of interest in the scientific sessions, so that, with a membership numbering about 7,000, they registered only 412 at the annual meeting of 1911. It seemed therefore that in order to increase the interest and swell the numbers in attendance the character, variety, and scope of the annual program should be revolutionized and greatly enlarged. The council had unanimously extended the full power to reorganize the society into sections, to appoint section officers, and, through them, with the aid of the committee on scientific work, to construct the program for the session. It was the opinion of the president that this method of conducting the scientific session should be adopted because it gave a wider scope for the presentation of papers, because it interested all classes of practitioners of medicine and surgery, because it gave an annual opportunity for creating public sentiment in favor of proper legislation in matters pertaining to the public health, and because it bound together in sections men whose interests were similar. In order to provide for the continuance of the work that had been inaugurated it would be necessary to adopt some by-law that would change the present one covering the work now performed by the committee on scientific work. After reviewing the plans used by the American Medical Association and several of the State societies Dr. Phillips said that for this State it seemed desirable that the officers of the sections should in large part constitute the committee on scientific work, and he recommended that the by-law be so changed that a committee on scientific work be constituted, made up of the officers of the sections, together with one person to be appointed by the president, who should serve as chairman of the committee and also as member of the council. He further recommended that the by-laws be changed so as to empower each section annually to elect a chairman and secretary, and that each outgoing chairman of a section should serve on the executive committee of said section for a period of three years. Dr. Phillips also recommended that, as they were going through a formative period, to the council be delegated the authority to appoint the officers for the five sections now in existence or for any other sections which the council might authorize. After considering several other points in regard to reorganization, Dr. Phillips said that several matters of legislation had come before them during the year. A study of the conditions existing in many of the smaller towns of the State would convince any observer that there was something radically wrong with the method of appointment of health officers and a lack of control of their acts. It would almost seem that their legislators were not awake to the importance of the preservation of public health inasmuch as appropriations for public health and sanitation were extremely meager when compared with those for other State departments; for instance, the State Commissioner of Health received $5,000 per year while the State architect received $7,500, and the Attorney to the Public Service Commission $10,000 per year. It was also evident that the method of appointing health officers in villages and townships was open to criticism inasmuch as such appointments were largely of a political nature and often without regard to efficiency. He recommended that the committee on legislation or a special committee be appointed by the society to investigate these matters and to recommend such legislation as might be deemed wise. He then considered a communication from the Department of Education which he had received in regard to ethics and educational standards of the medical profession. This communication spoke of the question of the division of fees and of different measures of education for those who practised the healing art in different ways. An osteopathic member of the State Board of Medical Examiners had stated that in the present undeveloped situation in the schools of osteopathy it would be impossible for the graduates thereof to comply with the proposed requirements of the Board of Medical Examiners. This protest had led Dr. Draper to say that the State must eventually come to the point of exacting differing measures of education and experience from those who practised the healing art in different ways. Dr. Draper asked for careful investigation and reflection on this subject. Regarding this suggestion Dr. Phillips believed it was the duty of this society to place itself on record as opposed to the plan. In regard to the matters of ethics brought up, they were clearly defined in the Code of Medical Ethics of the American Medical Association, and it was the duty of the county societies to see that they were enforced. In regard to a National Department of Health, the speaker recalled that the House of Delegates of this society had passed resolutions endorsing the plan at its meeting in January, 1910. Two bills were now before the U. S. Senate with this end in view, and the society should pass resolutions endorsing such legislation and the members should endeavor to enlist the interest of their senators and congressmen in the subject. National quarantine control of all ports now under State control should also be strongly endorsed, and the many advantages that would follow such a movement should be plainly set forth. In closing, Dr. Phillips said that during the year several letters had been received asking if provision had been made for the care of aged and infirm physicians who were unable to care for themselves. The New York Physicians' Mutual Aid Association had appointed a committee to formulate a plan to care for such of its members as needed assistance. It seemed desirable that the Medical Society of the State of New York should appoint a committee to consider this matter and to confer with the committees of other organizations that might desire to plan some form of relief for worthy members of the profession who were in need of assistance.

Report of the Secretary.—Dr. Wisner R. Townsend of New York presented this report which showed that the membership of the Society on January 1, 1912, was 6,865. He suggested that the eight councilors elected by the eight district branches be elected to serve two years instead of one as at present. This would greatly add to their efficiency and the council would thus always have four councilors of at least one year's experience.

Report of the Treasurer.—Dr. Alexander Lambert of New York presented this report which had been duly certified by a public accountant of the State, and showed that the Society had on December 30, 1911, a surplus of $11,224. The excess of income over expenses for the year 1911 had been $850.

Report of the Council.—Dr. Wisner R. Townsend

presented this report which showed that the Council had held two meetings during the year, one in Albany on April 19, 1911, and one in New York on May 10, 1911, the minutes of which had been published in the *New York State Journal of Medicine*.

Report of the Committee on Publication.—This committee appointed by the Council and consisting of Drs. S E. Getty of Yonkers, H. A. Fairbairn of Brooklyn, S W S. Toms of Nyack, Alexander Lambert of New York, and Wisner R. Townsend of New York reported that at their first meeting on May 31, 1911, Dr. S. W. S. Toms was appointed chairman for the ensuing year and Dr. Algernon T. Bristow was appointed editor. The cost of publishing the journal was $8,034; after deducting receipts for advertisements and sales the net cost had been $4,553. Eight thousand copies were issued monthly. All advertisements of medical preparations that did not conform with the rules of the American Medical Association as adopted by the Council of Pharmacy and Chemistry were rejected.

Report of the Committee on Public Health.—Dr. JOSHUA M. VAN COTT of Brooklyn presented this report During the year this committee had sent out letters inquiring into the laboratory facilities of the several counties in the State. It was found that there was need of facilities in many counties for the proper examination of sputum, urine, feces, gastric contents, blood for malaria, cultures for diphtheria, Widal and Wassermann reactions, and tumors, but it was decided after due deliberation that in view of the unsettled state of the Legislature it would be unwise at present to take any step towards securing any appropriation by the State for laboratory purposes.

Report of the Committee on Legislation.—Dr. R. P. BUSH of Horseheads reported that this committee, in the absence of any specific instructions from the Society, had endeavored to promote the enactment of such bills as seemed to promise benefit to the people and to oppose the passage of those that would, if enacted into laws, tend to interfere with scientific investigation, sanitation, and prophylaxis. The bills which became laws in which the Society was most interested were: A bill establishing a State institution for the study of malignant and allied diseases at Buffalo; it might receive in its hospital and treat without pay cases of these diseases. This bill carried an appropriation of $65,000. A bill making a change in the physician's legal duties in making reports of deaths. The physician reported the cause of death and delivered the certificate to the undertaker who was responsible for the filling out and filing. A bill putting the supervision of cold storage establishments under the Department of Health. This measure prohibited too long retention of food and provided that when sold it must be properly represented. A bill prohibiting the pollution of the waters of the State and providing penalties and a method of enforcing them. A bill prohibiting the sale or gift of hypodermic syringes or needles. Together with the order of a duly licensed physician or veterinarian, the name of the purchaser, the date of sale and description must be recorded and preserved.

Report of the Committee on Experimental Medicine.—This committee, of which Dr. JOSEPH D BRYANT of New York was chairman, presented a report which called attention to the fact that during the legislative sessions of 1910 and 1911 six bills opposing vivisection were introduced. After reviewing the text of each of these the report stated that each of these bills was opposed by this committee both by a campaign of education and by arguments before legislative committees. The presentation to the public of the truth regarding medical research had been maintained by the committee at the expense of much time and money, supported by generous friends of science and humanity. The chief arguments made before legislative committees were made by Drs. James Ewing of Cornell University, William H Park of the New York University, and Simon Flexner of the Rockefeller Institute. In one instance Dr. W. B. Cannon of Harvard University had attended and added the force of his influence. It was recommended that a vote of thanks be extended to each of these gentlemen for their efficient services by the President of the State Society. Only two of the six bills were reported from the committee both of which were signally defeated; the remaining four expired in committee. It was a sad commentary that out of a membership of 7,000 in the State apparently less than one per cent. of this number evinced any appreciable interest in the outcome which should concern each and every member of the society in the profoundest degree. It was hoped that in the future a more encouraging response from members might be reported. It was pointed out that a reorganization of this committee was urgently needed as well as an appropriation of $150 from the funds of the Society.

Report of the Committee on the Regulation of the Introduction of Medical Expert Testimony.—Dr. DWIGHT H. MURRAY of Syracuse presented this report, in which it was stated that the Hon. A. T. Clearwater, Chairman of the Bar Association Committee, seemed to think it was not advisable to introduce any bill during the present year, owing to the fact that the Legislature did not seem disposed to do anything with constructive legislation. If conditions were changed they would endeavor to push a bill to passage in 1912. A supplementary report was also submitted which set forth Judge Clearwater's views on Medical Expert Testimony and contained the recommendation that the resolutions adopted some time ago by the New York Academy of Medicine in regard to medical expert testimony be adopted by the State society.

Report of Committee on Uniform Membership.—This committee, appointed to consider the legality, expediency, and advisability of making every member of a county and State society, *ipso facto*, a member of the American Medical Association, reported that it had held no meeting because the American Medical Association had failed up to the present time to present any definite plan for consideration.

Report of the Counsel.—JAMES TAYLOR LEWIS reported that the year 1911 had been extraordinary in some respects. More suits had been instituted during this year than during any year since 1900, and more cases had been actually disposed of in court than in any year since organized malpractice defense was established. This year had seen the final defeat of every action brought against a member of the State society and defended by the counsel of the society. There were no appeals from any verdict pending, all having been set aside. September of 1911 had terminated eleven years of organized malpractice defense in New York State, during which time upwards of 300 suits had been brought to the counsel for defense, and something over 100 had been actually defended in court. Verdicts had been rendered against the defendants in four cases, all of which verdicts had been set aside. Twenty-three cases had been disposed of during the past year. The counsel was of the opinion that the willingness of members of the State society and others to make use of what was known as indemnity insurance was a potent factor in breeding malpractice suits. He believed that members of the profession should abandon this practice of taking out insurance; it was harmful not only to the man who held it, but to the profession as well. The public had been further informed during the past year of this organized malpractice defense and this knowledge was bound to be of benefit as would be demonstrated by the record of new cases during the coming years. He had formerly been opposed to publicity of this defense, but he now believed that it should be given more publicity, principally for its moral effect on the public. The legal work of the counsel on behalf of the State society had been widely extended outside of malpractice defense. There had been a continual increase in correspondence and inquiry in the nature of consultation with the counsel by members of the profession on various legal questions, which showed the broadening interest of members in the State society itself and demonstrated the desire on the part of members to familiarize themselves with legal questions and principles involved in the practice of their profession, all of which was most gratifying. State societies of other States were continually inquiring through their officers as to the advantages of organized malpractice defense and new efforts in various States were being formulated in this direction. The work of the State society through its legal department could and should be further broadened and the counsel expressed himself as ready at all times to afford legal assistance in any direction to those requesting it.

The recommendations contained in the reports were referred for consideration to a committee appointed by the president.

No Prizes Awarded.—The Secretary, Dr. WISNER R. TOWNSEND announced that two essays had been submitted to the committee on the award of prizes, but neither of them had been adjudged of sufficient merit to warrant the awarding of a prize.

Time and Place of Annual Meeting.—The last Tuesday in April of 1913 was decided upon as the time of the next annual meeting. In response to an invitation from the Monroe County Medical Society, Rochester was chosen as the place of meeting in 1913.

Resolutions Adopted.—Among the resolutions adopted by the House of Delegates were the following: A resolution from the Medical Society of Dutchess County providing that, as it was extremely difficult if not impossible

for the county societies in rural districts to secure the conviction of illegal practitioners owing to the difficulties in securing evidence, the State Society take up this work. A resolution protesting against the suggestions made by the Educational Department that different requirements be permitted for different schools of medicine and that a copy of this protest be sent to the Board of Regents. A resolution endorsing the action of the American Medical Association and of the various county societies in regard to public health work. A resolution introduced by the Committee on Experimental Medicine urging the necessity of instructing the public on the subject of vivisection at all times and by all honorable means and providing for an enlarged committee for the prosecution of this work. A resolution endorsing the bills now before the Senate for the establishment of a National Health Department and one urging the national quarantine control of all ports now under State control.

Second Day—Tuesday, April 16.

Election of Officers.—The following officers were elected for the ensuing year: *President*, Dr. John F. W. Whitbeck of Rochester; *First Vice-President*, Dr. W. S. Gleason of Newburgh; *Second Vice-President*, Dr. William F. Campbell of Brooklyn; *Third Vice-President*, Dr. R. Paul Higgins of Cortland; *Secretary*, Dr. Wisner R. Townsend of New York; *Treasurer*, Dr. Alexander Lambert of New York; *Chairman of Committee on Scientific Work*, Dr. Thomas J. Harris of New York; *Chairman of Committee on Public Health*, Dr. Joshua M. Van Cott of Brooklyn; *Chairman of Committee on Legislation*, Dr. R. P. Bush of Horseheads; *Chairman of Committee on Arrangements*, Dr. Edward W. Mulligan of Rochester; *Delegates to the American Medical Association*, Dr. Wendell C. Phillips of New York, Dr. William D. Johnson of Batavia, Dr. Dwight Murray of Syracuse, Dr. James P. Warbasse of Brooklyn, Dr. Grant C. Madill of Ogdensburg; *Alternates*, Dr. O. E. Jones of Monroe, Dr. Leo H. Neuman of Albany, Dr. Rosalie Slaughter Morton of New York, Dr. Walter Lester Carr of New York, Dr. Julius Ullman of Buffalo.

Report of Reference Committee.—Dr. Egbert Le Fevre of New York made the report for this committee and submitted the following recommendations and resolutions which were adopted by the House. A recommendation providing for the appointment of a special committee for revising the By-Laws which should report at the next meeting. A resolution providing that the Council be authorized to designate the sections for the following year and to appoint officers for the same. A resolution endorsing the principles of ethics of the American Medical Association on the subject of fee splitting and providing that whereas it was essential to the dignity of the profession and the welfare of the public they urged that county societies use every effort to suppress the giving or receiving of commissions without the knowledge of the patient. Resolutions providing for the appointment of a committee to confer with other organizations on the subject of providing assistance for aged physicians who were in need.

GENERAL SESSIONS.

First Day—Tuesday April 16.

The President, Dr. Wendell C. Phillips in the Chair.

Invocation.—The Reverend Alexander H. Abbott, Pastor of the Emmanuel Baptist Church, made the invocation.

Opening Remarks by the President.—Dr. Wendell C. Phillips said he had only to repeat that he had employed his time in reorganizing the work of the Society and left it to the members to decide if he had not better employed his time in this way than by writing an address.

Address of Welcome.—Governor John A. Dix made a short address of welcome in behalf of the State of New York.

Address of Welcome.—Mayor James B. McEwan of Albany welcomed the Medical Society of the State of New York in behalf of the City of Albany and spoke of the gratitude that humanity owed the profession as a whole and of the gratitude he bore to the profession and especially to one individual physician to whom he owed his life.

Greetings from the American Medical Association.—Dr. Abraham Jacobi made this address in which he stated that ten years ago he had been president of the Society and a member of the committee which had adjusted the relations of the Society with the American Medical Association. Six years ago they had recovered their legitimate relations with that great body. The State Society was now entering on a new era and he thought this a fitting time to urge that, as only one-half of the members of the State Society were members of the American Medical Association, they endeavor to make the membership in the larger organization more general. By such cooperation they would add to the efficiency of the American Medical Association in its work for the public welfare.

Relation of Exact Science to Medicine.—Dr. Harvey W. Wiley made this address. He said that in the shadow of the great disaster that had brought sorrow to a thousand homes in this and other countries it was of some moment that they were gathered here in the interest of saving life and promoting human welfare. They spoke of great battles and great disasters with horror but forgot that many hundreds died yearly of avoidable diseases. He compared the puny endeavors of men to the conquering powers of nature and said that it was a mockery we could not fail to recognize when any work of man was called "titanic." The time might come when by some sensitive device to detect temperature the approach of an iceberg might be foretold and that by the advance of medical science they might prevent premature contact with death. He considered medicine as applied Christianity and believed that the minister and physician should work hand in hand. He referred to the various senses in which medicine might be considered and said he viewed it in the broad light as that science which dealt with the prevention, cure, and alleviation of disease. He said the popular impression was that a physician who did not give some drug did not know his business but the truth was the physician who did not give drugs often did more toward preserving the health of his patient. The person who took nothing was often in a better environment than he who filled his system with drugs. The speaker then contrasted the medicine of thirty years ago with that of today. His impressions of medicine at that time led him to the conclusion that it could scarcely be regarded as a science, that at the very best it could only have been called scientific impiricism. This empiricism was fast being converted into a scientific reality. After all the human organism was the best physician and the fundamental tenet of medicine was the maintenance of animal resistance against all forms of disease. Dr. Wiley then undertook to show how the advance of science had assisted medicine. He first spoke of the science of astronomy and the influence that astral and meteoric conditions wrought in human environment and expressed the opinion that there was a great field here for investigating just how these external physical conditions affected health. In considering the effect that the science of physics had had on medicine he referred to the phenomena of radiant energy, especially to the *x*-ray and electric light, which had been the means of putting many devices useful in the diagnosis of disease into the hand of the physician. He thought that perhaps the curative effects of radiant energy had been somewhat overestimated. In speaking of the ways in which botany had always lent its assistance to medicine he called attention to the experiments that were being made in the introduction of foreign drug-producing plants and said it would be interesting to see the results of a new environment. In general it might be stated that such a change in environment led to a deterioration in the vitality of the medicinal agent. He went on to show the relation of chemistry to botany and said that this science was not only of service in transforming the medicinal qualities of plants into forms used in medicine but it was most useful in diagnosis and therapeutics. The body was an engine and was governed by the principles of thermodynamics and chemical laws were the basis of the early stages of life. He referred to Professor Loeb's experiments on the origin of life and to the changes that were wrought by a change of chemical environment. Life and growth were just as great a mystery as ever though we did know some of the laws that controlled them. The speaker then touched on the relation of chemistry to physiology, showing that the latter owed its very existence as a science to chemistry. He pointed out how physiology had shown the interdependence of the various organs of the body and that these organs were engaged in the manufacture and distribution of various substances and cited as examples the thyroid and adrenals. Going on to bacteriology he pointed out how chemistry had assisted this science by furnishing the stains which had enabled the microscopist to discover so much that had revolutionized medicine. He referred to the work that had been done in discovering the means of combating syphilis and ventured to prophesy that twenty-five years would see the cancer problem solved. Chemistry did more than seek new remedies, however, it threw light on pathological

changes. It had been within a short time only that the physician had realized the importance of the examination of all excreta and the chemical laboratory was now an indispensable adjunct to the physician. He believed that chemistry would solve the problems of metabolism and that the future physician would be a master in the science of diet and nutrition. Atwater, Benedict, and others had shown how the laws of thermodynamics were applicable to metabolism and there was hope that the empiricism of the present theories would be replaced by accurate scientific knowledge. In speaking of what pharmacology had done for medicine Dr. Wiley warned the physician against the tendency to try new drugs and urged him not to yield to the insistant demands to use a new drug as he thus became an experimenter of the body of his patient. After speaking of the possibilities that immunity held out he said that the introduction of scientific principles into medicine had shown a kernel of truth in all schools and sects that practiced the healing art, only each had exaggerated one idea and thus they had become narrowed. Creeds led to prejudice and battle and narrowed the human mind but science had erected a monument from which the true physician could survey all fields and take to himself whatever was found good. These sciences which he had considered were fundamental and only those grounded in them could with safety and efficiency study the healing art and become true benefactors of mankind.

The Prevention of Insanity.—Dr ALBERT WARREN FERRIS of Watkins read this paper. He said that after having given our attention to the conservation of our mineral resources, our forests, our orchards, and our cattle we at last had a little time to spare in which to give a little attention to our children. There were serums for typhoid, meningitis and diphtheria, vaccination against smallpox, a campaign against tuberculosis and now a movement had been inaugurated to combat insanity. There were three factors at work, an authoritative presentation of facts, an appeal to the taxpayer, and an appeal to the good sense of the ordinary men and women in the community. He asked if there was anyone who knew his family and that of his wife for four generations who could state positively that there was no taint of insanity in his family. There was an impression that the hospitals for the insane were recruited from the so-called lower classes, this was a mistake for records of the hospitals showed that 77 per cent. of the inmates were above the class of the day laborer; they had been producers, taxpayers and useful members of society. In 1910 there were over 32,000 insane in the State of New York, while in 1890 there were about 16,000. In twenty years the population had increased 47.6 per cent. while the number of insane had increased 103 per cent. Probably there had been no such increase if everything were taken into consideration but the fact remained that 6,000 new cases were admitted to hospitals each year, a net increase of about 1,000 cases annually. It was evident that the burden of the care of this large number of insane patients was increasing and the most sensible course that suggested itself was to ascertain the avoidable causes of insanity and to limit the production of this class of unfortunates. A campaign for this purpose had been launched and it had been found that the causes chiefly responsible for insanity were alcohol and syphilis. General paresis without syphilis was unknown and those suffering from this disorder constituted 12 per cent. of the new cases annually. Syphilis was responsible for many other forms of insanity. Syphilis treated in the second stage might be cured but many never recovered from it. About 5,000 of the men in the State hospitals owed their condition to "sowing wild oats." Alcohol was responsible for 50 per cent. of the male insanity. Alcohol was a stimulant poison and too much stress could not be laid on the deleterious effects of even small quantities habitually taken. Its effects were demonstrated in mental enfeeblement, defective offspring and sometimes in insanity. If physical conditions were amenable to hygienic treatment why not mental? Dr. Ferris said the subject was being studied from the viewpoint of environment and heredity and that dispensaries had been established for the treatment of the milder forms of mental disease. In studying these cases the hospital physician solicited the help of the family physician and the consulting physician. There were few committing physicians who ever visited the hospitals for the insane or kept themselves acquainted with the condition of their patients. Dr Ferris urged the establishment of psychopathic wards in connection with general hospitals for the temporary detention of insane patients. In closing he said that the responsibility for the prevention of insanity lay at the door of the physicians of this State.

The Present Status of the Movement for the Prevention of Tuberculosis in This State.—HOMER FOLKS of the State Charities Aid Association made this address by invitation. He said that today every eye had been centered on a spot in the Atlantic where a great disaster had occurred which had cost over a thousand lives, and he wished that the same concentration of attention might be secured for the fact that as many went down every year to death because of tuberculosis. Where tuberculosis was concerned it was not even permitted to give the women and children the first chance. It was many miles further from the Lower East Side of New York to the City Hall than it was from the Carpathia to the Titanic. There it was a mechanical difficulty that was to be fought; here it was ignorance and indifference of men. He hoped that the sympathy that was aroused by the great disaster would remain and become a permanent asset of the State in its fight against tuberculosis. In 1902 the Charity Organization Society, of New York City, began its work in this line and later the work was extended to the State but there were sharp distinctions between the two movements. In the city there was one health officer with able assistants, laboratory facilities and great prestige; in the State there were 1,400 health officers of varying degrees of efficiency who had limited financial resources and were afraid of public opinion. In 1907 little stress was laid on hospital treatment for the tuberculosis patient as a preventive agency; at that time there were only seven agencies outside of New York City for this purpose with a total capacity of 444 beds. To-day there were 22 hospitals with a total capacity of 1,200 beds. In addition there were 11 county and 5 municipal hospitals with a capacity of 1,143 beds. Assuming that in the City of New York there were five living cases to one death there was one bed to every twelve cases. Outside of the city there was one bed to every twenty-one cases. In 1907 there were two dispensaries outside of New York City; to-day there were thirty-three. The speaker laid special emphasis on the services of the visiting nurses. They were the most valuable agency that they now had for finding out where the largest number of cases were. They had found that the overwhelming majority of cases of tuberculosis were unknown, unreported and uncared for. In 1907 there were but two visiting nurses outside of New York City; today there are forty-nine. The necessity for financial relief especially where the victim of the disease was the breadwinner of the family was early recognized. In 1907 only two agencies for supplying such relief were in existence while in April, 1912, there were twenty-seven. Progress had been made in respect to the compulsory reporting of cases but this was not as rapid as was desirable. In 1911, 8,700 cases were reported. It was his belief that only about one-fourth of the actual number of cases were reported. The physician should be not only a good physician but a good citizen and a good sanitarian and should look to it that this law in regard to reporting tuberculosis was obeyed. The duty of supervision of cases of tuberculosis in their homes devolved on the attending physician or the health officer and he preferred that the responsibility should rest on the health officer. He said that he had left the consideration of popular education until the last because he considered it the most important, but the effects of popular education were the most difficult to measure. The large exhibit of the State Health Department had visited all the large cities of the State. Exhibits had been given in fifty-nine villages and at fifty-eight county fairs. The public lectures had been attended by 450,000 persons, over 1,000,000 leaflets on the subject of tuberculosis and its prevention had been distributed to the people, and there were in the State 263 local societies with a membership of over 8,800. As to the results of the movement he did not think that the death rate showed any appreciable diminution. It was falling but this had been the case before the movement was started. He concluded that the death rate varied from month to month and year to year because they arrived at prompt and efficient reporting of cases. The apparent increase in the death rate in the early stages of such a movement was due to more accurate diagnosis and more readiness to ascribe this disease as the cause of death. He did not think the campaign had been in operation long enough to show definite results. He thought the movement had been valuable in teaching the public to appreciate the physician and to employ him. The work was becoming so great that it was rapidly outgrowing the bounds of private philanthropy and should become a matter of public concern and of legislation. From the increase in the number of nurses, hospitals and dispensaries they could hold out the hope that the slogan "No tuberculosis in 1915" might be realized but even then their efforts would by no means be at an end.

(To be continued.)

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Original Articles.

PERSONAL OBSERVATIONS OF WASSERMANN'S EXPERIMENTS ON MOUSE TUMORS.*

By O. KILIANI, M.D.,

NEW YORK,

PROFESSOR OF CLINICAL SURGERY, COLUMBIA UNIVERSITY, SURGEON TO THE GERMAN HOSPITAL.

THE entire scientific world is aware that Wassermann has been carrying on for a number of years past experiments in treating animals who are suffering from tumors (tumorkranke Tiere). Since about a year, after a number of experiments in other directions had proved failures, these researches have taken the character of chemotherapeutic experiments on tumor animals, especially with eosin-selenium.

A part of the results achieved by Wassermann with his collaborators, Keysser and Michael Wassermann, has been published in the *Deutsche medizinische Wochenschrift*, No. 51, 1911, and in the *Berliner klinische Wochenschrift*, No. 1, 1912, where the experimental part is described by Wassermann-Keysser-Wassermann and the anatomical part by Hansemann.

As it is more than probable that these experiments and the results achieved will have a direct bearing on our future treatment of human cancer, it may be of interest to this society to hear a report of what, during my recent stay in Berlin, I had occasion to observe in the Royal Institute for Infectious Diseases at Berlin, through the great kindness of Geheimrat Professor A. von Wassermann.

As I may rightly assume that the contents of the two publications named are known to the medical community at large, it will suffice to repeat briefly the fundamental idea of the procedure. I will also omit all historical notes, with the names of others who have worked in the same line or prepared the scientific field for such work, as I want to give you a simple report of a practical surgeon of what he has seen of those animal experiments, which promise to be of such far-reaching importance.

Wassermann starts from the idea that malignant tumors grow more energetically and are vitally stronger than the cells of other organs and that, therefore, they need more oxygen and have a more pronounced affinity for it. As a strongly reducing body, Wassermann selected natrium selenicum and telluricum, the metal of which was found to be reduced by living cells, especially by the cells of those places where carcinoma cells were located. The deposit of the metal was inside the body of the cell, near the nucleus. It is enough to mention that Wassermann carried on experiments with these two salts by local injection into the tumors of mice; but this really was not what Wassermann was after, as he wanted to carry media, which have a destructive power on tumor cells, automatically into the tumor from the blood circulation.

If I speak here of tumors or mouse tumors or tumors in mice, it is always understood that we have to deal with mice which had been inoculated (usually three or four months previously) with a tumor, which had been designated by Ehrlich as carcinoma, or mice which had been inoculated from Schillings' stock.

I shall not take up at all the purely anatomical question of these experiments and leave it to the members of the Society to read the anatomical part by Hansemann in the *Berliner klinische Wochenschrift*, No. 1, 1912.

To try automatically to reach a tumor by way of the circulation, selenium and tellurium were injected into the tail-vein of the mice with absolutely no result, apparently because the metals had been absorbed by other cells. It was therefore necessary, Wassermann reasoned, to find a carrier for the selenium to bring it into the parts where wanted, or, as he expressed it, to build "railroad tracks" on which these preparations could travel to the tumor. It was necessary to select chemical compounds which can be carried into the organism very rapidly, and which possess a strong power of diffusion.

Ehrlich and Wassermann had formerly tested the behavior of fluorescines, triphenylmethan dyes, in the living organism. Of these Wassermann selected finally eosin and similar chemical bodies, and it may be appreciated how industriously this question had been followed when I tell you that at the time of my presence in Berlin chemical preparation No. 256 was tried out. The principal chemical difficulty seemed to be to produce exactly the same chemical body again, after it had been found by a number of experiments to be especially effective; not only this, but these chemical compounds proved to be unstable, that is, they would within a very short while decompose enough to have an entirely different action. For this eosin-selenium and similar chemical substances, where one part acts as carrier for the other chemical part to certain cells or organs, Wassermann proposes the name *cytotrochine*, from *kytos*, the cell, and *trochia*, the track.

Before describing to you the method of treating tumor mice with eosin-selenium, as I have seen it carried out by Wassermann and his assistants, I want to say that most, if not all, of the experiments were carried on with doses near the fatal dose, to get the most striking results, a method which, of course, can be applied only in animal experiments.

A good-sized white mouse weighs about 15 grams, ½ ounce; lately Wassermann has had quite some difficulty, owing to the enormous demand for mice on the mouse farms, to secure enough animals of proper age and weight, a matter which was partly

*Read before the Surgical Section of the Academy of Medicine of New York, April 5, 1912.

responsible for many failures, as the animals were not strong enough. Such a mouse had previously (three or four months) been inoculated with mouse tumor, as I remarked before, either from Ehrlich's or Professor Schillings' stock. The tumor, usually situated on the back of the mouse under the skin, frequently not only attached to but growing into the muscles of the back and other organs, would at the time of the injection have achieved the size from a hazelnut to a walnut; sometimes the tumor would represent from one-third to nearly one-half the size of the animal.

Eosin-selenium, if rightly constituted, is a red powder, according to the color of the eosin, of which you here see a specimen. It is easily soluble in cold and especially in warm water. The solution must not only be clear but lucid. One c.c. of a solution of 1/400, that means 2.5 mg., injected into a vein of an average mouse of 15 grams, will be tolerated; if more is given, the mice die either acutely in convulsions or within the next twenty-four hours. The injection is made in the following way:

With an extremely fine hypodermic needle one c.c. is injected into the dorsal tail-vein of the mouse, after the veins have been dilated by a lighted cigar being carried past the tail a number of times. It is rather a severe test for the assistants to smoke all the necessary cigars, if many experiments are carried on in one day. Since some of the "Präeparateusen" (female laboratory assistants) are to carry on this work, an electric cigar lighter has been substituted for this purpose.

Immediately, that is within half a minute, after the injection of this eosin-selenium solution, the tail, the feet, the ears, the nose, the snout, the eyelids, and the entire eye of the mouse become intensely pink. The excretion of the preparation begins very soon after the injection; the principal part seems to be carried off by the feces, while the secretion through the urine stops after about twelve hours, when the urine becomes again untinted. Most of the mice turn pale again after twenty-four hours, but if the animal does not soon enough return to its natural color and stays pinkish, it usually dies, a fact which speaks for the inability of the animal to excrete the preparation properly.

If the mouse overcomes the effect of the injection of 2.5 mg., and if the preparation was a proper one, a most remarkable effect is to be observed. Three injections are made on three consecutive days. After the third injection the tumor is decidedly softened; then, with an intermission of one day, a fourth, fifth, up to an eighth injection is made, a matter somewhat depending on technical difficulties. After the softening of the tumor has begun, it begins to feel cystic, and finally an empty bag can be felt between the examining fingers, while the tumor has disappeared.

If an injected tumor mouse is killed after twenty-four hours, dissection of the animal shows that all other organs present the normal coloring, while the tumor itself is intensely red, a proof that the eosin-selenium, which has disappeared from the rest of the body, has been held back by the tumor.

If a tumor mouse is killed after the third injection, the tumor shows plainly on dissection a softening and decay, until in the later stages one sees at the post mortem only small débris or granular substance, and finally nothing but scar tissue at the former seat of the tumor.

If the tumor mouse stands the necessary amount of injections, the tumor has disappeared and the mouse is cured of its tumor. In exceptional cases, when the injections had not been carried far enough, but where the tumor had apparently disappeared, recurrences have taken place, but in all cases where the treatment could be carried on far enough the mouse was cured.

There is one great danger to the injected tumor mouse; even if the preparation was not too toxic—when it will kill the animals from the first to third day by poisoning—the absorption of the tumor may prove very dangerous to the animal. It is easy to understand that the tremendously rapid absorption of so much pathogenic material must tax the vitality of the animal to the utmost. This is especially the case if the softening and liquefaction of the tumor began very early, as, for instance, after the second injection. But a large number of tumor mice have been cured, and remained free of recurrence for a number of months, through this treatment.

The softening and liquefying effect of the preparation has been proven as typical, as a law, in now nearly 2,000 experiments on tumor mice.

I will now demonstrate to you the specimens which I owe to the kindness of Wassermann, which he gave me for the purpose of this paper.

In No. 1 you see a normal tumor mouse. Unfortunately in killing, the tail, which is very near the tumor, was torn out, so that a slight hemorrhage into the tumor took place. The two parallel incisions over the tumor show plainly the type, size and consistency of the tumor.

The mouse No. 2 (No. 1803) shows the first stage of the treatment. The animal has received two injections; while the rest of the animal shows natural colors the tumor is dyed red, and decayed, and of mushy consistency, showing beginning reabsorption. The size of the tumor was originally that of a large plum-stone.

The third mouse (No. 1817) shows the second stage. What is left of the tumor over the spine is red and decayed. On the upper right-hand corner, corresponding to the chest, are remnants of the tumor, of lardaceous appearance. The original size of the tumor was that of a cherry.

Fourth mouse (No. 1420), cured mouse. The tumor was originally on the rectus muscles of the loin.

I will now describe the autochromes prepared according to the Lumière method. Mouse No. 1806 is in the first stage (demonstration) mouse 1804 approaches the second stage; the dissolution of the tumor has progressed much further, and mouse No. 1817, corresponding to the mouse No. 1817 in the glass jar, shows the last stage of the treatment.*

The question now arises: Of what value is and will be the experimental work of Wassermann to us practical surgeons? I cannot think of entering into the theoretically scientific question: How far mouse tumor is similar to human cancer, or whether the tumor of a mouse is purely a local disease? I can only say that during my short stay I observed personally two metastases of mouse tumor in the lung, a fact which, I understand, has sometimes been questioned; but it seems to me it is not necessary at all to enter the question of relation of mouse tumor to human malignant growth. Wassermann has succeeded in carrying through the medium of eosin a strongly reducing chemical body (selenium) selectively into atypical growths which grow faster

* The specimens unfortunately, do not easily lend themselves to illustration, as the mice specimens are kept in glass jars and the autochromes cannot be reproduced.

and more abundant than the rest of the organs. If that is possible, it seems reasonable to hope that a treatment based on similar lines will be possible in human cancer.

If chemotherapy can solve this question at all, this tremendous step forward, of reaching tumor cells alone selectively, should bring us very much nearer to its solution.

If this treatment shall be tried in human cancer, and I have no reason to assume that it will not, the method must be, of course, vastly different. The work of the surgeon will be rather increased, as all operable tumors will have to be extirpated first, and only after the most exact removal of the diseased parts, the chemotherapeutic treatment could begin to hunt out, select, and destroy those minimal parts of carcinoma which have evaded the eye of the surgeon or may have been deposited somewhere else. It is at once clear that inoperable tumors, for instance certain intraabdominal ones, could never be the subject of such a treatment, as the more or less rapid softening would at once produce a perforation, as the diseased organ in such a condition would not even stand the intracellular pressure, thus ending the life of the patient abruptly.

As to the possible method to be applied for human treatment, one might expect that the injection into the artery (not the vein) supplying the diseased organ would facilitate the reaching of the growth.

It is needless to say that all further animal and clinical experiments will have to be carried on and out by the originator of the experiments, whom we all can only follow with the most sincere interest.

I wish to add that I regret more than anybody else the wrong impressions which have been created by inaccurate and over-enthusiastic reports, which found their way into the daily press, and wish to close my few remarks with the expression of the deepest-felt thanks to Wassermann, through whose incomparable kindness I have been permitted to watch these experiments.

44 West Seventy-seventh Street.

THE IMPORTANCE OF REMEMBERING THAT ALL PULMONARY PHYSICAL SIGNS ARE NOT THOSE OF TUBERCULOSIS.*

By H. A. HARE, M.D.,

PHILADELPHIA.

PROFESSOR OF THERAPEUTICS IN THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA AND PHYSICIAN TO THE JEFFERSON HOSPITAL.

Although some members of the profession seem at times to think that the physical signs of early tuberculosis of the lungs have been recognized only within recent years, as a matter of fact they were well studied and thoroughly understood long before the bacillus of Koch was discovered. Those who had not the aid of the microscope in determining the presence of the bacillus were forced to train their special senses to a point rarely reached by their successors whose auditory nerves are lessened in their acuity by the use of phonendoscopes and whose tactile sense in estimating fremitus is often untrained by lack of constant use.

The recognition of the fact that pulmonary tuberculosis is curable in the great majority of cases, if its presence is determined early in the malady, has been impressed so strongly upon the minds of medical men, and the disastrous results of oversight are so often met with, that there is a tendency to regard all abnormal physical signs in the lungs as indicative of tuberculosis unless the symptoms are so indicative of other affections that tuberculosis is manifestly ruled out. In other words, the fact that physical signs are present in the lungs is considered fair evidence that tuberculosis is the cause, and so individuals are classed as tuberculous who are not so diseased. I am well aware of the fact that countless instances can be brought forward in which unrecognized lesions have produced disaster, and I am not seeking to make light of the importance of recognizing that the early diagnosis of tuberculosis is essential. My object is to point out that some cases are not tuberculous, although thought to be so, and to emphasize the fact that there are no physical signs to be found in the chest which cannot be produced by lesions which are not tuberculous in origin. This point can, I think, be put in a concrete form by the citation of several cases.

Case I.—A girl of eighteen years had a history of constant cough for six weeks with practically no expectoration. Her evening temperature often rose to 100°, and she had little appetite. Her loss of flesh amounted to about eight pounds. At the right apex, above and below the clavicle, there was some impairment of resonance on percussion, some prolongation of expiration, no râles, but slight tubular breathing. She had a history of a sharp attack of influenza at the beginning of her illness but no adequate examination of her chest had been made. An examination into the amount of food she had taken daily showed that owing to her anorexia she had not received more than half the calories needed to maintain her weight for the six weeks spoken of. Indeed, it represented less than 1200 calories a day on the average. The diagnosis was impairment of normal lung action, because of infiltration or congestion of the apex as the result of the influenzal infection, with partial starvation. She was sent to the mountains, ordered proper amounts of food and exercise, and returned in about three months, having gained fifteen pounds and with no physical signs. She is still in perfect health. It may be claimed that this is an instance of a cured tuberculosis, but I think not.

Case II.—A man of forty-nine contracted a cough from his adolescent son who in turn had been infected by an epidemic of pertussis at a boarding-school. The paroxysms were so severe that he had to stop on the street to support himself by nearby objects when seized, although he never whooped. After some three months he still had a spasmodic cough and had lost twenty pounds. At his left apex there was prolonged expiration, blowing breathing, and high-pitched resonance on percussion. The loss of weight was due to the exhaustion produced by his cough, the physical signs I believe to be due to a localized emphysema of the lung. He has since become perfectly well save for the persistence of the physical signs to a moderate degree.

Case III.—A physician engaged in sanatorium work presented himself with a history of marked loss of weight, slight febrile movement, malaise, some anemia, loss of appetite, and impaired digestion. At the base of his right upper lobe posteriorly he had dullness on percussion and bronchial breathing. His tonsils were enlarged and their follicles filled with foul secretion. There was slight enlargement of the cervical lymph nodes on the right side. His tonsillar trouble was attended to and successfully. He was told that he had a pulmonary lesion

*Read before the College of Physicians of Philadelphia, April 3, 1912.

and had better stop work and betake himself to a better climate. He then volunteered the information that some years before he had had a pleuropneumonia of the right side of great severity. With the clearing up of his tonsillar infection and proper general treatment he speedily recovered perfect health except for the chest signs, and the diagnosis of pulmonary tuberculosis was revised so as to read tonsillar infection and an old lesion resulting from pleuropneumonia.

Case IV.—A man of about twenty-one lost fifteen pounds in three months. He had a rise of evening temperature of two degrees and very profuse mucopurulent expectoration, amounting to several spit cupfuls a day. At one apex there seemed to be slight impairment of resonance, and some râles were heard. On both sides of the vertebræ there were many râles and whistling or tubular breathing at several points. The diagnosis of dangerously advanced tuberculous disease of the lung was made. I took the liberty of revising this to pneumococcic infection of the bronchial mucosa with possibly some bronchiectasis. The use of suitable expectorants, an outdoor life, and good food resulted in no expectoration, little cough, no râles and a gain of fifteen pounds in three weeks with no febrile temperature. No tubercle bacilli were in the sputum but multitudes of pneumococci, although there was no history of pneumonia.

Case V.—A woman of twenty-one, after a severe tonsillar infection followed by infection of the cervical lymph nodes, developed six weeks later moderate continued fever lasting several weeks, marked loss of flesh, constant unproductive cough, loss of appetite and loss of weight. She complained of a sense of discomfort at the third interspace near the sternum which was increased by coughing. At this point there was distinct blowing breathing and dullness on percussion. The cough became slightly productive because it caused tracheal irritation, but the sputum was negative except for a few pus organisms. The right apex showed distinct impairment of expansion. The diagnosis of early tuberculosis was made but suddenly revised when after a severe attack of cough a teaspoonful of pure pus containing no tubercle bacilli was expelled. Recovery speedily followed. The diagnosis was infection and suppuration of a bronchial lymph node rupturing into a bronchus.

Case VI.—A woman of thirty, remarkably athletic and strongly built, lost strength, health, and appetite and had an incessant cough which failed to be benefited by ordinary measures. A cold shower bath following exercise gave a good reaction but caused such violent cough that chloroform or amyl nitrate was used to control it. Examination of the chest showed on the right side of the sternum, for two inches vertically, distinct impairment of resonance from the second to the fourth interspace with tubular breathing. The *x*-ray revealed a chain of enlarged bronchial lymph nodes on both sides. As the illness had followed an attack of influenza, she was treated by rest and iodide of iron, and then sent South for the winter with perfect recovery as a result; but she and her family were in misery for weeks because of the diagnosis of pulmonary tuberculosis.

Case VII.—A young man in his twenty-first year, a student at Yale, where he had been very athletic during the late fall and early winter, suffered from pain in the stomach, loss of flesh, cough, and loss of vigor. He became pallid and suffered from dyspnea on exertion. When examined by me he was found to have at the right apex tubular breathing, great impairment of resonance, and a few râles. The diagnosis made was tuberculosis, the more so as he had an evening temperature of 101.5°. He became rapidly worse and the area of consolidation of the lung rapidly increased. At the request of the family, one of the older fellows of this college saw him and made a diagnosis of "epidemic influenza." Some time later he was seen by the late Professor Da Costa, whose name I mention because any opinion expressed by him was so well worthy of confidence. His diagnosis was scrofulosis, probably because the cervical lymph nodes were swollen. The blood examination was negative. The spleen was not materially enlarged. The disease ran a very rapid course, ending in death from respiratory obstruction. Towards the end the diagnosis was evident and the autopsy confirmed it, namely, Hodgkin's disease, with the lesions chiefly in the bronchial lymph nodes.

Case VIII.—A woman of twenty-eight years caught a severe cold which lasted for several weeks with persistent cough. An examination of her right apex showed impairment of expansion, impairment of resonance, some prolongation of expiration, and a few râles. The diagnosis was probable tubercular infection, but perfect recovery of health in two weeks and the discovery of the history of a pneumonia in 1908, resulted in a diagnosis of an acute cold with physical signs due to an old catarrhal pneumonia.

I can cite many similar instances.

Another word may be said as to the diagnostic significance of dullness and absence of vesicular breathing at the base of the lungs. Nearly always these result in the diagnosis of "consolidation" or "pneumonia." In severe bronchitis, in whooping-cough, and after operations in the upper abdominal segment the real state is often atelectasis.

Finally, a few words as to the bronchial lymph nodes. It is remarkable that although these nodes are universally recognized in books on morbid anatomy as being often diseased, the practitioner almost never regards them as important facts in diagnosis, yet these are often the cause of marked physical signs. Sahli describes Neisser's method of their diagnosis by the distended finger cot on a bougie and the *x*-ray will often show them. Delafield and Prudden say: "The tracheal and bronchial lymph nodes may be the seat of a variety of lesions which, owing to their situation, as well as for other reasons, are of considerable practical importance. They may be enlarged from hyperplasia in acute infectious diseases; by the development in them of tumors; in leucemia and with especial frequency in tuberculosis. They may become pigmented from inhaled coal or other dust and may atrophy or become fibrous or calcified. In cheesy degeneration following tuberculosis, or in the suppurative inflammation, perforation may take place into the air passages, the esophagus, the pulmonary blood-vessels, or aorta, or into the pericardial or pleural cavities; in this way hemorrhage or secondary inflammatory processes or gangrene may occur. Death may occur from pressure upon the trachea by tumors of the adjacent lymph nodes. Sudden death from asphyxia may result from perforation into the trachea. Pressure upon the pulmonary veins may lead to pulmonary edema. The bronchial lymph nodes are very important as distributing centers of infectious microorganisms, and particularly

as points of lodgment of tubercle bacilli, which have been gathered from the pulmonary air spaces from the pharynx or elsewhere." They also give the following references to other literature.*

Again in Osler's "Modern Medicine" Warthin says: "An acute simple inflammatory enlargement of the bronchial glands occurs in severe forms of bronchitis, pneumonia, and other acute inflammations of the lungs. It is very common in children in association with the acute infectious diseases, particularly when these are complicated with respiratory affections. It is highly probable that in the majority of cases of simple cervical adenitis there is at the same time more or less enlargement of the bronchial nodes. In the ordinary cases the symptoms due to the pressure of the enlarged glands cannot be separated from those of the primary condition; but when the enlargement is marked severe pressure symptoms may be produced. Dysphagia, dyspnea, respiratory stridor, cyanosis, and the physical signs of bronchial stenosis constitute the clinical picture. Should suppuration occur, the abscess may rupture into the bronchi and sudden death ensue. Chronic inflammation of the bronchial nodes is present in chronic bronchitis, bronchiectasis, chronic pneumonia, etc."

Finally, in Spitzka's edition of "Gray's Anatomy" we find these words: "In all town dwellers there are continually being swept into these nodes from the bronchi and alveoli large quantities of the dust and black carbonaceous pigment that are so freely inhaled in cities. At first the nodes are moderately enlarged, firm, ink black, and gritty on section; later they enlarge still further, often becoming fibrous from the irritation set up by the minute foreign bodies with which they are crammed, and may break down into a soft slimy mass or may calcify. Not infrequently an enlarged tuberculous node perforates into a bronchus, discharging its contents into the tube. When this happens there is great danger of acute or pulmonary tuberculosis, the infecting node-substance being rapidly spread throughout the bronchial system by the coughing its presence in the air-passages excites."

French has recently pointed out that the lymph nodes immediately below the right bronchus are often infected, and Siennikow has written a valuable paper in which he shows that these right nodes are very large ones. By their pressure on the bronchus they cause blowing breathing, and by their irritation of the vagus or phrenic they cause cough. There can be no doubt that one of the chief causes of disease of these nodes is tuberculosis, and a valuable paper on this subject is published by Jordan in the *Practitioner* for February, 1912.

My point is not to deny that these nodes are often tuberculous, but that they may be infected by other organisms than the tubercle bacillus, and second, that many physical signs thought to have their origin in the lung tissues are due to partial bronchial occlusion by pressure.

If any one thinks after hearing this paper that I minimize the frequency of tuberculosis, that I fail to appreciate the disastrous results of its presence if not recognized, or that I do not know of the misery that comes to the relatives when a long-drawn-out and hopeless fight ends in defeat, he fails to grasp my meaning.

My object is not only to be always on guard against the ever-present possibility of pulmonary lesions, but also to emphasize the fact that every subacute or chronic pulmonary lesion presenting impaired resonance, prolonged expiration and, for a short time, febrile movement is not tuberculosis.

A most valued assistant said to me when I spoke of this paper, "You may be right, but you will do a great deal of harm by making men careless as to the possibility of tuberculosis in a given case." I think not, because if any state of the lung, save a healed lesion, presents these physical signs the patient should be warned, and should be treated by fresh air, good food, and all other measures to increase vital resistance, which measures are identical with those for tuberculosis. In many instances untold mental misery for the patient and his family is engendered by the sentence of tuberculous infection, and his whole manner and place of living is altered. His career is not only changed in its course but probably narrowed or arrested. He is afraid to plunge into the struggle for success because he is in dread of a relapse or return of his "old trouble." His seniors are afraid to put him in line for advancement lest their act prove a mistaken kindness and cause his breakdown, his chance of getting life insurance is stopped, and even his marriage may be prevented by the blot on the history of his lungs. These are not imaginary theories. I can point out man after man in and out of the profession who have been so hampered. When tuberculosis has been present nothing but thanks for his recovery can be thought of, but where it has not been present a mistaken diagnosis has been a calamity.

The parallel between the diagnosis of syphilis and tuberculosis is exact. Syphilis is very prevalent, it is the most likely explanation of many symptoms and signs, its correct diagnosis is essential for the sake of the patient, his career, and his relatives, but before his morale is shaken by being told that he has syphilis, before his life is changed and he is perhaps intimidated so that he is tied forever to a fear that an old malady is constantly with him, ready to develop at any moment, all the other possibilities of his case should be excluded.

We must be careful that the predominance of tuberculosis does not cause us to commit the patient to the constant woe of worry and alarm, until we have excluded the conditions which produce physical signs in the chest similar to those of tuberculosis.

Eighteenth and Spruce Streets.

*Consult for summary of lesions of bronchial lymph nodes Hall, *Philadelphia Medical Journal*, Dec. 1, 1900, bibl. See also concerning tuberculosis reference Northrup and Bovaird, p. 487, and Harbitz, *Jour. Inf. Dis.*, vol. ii, p. 143, 1905. See also statistics of Hand, Phila. Path. Soc., vol. vi, p. 132, 1903. For an excellent résumé concerning normal and pathological tracheal and bronchial lymph nodes see Marfan in Bouchard and Brissaud's "Traité de Médecine," t. vii, p. 525; also Zuber in Grancher, Comby, and Marfan's "Traité des Maladies de l'Enfance," t. iv, p. 235. For a study of the relation of the bronchial lymph nodes to the lymph vessels of the thorax see Welemincky, *Berl. klin. Woch.*, 1905, p. 743. For a study of the relationship of the cervical and bronchial lymph nodes see Beitzke, Virch. Arrh., Bd. clxxxiv, p. 1, 1906.

Treatment of Erysipelas.—T. Pontano believes that there is no internal or local remedy that is of any great value in the treatment of erysipelas, or that has any influence on mortality. Antistreptococcus serum has proven valueless. Cold applications of physiological salt solution, repeated every four hours, although they do not modify the course of the disease or lessen the mortality, protect the part, lessen contagion, and quiet the pain. The author's conclusions are based on the treatment of 1084 cases, with 995 recoveries.—*Il Policlinico.*

ATHLETIC SUPERIORITY OF OUR NEW STOCKS.

By LT.-COL. CHAS. E. WOODRUFF,

MEDICAL CORPS, U. S. ARMY.

EVERY little while some timid soul confesses to a fear that Americans are becoming degenerate and are bound to die out. The British also are occasionally apprehensive over their alleged physical decay and fill the newspapers with doleful wails as to the future of the human race in general, and the English part of it in particular. There is no ground for such absurd pessimism, though as a matter of fact, there is a plenty of evidence that certain types in each nation do have a higher death rate than others, and that there is a constant slow change in the general average. Both civilizations have been built up by immigrants, and it is a law of nature that change of racial residence is always followed by extinction or alteration of type through the survival of the fittest for the new environment. Moreover there has been a constant immigration into the British Islands from the beginning of things human, and the influx of new blood has always kept civilization humming even if each invasion in olden times did destroy part of what it found. The same phenomenon is being repeated in America with the sole difference that the invaders, except in Mexico and Peru, have not destroyed, but are constantly building up. The process of decay of certain types is also quicker in America and the new blood comes into prominence sooner than in England. Very few of the descendants of the signers of our Declaration of Independence are in public life and most of them are nonentities, while immigrants and the sons of immigrants are in the seats of the mighty. The descendants of the signers of Magna Charta controlled England for many centuries though none of that stock is in evidence now; while the present controlling elements date back some centuries and very few are recent arrivals from the Continent.

It is high time that we find out who are the fittest in each part of America. Every bit of evidence is of some value and that is the reason why the tremendous victories of the American Olympic athletes have such a scientific and popular interest. In the *North American Review* of 1907 there is an analysis of the victories at Athens in 1906, and it is shown that to a large extent the American winners were foreigners or of foreign-born parents, while the old pre-revolutionary stocks were in a conspicuous minority. Moreover, it was discovered that the successes were almost exclusively in short events requiring an enormous expenditure of energy in a short time, while in slow contests of endurance the Americans were hopelessly outclassed by Europeans. The phenomenon was interpreted as another of the many proofs that this sunny southern land is highly stimulating but, as in the case of all other stimulants, exhaustion follows in time though perhaps it may require several generations to be noticeable. Northern races always have died out when they migrated this far south, for it must be remembered that most of Europe is north of the fortieth degree of latitude, and the races which first stocked this country always lived north of the fiftieth parallel. The successes of the 1908 Olympic athletes present new evidence in support of those general conclusions and it will be highly profitable to look into it a bit, so that we may not overdo the matter of athletics in the physical training of boys.

About 100 of the best athletes in America went to London for the latter competition. The proportion of foreign born, native born of foreign parents, and native born of native parents was about the same as for men of the third decade of life in the general population as shown by the census of 1900, but when we analyze them more closely some astounding facts are discovered. Eighty-three reported their ancestry, and the results are condensed into the following table:

1. Foreign born	8
2. Both parents foreign born	9
3. One parent foreign born	12
4. One or more grandparents foreign born	22
5. One or more great-grandparents foreign born	2
6. One or more great-great-grandparents foreign born	4
7. Old stock	5
8. Colonial stock of 17th century	9
9. Other native born variously stated	12
	83

That is, about three-fourths of the best athletes of the country are of the stocks which arrived here after the beginning of the nineteenth century, and the great majority of them arrived in the two or three decades following 1840. On account of the "foreign" names among those who did not answer the inquiries these proportions are probably too small.

When we analyze the victors among them, these facts are still further accentuated. Of those who won first, second, or third place, 10 per cent. were foreign born, while 14 per cent. of the non-athletic population of equal age are foreign born. About 43 per cent. were native born of foreign parents as compared with 17 per cent. in the general population, and only 47 were native born of native parents as compared with 68 per cent. as shown in the census. Of the twenty-seven winners whose ancestry is known, three were foreign born, six had foreign born parents, six had one foreign parent, six had one or more foreign grandparents, and one had foreign born great-grandparents. Only one was of old stock, one of colonial stock, and three were native born of native ancestry variously stated. Considering the names it is safe to say that 85 per cent. or more of the winners are of stock which immigrated since 1840. It is not true that the Olympic games were victories for old American families, as so commonly believed.

Now does this mean athletic decay of the old stocks or a temporary greater superiority of the new? Perhaps both conditions exist. The stimulation of southern climes is one of the best attested facts in medicine and anthropology, and the subsequent decay of migrants too far south is also settled. The native children of foreign parents grow bigger than their ancestors, are taller, have larger chests, larger bones and muscles—though much of this is due to better feeding—but they are also quicker, brighter, and more energetic, which is the result of stimulation. So we find great ability for physical spurts in the first, second, and third native generations, after which there is either reversion to the former normal slowness or actual decay. This stimulation of newcomers differs only in degree from the identical nervous tension of northerners recently arrived in the tropics—a stimulation which

completely deceives them as to the dangers of the climate and tempts them to overexertions which are followed by exhaustion or even collapse. The new stocks in America likewise feel better and are more energetic than their cousins who have remained at home under the protection of the mists and fogs of northern Europe. The athletic craze in America could not exist without this stimulation and we find all kinds of clubs and associations patronized by our newcomers, and there is not the slightest doubt, that as in the tropics, they are overdoing the matter.

The birthplaces of the native athletes present more interesting facts. Practically all of them were born north of Mason and Dixon's line, for the six who were of southern birth were so near that line that they could scarcely be considered exceptions—three in Missouri and one each in northern Kentucky, northern Virginia, and Arkansas, and three of the six were winners. The part of the country furnishing no athletes at all has the highest percentage of native born citizens. It has been said that this is due to the fact that no attention is paid to developing athletics in the south, but the absence of athletes is the reason why there is so little time given to these sports. That is, the further south the quicker the physical decay.

The only three foreign born winners were from Ireland, and it is surprising to note that nearly all the contestants were of Irish, Scotch, English, and German ancestry. Latin Europe was represented by one lone Cuban. The contestants average 5 feet 10 inches in height and 158 pounds in weight, even including the little runners like Hayes. These figures are way above the average of the American population as we would expect in such picked men, but there is another reason, they are descendants of the biggest men in Europe—the Northmen—whom they even surpass in height and weight.

American athletes have long held the records for short, sharp contests, and when these Olympic games were over, it was loudly proclaimed that we had now invaded other fields and were victorious in events requiring endurance: but the Marathon race was the only one, and subsequent events have shown the superiority of Europeans. Even a Marathon cannot be said to be a test of real endurance, for it lasts less than three hours, while the normal man is built for low pressure strains for days. The points which placed our team at the head were short races, jumps, vaulting, throwing weights, and light weight wrestling. It is still true that our excellence consists almost wholly in a curious form of nervousness which permits of the expenditure of all our force at high pressure for a short period, so vastly different from the normal nervous slowness which compels a low pressure expenditure over long periods. Instead of being a matter for congratulation, we can well pause and ask ourselves if it is not a sign of overstimulation which bodes ill for the individual victors. Professional athletes are notoriously short-lived, whereas they should live longer than the rest of us.

College amateurs tell a different story, according to Dr. Anderson of Yale University. The death rate of the athletic alumni ("Y" men) in the last fifty years, as far as known, was 7.2 per cent., but 12.9 per cent. of the non-athletes died in the same time. As the latter class contained all the short-lived weaklings who could not indulge in strenuous sports, and the former were picked men of perfect physique with longer expectation of living, it is questionable whether these figures do not show some damage to the athletes. The athletic naval cadets break down in after life sooner than the non-athletes, and all cadets are picked men on an equal footing as to longevity. Whether this break down is due to the congenital or acquired neurotic condition which made it possible to expend much energy in a few seconds as in our short contests—an almost constant symptom of even high grades of neurasthenia—or whether it results from the strains and exhaustions of training remains to be determined. The tuberculosis which carries off an undue percentage of both professionals and amateurs, may be due to the original exhaustion or that of training.

The contestants show a remarkable tendency to blondness—the types which originated under the clouds and mists of northern Europe and which are now known to suffer more than brunettes from the nervous instability due to excessive light. They are the only ones we would expect to excel in sudden spurts of energy. Of eighty-two who have mentioned complexions, forty-three have blue eyes, thirteen gray, six light brown, seventeen brown, and only three dark brown. Hair color is always darker than that of the eyes and does not give such clear evidence of blondness, but even here there were twenty-eight with decidedly blond hair, twenty-six with brown, nineteen dark brown, and only nine black. Among the winners brunetteness is still more rare, for twenty-three had shades of blue and gray eyes, three brown, and only one dark brown, omitting one of part African blood. Twelve had very light hair, thirteen shades of brown, and only two reported hair as dark brown, and none black.

Of the millions of negroes in the United States only two found their way into the team, and one of those, if not both, was part white, and one was a winner in a relay race. Negroes can work long periods at low pressure but are unable to exert their nervous strength all at once like white men, and among whites the brunettes are not so able as the blonds. Similarly only one Indian competed and he achieved nothing except ninth place in the Marathon. The proportion of blonds among the old stock athletes, though less than in the new as we would expect from the diminishing blondness of American families, is apparently considerably larger than in the non-athletic old stock population. That is, pigmentation is protective enough to prevent the stimulation which leads to exertion of this kind. Consequently the brunets, who constitute the majority of our population, furnish a minority of the athletes.

Almost all the points and events not won by the American team were secured by the nations of the northwest corner of Europe, the rest of the world taking so little that it can be considered a victory of the big brawny northmen who have been the world's rulers from time immemorial, and who are largely blond. Of the native born American winners, eight have German ancestry, five English, five Irish, five Scotch, one Welsh, and one Swiss, and the five old stock Americans are probably all English. The races then which are athletic in their ancestral homes are also athletic in America. Methods of training had very little to do with the matter, if anything at all. There is even a still greater significance to these victories of our big blonds, for it is now almost accepted as a fact that this type constituted the primitive Aryans who arose near the Baltic, if not in Scandinavia itself, and who, for 3,000 years, have been migrating all over the world.

carrying and building up civilization by reason of native ability and the stimulation of sunny climates, and then dying out from overstimulation. They were like glaciers melting under the sun, but leaving their speech and civilization in a terminal moraine, as evidence that Aryans were once there.

The athletic superiority of the ancient Greeks is curiously like that of our own, for they too were Aryan northeners who had migrated to a stimulating climate, Greece being at about the latitude of forty. They died out because of their climatic unfitness, and the same thing happens in America, but the constant influx of immigration restores the type here, and America seems destined to be the athletic leader for all time—at least in events requiring a spurt of nervous energy; but the slower, more stolid nervous system of northern Europe will always be the winner in low pressure sports requiring endurance over extended periods. The youthful games on the two sides of the Atlantic will always differ like baseball and cricket because of this difference in nervous tension. Low pressure games like golf are the only ones suitable for both nations and survive because men can play them long after they have lost ability for those requiring youthful high tension. It is to be noted, too, that the middle aged European can indulge in the athletics of youth longer than we can, because they age slower and also because of the lower pressure needed as in cricket. So let us try to introduce low pressure games in which we can indulge until our hair is white, and do away with the system which exiles us to the bleachers thirty years too soon.

CHEMICAL CONSTITUTION AND PHYSIOLOGICAL ACTION.

BY WALTER A. JACOBS, PH.D.,

NEW YORK.

(From the Laboratories of the Rockefeller Institute for Medical Research, New York.)

With the discovery in 1859 by Stahlschmidt[1] that by the addition of a methyl group to strychnine a substance was produced which no longer showed the tetanizing effect of this alkaloid, but possessed a curarizing action, a new era was opened in pharmacological studies. Many pharmacologists and organic chemists became firmly convinced that a certain relationship must exist between chemical constitution and physiological action, and that the mechanism of the action of drugs upon the organism was of a chemical nature. Some turned their attention at first to the chemical study of substances which possessed marked physiological action, with the idea of determining what in the chemical structure of the compound was responsible for the observed effect. But with the meagre knowledge at hand of the constitution of such complex substances as the alkaloids these efforts were soon complemented by the attempts based upon speculation regarding the structure of the alkaloids or the groups responsible for their action to synthetize substances of a similar nature, with the view of producing the same or similar effects. The great progress made in synthetic organic chemistry up to and during this period was reflected in the increasing interest and work done by those engaged in the synthesis of new medicaments. It was thought that by the conversion of substances of recognized therapeutic value by simple chemical transformations into a series of derivatives, that a substance could be selected which would be cheapest and have the greatest curative value with least injury to the organism. Through such efforts as these an enormous number of new preparations were made, but compared with the great labor expended and in spite of the recommendation of their exploiters but few proved of value.

Of these the greatest achievements were obtained in the group of antipyretics and anesthetics. In the antipyretics interest centered upon two classes of substances of the type of antipyrin and phenacetin. The discovery of antipyrin was the culmination of efforts based upon a false idea regarding the structure of quinine and directed toward the preparation of substances which would possess the properties of this alkaloid. Phenacetin and the numerous preparations related to it owe their discovery to the observation that anilin[2] and acetanilid possessed antipyretic and antineuralgic properties. But the bad effect of these anilin derivatives upon the blood and the observation that such substances are oxidized in the organism and excreted as para-amido phenol[3] led to the preparation among other para-amido phenol derivatives of para-acetamido phenol-ethylether or phenacetin. Other important results were achieved in the discovery by Baumann of the anesthetizing properties of sulfonal and trional, and by Fischer and Mering of veronal. Close upon the acquisition of knowledge regarding the structure of cocaine and of the groupings responsible for its action there followed the synthesis of such local anesthetics as eucaine by Merling and orthoform and nervanin by Einhorn. Although but few out of the hundreds of preparations which have been made have offered any promise from a therapeutic standpoint, nevertheless there has resulted a large amount of experimental material of real theoretical value in so far as it has afforded a picture of the significance of certain groups, and arrangements of groups in the molecule in determining the effect upon the organism. As an instance may be cited the following:

Following the experiment of Stahlschmidt, and with the idea that the methylation of strychnine occurred on the tertiary nitrogen atom forming a substituted ammonium base, Brown and Fraser[4] methylated a number of other alkaloids and obtained the striking result that independently of the action of the original alkaloid the new substances always exhibited a curarizing action. These results were followed by others and culminated in the observation of Böhm[5] that by the same methylation curine, a but slightly toxic alkaloid occurring with curarine in curare could be converted into a base showing all the properties of curarine which is over two hundred times as toxic. More recent experiments[6] have demonstrated that the nitrogen as such is not necessary to induce such effects for the substituted phosphonium, stibonium, arsonium, iodonium, and sulfinium bases which are analogues of the ammonium bases having phosphorus, antimony, arsenic, iodine, and sulphur in the place of nitrogen possessed like curarizing properties.

Such significant results as these were also obtained in numerous studies in the alkaloid series, but the subject is of too complicated a nature to treat here.

This synthetic tendency and the study of groups have had their foundation in the chemical conception of the action of substances in the organism, and though here and there a few laws were formulated to explain the action of certain types of sub-

stances but few attempts have been made to construct general theories regarding the relationship between constitution and action. Schmiedeberg[7] was the first to furnish explanations for the action of substances mainly of the aliphatic series. The activity of aliphatic substances depends above all upon physical and biological factors. The resorbability plays a big rôle. Further, the solubility in water and volatility at ordinary temperature are of distinct importance. The volatile hydrocarbons of petroleum, for instance, show the characteristic narcotic action of the hydrocarbon group, whereas the liquid nonvolatile members which are also insoluble in water are entirely without action. The activity as regards the alcohol group, *i.e.*, the narcotic action, is conditioned by the number of oxygen atoms in the molecule. All substances of this group containing two or more oxygen atoms show little or no action. If a compound, as for instance paraldehyde, is composed of several independent hydrocarbon groups, it is active when at least one has no, or not more than one, oxygen atom. For substituted substances Schmiedeberg formulated the following laws:

By the substitution of aliphatic radicals in very toxic atomic groupings the action is modified in intensity as well as in character. As examples may be cited the comparatively nontoxic nitriles and isonitriles, of which the former is a direct substitution product of prussic acid. On the other hand, the introduction of certain groups into the hydrocarbons may deprive them of their narcotic action. This is well shown by the mono-, di-, trimethylamines. These all possess an action characteristic of the ammonia end of the molecule. They produce no narcosis. When the compound, as in the ethers and esters, are composed of two groups joined by oxygen, the action depends upon the nature and properties of the two components.

More recently a somewhat fantastic attempt was made by Oscar Loew[8] to explain in a purely chemical way the action of all toxic substances. He starts with the assumption that living protoplasm has in its molecule labile aldehyde and amino groups. He regards as poisons all substances which in very great dilution react with these groups, and their toxicity as proportional to this reactivity. The last word, however, in the attempts to explain the connection between constitution and action was spoken by Ehrlich.

Ehrlich[9] realized from the start the great importance of distribution in the organism. Here and there a few observations had been made regarding the distribution of substances, but from the Ehrlich standpoint too little significance had been attached to this factor in determining action, and to this he attributes in part the many failures which up to this time had characterized the efforts to synthetize medicaments. The fundamental conception of Ehrlich's theory of action is that the distribution, *i.e.* the selective affinity of substances for particular organs and systems is a function of their chemical constitution. To support this view he brought to his aid experiments on synthetic dyestuffs, and to explain his results he borrowed the conceptions of Witt and Nietzki regarding the relationships between color and constitution. According to Witt a few groups, such as the azo and nitro groups, are responsible for the dye nature of substances of which they are a part. These so-called chromophore groups lend, however, only a chromogen nature to the substance. In order for the real color to appear certain acid or basic auxiliary groups, namely, the phenolic and amido groups are essential in the molecule, and the nature and intensity of the color depend upon the number of such auxochrome groups and upon the extent to which the free hydrogen of these is substituted by ethyl, methyl, and the like. So, also in physiologically active substances, certain groups are of a toxophore nature, such as the anesthesiophore benzol group in cocaine, while to the basic complex of the alkaloid containing the tertiary nitrogen atom an auxotoxic character must be ascribed.

Having recourse to anatomical and histological examinations, Ehrlich made a large number of dyes the subject for study. In particular he observed that the power to stain the grey nerve tissue was possessed by only a few dyes, particularly of basic nature. Alizarin is the only acid dye with the auxochromic phenol groups which presented an exception. By the introduction of negative sulfo groups into these dyes they were completely deprived of their neurotropic property. This evidences a change in the selective distribution in the organism as determined by constitution. The experimental material affords numerous other examples. To explain, however, how a substance of a certain chemical character is selected by this or that cell, recourse was had to purely physical explanations. A fiber of wool immersed in a picric acid solution of the highest dilution will be stained by the dye. In the same way the tissues may remove some of the poison introduced into the circulation. As regards dyeing two theories exist—that of salt formation and the Witt-van't Hoff theory of solid solutions.

In the solution idea Ehrlich sought the explanation for the phenomenon of localization. This localization may be regarded as a shaking out process. That here no chemical union could exist was shown by injecting animals with a great variety of substances such as thallin, anilin, the alkaloids, phenols, etc., and after awaiting the usual time for completed distribution it was found possible to extract by suitable solvents the substance from any of the tissues infused. The decolorization of brain tissue stained with methylene blue and of the fuchsin kidney was shown in typical manner by ether or alcoholic extraction. In some instances there is a possibility that a very reactive substance might form a stable chemical union with the constituents of the protoplasm, but these are few, and to explain localization in general we must turn solely to physical phenomena. On the other hand, for the furnishing of the necessary relationships between the molecule of those substances available as foods, a chemical union with the protoplasm must be assumed. Experience with the bacterial toxins has shown a like requirement, and perhaps in the fact that the toxins possess a haptophore group and other toxic substances do not the reason may be found why workers up to now have been unable to produce any sort of immunity toward simple substances of known composition.

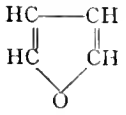
The theory of narcosis of Overton[10] and Meyer[11] is likewise based upon a purely physical conception. Here all chemically indifferent substances which are soluble in fats and fat-like substances must produce narcosis in all living protoplasm in so far as they can be distributed therein. This action will be most marked upon those cells in which lipoids predominate and the relative strength of the narcotic is dependent upon the

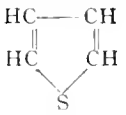
partition coefficient between the other cell substances (mostly water) and the fat-like constituents. This explanation restricted to chemically indifferent narcotics has served its purpose well, but when the attempt is made to apply it to chemically active narcotics, such as morphine, considerable stretching is necessary. For example, morphine possesses a phenolic hydroxyl group. To this is attributed the narcotic action of the alkaloid for when by chemical means this group is changed to a methyl ether group codeine results which no longer produces narcosis.

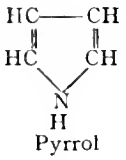
Of all of these theories the best that can be said is that they are but the crudest pictures of the conditions and influences which really determine physiological action. A theory which attempts to explain all phenomena of selection and action from only one standpoint, whether chemical or physical, is bound to meet serious obstacles in the enormous complexity of the relationships that must exist between the tissues and the unendless variety of active substances. In all pharmacodynamic studies the fate of the substances in the organism must be thoroughly studied, for it is essential to know whether the observed action is due to the substance itself or to a transformation product of the same. For instance, it has been proven by Hinsberg[12] that all substances of the phenacetin series which possess antipyretic properties are changed in the organism to para-amido phenol, and that the degree of this action is proportional to the amount of this substance found in the urine. Those derivates of anilin which are not changed to para-amido phenol are not febrifuges. The conclusion then is that the amido phenol is responsible for the observed effects. On the side of the acting substance we possess considerable empirical data obtained with both active and inactive substances, which afford us a picture of how certain groups in certain positions in the molecule act, or how certain groups when placed in the molecule either strengthen or weaken the action characteristic of the mother substance. I shall describe briefly the significance which is attached to the presence in the molecule of certain groups and configurations.

The saturated hydrocarbons[13] of the aliphatic series produce by inhalation anesthesia and sleep, in large doses resulting in death through asphyxia. With the higher members of the series the action is more pronounced. The degree of their toxicity and the duration of anesthesia increases with the number of carbon atoms. The lower members produce narcosis by the exclusion of oxygen, whereas the action of pentane and hexane is more deep seated. According to Lauder Brunton and Cash the principal action of the lower members of the series consists in their stimulating and anesthetic action upon the nerve centers. In the aromatic series the hydrocarbons affect the motor centers more than the sensory, so that instead of anesthesia, tremor, convulsions, and paralysis result. The simple halogen substitution products like chlorbenzol, brombenzol, etc., exhibit a similar action. Naphthalin slows the respiration and acts as a febrifuge by decreasing the metabolism. In general the aromatic nucleus has marked antiseptic properties. A one per cent. solution of phenyl urea, for instance, is as strongly antiseptic as sublimate. Whereas the aliphatic diamine cadaverin is little toxic, the aromatic toluylendiamine shows the toxic influence of the aromatic nucleus by producing jaundice and hematuria.

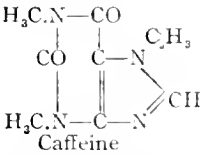
The chemical analogy with benzol shown by furane, thiophene, and pyrrol is further evidenced by a similar pharmacological action.

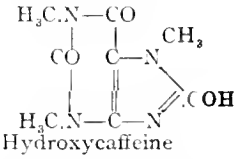

Furane


Thiophene

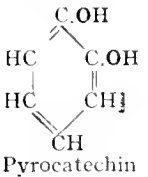

Pyrrol

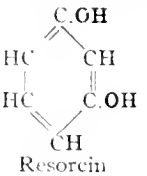
The entrance of the hydroxyl group into substances of the fatty series tends to diminish their action, and the more these groups enter the molecule the weaker is the action. From the narcotic aldehyde, CH_3, CHO, by condensation the inactive aldol, $CH_3.CH(OH).CH_2.CHO$, is obtained. By hydroxylation of ordinary alcohol the inactive glycol, $CH_2(OH).CH_2(OH)$, is produced. From the strongly narcotic hexyl alcohol, $CH_3.(CH_2)_4.CH_2OH$, by complete hydroxylation mannite, $CH_2OH.(CHOH)_4.CH_2OH$ is obtained, which is almost a food. The sugars are indeed real foods. The presence of the hydroxyl group may render substances more subject to the oxidative processes in the organism. Hydroxycaffeine 14 must be given in much larger doses than caffeine before caffeine action appears. It is apparently rapidly oxidized.

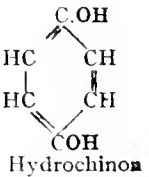

Caffeine


Hydroxycaffeine

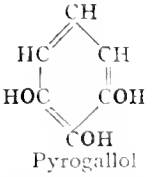
The phenolic hydroxyl, however, tends to increase the tetanizing effect of benzol. The addition of one or more additional hydroxyl groups weakens the tetanizing action, but increases toxicity in other directions. Here position in the nucleus is also a determining feature. The dioxy benzols all act on the spinal cord and produce clonic convulsions, the toxicity decreasing in the order given.

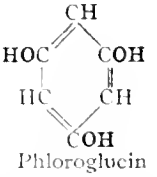

Pyrocatechin


Resorcin


Hydrochinon

The trioxy benzols, pyrogallol, and phoroglucin are less toxic.

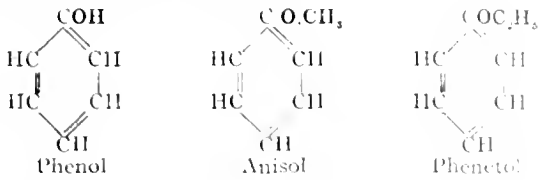

Pyrogallol


Phloroglucin

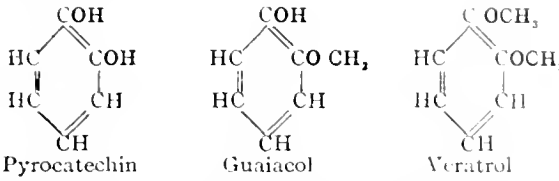
That the toxicity of these substances is intimately connected with the presence of the hydroxyl groups has been demonstrated by numerous observations. Stolnikow[15] showed that by the introduction of the indifferent sulphuric acid group in such substances as phenol, pyrogallol, and resorcin the resulting ether sulphuric acids were far less toxic than the phenols themselves.

In the case of morphine and morphine ether sulphuric acid, the nature of the action was completely changed. The original narcotic action disappeared entirely and in very large doses a codeine effect was obtained. In like manner in anisol and phenetol the

methyl and ethyl ethers of phenol, the toxicity of phenol is greatly reduced.[16]


Phenol Anisol Phenetol

This is also well shown in the series pyrocatechin, guaiacol, and veratrol.

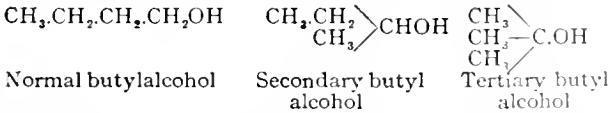

Pyrocatechin Guaiacol Veratrol

the toxicity diminishing in the order given with the covering of the hydroxyls by the methyl groups.

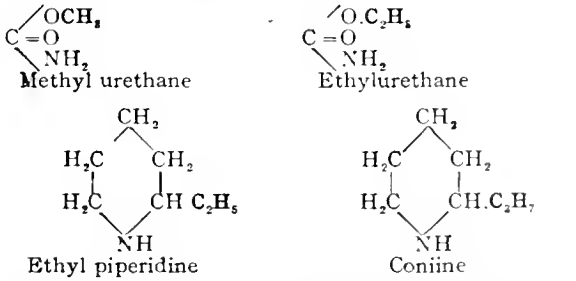
The phenolic hydroxyl in morphine is of considerable interest. Morphine is the only member of the opium alkaloids possessing a pronounced narcotic action. This action is to be ascribed to the phenolic hydroxyl group; for if this hydroxyl is covered by an alkyl group such as methyl, ethyl, and the like, the characteristic narcotic action almost entirely disappears and the tetanizing action of the rest of the molecule shown by the codeines becomes apparent.[17] The action is shifted from the brain centers to those of the cord.

It is unlikely that any constant action can be attributed to the hydroxyl group as such. It would seem that the hydroxyl group is more the means of bringing a substance in contact with a particular tissue, and so affording the opportunity for the rest of the molecule to exert the action characteristic of it.

As regards the alkyl group such as methyl, ethyl, propyl, etc., it has been found that in combination with hydroxyl, as alcohols, the narcotic action of the original hydrocarbon is retained, the toxicity increasing with the molecular weight and the boiling point. In homologous series substances are more active the longer the carbon chain. Normal butyl alcohol is, therefore, more toxic than the tertiary alcohol. The tertiary alcohols exert the least narcotic effect, the secondary alcohols a greater, and the primary alcohols the greatest of all. This rule holds not only for alcohols but for other series as

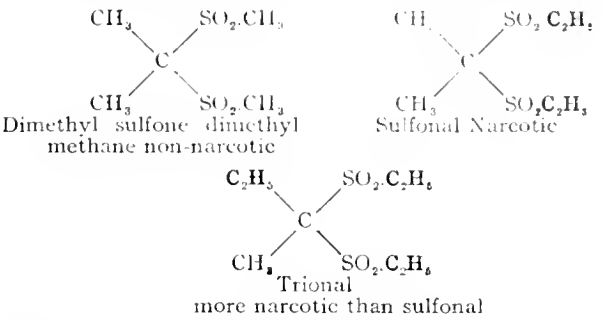

Normal butylalcohol Secondary butyl alcohol Tertiary butyl alcohol

well. Ethyl urethane is more toxic than methyl urethane and propyl piperidine or coniine is twice as toxic as the ethyl compound.


Methyl urethane Ethylurethane

Ethyl piperidine Coniine

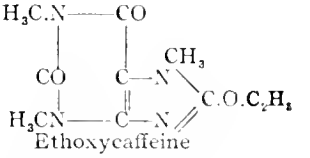
Of the alkyl groups the ethyl has proved of particular significance. Its presence in many substances with marked action on the central and peripheral nervous system have led many to ascribe to it particular neurotropic properties. The experiments of Baumann and Kast[18] in the sulfonal group demonstrated that the narcotic effect increased with


Dimethyl sulfone dimethyl methane non-narcotic

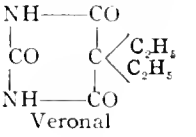
Sulfonal Narcotic

Trional more narcotic than sulfonal

the number of ethyl groups contained in the molecule and where the ethyl was replaced by other alkyl radicals the anesthetic power was lost. Ehrlich[19] has ascribed the universal use of alcoholic beverages and the persistent attempts to render them free from other higher alcohols (fusel oils) to the special property of the ethyl group. Ehrlich and Michaelis found that a diethyl safranin dye possessed the property similar to methylene blue of staining the nerve endings of surviving organs. When other safranin dyes were made minus the diethyl amido group, or in which the ethyls were replaced by methyls, this neurotropic property was entirely lost. In ethoxycaffeine[20]

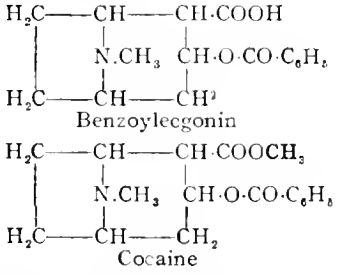

Ethoxycaffeine

and veronal which is diethyl barbituric acid


Veronal

the marked narcotic action is attributable to the ethyl group.

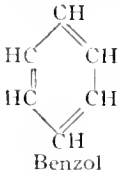
In esters where the alkyl group is combined with a physiologically inactive acid the properties of the alkyl group are retained. In certain cases in which the inherent properties of the molecule may be hidden, as we shall later see by the presence of the carboxyl group, COOH, esterification will restore these inherent properties. In benzoyl ecgonin itself the inherent anesthetic property of the molecule is hidden by the free COOH present. The substance is twenty times less toxic than cocaine. When it is methylated cocaine results and the anesthetic properties appear.

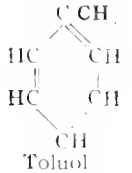

Benzoylecgonin

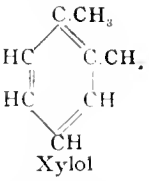
Cocaine

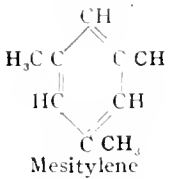
Alkyl groups entering into the aromatic nucleus effect considerably the original action. The activity

of benzol decreases with the introduction of methyl groups, so that the toxicity diminishes from benzol through toluol and the xylols to mesitylene.


Benzol


Toluol


Xylol


Mesitylene

Introduction of the methyl group into the benzol nucleus increases the antiseptic power. The introduction of methyl or ethyl groups into ammonia diminishes its convulsing properties. In general, methylation on a nitrogen atom diminishes or removes entirely the toxicity of the original compound.

The entrance of chlorine into aliphatic substances increases in general the narcotic action. The toxic effect stands in direct relationship to the narcotic action. With the increase in the number of chlorine atoms the toxicity becomes greater. For instance, methylene chloride, CH_2Cl_2, is less toxic than chloroform, $CHCl_3$, and this again less so than carbontetrachloride, CCl_4.

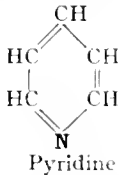
The introduction of chlorine into the benzol nucleus has but slight effect on its action. Benzol derivatives substituted by halogens in the nucleus are more strongly antiseptic than the mother substance. In general bromine substitution products in the aliphatic and aromatic series resemble the analogous chlorine derivatives. Organic iodine compounds differ from the other halogen compounds in being more antiseptic and less narcotic.

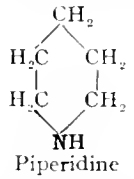
In regard to the action of the basic nitrogen containing radicals it may be said that the entrance of nitrogen as an amino group in aliphatic or aromatic compounds as well as the presence of nitrogen in cyclic bases may have a various pharmacological significance. The action depends mostly upon the nature of the rest of the molecule, upon the nature of the linking, and the valence of the nitrogen as well as the reactivity of the nitrogen containing group. Ammonia, the simplest of the series, aside from its irritating action has a tetanizing effect. If the hydrogens are replaced by methyl or ethyl groups, this action is gradually diminished so that the final product, trimethylamine, is without action. If an acid radical is introduced as in acetamid the substance is nearly or entirely without effect. Acetamid passes unchanged through the organism. Where nitrogens are joined together, as in hydrazine, a very toxic group is produced. Where they are joined together by a carbon chain, as in tetra and penta methylene diamine, they are comparatively harmless.

$NH_2.CH_2.CH_2.CH_2.CH_2.NH_2$ Tetra methylene diamine

$H_2N.NH_2$ Hydrazine

Aromatic amino compounds are of special interest because of their relation to the phenacetin series of antipyretics. In the union of the aromatic nucleus with the amido group, the ammonia action predominates. These substances may produce convulsions and paralyze the muscles and nerves. The substitution of simple elements like chlorine, bromine, etc., in the benzol nucleus of aromatic amido compounds changes but little the action. An alkyl group increases the action. Substitution in the amino group itself by alkyl radicals reduces the toxicity considerably. The aliphatic diamines are physiologically little active; on the other hand, the aromatic bases are extremely toxic, as, for example, toluylenediamine and the phenylenediamines. In general, substances which have a tertiary nitrogen, such as pyridine or its homologues, are but little toxic.


Pyridine

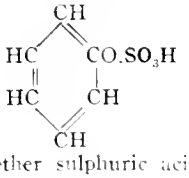

Piperidine

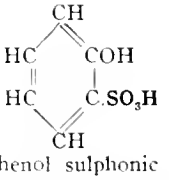
If by reduction to its hydro-base piperidine, the nitrogen is changed to an amid group, NH, a strongly toxic substance is produced. If the amid hydrogen is replaced by an alkyl group the substance again becomes inactive. If alkylation continues so that substituted ammonia bases are formed, a curarizing substance is obtained.

The nitro and nitroso groups possess little general significance other than that their introduction into compounds increases the toxicity. As aliphatic alkyl esters of nitrous acid their action is characterized by marked dilatation of the blood-vessels, the action decreasing from the maximum in the amyl ester down to the methyl ester which is least active.

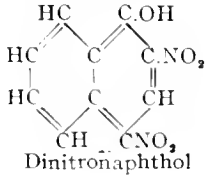
The aldehyde group in the fatty series appears to possess narcotic properties as in acetaldehyde. To the aromatic aldehyde group but little significance can be attributed, due to its rapid oxidation to the acid.

The action of acid radicals such as the carboxyl and sulpho groups is one of the most interesting instances of the effect of groups. There are a large number of toxic substances against which the organism protects itself by conjugating them with glycocol, sulphuric acid, and glucuronic acid, the resulting substances being excreted as such. This detoxification is due to the entrance of the acid group into the molecule. This rule is pretty general so that if by chemical means we introduce into toxic substances a carboxyl or sulpho group the toxicity is greatly reduced, if not entirely removed. For instance, the conversion of phenol into the oxybenzoic acids removes almost entirely the toxicity of phenol. Phenol ether sulphuric acid[21] and phenol sulphonic acid are practically harmless.

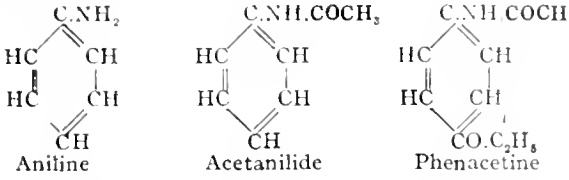

Phenol ether sulphuric acid


Phenol sulphonic acid

The formation of morphine ether sulfuric acid removes entirely its narcotic action and only in large doses is the codein effect characteristic of the rest of the molecule to be observed. Even the toxic action of the nitro group is antagonized as seen in the conversion of the very toxic Martius yellow or dinitronaphthol into the harmless sulphonic acid.


Dinitronaphthol

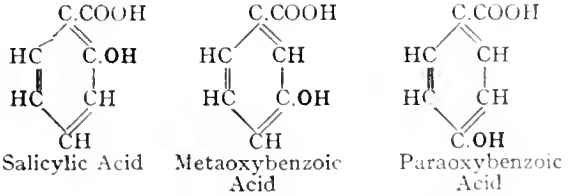
The relative toxicity of benzol, toluol and naphthalin and their carboxyl derivatives are further examples. The very toxic pyrocatechin and the nontoxic protocatechuic acid show this influence again and endless other examples might be cited. The entrance of acid radicals into aromatic amido compounds has been of particular therapeutic importance. The conversion of anilin into acetanilid or antifebrin removes to a great extent the harmful action of anilin upon the blood, without affecting its antipyretic properties. Phenacetin likewise belongs here.



Aniline Acetanilide Phenacetine

The presence of a double or triple bond in the molecule increases as a rule the toxicity. Allylalcohol,[22] $CH_2{=}CH.CH_2OH$, which is but an unsaturated propylalcohol, no longer possesses the characteristic narcotic properties of the alcohol group. Diiodoacetylene, $IC{\equiv}CI$, with a triple bond is very toxic; much more so than could be attributed to the iodine in it.

Among aromatic substances considerable differences are to be found in the action of isomers. The well known example of the differences in the action of salicylic acid which is orth-oxybenzoic acid and its inert isomeric oxybenzoic acids, may be mentioned.



Salicylic Acid Metaoxybenzoic Acid Paraoxybenzoic Acid

Although no general rule can be made, in the majority of instances the toxicity increases from the ortho through the meta to the para compound. This is shown by the isomeric nitro phenols, nitro toluols, brom toluols and toluidins. As regards toxicity there are, however, numerous examples in which either the ortho or the meta compounds exceed in toxicity. Among the alkaloids, position is likewise a determining feature in the action; for the shifting of a side chain from one position to another is accompanied by striking changes in the character or intensity of the action. Of a still greater significance are the differences presented in their behavior towards the organism of substances which have identical atomic groupings in the molecule but differ in the arrangement of these atoms or groups in space about one or more asymmetric carbon atoms. Differences in the action of such stereoisomeric substances were first observed by Pasteur. Various fungi, grown in media containing optically inactive tartaric acid, were found to render the solution levorotatory. The organism assimilated the dextro form leaving the other unavailable form intact. At that time he drew the correct conclusion that physiological action is dependent in some way upon the geometrical arrangement of atoms in space. Such observations were later continued by Fischer[23] in his classical studies in the sugar group. The glucosides of the hexoses were divided into two groups, one being cleaved by yeast invertase, the other by emulsin. Also those sugars only which possessed three or a multiple of three atoms of carbon would undergo alcoholic fermentation. From these results Fischer concluded that in order for an enzyme to act upon an optically active substance the configuration of the one must fit into the configuration of the other, just as a key fits in its lock. Experience with the intermediary products of proteins has consistently confirmed these views and many observations have been made of the behavior of optically active substances in the organism, which still further bear this out. When racemic mixtures of sugars or amino acids are fed to an animal it is found that under normal conditions the organism will burn the natural form, while that form not occurring in the animal tissues is excreted in the urine.

Among the alkaloids considerable differences have been observed in the pharmacological action of optical isomers. The isomers cinchonine and cinchonidine, quinine and quinidine, the hyoscyamines and atropine all show differences in the intensity and character of their action. Recently this has been demonstrated by Cushny[24] and Abderhalden[25] with adrenalin. The synthetic adrenalin is generally found to be less active than the natural product. After the successful cleavage of the synthetic preparation into its optically active antipodes, the dextro form was found to be comparatively inert the activity of the laevo form equaling that of the natural product. As the synthetic product is an equal mixture of the two forms, its smaller effectiveness was explained.

REFERENCES.

1. Pogge. Ann. 108,513.
2. Cahn and Hepp: *Zentralb. f. klin. Med.*, 1886, No. 33; *Berl. klin. Woch.*, 1887, Nos. 1 and 2.
3. Schmiedeberg: *Arch. exp. Path. Pharm.*, 8, 12.
4. Transactions Roy. Soc. Edinburgh, 1868, xxv, 707, and Proc. Soc. Edin., 1869, 560.
5. *Arch. d. Pharm.*, 235, 660.
6. Vulpian: *Arch. de phys. norm. et pathol.*, i, 472.
7. *Arch. exp. Pharm. Path.*, 20, 201.
8. "Naturliches System der Giftwirkung," München, 1893.
9. "Ueber die Bezichungen von chem. Constitution, Verteilung, und pharmak. Wirkung," *Vortrag im Verein für Innere Medizin*, Dec. 12, 1898, Berlin.
10. Overton: "Studien über Narkose," Jena, 1901.
11. Meyer, Hans: *Arch. exp. Path., Pharm.*, xlii, 109; xlvi, 338; xlvii, 431.
12. Treupel und Hinsberg: *Arch. exp. Path., Pharm.*, xxxiii, 216.
13. Where references are not given the reader is referred to S. Fraenkel: "Die Arzneimittel-Synthese," Berlin, 1906.
14. Filehne: Dubois' "Arch. f. Phys., 1886, 72.
15. *Zeitschr. f. physiol. Chem.*, viii, 266.
16. Marfori, Pio: *Ann. di chim. e di farmacol.*, ii, 304.
17. Stockmann and Dott: *Brit. Med. Jour.*, 1890, ii, 189; 1891, Jan. 24. Proc. Roy. Soc. Edin., xvii, 1890, p. 321.
18. Baumann and Kast: *Zeitschr. f. physiol. Chem.*, xiv, 52. Kast: *Berl. klin. Wochens.*, 1888, No. 16.
19. l. c.
20. Filehne: Dubois' *Arch. f. Phys.*, 1886, 72.
21. Stalnikow: l. c.
22. Miessner: *Berl. klin. Woch.*, 1891, 819.
23. "Untersuchungen über Kohlenhydrate und Fermente," Berlin, 1909. "Untersuchungen über Aminsäuren, Polypeptiden, und Proteine," Berlin, 1906.
24. Cushny: *Journ. Physiol.*, xxxvii, 130.
25. Abderhalden, E., and Müller, F.: *Zeitschr. f. physiol. Chem.*, lviii, 185.

The Champetier de Ribes Balloon in Treatment of Vaginismus.—L. Funck-Brentano describes a new minor operation for vaginismus in extreme cases, in which even a touch on the hymen causes intense contraction. He anesthetizes the patient, places a balloon having a diameter of 5 or 6 cm. in the vagina, then inflates the balloon and on its surface excises the hymen entirely with scissors. Then he extracts the balloon and introduces a larger one. The larger balloons must be extracted slowly for fear of tearing the vagina.—*La Gynécologie.*

PELLAGRA.*

By M. M. SMITH, M.D.,

DALLAS, TEX.

MEDICAL DIRECTOR MODERN ORDER OF PRAETORIANS.

THE Chairman of the Association of Life Insurance Presidents at their Fifth Annual Meeting held in New York, December, 1911, said in his address, "These annual gatherings may be likened to a great ocean liner in port, coaling up; laying in store the material that creates propulsive power, such as will enable it to stand the strain and buffet the storms that beat against it, when it comes to the real work for which it is built. And so, laying up in store the advice, the suggestions, the admonitions, the knowledge and wisdom of generous helpers, we may confidently trust those who are in command to study the charts, to lay out the course, to start the enginery, and to put in operation all those practical appliances which will most economically and effectively produce the results for which this Association was devised." What was so beautifully expressed by President Hegeman will apply with equal force to this organization.

The time alloted me for this paper will not permit of a discussion of pellagra in its various phases and I shall confine myself to those phases of the subject, which are of the greatest interest to the Medical Directors of Life Insurance Companies.

Pellagra is a disease which has been prevalent in Europe for more than a century. Its increase in many sections attracted the attention of some of the leading physicians of the world. The disease was regarded as a national menace in Italy and strong prophylactic measures looking to its prevention were enacted. So great was its prevalence that at one time there were more than 100,000 cases in Italy alone, and the infected area was only a portion of that country. At the present time the disease is most prevalent in Northern and Central Italy, Southern Roumania, the Austrian Tyrol, Southeastern Hungary, Lower Egypt, and the Southeastern United States. In this country a few isolated cases were discovered and referred to in medical literature prior to 1907, but at that time, authentic cases were reported to exist in thirty-seven States. Through information obtained through general reading upon the subject, and a correspondence with the professors of the chair of practice of the medical colleges of the United States, the various boards of health, and physicians who have been coworkers, I am inclined to believe that at the present time there exist from ten to fifteen thousand cases of pellagra in the United States, these principally in the Southeastern States. The most malignant types of the disease have been found in large numbers in the insane asylums. There is no question but what the disease is rapidly increasing in this country to-day, and I can truthfully say to an alarming extent. One writer of prominence (Dr. E. H. Martin, Hot Springs, Ark.) used the following language, "The importance of this subject may be realized when we consider there have been probably 100,000 cases of pellagra in the United States during the summer, and that we may expect possibly one-half million new cases next spring." This statement was made in a paper read at the Medical Section of the Southwest Medical Association in Oklahoma City, October, 1911. I am not, however, as much a pessimist concerning the disease as Dr. Martin.

Etiology.—The cause of the disease is not definitely known at this time. The general belief that poisoning by the use of Indian corn as an article of diet has been the theory as to its cause for the past century and this theory is particularly held in Italy where the disease has been most prevalent.

Another theory advanced in 1903 by Sambon that the disease is caused by the bites of the Simulium fly. This is of recent origin and is unquestionably more acceptable as an explanation for the cause of the disease and its confinement to certain localities.

Again, the theory of Allessandrini, advanced in 1910, is that it is a parasitic disease caused by a water-borne nematode worm. Many other theories have recently been advanced as to the cause of the disease. Some hold that it is a form of amebiasis; others that it is caused by the use of cotton-seed oil and other semi-drying oils, as articles of diet.

I shall not attempt to discuss these various theories, but merely mention them to show that, although the disease has existed in thousands of cases for more than a century in Europe and now in America, at the present time no definite and positive cause for it is known.

Diagnosis.—The diagnosis of pellagra in well-marked cases, where the skin manifestations and the constitutional phenomena are in evidence or the so-called pellagrous triad of erythema, nervous, and digestive disturbances are present should cause no difficulty; but it is a well-known fact that the disease is often not diagnosed by men who are recognized competent diagnosticians because of the lack of knowledge concerning its symptomatology, and the inattention to the literature of the current medical journals and public health reports of today. An early diagnosis where there is merely the first indications of the disease would necessarily be a difficult one, especially with those who are inexperienced with the disease.

Prognosis.—The experience with the disease in America shows that the mortality rate is very much higher in the United States than in Europe. In fact, the type of the disease seems to be much more severe here than in the Italian pellagra of today. The death rate of pellagra at the present time in the United States is probably from 25 to 33 1/3 per cent.; this includes the asylum cases. I should say with an early recognition and the most appropriate treatment of cases, extending over a long period of time, there is a very small mortality, but with the far advanced cases, particularly those found in the insane asylums, and in the typhoid type of the disease, the mortality is exceedingly high. The death rate is probably double in the United States what it is in other countries. It seems to be one of the characteristics of the disease for the prognosis to improve gradually with its continued existence. Whether this is due to a partial immunity being established, an attenuated virus as a result, or whether the mortality is reduced more on account of the physicians' experience with its symptomatology and treatment, whereby early diagnoses are made and the most appropriate treatment given, I cannot say.

Treatment.—At the present time there is no definite, specific treatment of pellagra. Nevertheless, much has been done in the last few years by physicians in various portions of the United States, particularly in the pellagra sections of the country, in outlining a general plan of treatment. This I shall

*Read by invitation at the meeting of the Medical Section of the American Life Convention, held in San Antonio, Texas, February 28-29 and March 1, 1912.

not discuss in detail, but simply say that the most successful plan at the present time is the regulation of diet, with wholesome surroundings, climatic change, if possible, and a suitable preparation of arsenic in the form of atoxyl, soamin, salvarsan, or other forms. Transfusion, serum treatment, and other plans have been used.

With the above-mentioned facts before us, namely, (1) the prevalence and rapid increase of pellagra in the United States; (2) that this is a disease the cause of which is not definitely known; (3) that it is a condition that is not diagnosed early; and (4) that it is a disease that has a very high death rate, should make us, as medical directors, give the problem serious consideration as we are the door-keepers, as it were, to the great savings banks represented in the form of life insurance companies.

What are some of the things which might lead to a successful solution of this impending danger? First, pellagra is a national health problem in the United States at the present time, hence it should receive the serious consideration of the National Health Department, including the boards of health of the respective states where it exists. Concerted action should be taken by both the National and State Health Departments looking to legislative enactments and appropriations sufficient to furnish money to carry on proper investigations where pellagra is present to any extent and where extensive detailed work may be done looking to the study of the cause of the disease, its prevention, etc.

Secondly, pellagra should be made a reportable disease, with a statute requiring all cases to be reported to the proper health officers, thus furnishing vital statistics and affording an opportunity for scientific investigators to ascertain the complete case-histories and such other information as may be desired which will aid very materially in ascertaining the cause of the disease, its prevention and the most successful treatment.

Thirdly, an educational campaign should be waged by the National Government, the respective State Health Departments where the disease exists, including the county and city health officers, for the education of the medical profession at large, so that they may be able to recognize the disease in its earliest stages and be prepared to administer the best possible treatment. Such educational work can be materially improved by well-arranged clinics through the various medical associations and schools and the presentation of suitable papers and their discussion in such organizations. In addition to these clinics, lectures should be held and wholesome literature for the people in general should be distributed so that the people may realize the value of healthy surroundings, the need of wholesome foods, the proper observance of rules of bathing, strict vigilance as to quality of corn preparations they eat, suitable screening for places of residence, and such other educational steps as will tend to better their condition, particularly of the poorer classes where the disease exacts its greatest toll.

Conclusion.—In conclusion, gentlemen, I have briefly referred to the uncertainty of the cause, the varied symptomatology, the grave mortality and the prevalence of this disease with its rapid increase in this country for the purpose of impressing upon you the importance and necessity of active work being done throughout the pellagra portions of the United States especially, so that we may not be in a state of unpreparedness in case of a real epidemic of the disease, but far more important it is to prevent such an epidemic, rather than to suffer its ravages.

In passing I desire to say that the company with which I am connected has paid four death claims in the past two years caused by pellagra and I do not doubt that other companies represented here have had similar experiences.

I believe the local medical examiner, who has no speaking acquaintances with this disease, might conscientiously recommend as a first-class risk for insurance, a comparatively early case of pellagra, should such a case undergo examination during the interval of apparent good health, as such periods are very common with the disease. By the dissemination of this knowledge among the local medical examiners of the various insurance companies, with the importance of the early recognition of the premonitory symptoms of pellagra stressed, as it were, thereby pointing to its early recognition, might be the means of preventing a large percentage of such cases being accepted as insurance risks.

As the conservation of the public health is of very great importance to all insurance companies, it behooves us as medical directors to bring before the management of our companies the importance of concerted action looking to more active steps being taken in a united way looking to the accomplishment of the things I have crudely suggested in this paper, which apply especially to pellagra; but will aid very materially in preventing the spread of other diseases.

OVERWORK AND FATIGUE IN RELATION TO NERVOUS PROSTRATION.*

By EDWARD LIVINGSTON HUNT, M.D.,

NEW YORK.

INSTRUCTOR IN NEUROLOGY, COLUMBIA UNIVERSITY; ASSOCIATE CONSULTING NEUROLOGIST, ST. LUKE'S HOSPITAL; CONSULTING NEUROLOGIST, LINCOLN HOSPITAL; NEUROLOGIST TO PENITENTIARY AND WORKHOUSE AND N. Y. CITY HOME FOR THE AGED; ASSISTANT CHIEF NEUROLOGICAL DEPT., VANDERBILT CLINIC.

Nervous prostration means nervous collapse. It is a condition to which the Hebrew, the Slav, and the Scandinavian are particularly liable—men and women in about equal proportion. It is a disease of early and middle life, seldom occurring before twenty or after fifty. It, therefore, comes at that period of life when the energies, the producing capacity, and the struggle for existence are greatest. Its coming is not abrupt but is heralded by many and familiar signs.

The danger signals which foretell a nervous breakdown are irritability, fault finding, and peevishness. The patient becomes suspicious and introspective. His work is done with less care and greater friction; it goes slower and its character deteriorates. The power to concentrate is diminished. He complains of headache, giddiness, and dyspepsia. Fears and anxieties appear: confusion and indecision complete the picture.

There are many types of nervous collapse, according as to which part of the nervous system is most affected. One patient may complain of pains, another of digestive disturbances, a third of apprehension and loss of assurance, a fourth of depression and so on, each of itself a symptom betokening loss of control and a nervous mechanism which "Like sweet bells is jangled out of tune, and harsh."

The nervous mechanism is a wonderfully planned and exceedingly delicate organism. Its adjustment is very fine. Little things, seemingly of no importance, affect it tremendously. A delicate and highly

*Read at a meeting of the Public Health Education Committee of the Medical Society of the County of New York, March 20, 1912.

organized nervous system is impaired by any excess. A room of bad air, an abrupt change of temperature, or an overdose of alcohol or of food may and can disturb its careful and steady workings. On the other hand too close observation and a too ready interpretation of the multitudinous signs, which appear in a nervous patient, may also materially disturb its workings.

The causes of nervous prostration are many and various. Of the predisposing causes the two most important are defective heredity and civilization. Of the exciting causes I might enumerate excesses, poisons, worry, competition, city life, lack of exercise, poor food, bad air.

Nervous prostration teaches us many things. It teaches us that we do not come into this world equal, that our attainments are not the same, and that as we advance our development is not similar; it teaches us that each man is a law unto himself; it teaches us that in many our ambitions must have limitations; it teaches us that if we become prodigal of our nervous energy we shall pay and pay heavily; finally it teaches us that we must have regard for the laws of physiology and of reason.

Nervous prostration is an overdraft; it means that you have strained the nervous cells, not to the limit, but beyond the limit; it means that you have pulled the walls of the physical house down about your head; it means panic. As the nervous system is intimately and closely allied to every other structure of the body it means that the ruin is widespread and the symptoms legion.

The great excess of the present generation is overwork. In this respect without doubt America leads all nations. Mills found that the average length of life in 105 overworked American public men was only fifty-eight, whereas in an even larger number of members of Parliament the average was sixty-eight. The American is apt to have completed his work before the Englishman begins to reap his reward.

Women are equally as susceptible to overwork as men. It is by no means an uncommon thing here in New York to hear women say that they have no time to accomplish all that they wish. Their varieties of interests are great and their understandings far exceed their nervous strength. Women are more apt to feel the effects of their overwork than men, partly because they possess more susceptible and more delicate temperaments and partly because they are more apt to neglect food and exercise. The society woman rarely exercises enough, the working woman rarely eats enough, neither gets enough of air and outdoor life.

Overwork was considered a virtue; now it is known to be a vice. It is recognized as a debauch—one to be shunned equally with those of alcohol, of opium, of meat, and of excessive pleasure. It is just as ferocious; it brings in its train just as many ills. Overwork is contagious. The very air of New York breathes and burns overwork. The wife of an overworked man is very apt to be driven from sheer lack of occupation and companionship into undertaking more and greater problems than are compatible with her strength. The high cost of living, the desire to emulate one's neighbors, and the wish for luxuries beyond their grasp are important factors in bringing about overwork in both the sexes. The hold which pleasure has on many precipitates overwork. The woman who is the breadwinner feels the need of relaxation and pleasure. To obtain it she has to make unusual and undue demands upon her strength. This is a form of overwork.

Overwork pleases because it stimulates; it entices because it leads to power; it entrances because it beckons fame. Regard it however from the opposite point of view. It enslaves the worker; it narrows his field of vision, augments his egotism, and deprives his family and friends of the pleasures of his society and of the benefit of his experience. It is a selfish fashion and one which inevitably leads to destruction. It makes a man unfit to live with and it makes him unmindful of his duties as a man, a citizen, and a patriot.

In saying these very hard facts about overwork I do not forget the old maxim which we have all learned in our childhood. I mean that very old saying that work hurts no man. It shall not be forgotten, but with it, hand in hand, should go the modern saying that overwork hurts every man. A quarter of a century ago Dr. Weir Mitchell in a classical book struck the keynote of this situation when he said, "Wear is use; tear is abuse."

Every man should work, but no man should overwork. How are we to discriminate between the two? Where draw the line? What is to be the measure of how much work a man should do? What are the indications that we have overstepped the boundary line of the possible work and have crossed into the region of the impossible overwork? In short, what is work and what is overwork?

There is no standard. There is neither physical nor mental guidepost which can mark for us the passage from work to overwork. In this respect every man is a law unto himself. Each constitution has to be considered on its own merits. What is one man's work is another man's overwork. Just as a child requires a smaller dose of medicine than a man, so it is in work. The dose of work must be regulated according to the needs, the requirements, and the abilities of the worker. It is well to bear this in mind. Neither a young nor an old man can exhibit the same energy, the same force, nor the same strength as one who is of mature years and in his prime. These facts are too often lost sight of and too hastily thrust aside. Either man or woman who has undertaken a task, who has entered into a struggle, should carefully consider his equipment and especially his nervous equipment. It was Our Lord himself who said, "Which of you, intending to build a tower, sitteth not down first, and counteth the cost, whether he have sufficient to finish it?"

Old as the hills, no better words than these could be brought to illustrate my meaning. Sit down first and count the cost—the cost of the nervous energy. Balance your nervous bank account as often as you balance your financial bank account. It is of much more importance to you. A surplus of nervous energy is the greatest asset you can have—so long as you do not speculate with it. Be satisfied with a fair return. Don't expect a large interest. Remember that a large return is the price of danger.

I once had a patient who told me that on one occasion in his life he had spent two whole days and two whole nights in his law office dictating to relays of stenographers. All the meals had been sent in from neighboring restaurants; tobacco, coffee, and work had filled up the forty-eight hours. Was this ennobling, was this worthy of a fine man? but let me tell you of the sequel to this debauch. A few weeks later he contracted a simple condition—a condition which you and I could readily have thrown aside. So low, however, were his vital powers and so abused and devastated was his nervous system that he developed a delirious and delusional state; this simple little condition turned into a protracted

and prolonged illness, which finally killed the man. Overwork not only injures the worker but it injures posterity. It not only deteriorates the worker but it deteriorates the work.

The woman who, in addition to her regular duties as the head of a modern New York house and the mother of several children, undertakes to keep up a large acquaintance, to join card parties, to do some studying, and then entertain and be entertained, is approaching the line of overwork. The home is a place of rest, and relaxation much more to the man than the woman. He is constantly shielded; she is constantly the shield. She therefore rarely finds it as easy to obtain rest at home as he does. Few women realize this, and therefore few systematically arrange or find it possible to arrange to rest at a time when it is most beneficial and most lasting. To rest, one must be free from cares, interruptions, and noise.

Let me cite one other instance of an overworked man. Somewhere here in New York there lives an ambitious and very hard working lawyer. He gets home at 7:00, swallows his dinner, and shortly after 8:00 he is in his study once more hard at work. Here he stays, writing briefs, studying cases, and outlining arguments until midnight. This is a nightly occurrence. I ask you is not that man overworking? Is he not injuring the unborn and is he giving his clients the best that is in him?

Overwork injures not only the nervous system but also the physical. The overworked brain is flushed with blood, the blood vessels are distended, and the delicate arteries continualy and constantly are put to their utmost. The artery is injured and in time there develops that bête noir of the middle-aged man—endarteritis or what you call a thickening of the arteries. From this result, as you know, depression, anxiety, melancholia, and a host of phobias.

There is a tendency in the schools to overwork. Children are driven. Few principals ever consider this; how can a class of twenty boys do the same amount of work when half claim their parentage from the peasant stock and half from overworked fathers? So then avoid overwork. Find the number of foot pounds that you can raise and don't raise one more. Get your gauge.

There is a form of overwork, exceedingly common and exceedingly disastrous—one which equally accompanies great intellectual labors and minor tasks. I allude to *worry*. When we medical men speak of the workings of the brain we make use of a term both expressive and characteristic. It is to cerebrate. To cerebrate means to think, to reason, and to reach conclusions; it means to concentrate and to work hard. To think then is to cerebrate and to worry is to cerebrate intensely. Worry is overwork of the most disastrous kind; it means to drive the mental machinery at an unreasonable and dangerous rate. Worry gives the brain no rest but rather keeps the delicate cells in constant and continuous action. Work is wear; worry is tear. Overwork, mental strain, and worry lead to a diminution of nerve force and to a destruction of nerve energy; they invite a prostration of the vital forces and cause a degeneracy of the blood vessels of the brain.

Exhaustion, another name for fatigue, may show itself either in the form of physical collapse, so that the patient lacks resistance, and becoming anemic and run down, falls a prey to any and every little ailment or in the form of mental collapse. An exhausted brain then gives way to depression, to fears, and to anxiety.

Exhaustion may be due to disease or to excess. It may follow too little or too much food. It may be the result of too much brain work and too little physical exercise or *vice versa*. It may come as the result of too great concentration in one particular direction. It may follow too much pleasure or result from bad air, alcohol, or worry.

The vast majority of nervous breakdowns are avoidable; they are the result of our own excesses and of the disregard which we show toward the ordinary laws of health and hygiene; they are the results of the tremendous demands which are made upon us by modern life; they are the results of the strenuous life.

How then can we who live in a big and busy city with the telephone and the automobile hope to escape this fate? What course should we follow so that we can still fill our niche in the work of every day life and fill it profitably, advantageously, and without danger? We should cultivate in all things moderation. We should be masters of ourselves. We should follow strictly the rules of health. Exercise, baths, and fresh air should be just as important as simple and good food. We should strive to expend as little energy as possible. We should avoid large public assemblages where the air is bad and the crowds weary us. We should not always strive and struggle to do something new and something different. We should cultivate contentment.

When you are thoroughly tired and begin to feel that peculiar sense of lassitude and exhaustion creep over you then it is time to have a change of work. I have known men who could work for a very long time so long as they constantly changed the character of their work. Give one set of cells a rest and utilize another. Have a variety of interests, keep abreast of the times, know a little about politics, art, and books. Have a hobby. Everyone should have some one thing in which he can interest himself and to which he can turn—some channel in which he can divert his energy, so that he can free it from the well-worn path of the daily labor.

Another lesson which we all need to learn is to think of our business only in business hours. When you leave the shop leave your business, when you lock your desk lock your thoughts. Have an hour in the day which belongs to your children. Spend it with them. It will help them and it will help you. Have something which will be of interest and pleasure to your children as well as of benefit to yourself. It may only be a romp in an improvised gymnasium, it may be a dip in the ocean, it may be a walk home from the station. If you can't do anything better, play bear with your boy. If you have no boy play bear anyhow.

The tendency of the business and professional men of the present day is too narrow. Their interests are too largely centered on their own advancement with a total disregard of everything else and everybody else.

When you are tired, when you are weary, and when things have gone wrong don't lie down with a book which you think you are reading and enjoying, but get out in the fresh air under the blue sky, play a game of tennis, ride a horse, or take a long walk. You will return refreshed, invigorated, and with renewed energy. Exercise makes energy. Oxygen gives force.

Never let your brain rehearse the mistakes and failures of the day. In the language of the nursery, don't cry over spilt milk.

Women should realize the great importance of being out in the fresh air. Man from the nature of

his life has to go out every morning and has to take a certain amount of exercise. Women do not get out enough and do not exercise enough. Every well woman should make it a rule to walk two miles daily. The seamstress, the school teacher, and the shop girl especially need long walks, good food, and fresh air.

Learn to sleep. Both men and women should spend more time in bed. Here in New York we do not sleep enough. There is nothing that will repair tired and jaded nerves quicker and more lastingly than a long unbroken sleep. I have known patients who complained of irritability, brain fag, and exhaustion, who when put to bed would sleep almost continuously for three or four days and nights. Sleep is of great value, it starts us anew, it supplies energy, it winds up the physical clock. It is a panacea for all ills. There is no greater remedy for worry than this same sleep.

"— the innocent sleep;
"Sleep, that knits up the ravell'd sleave of care,
"The death of each day's life, sore labours bath,
"Balm of hurt minds, great nature's second course,
"Chief nourisher in life's feast."

Avoid alcohol. It doesn't stimulate, it depresses. Avoid fatigue, it, too, depresses. Avoid large public assemblages. The air is bad and contact with great numbers is great wear.

Don't overeat, and above all don't overeat meat. If you wish to eat a great deal of meat then you must take a great deal of exercise. Earn your roast beef.

Don't hurry. Don't worry. As Dr. Mitchell puts it admirably in his novel, the "Red City": "Learn the lesson of the midyears of life—to be of all thought the despot."

54 West Fiftieth Street.

INJECTION OF PARAFFIN FOR INCONTINENCE OF URINE FOLLOWING TRAUMA TO THE URETHRA.

By EUGENE H. EISING, M.D.,
NEW YORK,
ADJUNCT SURGEON, MOUNT SINAI HOSPITAL.

The use of paraffin in surgery since its introduction by Gersuny about 15 years ago has, if nit fallen out of use, at least found narrow limits for its employment. In its earliest days it was used for many conditions for which it was entirely unsuited and beside meeting with failure at times invoked complications more or less disastrous. It is in connection with the intractible symptom of dribbling of urine in the female that I would revive interest in the injection of paraffin. From to time to time the cure of these cases has appeared in medical literature following the injection of paraffin, after operative methods have failed. It is to this list of cases that I would add two of my own.

The type of incontinence referred to is a relative one, that is the incontinence is not complete. There are usually to be found several ounces of urine in the bladder. The cause of the condition is invariably due to the mechanical effects of childbearing upon the surrounding muscular coats of the urethra, which is left in a relaxed condition. The symptom usually does not make itself manifest until the patient assumes the erect posture. Cystoscopically the bladder is found entirely normal. If the bladder is moderately distended with fluid, the fluid is retained until the erect posture is again assumed, when the dribbling recommences. The increase in the intraabdominal pressure caused by the corset increases the incontinence. Relief is sought from this distressing condition and after the nonoperative methods are exhausted, surgical means are usually pursued. The surgical measure is usually selected according to the exigencies of the case, with the view of restoring normal conditions and with the hope that the troublesome symptom will remain away. A disappointment usually follows. Or, as in one of my cases in which a deliberate dissection of the urethra through the vaginal wall was made and lateral plications were made over the urethra, a functional failure ensues.

Based on an experience of only two cases and from a citation of the literature, I would suggest the submucous injection of paraffin as the method of first recourse giving the greatest probability of cure. Herewith are reported the two cases:

Case I.—Mrs. D. J., age 36 years, mother of three children. Incontinence followed birth of first child, 14 years ago. Was treated at beginning with bladder irrigations, then followed a long period of neglect for about 10 years. The condition became aggravated and she was operated upon twice in the West. Following these operations the dribbling remained constant except when the patient occupied the horizontal position. The bladder was always found to contain several ounces of urine. In May, 1911, an operation was performed through a vertical incision in the vagina overlying the urethra. Transverse plications were made so as to narrow the lumen of the urethra for most of its length and mucous membrane was closed over it. The immediate result seemed good and the incontinence remained controlled for six weeks. Following this, although somewhat improved, the dribbling continued. In October, 1911, one injection of paraffin was made parallel to and along the urethra. The injection was followed by considerable reaction. The pain lasted one week and there was some swelling. From the very beginning the dribbling has ceased and the bladder control is now perfect.

Case II.—Mrs. R. M., age 38 years, mother of one child, 8 years old. Dribbling of urine has been constant since the birth of the child. The uterus was found large and retroflexed and was thought to be the cause of the incontinence. In January, 1911, ventrosuspension was done. After the operation all seemed well until the patient began to wear the corset four weeks after the operation. Incontinence is present only after the application of the corset. Three injections of paraffin were made, the first two proving only partially effective. The third injection was followed by cessation of the dribbling and perfect bladder control.

The purpose of this report is to emphasize the prompt and excellent results following this simple procedure. The paraffin used in these two cases was of the ordinary commercial type, no admixture of soft paraffin being used. The use of a special syringe is not necessary, if sterilized chamois gloves be worn so as to permit of the handling of the syringe while it is hot.

221 West Seventy-eighth Street.

Alimentary Anaphylaxis.—E. Lesné and L. Dreyfus find that this condition occurs most frequently among infants who have had previous digestive troubles. The alimentary canal has the power to a certain extent of neutralizing the toxic effects of the albuminoids. The authors believe that pepsin and pancreatin also have this effect. They therefore advocate the administration of these ferments as a means of preventing anaphylaxis.—*Le Bulletin Médical.*

PURE AIR BY DIFFUSION.

By JOHN F. LOCKWOOD, M.D.,

KANSAS CITY, MO.

We use natural gas as a fuel and for lighting purposes. There is little or no odor about our natural gas, and it is therefore not discoverable by the sense of smell when it happens to escape into the living apartments.

Last night the gas in our residence was lit in the upper hall, which communicates freely with the sleeping rooms. The gas pressure lowered and the jet went out unnoticed by us. Later, as is usual after everybody has cooked the evening meal, the gas pressure rose and all night long the gas poured into the sleeping rooms. The family slept in these rooms and passed the night quite comfortably. It was at 5 A. M. that we awoke and heard a roaring. It did not sound like steam from the steam radiators, so we arose to investigate. Then it was that we discovered that gas had been escaping all night long. When we realized that we had been safely delivered from what might have been a case of wholesale methane poisoning we began to praise the bridge that had brought us over. Let us here deliberately detail to the reader the "bridge." Please patiently follow:

Last fall, as cold weather began, we put into practice the following scheme for ventilating the sleeping rooms: It consists of providing each bedroom with a yard square of "gills." We call them gills because of their similarity of purpose with the gills of a fish—*supplying oxygen*. One window in each bedroom is selected and the lower half is fitted with a light frame (or the summer screen may be used) covered with 6½ oz. drill or muslin sheeting. This forms the "gills." Now for the modus operandi: In the summer time when the temperature of the air is such that drafts are not dangerous we have no trouble in getting the right quality of air to breathe, but when the cold weather comes we are driven indoors and in anticipation of sudden cold snaps we seal our houses, filling cracks and crannies until not a breath of fresh air can enter. We have two reasons for doing this: One is to prevent cold drafts striking us, and another and principal reason, it may be, is to economize in fuel.

In sealed houses in winter we breathe and rebreathe the same air and each time we inspire it we rob it the more of its oxygen and laden it the more with carbon dioxide.

When one retires to sleep in a pent-up atmosphere, vitiating it more and more each hour, toward morning one feels the need of more covers, for the feet are cold. Why? Oxygen which unites with the fat in the blood and thus by combustion warms the body is much exhausted from the sleeping apartment, and so the morning finds the sleeper chilly, not rested, not refreshed, not repaired; the head aches, there are malaise, stupor, and a disinclination to begin the day. Now had the same time been spent in a canvas inclosure the air would have been *continuously replete* with that life-giving quality—oxygen. Such environment tends to keep the atmospheres equal or even in quality.

Air is a mixture, not a chemical compound; therefore to rob it of oxygen does not disintegrate it, but only lessens its life-sustaining quality.

	Inspired Air. Per cent.	Expired Air. Per cent.
Oxygen	21	16.6
Nitrogen	79	79
Carbon dioxide	.04	4.4

With each inspiration fully one-fifth of the oxygen diffuses into the blood. Do we know this to be true experimentally? We surely do. Herein is a practical demonstration of a gas *diffused* into a liquid through a moist intercepting membrane (the wall of the blood vessel). How rapid the process must be that it should be performed between the acts of inspiration and expiration! Patiently consider with me the steps: When we inbreathe the air tubes, terminating in blind ends, expand, enlarge, the residual air in the lungs retires into these blind ends followed in by the tidal air, the oxygen from the tidal air leaps into the residual air and on into the blood through the moist membrane (blood container), changing the blood from a purple to a bright scarlet, from the venous to the arterial state. This is called oxidation.

This process is almost instantaneous, and yet it is performed where the intercepting membrane is of so dense a structure that it will retain a pulsating stream of blood. Surely it is axiomatic that oxygen diffuses faster in air than in liquid.

May we lay alongside of the above detailed process another similar process: That of air purified by *diffusion* through a septum of porous cloth: that of a canvas inclosure—a house tent for a consumptive, it may be. Conceive with us the situation. Surrounding this canvas inclosure is a great reservoir of pure free air, the inside air is being depleted of its oxygen and vitiated with carbon dioxide by the indwellers, but the two atmospheres are in contact through the meshes of the cloth. These atmospheres have easy access to one another for the process of diffusion of their gases. This tireless automatic process is keeping the inside atmosphere like the outside up to its full quota of oxygen (one-fifth) by *diffusion*.

"Gases are to each other as a vacuum" is a familiar rule in physics. It is the application of this rule that saved the household from suffocation when the natural gas was poured into the sleeping apartments all night long and yet it was *diffused* out through the muslin-covered window openings and that so rapidly that it did not interfere with reparative sleep.

We would impress upon the reader that though this process is invisible, it is none the less effective. We believe because it is invisible it is not appreciated as it should be. We have seen the brightest patients in hospitals where much of the window space was (intentionally) covered with muslin, replacing the glass. The most cheerful children in a child's ward equipped extensively with these "gills." And why not?

A young lady patient with heart disease (dyspnea) thought it was draft fanning her face that rescued her, but she was thoroughly calmed all night long with "gills" in her bedroom window (and no drafts). The oxygen was supplied to her in proper proportions.

Does not the very use we put pure oxygen gas to in emergencies bespeak a place for our process—pure air by diffusion? Give pure oxygen gas to the suffocated pneumonic patient. Give pure air by diffusion to the consumptive twenty-four hours out of every twenty-four hours and he is gradually restored to a life of usefulness.

SEVENTH AND WYANDOTTE STREETS.

Renal Infarcts.—If a patient suffering from septicemia develops acute pain in the back with the sudden appearance of blood and albumin in the urine, one should suspect the formation of a renal infarct.—*Canadian Practitioner.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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New York, April 27, 1912.

ANNUAL REPORT OF THE PUBLIC HEALTH AND MARINE HOSPITAL SERVICE

PERHAPS in no country is there an institution which has a scope of duties as great as that of the United States Public Health and Marine Hospital Service. Among these duties are scientific research and sanitation, the supervision of foreign and insular quarantine, immigration and interstate quarantine, and the preparation of sanitary reports and statistics. There is also a bureau having charge of the personnel and accounts of the service and miscellaneous matters. Each of these divisions is in charge of a medical officer. By means of special bureau regulations the several functions of these divisions are coordinated and their operations brought under the direct personal supervision of the surgeon-general. That all of these divisions work harmoniously is obvious to one who has a knowledge of what has been done by the service as a whole. It also emphasizes a fact already well known, that the average ability and capacity for work of the members of the service are of a high order. The report for the year ended June 30, 1911, contains a fund of valuable information. The report fills more than 300 pages so that only a cursory consideration of its more salient features is possible.

With regard to scientific research and sanitation it is stated that some of the investigations begun in previous years have been completed. Conspicuous among these have been the studies into the origin and prevalence of typhoid fever in the District of Columbia. It is of interest to note that the authority of Congress has been obtained to admit to Marine Hospitals for purpose of scientific study a limited number of cases of contagious and infectious diseases. Thus, at Wilmington, N. C., this provision has enabled the Marine Hospital staff to carry on investigations into the intestinal parasites of man, and similarly at Savannah, Ga., cases of pellagra have been carefully studied. Attention is drawn to the insufficiency of funds provided for the maintenance of the Hygienic Laboratory and it is properly urged that adequate provision should also be made for the special investigation of typhoid fever, tuberculosis, and pellagra. The last-named disease, particularly, threatens to become a national calamity. According to a conservative estimate there have been 25,000 cases of pellagra in the United States since 1907, when the disease began to attract attention.

During the fiscal year the service has inspected a total of 15,160 vessels at the domestic and insular quarantine stations and at foreign ports. The widespread epidemic of cholera which prevailed in Russia and Italy during the fall of 1910 and summer of 1911 necessitated the greatest vigilance on the part of the officers of the service and subjected its machinery to considerable strain. Fortunately the stringent measures resorted to had the desired effect of keeping cholera out of this country. The efforts of the service to guard the public have been especially noticeable in the Philippine Islands. In spite of the nearness of these islands to many infected foreign ports, and the almost daily arrival of vessels from such ports, the quarantine service has proved an effectual barrier against the entrance of disease. Indeed, the results attained with the aid of the military and civil health authorities in cleaning up the cities of the Philippine Islands, may be justly compared with the sanitary work done in Panama and Cuba. Universal vaccination has practically eradicated smallpox in the Philippine Islands. This disease is still unduly prevalent in the United States. The greatest numbers of cases reported during 1910 were in North Carolina, Texas, Michigan, Oklahoma, and Kansas. In Quebec the spread of smallpox has been shown to be almost wholly due to the neglect of vaccination and to the carelessness of the population with respect of mild cases. Probably a similar situation exists in this country and it is possible that only a rude awakening will dispel the prevailing belief that smallpox has lost its virulence and is not to be dreaded.

The medical inspection of immigrants has entailed considerable labor and has demanded not only expert medical knowledge but also tact and discrimination. During the past year 26 commissioned officers and 51 acting assistant surgeons were assigned to this work exclusively. During the fiscal year ended June 30, 1911, 1,098,809 immigrants were examined by medical officers of the service in regard to physical and mental fitness to enter the United States and its dependencies, Porto Rico and Hawaii.

The report records the endeavor of a particularly able and earnest group of men in safeguarding the health of the country and should commend itself to the consideration of all thoughtful citizens. Three thoughts are suggested by its study: First, that Congress should no longer endanger the permanence of the present high standard of efficiency by delaying the passage of the bill raising the pay of the officer of the service. Second, that when the Department of Public Health is established it should be built up around the Marine-Hospital Service as a nucleus, and should be, as is this service, a purely medical and sanitary institution, free from any political appointments. And third, that the quarantine service at New York and the few other places where the anomaly of a State or municipal quarantine still exists, should without delay be placed under the care of this body of trained sanitarians; the country would profit by freedom from the danger of imported epidemics and the State of New York would be spared a heavy expense.

THE TOXIC FACTOR IN TOBACCO.

The subject of tobacco smoking is one about which various expert and popular opinions have been formed, though generally these ideas have been almost as nebulous as the fumes of the seductive weed. Few will fail to recall the lurid picture of the baneful effects of cigarette smoking painted by the preceptors of youth, and the opinions of one's maturer years are largely tinctured with these early impressions, many of which were perhaps decidedly painful. At any rate there is at present lacking any exact knowledge of the relative toxicity of the various forms of tobacco and of the different methods of smoking it. For this reason the investigations recently conducted in the *Lancet* laboratory and reported in that journal of April 6, 1912, merit attention.

The objects of these investigations were to devise new and more accurate methods of estimating the amount of nicotine contained in tobacco-leaf; to determine the relationship of the true amount of nicotine in any tobacco to that in the smoke produced from that tobacco; and to determine whether this relationship is modified by the way in which the tobacco is smoked—in the pipe, cigarette, and cigar.

In regard to the first of these objects it is noted that the established methods of determining the percentage of nicotine have been vitiated by the fact that it has been difficult to separate ammoniacal compounds from the alkaloidal base. Without detailing the steps of the newer method evolved in the *Lancet* laboratory, it may be stated that this method eliminates the above difficulty, with the result that the amount of nicotine found in tobacco is decidedly less than commonly recorded. Thus instead of the 6 to 8 per cent. of nicotine as given by analytical authorities, it has been found that the tobaccos consumed by the public contain seldom more than 3 per cent. of nicotine, the average being about 2 per cent. or under. The highest amount is found in Perique, which as a rule is not smoked alone, but in mixtures containing various amounts of it. Cigars contain a smaller proportion of nicotine than pipe mixtures or even some cigarettes. There is very little difference in the amount of nicotine in American, Turkish, and Egyptian cigarettes. French tobacco contains a good deal more nicotine than any of these. Pipe mixtures contain more nicotine than cigarettes. An Havana cigar contains the least amount of nicotine (0.64 per cent.)

Of more importance than the amount of nicotine contained in the tobacco is the amount contained in the smoke drawn into the mouth. This varies widely not only in the different methods of smoking, but also with the different varieties of tobacco used. Thus one Virginia cigarette containing a nicotine value of 1.40 per cent., gave up only 0.12 per cent. to the smoke, while another Virginia cigarette containing 1.60 per cent. of nicotine yielded only 0.06 per cent. of the latter to the smoke. The same tobaccos, however, when smoked in the pipe, yielded to the smoke respectively 53 and 37.5 per cent. of the nicotine. The reason for these differences is the fact that the combustion of tobacco in the cigarette is more complete than the combustion in the pipe. There is free access of air to the burning cigarette end, while in the pipe the tobacco is in a kind of retort, and the hot gases formed carry nicotine into the smoke. Although combustion in the cigarette is more complete than in the pipe or cigar, nevertheless cigarette smoke contains injurious substances other than nicotine, among which are mentioned aldehydes, including acrylaldehyde or acrolein, a class of bodies noted for their intense irritating effects. Although pipe mixtures yield a large amount of nicotine to the smoke, they also yield a very large proportion of basic substances, including ammonia, and it is surmised that these bases prevent the formation of the irritating compounds often found in cigarette smoke.

On the whole it appears from these investigations that the cigar represents the least injurious form in which tobacco may be smoked, a fact which coincides exactly with popular experience. The choice of a cigar is, however, not only a matter of taste and extent of purse, but also of scientific discrimination. While a British cigar containing 1.24 per cent. of nicotine yields 83 per cent. of this to the smoke, the Havana cigar containing 0.64 per cent. of nicotine, liberates only 31 per cent. of this. Thus science acknowledges the supremacy of the Havana cigar in the domain of tobacco.

SODIUM NUCLEATE IN THE TREATMENT OF SCARLET FEVER.

Various nuclein preparations have been used in medicine and surgery as therapeutic and prophylactic remedies, ever since Mikulicz showed the powerful action of nucleic acid in calling forth a leucocytosis. It has been shown experimentally that nucleic acid partly protects animals from peritoneal infections, that it seems to have an abortive effect on such infections as erysipelas, and that in general it is of effect in indolent infections where very little reaction is apparent in the infected organism. Writing in *Russkii Vrach* for March 3, 1912, M. G. Molyakoff tells of his experiences with sodium nucleate in the treatment of scarlet fever, his observations being of sufficient interest to deserve a wider circle of readers than the Russian journal affords.

Molyakoff treated altogether 90 cases of scarlet fever, 7 of which reached the hospital on the second day of the disease. The most favorable effect of sodium nucleate appeared to have taken place among children of this group. The injection led to a rise in leucocytosis and the disease, or rather the toxemia as marked by fever, seemed to have been quickly aborted, the high temperature dropping to normal in from one to three days. None of these children died. To the second group belonged children that reached the hospital on the third to the sixth day of the disease. No abortive effect of nuclein was noted in this group of cases, yet it seemed to Molyakoff as if the mortality in the 71 members of the group was lower than is usually the case with scarlet fever patients in the Russian provinces. Three children of this group died, two from phlegmonous inflammation of the neck, one from cardiac failure. The third group of patients comprised those who reached the hospital late in the disease; there were few of them, and no effect, favorable or un-

favorable, was noted from the injections of sodium nucleate.

Molyakoff has also tried similar injections in a few cases of typhoid fever and of acute articular rheumatism. No effect was noted in the first condition, while in rheumatism the injections seemed to have exercised some favorable influence and especially had an analgesic effect on the joint pains. Molyakoff used a solution of sodium nucleate in 30 to 50 c.c. of distilled water using 0.1 gram for each year of the child's age. The solution was sterilized by boiling for five minutes. No untoward effects, beyond occasional headches, were noted.

The Titanic Disaster and Its Medical Heroes.

Then rose from sea to sky the wild farewell—
Then shriek'd the timid and stood still the brave—
Then some leap'd overboard with dreadfull yell,
As eager to anticipate the grave.

In almost every pitiful detail the lines written by Byron nearly one hundred years ago are descriptive of the scenes associated with the sinking of the *Titanic*. As one contemplates the harrowing fate of the fifteen hundred martyrs of the sea, there grows the feeling of admiration for those qualities of chivalry which leaped like a beacon out of the gloom and terror of the early morning hours of April 15. The mastery of civilization over the primitive instinct of self-preservation was never exemplified by greater heroism and devotion. Medical men should feel a sense of pride that the time-honored traditions of their guild were not violated in those trying hours. Dr. William F. N. O'Loughlin, the chief surgeon of the ship, was active to the last in the service of others. Buckling life belts on to more than a score of women and carrying many of them to the life boats, calming the frightened passengers, and in every other way striving to create order, the gallant surgeon finally awaited death with resignation. The sea claimed one who had served her faithfully for forty years, one whose ministrations to poor and rich alike had endeared him to thousands of travelers. Several other physicians among the passengers, together with the surgeons of the ship, went down, as thousands of others of our calling have met death in laboratory or lazaretto, or courted it fearlessly on the battlefields of war or of pestilence. All honor to those who shared the watery grave with their precious charges.

The Senile Heart.

The death by heart-failure of General Frederick D. Grant emphasizes the repeated warnings of the medical profession that we should treat a senile heart with respect. As far as we know there is not the slightest disagreement on this one point—every human heart over 50 and perhaps over 45, cannot stand much internal pressure without being ruined or at least damaged. A very slight man may go through severe muscular exertion with but little damage, but a heavy man, like the General, places on the heart and arteries a hydrostatic pressure beyond the safety point and it never recovers. When the system is placed under an extra strain by disease, the heart cannot stand it. The annual riding endurance tests are beyond human endurance. The pitiful feature of this deplorable death is the fact that General Grant in his last annual report had called attention to the opinion of life insurance examiners that army officers were becoming poor risks on account of the increasing strains of their profession. There is a suspicion that he felt it himself and was fully aware that a disease which would not ordinarily be fatal for many years, would kill him promptly. The increasing body of lay opinion against excessive exertion should now have some weight in preventing unnecessary strains in the future. The Surgeon General of the navy has shown that "trained" athletes do not last as well in the navy as the non-athletic. The statistics of Anderson of Yale do show that "Y" men in the last fifty years have had less mortality than the "weaklings" who could not compete, but the difference should be greater, for such perfect specimens ought to have far less mortality. It is safe to predict more deaths like General Grant's, unless we treat the heart of a man over 45 with more gentleness.

Syphilis and Paresis.

The most practicable method of studying this relationship has always been to trace the paresis back to syphilitic infection, and in certain cases this has been possible up to a negligible residue, so that most neurologists believe fully in the dictum "no syphilis, no paresis." The number of syphilitics doomed to become paralytic dements, and the influence of collateral factors have been much harder to arrive at. At a recent session of the Royal Imperial Society of Physicians in Vienna (*Berliner klinische Wochenschrift,* Feb. 19) Mattauschek and Pilcz make public the results of a collosal research which was conducted as follows: The army officers, 4,134 in number, who were known to have become syphilitic during the period 1880-1900 were all followed up to ascertain the proportion which developed paresis. This was found to be 4.67 per cent. It was also ascertained that by far the greater number of these had either suffered very little from the infection, or had been treated insufficiently. The two factors are naturally associated, for the mild, nonrelapsing cases are the very ones which naturally go untreated. But the most thorough antiluetic treatment is not always able to ward off paresis. More than this the statistics do not teach, although the paretic syphilitics were controlled by study of the nonparetic material. It appears that under protracted intermittent treatment the chance of paresis developing is somewhat less than under a single term of early treatment. Any sort of febrile infectious disease in the first year of syphilis seems to predispose the patient to paresis.

Can Normal Tissue Cells Be Cultivated in Vitro?

With that commendable conservatism which illustrates how little responsible scientists are influenced *à priori* by new discoveries alleged to have been made by their colleagues, leading pathologists in Germany who have repeated the original experiments have expressed themselves somewhat skeptically as to the nature of the supposed prolification of tissue cells *in vitro*. Some of the cell elements undoubtedly appear to multiply, but the phenomenon, they say, is susceptible of a very different explanation. The entire subject was vigorously debated before the Medical Section of the Schlesischen Gesellschaft für vaterlandische Kultur, Breslau, last December (*Berliner klinische Wochenschrift,* January 20). Among those who had repeated the English and American experiments were Pfeiffer and

Praussnitz while others present had had opportunity to study the preparations. Praussnitz explains the phenomenon as follows: The tissue placed in the culture medium undergoes autolytic changes which result in an aseptic necrobrosis. The connective tissue cells either migrate or are washed out into the nutrient plasma. That they may proliferate is not impossible, but strict proofs have not thus far been supplied. The speaker had experimented only with adult tissues, the reason being that the novelty of the discovery obtained only for fully developed structures. That embryonal tissue can continue to grow *in vitro* is not apparently in dispute, but it has commonly been denied that adult tissues possess the same property. That the connective-tissue cells of the latter do not undergo true proliferation is said to be evident from a comparison with the intracellular finds seen in actual growth. Carrel admits that mitoses do not occur regularly. The entire subject is of course one for earnest and patient investigation.

News of the Week.

Polyclinic Hospital.—The new quarters of the New York Polyclinic Hospital at 347 West Fiftieth Street, New York, were open for inspection last week. It is expected that they will be ready for the reception of patients about May 1. The building consists of ten stories, two basements, and a roof garden, the tenth floor being devoted to the kitchens. On the ninth floor is the operating room, dedicated to Dr. William A. Pryor. The roof garden commands a wide view of the city and of the Hudson River, and should be cool in summer; in winter it will be inclosed in glass and heated.

Police Surgeons to Parade.—Commissioner of Police Waldo of New York has ordered that this year the police surgeons of the city must join in the annual department parade, and must, furthermore, appear on horseback. Heretofore, it has been a matter of individual decision whether a surgeon paraded or not, and but few have, as a rule, cared to take advantage of the occasion to make a public display of their horsemanship.

Sterilization of Criminals.—Governor Dix of New York recently signed the bill passed by the Legislature providing for the sterilization of certain classes of male criminals and defectives confined in State institutions. The new law, which is in the form of an addition to the public health law, creates a board, to be known as the Board of Examiners of Feeble Minded, Criminals, and Other Defectives, to have supervision over the matter, the board to be made up of one surgeon, one neurologist, and one medical practitioner, each with ten years' experience. If after examination this board decides that an inmate of the class affected by the law would transmit to his offspring a tendency to crime, insanity, or feeble-mindedness, or that his own mental condition would be improved thereby, it is to appoint one of its members to perform the necessary operation. The law applies to those who have been convicted of rape or of such a succession of offences as the board may consider to afford sufficient evidence of confirmed criminal tendencies. The operations of the law are safeguarded by the provisions for a judicial review of the findings of the board before any operation is performed, and no order of the board can become effective until it has been on file for five days. Careful records are to be kept of the effect of the law's application. New York is the sixth State to adopt such a law, New Jersey and Illinois being among those in which such action has already been taken.

School Reorganized.—The University of California Medical School was recently reorganized with Dr. Herbert G. Moffitt as Dean. Dr. Wallace I. Terry heads the department of surgery, and Dr. W. W. Kerr that of medicine. The new plans include the concentration of the work of the school in San Francisco in a hospital to be built from funds furnished by friends of the school.

To Transfer Lepers.—The Government, it is said, proposes to transfer the leper colony of the Island of Guam to the Philippines, where the lepers are interned on Culion Island. Congressional action will probably be necessary as the appropriation made for the support of the lepers at Guam cannot be used for transferring them to or for maintaining them in the Philippines.

Infantile Paralysis.—The reports of the United States Public Health and Marine Hospital Service shows that whereas 5,861 cases of infantile paralysis with 950 deaths were reported during 1910, there were in 1911 only 1,033 cases with 440 deaths. During the past two years the disease was prevalent in all sections of the country, including Alaska.

Health Department Moves.—The offices of the Department of Health of the City of New York have been removed from the building at the corner of Sixth Avenue and Fifty-fifth Street, where they have been housed for some time, to the new headquarters building on the corner of Walker and Centre Streets. It is expected that the moving will be completed and the old building abandoned by the first of May.

Charitable Gifts.—By the will of the late Moses Weinmann of New York the sum of $5,000 each is left to the Mt. Sinai Hospital, the Beth Israel Hospital, the German Hospital Dispensary, the Montefiore Home, the Presbyterian Hospital, and St. Vincent's Hospital. By the will of the late Andre F. Bornot, of Philadelphia, the residue of his estate is bequeathed to St. Joseph's Hospital, St. Vincent's Home for Children, and the Church Home for Children. By the will of the late Harriet Evans, of Philadelphia, the sum of $5,000 is bequeathed to the Presbyterian Home for Aged Couples and Aged Men at Bala, $5,000 to the Presbyterian Orphanage, and $5,000 to the Philadelphia Home for Incurables.

Dr. John F. Anderson, director of the Hygienic Laboratory, U. S. Public Health and Marine Hospital Service, will deliver the Cutter Lecture on Preventive Medicine at the Harvard University Medical School on May 9 at 5 o'clock. The subject will be "Some Recent Advances in Our Knowledge of Certain Infectious Diseases." This is the second of a series of lectures to be given annually under the terms of a bequest from John Clarence Cutter. The lectures are free to the medical profession.

Dr. S. A. Knopf will deliver the oration on medicine before the Illinois State Medical Society on May 23, the title of the address being "Some Modern Medico-Sociological Conceptions of the Alcohol, Venereal Diseases, and Tuberculosis Problems."

Health Statistics for March.—The death rate in New York City for the month of March, 1912, was 16.01, a decrease of 1.59 as compared with the same month of 1911, when the rate was 17.60. The number of deaths was 7,030, a decrease of 415. The mortality from the communicable diseases was con-

siderably increased with the exception of measles and pulmonary tuberculosis, in which there were increases of 17 and 67 respectively. The decrease was especially marked in influenza, bronchitis, and pneumonia, the deaths due to these diseases totaling 207 less than last year. The mortality from cancer showed the increase which has been marked all through the last decade. The number of births reported was 11,463, a decrease of 180 from the total in March, 1911, while on the other hand the number of marriages reported increased from 3,412 to 3,436.

Death of Centenarian.—Mrs. Ida Oshinsky of Hancock, Mich., reported to be the oldest person in the State, died on April 13 at the age of 108 years.

The International Conference on Tuberculosis began its sessions in Rome on April 11, as a preliminary to the International Congress. A large number of delegates from America attended the discussions.

Bad Butter Seized.—By the order of the United States Government, Marshall Henkel recently seized in New York 30,000 pounds of decomposed butter which was in the possession of the West Shore Railroad, having been shipped from Chicago. The inspectors reported that the butter bore a close resemblance to Roquefort cheese.

New Hospital Building.—Plans have been filed for the erection of an eight-story building for the Beth David Hospital Association. The hospital will stand on the northwest corner of Lexington Avenue and One Hundred and Thirteenth Street, and will have a frontage of 60.11 feet on the avenue and 73.10 feet on the street. The facade will be of brick and terra cotta.

Willed His Brain to Science.—It has become known that the brain of the late Vladimir Koch, assistant professor of pharmacology in the University of Chicago, was willed to the Wistar Institute, of Philadelphia.

Philadelphia Medical Club.—A reception was given by the club on the evening of April 19 in honor of Mr. Charles C. Harrison, formerly Provost of the University of Pennsylvania, Mr. John H. McFadden, President of the Art Club; Mr. William Potter, President of the Board of Trustees of Jefferson Medical College, and Mr. Edward T. Stotesbury.

National Conference on Pellagra.—In response to invitations from the State Medical Association and the State Board of Health of South Carolina, the National Association for the Study of Pellagra will hold its next triennial meeting in Columbia, S. C., October 3 and 4, 1912, the week following the Washington meeting of the Fifteenth International Congress on Hygiene and Demography. An invitation is extended to all persons interested in pellagra to participate in this meeting. The cooperation of officers of the Government Medical Service, State Boards of Health, and State Hospitals for the Insane is especially solicited. Persons wishing to present papers will address the special committee, consisting of Drs. J. W. Babcock, J. J. Watson, and J. H. Hayne, Columbia, S. C.

Massachusetts State Medical Society.—At the annual meeting held on April 11, in Boston, the following officers were elected: *President*, Dr. George R. Southwick, Boston; *Vice-Presidents*, Dr. J. Herbert Moore, Brookline, and Dr. John H. Bennett, Pawtucket; *Secretary*, Dr. Edward S. Calderwood.

Fairfield County (Conn.) Medical Association.—The annual meeting was held in Bridgeport on April 9, when the following officers were elected for the ensuing year: *President*, Dr. James Douglas Gold, Bridgeport; *Secretary*, Dr. Frank W. Stevens, Bridgeport; *Treasurer*, Dr. Philip W. Bill.

Monongalia County (W. Va.) Medical Society.—At the annual meeting held in Morgantown on April 9, the following officers were elected: *President*, Dr. R. Coale Price; *Vice-President*, Dr. Clyde Watson; *Secretary*, Dr. E. R. Taylor; *Treasurer*, Dr. James A. Cox.

Rock Island County (Ill.) Medical Society.—The annual meeing was held on April 9, officers being elected for the ensuing year as follows: *President*, Dr. E. Sargent, Moline; *Vice-President*, Dr. W. D. Snively, Rock Island, and Dr. F. E. Clarke, Watertown; *Secretary*, Dr. W. D. Chapman, Silvis; *Treasurer*, Dr. A. T. Leipold, Moline.

The Georgia State Association of Health Officers held its annual meeting in Augusta April 16, and elected the following officers: *President*, Dr. E. E. Murphy of Augusta; *Secretary-Treasurer*, Mr. A. V. Wood of Brunswick.

The South Carolina State Medical Association met at Columbia, S. C., and elected the following officers: *President*, Dr. Chares M. Reese of Charleston; *Secretary*, Dr. E. A. Hines of Seneca. Rock Hill was selected as the next meeting place.

The Medical Association of Georgia has elected the following officers: *President*, Dr. W. W. Pilcher of Warrenton; *First Vice-President*, Dr. J. W. Palmer of Ailey; *Second Vice-President*, Dr. T. H. Hall of Macon; *Secretary and Treasurer*, Dr. W. C. Lyle of Augusta. Next place of meeting, Savannah, beginning the third Wednesday in April.

Northwest Texas Medical Association.—At the annual meeting held in Cisco on April 9, the following officers were elected: *President*, Dr. Allen Ivy, Waterford; *Vice-President*, Dr. B. F. Jones, Cisco; *Secretary*, Dr. A. D. Patillo, Petrolia.

Middlesex County (Conn.) Medical Society.—The annual meeting was held on April 11, when officers were elected as follows: *President*, Dr. F. B. Bradeen, Essex; *Clerk*, Dr. A. B. Coleburn, Middletown; *Censors*, Drs. M. C. Hazen, J. H. Kingman, and John E. Loveland.

Brockton (Mass.) Medical Society.—The following officers were elected at the annual meeting on April 11: *President*, Dr. R. A. Elliott, Avon; *Vice-President*, Dr. Harry R. Cloudman; *Secretary*, Dr. H. A. Chase; *Treasurer*, Dr. Joseph E. Brady.

New London County (Conn.) Medical Society.—The national reciprocity bill now pending in Congress whereby a physician holding a license to practise in one State is allowed the right to practise in all others as well, was endorsed at the meeting of this sociey held on April 4. The following officers were elected at the meeting: *President*, Dr. E. P. Brewer of Norwich; *Vice-President*, Dr. W. H. Gray of Mystic; *Clerk*, Dr. E. Oliver Winship of New London.

Iberville Parish (La.) Medical Society.—At the annual meeting in White Castle on April 4 the following officers were elected: *President*, Dr. A. A. Landry of Vaincourtville; *Vice-President*, Dr. E. O. Graham of New Orleans; *Secretary*, Dr. Rome D. Martinez.

Denison (Texas) Medical Society.—The election of officers at the annual meeting on April 4 resulted as follows: *President*, Dr. A. V. Rutledge; *Vice-President*, Dr. J. C. Carter; *Secretary-Treasurer*, Dr. J. A. Rutledge.

Tri-County (Ga.) Medical Society.—The annual meeting of this society, which embraces the counties of Early, Calhoun, and Miller, was held in Blakely on April 3 and the following officers were elected: *President*, Dr. P. H. Fitzgerald of Blakely; *Vice-President*, Dr. C. K. Sharp of Arlington; *Secretary-Treasurer*, Dr. J. G. Standifer of Blakely.

Obituary Notes.—Dr. Paul C. Freer, director of the Bureau of Science in the Philippine Islands, and dean of the College of Medicine in the University of the Philippines, died in Manila on April 17, aged 50 years. Dr. Freer was born in Chicago, and received his medical degree from Rush Medical College in that city in 1883. In 1887 he received the degree of Ph.D. from the University of Munich, and in succeeding years was assistant chemist at Tufts College and instructor and later professor of chemistry at the University of Michigan. In 1901 he was appointed superintendent of the Government laboratories in Manila and a member of the Philippine Islands Board of Health; and in 1905 became director of the Bureau of Science. Dr. Freer was editor of the *Philippine Journal of Science* and a member of many chemical and medical societies.

Dr. Samuel Oakley Van der Poel died at his home in this city on April 22. He was born in Albany in 1853, was graduated from Rutgers College in 1873, and from the College of Physicians and Surgeons, New York, in 1876. After serving for a year and a half as an interne in Bellevue Hospital he pursued his postgraduate studies in Vienna. On returning to this country he went to Albany to practise and was appointed adjunct professor of the theory and practice of medicine in the Albany Medical College. In 1885 he came to New York City, where he resided continuously thereafter. He was formerly visiting physician to the City Hospital and at Randall's Island, assistant surgeon to the Manhattan Eye and Ear Infirmary, and assistant in the throat department of the Vanderbilt Clinic. For fourteen years he was medical director of the New York Life Insurance Company. He was a member of the medical societies of the county and State of New York, of the New York Academy of Medicine, of the American Laryngological Society, and of the Society of Alumni of Bellevue Hospital. Dr. Van der Poel came from a medical family, both his grandfather, his father, and his uncle having been physicians, and his brother also is a physician of this city.

Dr. Francis W. Bowron of Brooklyn, N. Y., a graduate of the New York University Medical College in 1870, and a member of the New York State and Kings County Medical Societies, died at his home after a long illness on April 11, aged 65 years.

Dr. Horace Wardner Eggleston of Binghamton, N. Y., a graduate of the University of Vermont College of Medicine, Burlington, in 1895, and formerly first assistant in the Binghamton State Hospital, died at his home on April 11.

Dr. Russell Broughton of Rockford, Ill., a graduate of the Rush Medical College, Chicago, a veteran of the Civil War, and a member of the American Medical Association and of the Illinois State and Winnebago County Medical Societies, died at his home on April 4, aged 69 years.

Dr. James David Thorburn of Toronto, Ontario, a graduate of the Toronto University Medical Faculty in 1887, and a member of the College of Physicians and Surgeons, died after an operation for appendicitis on March 19.

Dr. Ira Adelbert Hix of Binghamton, N. Y., a graduate of the New York University Medical College in 1883, and a member of the New York State and Broome County Medical Societies, died at his home of typhoid fever on April 12, aged 53 years.

Dr. Philippe Ricord of Newark, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1868, and a member of the New Jersey State and Essex County Medical Societies, died on April 10 of pneumonia, aged 69 years.

Dr. George L. Reagan of Berwick, Pa., a graduate of the University of Vermont College of Medicine, Burlington, in 1865, formerly president of the Berwick Borough Council, and a member of the Pennsylvania State and Columbia County Medical Societies, died at his home on April 8, aged 75 years.

Dr. H. Preston Gilstrap of Kansas City, Mo., a graduate of the Washington University of St. Louis, Department of Medicine, in 1896, died suddenly on April 4, aged 45 years.

Dr. Truman M. Griffith of Pittsfield, Me., a graduate of the New York University Medical College in 1883 and a member of the Maine State and Somerset County Medical Societies, died at his home after a long illness on April 8, aged 59 years.

Dr. William C. Maloy of Atlanta, Ga., a graduate of the University of Georgia Department of Medicine in 1890, and a member of the Georgia State and Dodge County Medical Societies, died after a short illness of appendicitis on April 3, aged 56 years.

Dr. Walter A. Russell of Everett, Mass., a graduate of the Bellevue Hospital Medical College in 1898, and a member of the American Medical Association and the Rhode Island State Medical Society, died at his home suddenly on April 5, aged 39 years.

Dr. Thomas Virgil Hubbard of Atlanta, Ga., a graduate of the Atlanta Medical College in 1892, and a member of the Georgia State and Fulton County Medical Societies, died suddenly at his home on April 4, aged 43 years.

Dr. James D. Marsh died of apoplexy at North Bethlehem, Pa., on April 11 at the age of 60 years. He was graduated from Jefferson Medical College in the class of 1882.

Dr. Albert Henry Allen, a graduate of the College of Physicians and Surgeons, New York, in the class of 1904, and a member of the New York State and Franklin County Medical Societies, the American Medical Association, and the National Association for the Prevention of Tuberculosis, died in Saranac Lake, New York, on April 12, of tuberculosis, after a long illness, aged 37 years.

Dr. Victor Seymour Pier of Brooklyn, New York, a graduate of the College of Physicians and Surgeons, New York, in 1901, a member of the New York State and Kings County Medical Societies, and associate in gastroenterology in the Brooklyn Hospital, and physician to the Brooklyn Hospital Dispensary, died at his home on April 17, aged 36 years.

Dr. Henry A. France of Far Rockaway, New York, a graduate of the Albany Medical College in 1864, a veteran of the Civil War, and a former postmaster of Far Rockaway, died at his home on April 15, aged 70 years.

Dr. Warren B. Maxwell of Grafton, Mass., a graduate of the Dartmouth Medical School, Hanover, N. H., in 1876, died at his home on April 11, of pneumonia, aged 64 years.

Dr. Henry C. Miner of Topeka, Kan., a graduate of the Northwestern University Medical College, Chicago, in 1875, and a member of the Kansas State and Shawnee County Medical Societies, died at his home on April 4, aged 70 years.

Dr. Henry Martin Blake of Monmouth, Me., a graduate of the Bellevue Hospital Medical College in 1868, and a member of the Maine State and Kennebec County Medical Societies, died at his home on April 7, aged 75 years.

Dr. Frank Lee Drummond Rust of Boston, Mass., a graduate of the Harvard University Medical School in 1897, ophthalmic surgeon to the Carney Hospital, and assistant professor of ophthalmology at Tufts College Medical School, and a member of the Massachusetts State and Suffolk County Medical Societies, died at his home of septicemia on April 10, aged 38 years.

Dr. Mark J. Lehman of New Orleans, La., a graduate of the Medical College of Alabama, Mobile, in 1873, and formerly a member of the United States Public Health and Marine Hospital Service, died at his home on April 7, aged 57 years.

Dr. John P. Soliss of Sapulpa, Okla., a graduate of the Hahnemann Medical College and Hospital of Chicago in 1895, and a member of the Oklahoma State and Illinois State Medical Societies, died at his home on April 7, aged 63 years.

Correspondence.

THE MODIFICATION OF COW'S MILK.

To the Editor of the Medical Record:

Sir:—Referring to the milk formula printed in your journal on March 23, 1912, Dr. L. Monk has expressed his dissatisfaction with the excessive amount of proteins and the small amount of sugar. I am sorry that Dr. Monk had not consulted some one as to the exact percentage of the constituents in cow's milk. The average of a large number of analyses on milk made in this country shows* the percentage of proteins to be 3.30. Dr. L. Monk's objection is that the modified milk according to my formula will be 0.5 per cent. richer in proteins than it should be. But he is mistaken. The actual percentage of proteins in cow's milk is 3.30. The 7½ oz. of whole milk + 2½ oz. top milk employed in my formula contain therefore not 40 per cent. of proteins but 33 per cent.

The excess of proteins in the 20 oz. mixture is therefore not 10 per cent., as Dr. Monk thinks, but 3 per cent. This minimal deviation from the exact 1.5 per cent. of proteins intended for a child 6 months old is quite allowable when we bear in mind the fact that when we employ other formulas the deviation from the exact 1.5 per cent. of proteins is greater. In regard to the amount of sugar missing I thank Dr. Monk for calling my attention to the fact that I made a mistake in writing 120 instead of 140, which would give the child one oz. of sugar instead of 6.5 drams.

Dr. L. Monk is also mistaken in thinking that the formula cannot be used in every case. By careful calculations it can easily be utilized by the mother as well as by the physician. I doubt if there is a mother that would not understand this. In regard to the extra expense I do not see where that comes in. Two pints of milk cost exactly as much as one quart of milk. I trust that this will be understood and that with the method of calculating given in the original formula every intelligent physician will be able to use it with satisfaction.

M. A. Helfgott.

Baltimore.

*Amer. Exper. Station Record V, No. X.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ELECTROCARDIOGRAMS—CANCER OF THE COLON—CARBOLIC ACID AND QUININE IN PLAGUE—A PROFITABLE SEWAGE DISPOSAL SCHEME—ROYAL COLLEGE OF PHYSICIANS—OBITUARY.

London, April 4, 1912.

The debate on Circulatory Disorders at the Chelsea Clinical Society extended over two evenings. Sir Clifford Allbutt's opening address, of which I sent you an account last week, gave rise to some important remarks at the first, showing that the experience of some of our ablest physicians as to cardiac failure amounted to little. One talked of toxic conundrums and the need of research on the poisoning of snakes and of uremia and diabetes. Others spoke not only of the little known, but of the unknowable conditions which resulted in such contradictory experiences that a strict examination for life insurance in which nothing was detected might soon be followed by sudden death while another patient with gross changes lingered on and eventually died of senile decay with no sign of heart failure. But the interest of the second evening quite eclipsed that of the first for Professor Einthoven of Leyden read a paper on the Human Cardiogram and was followed by Prof. A. D. Waller from the physiological aspect, and he by Dr. Thomas Lewis, to whom more than any one, at any rate in this country, is due the extension of Einthoven's method to clinical investigation. The annual dinner of the Chelsea Clinical Society was also held on the 20th of March and naturally Prof. Einthoven was the guest of the evening, none of the speakers omitting to pay him compliments to which in due course he gracefully replied that his electrocardiogram had demonstrated the goodheartedness of English doctors. In addition to all this we honored the distinguished visitor at the R. S. M., where a special meeting was held in the Clinical Section for him to give a demonstration which was illustrated by lantern slides. You will readily understand that a full exposition of his views as stated at the two societies would fill ten or a dozen pages of the Record and that I can therefore only mention a few points without referring them to either meeting and so with the comments made by others.

The professor pointed out that his method shows the time relation between the action of the ventricles and auricles and enables the difference in time between them to be accurately and easily measured. Further, it gives a new insight into several diseases, among which must be mentioned auricular fibrillation. It shows, too, that the pulse is an important guide to cardiac action. Differences in magnitude of pulse do not necessarily correspond with differences of strength of cardiac contractions. A forcible ventricular contraction may produce only a feeble or even imperceptible pulse, if at the moment the left ventricle is not sufficiently full, which will be the case if the contraction of the auricles has not just preceded it or is insufficient itself. The irregularity of the pulse in auricular fibrillation is due to auricular, not to ventricular, irregularity. *Pulsus alternans* in which every second beat is small and feeble is probably due to inequality in the

strength of ventricular contractions. Tachycardia may be shown to exist by the electrocardiogram when the pulse is not rapid. We may judge the state of the heart muscle more accurately by the cardiogram than by pressure curves from the pulse. "Electrocardiography," said Prof. Einthoven, "is still a young plant. We may reasonably expect that it will continue to bear good fruit."

Dr. T. Lewis spoke of it as "a growing science," the value of which had received universal recognition—the instruments being installed wherever pathology and clinical medicine were efficiently studied. We were indebted to it for our knowledge of the site of the heart beat. It had shown us that the crises of paroxysmal tachycardia are not simple disturbances of innervation. It could detect not only functional disturbances of the main auriculoventricular bundle but also defects in its chief branches—a discovery of fundamental import in the study of heart diseases. Without an electrocardiographic examination the heart had not been completely examined.

Dr. Dally gave some account of a case illustrating the common experience that when heart-block has become complete the patient suffers less than while conduction is only partially interfered with. A series of electrocardiograms showed the auricular beats occurring at regular intervals but quite independently of the ventricular waves. This was only one example of the value of the method and he quoted from a personal letter he had lately received from Professor Lewellys Barker of Johns Hopkins University the following words: "It seems to me that sphygmography and phlebography have now in practical work little more than historical interest provided arrangements are made for electrocardiography."

Cancer of the colon is often associated with a second growth above or below—or with polypi. Mr. Cuthbert Wallace related in the Surgical Section a series of such cases and suggested these questions for consideration: Whether polypi below a malignant growth were produced by implantation of cells from the tumor and carried down with the feces; whether those above the growth were caused by regurgitation of feces carrying such cells upward; whether when two cancers were present in the large intestine the upper was always primary and the lower due to cells carried down. Mr. Gordon Watson said he rather thought multiple polypi were generally precursors of carcinoma. He mentioned a case in which no polypi could be seen by the sigmoidoscope but at the post mortem three months later a number were found below the growth. Mr. Symonds said that in the majority he had met with no polypi below these carcinomata. He had seen a case in which a number of polypi disappeared spontaneously.

At the Oxford Medical Society on the 8th of March Mr. W. L. Seymour gave some account of his experience as a medical plague officer during the two outbreaks in Scinde (1897-8). Guided by a long experience of the value in septic and infective diseases of carbolic acid and quinine he gave these internally, at the same time soaking the glands continually with carbolic oil (1 in 30) on lint. He claimed that in the second outbreak he obtained by this treatment a percentage of 75 recoveries. He mentioned that Kitasato found the bacillus did not grow in cultures after an hour's exposure to a 1 per cent. solution of carbolic acid, adding that he had himself found that quinine intensified the effect of that agent. He had no doubt that the spread of plague was rather by place infection than by transmission from person to person.

Bradford is to be congratulated on the success, pecuniarily, of its experiment in dealing with sewage, which has extended over ten years. The idea of the engineer was the recovery of the grease contained, and he has accomplished it, purifying it to a sufficient extent to dispose of it commercially. The solid residue after extraction of the grease he dries and compresses into blocks, which form a good manure, and are eagerly bought by farmers. The corporation deserves credit for boldly carrying forward the scheme. The buildings and plant have cost £60,000, but last year a profit was made of £30,000, and when some further buildings are completed it is expected to reach £50,000 a year. Profitable sanitation in the commercial sense is something to boast of. During the coal strike some of Bradford's manufacturers discovered that the blocks so far used as a manure on the land could be utilized as fuel.

At the Royal College of Physicians on Monday the president, Sir T. Barlow, Bart., delivered his annual address, in which he referred to the work of the college during the year, and noticed the diseases of those fellows who had died during that period. A vote of thanks was carried by acclamation, to which the president responded and vacated the chair. He was then almost unanimously re-elected, and having received again the insignia of office, plighted his faith once more and thanked the fellows for the new honor that had been done him.

Rev. J. G. F. Hearn, M.D., T.C.D., late chief of Dublin University Mission at Chota Nagpur, India, has died suddenly at Bournemouth, aged forty-five. He graduated in arts at Trinity College, Dublin, in 1891, took M.B., and B.Ch. in 1893, and the M.D. in 1896.

News has arrived of the decease of J. F. Rymer, M.R.C.S., who went as a medical missionary to Canada in 1907, intending to penetrate within the Arctic Circle and labor among the poor Indians at the several stations. He died in January at Fort Resolution.

Dr. R. A. Prichard, J.P., died on March 11, aged sixty-nine, at Conway, North Wales, where he settled in 1868, having qualified L.R.C.P. Ed. and M.R.C.S. Eng., the previous year. He attained a great practice, and took intense interest in the affairs of the borough, and during his career served as mayor and constable of the Casle no less than six times. In 1909 he was presented with a testimonial by the county in the shape of a handsome motor car. He at one time served in the volunteers and retired as surgeon-colonel.

Progress of Medical Science.

Boston Medical and Surgical Journal.

April 11, 1912.

Chronic Ulcer or Chronic Indigestion, Its Successful Teratment by Surgical Measures. A Report of Twenty-Five Cases. C. L. Scudder.
Chorionepithelioma. S. Rushmore.
The Relation of Gonorrhea to Pelvic Disease. G. W. Kann.
The Palliative and Operative Treatment of Anal Fissure. T. C. Hill.
A Delicate Method for Obtaining Hemin Crystals from Minute Blood Stains. W. F. Whitney.

Chronic Gastric or Duodenal Ulcer.—C. L. Scudder states that cases of intractable recurring dyspepsia in adult life are probably often cases of chronic duodenal or gastric ulcer. Cases of chronic ulcer of either the stomach or duodenum which have remained unhealed, as indicated by a persistence of symptoms, after carefully con-

ducted and skilled medical treatment for a period of from two to three months or longer are at present best treated by surgical measures. The reasons for surgical treatment in such cases are: (1) Medical treatment has failed to cure the trouble. (2) The exact duration and extent of the ulcer is unknown. Hemorrhage may occur and death result. (3) The stomach and duodenum may be perforated by the ulcer. (4) Carcinoma may develop upon the ulcer. (5) Obstruction at the pylorus may occur. (6) If untreated surgically, a still longer period of chronic invalidism will exist. (7) Surgery has demonstrated that it is possible to cure a large proportion of these chronic ulcers.

Relation of Gonorrhea to Pelvic Disease.—G. W. Kann believes that statements which claim that the gonococcus infection in the woman is responsible for 60 per cent. or more of the operations for pelvic inflammation are decided exaggerations and should be modified in the interest of truth and proper teaching. The statement that 45 per cent. of the cases of sterility are due to gonorrhea is also discredited by the reports of Bumm and Erb. From the figures obtained from hospital reports it is evident that operations for tubal disease represent from 5 to about 16 per cent. of gynecological operations, and even at that, the tubal disease is not always gonorrheal.

Treatment of Anal Fissure.—T. C. Hill states that a recent simple fissure without any hypertrophy of the external sphincter will invariably yield readily to palliative treatment; if there is only a slight degree of hypertrophy, excision of the fissure is sufficient; if there is a moderate degree only, dilatation under a general anesthetic is probably the best treatment; but if there is much hypertrophy and spasm, incision is the only operation that can be safely relied on to give permanent relief. This method has found almost universal favor among American proctologists and is practiced exclusively at the special hospitals for rectal diseases, St. Mark's and Gordons, in London. As first practised it consisted of a single complete division of all the fibers of the external sphincter muscle through the base of the fissure. It is now considered better practice to divide the muscle just to the right or left of the posterior median line, without regard to the location of the ulcer. The object of the operation is to eliminate the spasmodic action of the sphincters and so give the fissure a chance to heal. The incision should be made at right angles to the direction of the muscle fibers and carried outward for at least an inch to secure good drainage. It is important that the whole of the external muscle should be divided, and equally important to remember that one should be very careful not to injure the internal sphincter, as its division is invariably followed by some loss of control, if not absolute incontinence. Incision can be performed under local anesthesia in the majority of cases.

New York Medical Journal.

April 13, 1912.

Dorsal Root Section in Treatment of Spastic Paraplegia.—By L. P. Clark and A. S. Taylor. (See MEDICAL RECORD, Vol. 80, page 643.)

Value of Massage.—J. M. Taylor notes that in cases in which there is local congestion, by means of properly executed massage, the hypertension in the vessels can often be relaxed, bringing about prompt relief to pathological processes which, if unrelieved, would progress to protracted or deep-seated disorder. In acute coryza, distributed finger pressures on the second, third, and fourth dorsal vertebræ on either side will open up the nasal passage on the corresponding side. Febrile headaches, or congestion of the head or sense organs, are readily relieved by slow, distributed pressures on the posterior occipital nerves, and on the second, third, and fourth dorsal vertebræ. Colicky pains due to spasm of the pylorus can be promptly relieved by distributed pressures along the fourth, fifth, sixth, and seventh dorsal vertebræ. Acute fevers accompanied by phenomena of congestion—dry skin, vascular hypertension, and swollen veins and lymph vessels, are readily relieved by gentle pressures along the erector spinæ muscles and ligaments of the backbone, bringing about prompt diaphoresis and easement of sensory and other phenomena.

Diagnosis of Tumors of the Breast.—G. Barrie states that the diagnosis of tumors of the breast is made from the historical facts obtained from the patient; from the clinical examination; from the gross pathological picture; and from the microscopic study of the tissue. The clinical picture, presented by the history and examination, may be sufficient to give ample justification for making a diagnosis, and indeed in a majority of the cases one sees, it should be a correct one; according to Rodman, in seventy-five per cent. There is no doubt that with advanced knowledge regarding tumor growth, and the keener interest and fear of delay manifested by the laity in these cases, the large percentage in which a positive diagnosis can now be made, owing to the advanced state of the growth, from the clinical evidence alone will in future be greatly reduced. The earlier the tumor is seen, the more difficult it is to make a positive diagnosis from the clinical facts. If, owing to the early stage of the growth, or unusual features in the history and examination, the clinical picture does not clarify the situation, section of the tumor mass and its appearance in the gross should practically always do so. The occasion should be rare when one is dependent upon the microscope to make the diagnosis. The microscopic picture, given by the frozen section for immediate diagnosis, is sometimes confusing to any but the expert cellular pathologist, and, outside of institutions, such methods of making diagnoses are not feasible. The microscopic picture of tumor tissue given by the frozen section, or more carefully prepared slide, ratifies a diagnosis already made or suspected from the clinical and gross pathological picture. In tumors belonging to the benign group, the cellular structure of the mass, as seen by the microscope, is generally uniform, without a typical cellular change. In malignant growths, architectural irregularity, cellular change, degeneration, and invasion are observed.

Cancer of the Pancreas.—M. Packard in summing up the evidence in favor of the diagnosis of cancer of the body and tail of the pancreas, states that one must never lose sight of pain, with its characteristic distress and prostration. If a tumor mass is felt, its fixation, and its disappearance when the stomach and colon are distended, will distinguish it from new growths of the gastrointestinal canal. It is well to remember that cancer in any part of the body will cause an absence of hydrochloric acid secretion by the stomach. In pancreatic cancer, if jaundice is present, the gall-bladder as a rule will be distended, differing from the contracted bladder of biliary calculi. The subnormal temperature and the emaciation will also help in reaching a diagnosis. In the clinical examination of the urine, it is always well to examine a number of specimens. In all there is likely to be a marked oxaluria, in some a trace of sugar. The stools are bulky, containing undigested meat fibres, and sometimes free fat.

Microscopically, the nuclei of the muscle fibres are undisturbed, and chemically, there is little split fats and the casein remains undigested.

Leucoplakia Buccalis.—R. H. Ivy reports three cases of this condition and presents the following conclusions, which argue against the syphilitic nature of this disease. In the large proportion of cases the patches occur without signs of any syphilitic lesion past or present, elsewhere in the body, and without any history of syphilitic infection. In the author's cases the lesions failed to respond to any form of antisyphilitic treatment. In two of the cases the Wassermann reaction was negative.

Journal of the American Medical Association.

April 13, 1912.

Allergy or Anaphylaxis in Experiment and in Disease. L. Hektoen.
The Treatment of Sacculated Aneurysm by Wiring and Electrolysis. H. A. Hare.
The Surgical Treatment of Ascites Secondary to Vascular Cirrhosis of the Liver. Description of a Simple Technique. E. A. Babler.
Contribution to the Surgery of the Bones, Joints and Tendons (To Be Continued). J. B. Murphy.
Voluntary Submission to Treatment and Custody in Hospitals for the Insane. F. A. Fenning.
Contribution to the Diagnosis of Malta Fever. J. R. Mohler and A. Eichhorn.
An Epidemic of Septic Sore Throat in Baltimore and Its Relation to a Milk-Supply. A Preliminary Note. L. P. Hamburger.
Epidemic of Sore Throat Due to Milk. A Preliminary Note. J. L. Miller and J. A. Capps.
Cervical Rib. E. S. Evans.
Duplex Uterus (Didelphys). C. H. Frazier.
Note on Treatment of Typhoid Periostitis by Vaccine. F. C. Sharpless.
An Unusual Lithopedion. H. G. Smith.

Anaphylaxis.—L. Hektoen presents a comprehensive review of this subject. He believes it not unlikely that the fatal sudden collapse sometimes seen in typhoid fever and in the crisis in pneumonia are anaphylactic phenomena. The cutaneous manifestations of other diseases, such as smallpox, may be of the same nature. There is little doubt that the tuberculin and similar reactions are of anaphylactic nature, and sympathetic ophthalmia, eclampsia, hay fever, and asthma, and various idiosyncrasies, may also be of the same character. The old idea that the introduction of microbes and their products induced distinctively protective reactions seems to be against the facts of anaphylaxis, but the contradiction is only apparent. The difference is in the susceptibility of the normal and the sensitized animal, the action being so rapid in the latter that the toxic substances are set free in toxic quantities while in the normal animal the process is so slow that the symptoms are not produced. There is no contradiction between immunity and allergy which is a form of antibody reaction and an incident in the course of immunization.

Treatment of Sacculated Aneurysm.—H. A. Hare reports six cases of sacculated aortic aneurysm treated by wiring and electrolysis, in addition to the fourteen cases already reported by him. In every instance the growth was so large that death in the early future was imminent and in several cases the wall of the sac was so thin as to be blue or blackish in hue and bloody serum was oozing through the skin. In most of the cases death eventually took place, but in many if not all of the cases life was prolonged and relief or partial relief from the severe pain was obtained. Much depends on the condition of the aortic wall, and if the aneurysm is due solely to traumatism there is a chance for success. On the other hand, if the vessel wall is extensively or severely diseased the treatment is like trying to mend a rotten hose. In four cases a second operation was done on account of the artery giving away at another point, and in one case, a third, the patient finally succumbing to the rupture of a fourth weak spot. While it may be admitted that cases of direct prolongation of life are rare, it must be remembered that the condition is, except in the very rarest instances, inevitably fatal, and any other treatment would be ineffective. Moreover, the condition is often unrecognized until it has become desperate. The operation is the only one that offers material hope of prolonging life, this having been prolonged in one case at least five years. It is justified by the prompt relief of pain, which nearly always ensues and lasts unless the growth, extending in another direction, creates a new source of pain.

Surgery in Ascites.—E. A. Babler states that epiploexy is indicated as soon as the internist makes the diagnosis of ascites secondary to vascular sclerosis of the liver. The operation is contraindicated in Bright's disease in patients over 55 or 60 years of age or those in whom the excretion of urea is greatly reduced, and in organic disease of the heart or lungs. If there is marked jaundice, emaciation and hebetude all surgeons practically agree against operation. Epiplopexy is indicated in luetic and alcoholic cases. In carefully selected cases before general impairment of health has occurred the results should be satisfactory in 90 per cent.

Cervical Rib.—E. S. Evans states that when long enough to be clinically demonstrated a cervical rib appears as a rather hard tumor in the supraclavicular region at the root of the neck, usually on the left side. It may give rise to pain of the dull aching variety and frequently most marked over the ulnar distribution, and aggravated by the use of the arm and by moderate degrees of cold and relieved by raising up the arms. Hyperesthesia, similarly distributed but sometimes over the whole arm, may occur and is frequently associated with the other two symptoms mentioned. The muscles supplied by the ulner nerve are notably liable to atrophy. Respiratory disturbance due to the irritation of the phrenic nerve in its course along the scalenus anticus by a long cervical rib is believed to be a possibility, and dysphonia, cough, and even laryngeal paralysis, are occasionally noted from pressure or irritation of the inferior laryngeal fibers by the rib or the arterial dilatation it causes. Vascular phenomena depend in part on a constriction of the artery between the rib and the scalenus anticus and in part on vasomotor influences not clearly understood. Cyanosis or blanching may occur, but compression of the artery does not always account for it. The salient points in the diagnosis are: (1) the *x*-ray; (2) ischemia, with cramps in the hand, persistent or continuously intermittent; (3) pain in the arm, gradually increasing over a considerable period of time, aggravated by moderate cold and by use, and alleviated by elevation; (4) brachial neuritis, especially of ulnar distribution, with atrophy of the interossei and the thenar and hypothenar eminences; (5) a small, firm, pulsating tumor in the supraclavicular region with or without accompanying symptoms of pain, atrophy, etc., is, nine times in ten, a cervical rib. It is estimated that only about 10 per cent. of cases of cervical rib have any symptoms at all. It must be differentiated from (1) aneurysm of the carotid, subclavian or vertebral arteries; (2) brachial neuritis; (3) bursitis of the subcapsular or subdeltoid bursæ; and (4) occupation neuroses. The treatment is obviously surgical and the results usually satisfactory in the cases that have produced symptoms.

The Lancet.

April 6, 1912.

Modern Views Upon the Significance of Skin Eruptions. H. G. Adamson.
Pharmacology and Therapeutics of Lecithin and Phytin. W. Bain.
A Case of Angina Abdominis. Sir Lauder Brunton and W. E. Williams.
Acute Poliomyelitis and Allied Conditions. E. F. Buzzard.
Congenital Malposition of the Gall-bladder. A. J. Walton.
Telegraphists' Cramp. An Extract from the Report of the Departmental Committee, General Post Office, on the Subject, with Additional Matter. H. T. Thompson and J. Sinclair.

Significance of Skin Eruptions.—H. G. Adamson discusses first the eruptions due to physical injuries to the skin. An interesting and remarkable circumstance is the difference in length of time that elapses between the exposure to different kinds of injury and the resulting reac-

tions. To a mechanical injury, for instance, the reaction may be almost immediate; to burns it is a little delayed; to freezing (as with carbon dioxide snow) still further delayed; after application of a strong light (as the Finsen light) it does not occur for several hours, and after exposure to *x*-rays not for some days. The more unusual the kind of injury the more delayed the reaction. A possible explanation of this fact is that the tissues of the body have acquired a hypersensitiveness to damage done to them by the more common forms of physical injury. Those eruptions which are due to microbic invasion, may be of very varied aspect. For example, there are the scaly patches and broken hairs produced by the ringworm fungus, the vesicular and pustular lesions resulting from other ringworm fungi, the scaly macules of pityriasis versicolor, the comedo and the papulo-pustule of acne vulgaris, the follicular pustule of staphylococcic invasion, the vesicle or blister rapidly drying into a crust of streptococcic infection, the different types of eruption, papular, nodular, warty and gummatous—the result of infection by the tubercle bacillus, *Treponema pallidum*, sporotrichium, blastomyces, actinomyces, etc.; and to these are added the erythematous patches of a macular syphilide, the rose-spots of typhoid fever, and probably other erythematous eruptions. Blood vessel dilatation occurs in all of the deep-seated reactions, which are to be regarded as efforts of defence against microbes and their toxins.

Therapeutics of Lecithin and Phytin.—W. Bain concludes from clinical experience that lecithin is a valuable drug in cases of anemia and debility, and is to be regarded as a metabolic stimulus, for one can hardly conceive that the small amount of extra nitrogen and phosphorus administered in doses of a few grains daily can act as a tissue-former in any substantial degree. Its beneficial effect upon the nervous system is to be regarded as secondary to improvement in general nutritive condition, and not because lecithin is a "brain food." Its most striking effect is seen in the blood, the red corpuscles, white corpuscles (especially the lymphocytes), and hemoglobin percentage all being increased. Although there is some evidence that phytin (inosite phosphoric acid ester), a phosphorized constituent in vegetable tissues, may be of some value in herbivora, the evidence in favor of its utilization in carnivora and in man is either negative or conflicting.

Angina Abdominis.—Sir Lauder Brunton and W. E. Williams report the case of a patient aged 68 years who suffered from severe pain which came on when he began to walk. In this respect the pain resembled that of angina pectoris, but it differed in its position as it was most severe in the umbilical region. It was at first confined to the umbilical region and was attributed to flatulence, but it gradually increased in severity and extent so that it spread all over the front and back of the chest and caused perspiration to break out over his body. As this pain resembled so closely that of angina pectoris, but occurred in the abdomen, Brunton believed that it might well be termed angina abdominis, and that treatment similar to that of angina pectoris might be useful. He accordingly prescribed trinitrine with the most satisfactory results as it cut short the abdominal pain in the same way as it would have cut short anginal pain in the chest.

British Medical Journal.

March 30 and April 6, 1912.

A Lecture on Skin Rashes in Children. J. L. Bunch.
A Case of Late Syphilitic Glossitis Treated by Salvarsan (Ehrlich-Hata). Sir Malcolm Morris.
Sixteen Months' Experience of Salvarsan. G. G. S. Stopford-Taylor and R. W. Mackenna.
Cases of Chronic Purpura With and Without Cutaneous Lesions. F. H. Edgeworth.
Leishmania Donovani and Leishmania Tropica. R. Row.
Epithelioma of Hand and Glands; Removal of Two Fingers and the Glands. R. Parker.
On Acute Poliomyelitis (Heine-Medin's Disease). R. M. Hewitt.
Acute Anterior Poliomyelitis in Southwest Norfolk. G. F. Cross.
Serum and Vaccine Therapy in Connection with Diseases of the Eye. C. W. G. Bryan.
The Action of Tuberculin and Its Application to the Treatment of Different Forms of Tuberculosis. C. Riviere.
A Third Series of Twenty Cases of Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation. David B. Lees.
On Perez's Sign; and Audible Motor Crackles. With Special Reference to the Intrathoracic Tissue Sounds Elicited by Articular Movement in their Relation to the Diagnosis of Tuberculosis. W. Ewart.
The Influence of Strong, Prevalent, Rain-Bearing Winds on the Course of Phthisis. W. Gordon.
The Genesis of the Dicrotic Pulse Wave. D. W. Samways.
A Note on Blood Pressure Readings in Cases of Auricular Fibrillation. M. D. Silberberg.
Calcareous Degeneration of the Myocardium. J. A. Munro Cameron.
Results of the Treatment of Syphilis with Salvarsan at the Royal Naval Hospital, Haslar. T. B. Shaw.

Late Syphilitic Glossitis Treated by Salvarsan.—Sir Malcolm Morris reports a case of severe late syphilitic glossitis, in which the tongue was eroded and painful and its surface irregular and lobulated. It was so swollen that it could only be protruded with difficulty, and the teeth could not be seen. There were deep fissures and at the tip it was split completely through. Ulcers were present both on the tongue and on the lower lip. The Wassermann reaction was positive. On November 18, 1911, 0.6 gram of salvarsan was injected intravenously, the saline being made from water distilled twenty-four hours before use. There was very little general reaction on the day of the injection, but there was marked swelling of the lower lip. On the second day the patient felt very sick and uncomfortable, and his temperature was 102° Fahr., but it fell to normal in the evening and remained so. On the tenth day after the injection the tongue was less swollen and not so painful; by the twelfth day the ulcers had disappeared. During December the fissures began to heal, those at the base in the direction of the tip, the cleft at the tip in the direction of the base. By January 15, 1912, the fissures were entirely healed and the tongue had returned to its normal size. One of the conclusions drawn by the author from the history of the case is that tertiary syphilis is more amenable to salvarsan than secondary syphilis.

Salvarsan.—G. G. Stopford-Taylor and R. W. Mackenna record their results in the treatment of ninety-three cases of syphilis by means of this remedy during the past sixteen months. They conclude that salvarsan is efficacious at every stage of the disease in eradicating lesions that have resisted mercury and the iodides. The ideal treatment is an initial intravenous injection of salvarsan, followed by vigorous mercurial treatment, and if necessary by another injection of salvarsan.

Chronic Purpura.—F. H. Edgeworth states that whereas the acute form of purpura is well known and recognized, the chronic form of the disease has attracted less attention. In this form the lesions continue for months or relapse again and again. An important point in the diagnosis is the differentiation from hemophilia. Unlike purpura hemorrhagica this is neither congenital nor hereditary. In hemophilia the blood shows a considerable diminution in coagulability, but the clot once formed contracts; in chronic purpura hemorrhagica coagulation takes place normally, but the clot does not contract. Further, in hemophilia there is no considerable diminution in the number of blood platelets; in purpura hemorrhagica this is a marked feature. The author reports three cases of chronic purpura. In one of these three hemorrhagic crises occurred in the course of four years—in the first hematuria, in the second hematuria and rectal hemorrhage, in the third hematuria with gastric and rectal hemorrhage. These attacks were not isolated—hematuria of variable degree was almost constantly present in the intervening periods and followed the last attack. No hemorrhage took place in the skin, or from the nose, mouth, pulmonary tract, and menstruation was normal in amount. The coagulation time of the blood was normal. Turpentine controlled the violent outbursts of bleeding, and arsenic apparently brought about a cessation of all symptoms

The Application of Tuberculin.—C. Riviere states that since the reactivity of patients varies enormously according to their sensitiveness and how far this is covered by tolerance, it is well to begin with a dose so low that it is certain to be ineffective. The dose may then be very rapidly raised till some effect is noted. This must be looked for in a local reaction, or, failing this in some slight general effect, such as a flattening of the temperature, or a slight rise, or slight symptoms in the patient. Having reached this point, the doses must be raised more gradually, and for the gradation of dosage nothing is more suitable than a geometrical progression such as that supplied by Lawrason Brown. By this means risk of large reactions is reduced to a minimum, and yet, with skilful adjustment, the dose may be kept sufficiently near the reacting point to efficiently call forth an immunizing response, the main points of which are a slight focal hyperemia and the stimulation of antibody formation. It is unlikely that fever reactions will be altogether avoided.

Perez's Sign.—W. Ewart states that this sign consists essentially in the production of sounds audible over the upper thoracic surface on actively or passively moving the arms at the shoulder-joint, and particularly on raising or lowering them. Shoulder girdle conduction is also capable of picking up audible vibrations of extra-articular origin in the vicinity of, or at a distance from the joints, from muscles or membranes in contact with any of the links in that pleximetric chain. This is of practical importance, particularly as any incomplete examination might be misleading as to the localization of the cause either within the chest or at any part of its upper circumference.

The Genesis of the Dicrotic Pulse Wave.—D. W. Samways believes that the dicrotic wave is a ballistic or catapult wave, due to the longitudinal recoil of the first part of the aorta, after it has been longitudinally stretched by the contracting heart. When the ventricle contracts with sufficient force the aortic valves open, and the blood in the aorta and in the ventricle forms one continuous column under pressure. This rigid column occupying the aorta and ventricle presses its foot on the inferior wall of the heart near the apex, and is probably a chief factor in preventing the apex from moving upwards when the ventricle contracts. In fact, the arch of the aorta and the lower wall of the ventricle are mutually repelled by the pressure of the blood column lying between them and thrusting them apart. With a ramrod of blood pushing it down, the apex cannot come up during contraction, and the base has to be drawn down toward it during ventricular contraction, pulling with it the aorta, which consequently lengthens. The aorta is drawn like the finger of a glove over the blood at the base of the ventricle, the remainder of the ventricular blood being driven through the aortic orifice after it. As the aortic pressure rises and the outflow from the ventricle decreases, the aortic valves are pushed toward one another by the blood behind them in the aorta, and are finally closed. The pressure of the aortic column now falls on the valves, supported temporarily from behind, Mackenzie suggests, by the "hard, contracted, ventricular walls." Something else, however, now happens. The pressure in the aorta near the heart begins to fall, and the longitudinally stretched aortic walls soon begin to recoil to their normal length, just as the circularly stretched walls have begun to return to their normal diameter. And just as the circular recoil drives onward through the arteries the main pulse wave, so the longitudinal recoil, which follows closely on it, shoots on a second wave—the dicrotic or ballistic wave.

Berliner klinische Wochenschrift.

March 18 and 25 and April 1, 1912

Progress in Living Tissue Cultivation.—Carrel states that the life of animal tissue cultivated in vitro is too brief to permit of the study of many important points; so that the rate of progress in this field should depend largely on the degree of success attainable in prolonging the life of the culture. In the earlier experiments growth phenomena were not observed after two weeks. Life could be prolonged by transportation to new media but only for a short time. The author developed this principle by transplanting at an earlier period, retransplanting and washing out the culture on each occasion in Ringer's solution. In this manner not only was fresh pabulum constantly available but any possible inhibiting influence of heaped up katabolic products was eliminated. The whole procedure was roughly parallel to that in which intact tissues are concerned. In life, naturally, the circulating blood brings the nutriment and bears away the waste products. During the operation of these attempts at the rejuvenation of cultures it became apparent that the persistence of life was expressed in two phases, visible and latent. The culture could be made to pass from one phase to the other by alternation. Individual cells were made to live through as many as 18 different transplantations. It has been possible to keep connective tissue alive for two months. To obtain the best results small portions of tissue are taken from the embryo of a chick. These must not be crushed, for this produces death. The best culture medium is either plasma diluted with distilled water, or serum-agar. Recently the author has discovered the important fact that the tissue products are able to induce marked hemolysis in goat's blood when the culture has been made with the aid of the latter. Hence the tissues are able to cause the formation of hemolytic antigens.

Artificial Choledochus (Drainage Tube).—Wilms has now replaced the ductus choledochus communis on five occasions with sections of ordinary drainage tube. This resource is to be used only when suture, implantation, etc., cannot be practiced. The first patient had a cancer of the duct which made it necessary to extirpate the latter. A hard rubber tube was sutured at one end into the hepatic duct while the other was passed obliquely through the duodenal wall. There was no external biliary fistula, and the tube functioned well for the three remaining months of the patient's life. The success of the procedure led the author to resort to it in four cases of cholelithiasis in which the integrity of the duct was badly compromised. In one case the duct was extirpated in the fear of cancer and the rubber drain has now been worn a year without discomfort or untoward results. In the next case the drainage tube was expelled and a jejunostomy had to be done. In the next case the common duct could not be found in the midst of the cicatricial tissue. The drain was used here chiefly to shorten the time of intervention as the woman was cachectic. The first drain escaped into the duodenum. Another was inserted and worn for a time but was eventually vomited up. The patient made a complete recovery, an internal fistula evidently carrying the bile satisfactorily into the intestine. In the last operation, the common duct was left inside and the drain made to traverse it. Four months later it was expelled by the stomach. An anastomosis was then performed—hepaticus to stomach. The author has shown that these tubes are very well tolerated, and that their use greatly abridges the operation in cachectic subjects who upon regaining their health may, if advisable, submit to a radical plastic operation.

Periodically Changing Pupil (Athetosis Pupillarum).—Erlenmeyer describes a pupillary phenomenon which differs to some extent from all other recorded forms of changing pupil. In regard to shape this changes from round to oval or rather its naturally round outline constantly changes. During the change there is mydriasis. Nevertheless the condition is not excentric mydriasis, for

in the latter the pupil always changes back to its natural shape. To describe the entire cycle of changes in the two eyes requires several good-sized paragraphs. The attacks last for 16 to 20 seconds. One may or may not be followed by numerous others within a short time. There is then evidently a long period of quiescence. Owing to the periodic objective character of the phenomenon it was only due to chance that the author was able to study it. Nevertheless the attacks were accompanied by amaurosis, due apparently to the incessant change in shape and location of the pupil, and members of the patient's family had often witnessed the phenomenon. The latter was doubtless part of a general seizure of the nature of a vasomotor crisis with vertigo and pseudo angina pectoris. There were also many features suggestive of hysteria. There was a possibility of beginning arteriosclerosis of the aorta and coronaries. The patient was 48 years old and her heart was hypertrophied. A psychosis could be excluded, likewise alkaloidal poisoning. The author suggests the name "athetosis of the pupils."

Influence of the Blood Glands on the Psychic Functions.—Münzer begins a serial article on this subject, in which he states first that affections of the hematopoietic and metabolic glands are often associated with a series of psychic disturbances. There is, in fact, an intimate relationship between these glands and the central nervous system. Since we are almost in the dark as to the true nature of psychoses, this relationship should by all means be studied. The principal bodies to study from this viewpoint are the thyroid, hypophysis, and genital glands. In Graves' disease the psyche shows an abnormally high degree of affectability. The patient is strikingly irritable and restless, shy, easily disconcerted and diverted. His movements are characterized by a certain haste and want of steadiness. His moods alternate from depression to excitation. Hence on such a substratum psychoses readily develop. According to Ziehen these are of two different types. One is the acute hallucinatory confusion such as results from various intoxications, while the other appears to be a maniacal culmination of the natural tendency to excitation. In myxedema the psyche is affected in a measure exactly opposite. The affectability is greatly diminished so that the subject is quite indifferent to his surroundings. All mental processes are retarded. In order, however, to understand the relationship between the thyroid and the psyche one must begin with physiology. The developmental enlargement of the thyroid at puberty is well known, and at this period the psyche undergoes its mightiest transformation. During menstruation and pregnancy the organ also enlarges, and at these periods the emotional life is intensified. Again in senility with the blunting of the mental processes the thyroid undergoes atrophy. Certain writers even term the organ the "emotional gland," so manifest is its relationship to the affectability. But to explain this relationship few data only are available. Does the thyroid influence the nerve centers through the sympathetic? Or is thre an elective affinity between the thyroid products as they circulate in the blood and certain portions of the central nervous substance? Before attempting to answer these questions it is best to study some of the other glands. The article will be continued.

Tracheopathia Osteoplastica.—Haga had already reported a case of this affection, which consists of a deposit of cartilage and bone in the mucosa of the trachea. He gives another, a chance autopsy find in an elderly man. In his first case it could not be shown that the new formations were connected in any way with the tracheal rings. In the present one serial sections were also made, but again it was impossible to detect any continuity or other bond of community. Both patients died of cancer, and the first one had cancer of the thyroid. It is certain that the deposits occurred in a trachea, the seat of an inflammatory process, but beyond that all is conjectural.

Acquired Supersensitiveness of the Skin.—Sauerland who had been making a series of experiments on the degree of absorption of medicaments contained in ointments was led incidentally to the study of specific supersensitiveness of the skin. The test for absorbability was commonly a urinary one. Two substances tested were iothion and salicylic acid in various combinations. There was no congenital local supersensitiveness to any of the substances tested, nor was there any idiosyncrasy present toward them when given inwardly. But when a given area of skin had been treated repeatedly with the same preparation, an inflammatory reaction was finally induced. If a number of areas of skin were treated, some more and some less frequently, the anaphylaxis was manifested more severely in the area which had received the greatest number of applications. The more severe the reaction the shorter the incubation period, which ranged from one week to three or more. The author's earlier experiments were naturally made upon his own person and he was therefore in position to know that there was no peculiarity of any sort in the integument tested. After the experiments the skin remained sensitive to salicylic acid for over three months. The sensitiveness was clearly dependent on cumulative activity. Naturally these results suggest an entire series of future experiments of the greatest practical bearing.

Further Investigations into Anaphylatoxin and Bacteriotoxin.—Aronson refers to his earlier researches from which it appeared that many bacteria produce with guinea pig blood complement a virus which behaves in every way like an anaphylatoxin. From subsequent labors of his own together with much work since done by others in various fields of activity he concludes that bacteria alone are able to cause all cleavage processes with protein. Products are formed which may be highly toxic and which are in all respects the same as endogenous endotoxins. Hence in general infections not only are intoxications caused by the parenteral digestion of bacterial albumin, but the bacteria are able to cause the formation of toxins from the tissue proteids without any attempt at the formation of antibodies. The author's recent work with typhoid infection shows clearly that as far as that disease is concerned the substances which produce the anaphylactic reaction cannot be made to form immunizing antitoxins.

Influence of the Blood Glands on the Psychic Functions.—Münzer concludes his serial study with the following summary: The thyroid gland is of the first importance in expression of the affect life, this being shown by an entire series of physiological and pathological data. The posterior lobe of the hypophysis exerts a similar influence, while the anterior lobe exerts a trophic influence. The posterior lobe in addition to its influence on affect life may possibly be an independent center for the sexual impulse. The genital glands are the original seat of this impulse but also exert an influence on character and affect life. The pineal gland appears to antagonize the sexual impulse and, consequently, sexual maturity. All these glands therefore appear to stand in close relationship to the higher nervous centers and in virtue of this tie are able to modify the higher psychic life. At present there is no evidence that the suprarenals, parathyroids, and pancreas are able to exert a similar influence, hence these may not need to be reckoned with in connection with psychoses. The higher nervous centers may themselves produce an internal secretion. We know that in psychoses the blood glands sometimes appear to be involved secondarily, so that the possibility of reciprocal influence may be borne in mind.

Münchener medizinische Wochenschrift.

March 19 and 26, and April 2, 1912.

Appendicitis as a Borderland Disease.—Krogius writes in the interest of harmony between physician and surgeon in respect to the choice of treatment of appen-

dicitis. Himself a surgeon, he appears to find a ready way out of the dilemma without prejudice to either side. There is a benign appendicitis which is regular in course and shows no evidence of unfavorable progress, but instead the tendency is always to betterment. When the symptoms persist without tendency to improve the condition becomes a surgical one; and much more so is this the case where the evidence, however slight it may seem, shows a tendency to aggravation. Even a single symptom, become ever so little worse, indicates early operation. The prognosis is by so much graver, and need of intervention the more urgent when any one symptom becomes greatly aggravated, or when several unfavorable symptoms coexist. If after one attack resolution does not take place within reasonable time, when pain returns and does not abate again, or when a second attack of vomiting or a second chill occurs or when there is only persistent tenderness to pressure without tendency to lessen, it is as good as a diagnosis of impending gangrene or perforation and operation should not be deferred a day. No time should be lost through the palliative use of morphine. If the pain is severe enough for that, the condition is serious enough for operation. The author has now made use of these principles for seven years with a material of hundreds of cases, and in not one has his judgment been misplaced. If the conditions are balanced so evenly that a choice is impossible, one must operate, of course.

Tertiary Tuberculosis.—Hamberger believes that the infectious granulomata must exhibit a parallelism among themselves in respect to successive outbreaks and early and late lesions. He quotes Babes' opinion that leprosy as we know it clinically is practically a tertiary affection. The primary and secondary forms pursue a course so nearly latent as to escape notice. Tuberculosis must from analogy have its typical late lesions. Hence he does not look on pulmonary phthisis as representing the extended ravages of a local infection, but as a late visceral lesion of a systemic infection dating back for some years. Other late lesions comprise white swellings, some cases of bone tuberculosis, lupus vulgaris, renal tuberculosis, certain cases of tubercle of the eye, and types of hepatic cirrhosis and adherent pleurisy and pericarditis. This view is not merely the old belief that the greater part of tuberculosis in later life originated from childhood infection. A young child, an adolescent or an adult may contract the disease and in time show late lesions. The principal feature is the period of latency. The greater number by far of tuberculous victims are adults, just as are the majority of lepers. In either disease the period of latency may be as long as thirty years and is probably not much less than three. Syphilis behaves in the same manner. A particular type of delayed lesion is to be seen in certain fibroid affections. Here belong fibroid pulmonary phthisis, tuberculous cirrhosis of the liver, certain cases of adherent pleurisy and pericarditis, etc. Another type is characterized by promiscuous destruction of all tissues involved as in "white swelling" which involves bones, joints and tendons, and in nephritis.

Harmful Possibilities in the Use of Camphor.—Happich, having reference to the tendency to make use of large doses of camphor as a bactericide and analeptic, calls attention to untoward results which sometimes proceed therefrom. Some surgeons have thrown as much as 50 or 100 c.cm. of camphor oil into the peritoneal cavity after a laparotomy, and the belief has been freely expressed that camphor can do no harm. Even years ago Ziemssen stated that this substance "has no maximum dose." Nevertheless camphor is quite toxic to small animals, to the amount of one cgm. per kilo (three cgms. will kill a rabbit). Given as vapor and respired by the animal the toxicity is notably increased. The danger for mankind would lie in giving large doses to a badly weakened subject. The overaction of camphor is expressed ordinarily by marked slowing of pulse and tendency to collapse.

Relations of the Head to the Limbs.—Magnus discusses certain reflexes which he holds largely responsible for the maintenance of muscular tonus. He characterizes them as exquisitely tonic. There exists a sensory component which does not proceed from the sensory nerves of the muscles, and does not come into relationship with the reflex centers in the cord which nevertheless exerts a notable influence in maintaining muscular tonus. These elements proceed in part from the cervical region and aid in determining the position of the head on the trunk and in preserving permanently the muscular tonus of the lower extremities. Another course is the labyrinth, the relationship of which to muscular tonus has been extensively studied. The combined neck and labyrinth reflexes place the head in a certain definite relation with the limbs, whereby a certain movement of the head is associated with a certain attitude of the body. The labyrinth exerts a definite influence on the neck muscles. This subject has been studied both in the clinic and in animal experiment. Let us suppose that a child's head is in a definite attitude with respect to its trunk. The tonus of the individual limbs is determined and the position of the head now changed. After a variable interval the tonus in the limbs now shows a change. When the position of the head in space is changed, the alteration in tonus is called forth by the labyrinth reflex. When the position of the head on the trunk is changed, the alteration in tonus is due to the cervical reflex. It is evident that in various pathological states these reflexes will be found to be modified.

Röntgen Castration in Prostatic Hypertrophy.—Ehrmann refers to the experience in this field of Wilms and Posner and Hock, respectively. The author appears to have been the third to enter the field and thus far has treated but one case. Patient was nearly 60 years of age and had been found to present a much enlarged prostate with beginning urinary infection. He recovered readily through using a retention catheter. The uroseptic attacks continued, however, with suspicion of pyelitis. Severe hematuria was a feature of the case. Radiography of the testicle was then begun. After a short interval improvement began and continued steadily. The testicles diminished in size under the treatment. The prostate is much smaller and softer. The only symptom which persists is nocturnal desire to urinate.

Scopomorphinism.—Franck applies this term to a case of associated chronic addiction to scopolamine and morphine. Such a condition would be likely to come about only through the availability of a combined solution of the two principles. The patient was a male, 32, neurasthenic, upon whom an operation had been performed under scopolamine-morphine narcosis. He straightway began to use the narcotic mixture as supplied to the profession in ampullæ and continued the use for over a year. At first he injected one ampulla every evening, gradually increasing the frequency and dose until he was using three ampullæ thrice daily. The syndrome set up comprised emaciation, profuse sweats, general tremor, a high degree of mydriasis, constipation, marked increase in activity of the reflexes, and impotence. The characteristic stupor which develops after the injections would sometimes appear in their absence. The condition was purely psychic, however, for the subject instead of resting, pursued numerous activities automatically and without the least subsequent recollection of events. At last an equivalent state appeared to replace sleep so that the victim did impulsive, purposeless acts, such as seeking for supposed lost property. He was able to transact business behind the counter, but his affairs eventually suffered more and more. Of interest is the fact that the subject could not at any time tolerate morphine alone. He was readily cured within a month.

The Gurita.—Under this name Kolb describes the bandage worn by the Javanese women after confinement to preserve their youthful outlines. The Hollanders appear to have copied this custom from the native women and the European women have evidently borrowed the practice from their colonial sisters with slight modifications. As recommended by the author it is a wide corset reaching from the breasts to the mons veneris. The aperture is at the flank, in advance of the lateral line. The posterior flap has some ten tails or straps and is long enough to overlap the anterior flap. The margin of the latter is free, but in the opposite inframammary line a corresponding number of tails or straps is attached. When the bandage is in place the two sets of tails may be knotted together, or straps and buckles may produce the same effect. The underlying ideas may of course be carried out in a variety of ways, and such apparatus could readily be extemporized. The bandage appears to be soft and free from anything intended to confer rigidity. The author employs it in other conditions, and it may be applied during labor to increase abdominal pressure. It also makes a good abdominal support for pendulous belly. It cannot be claimed that the idea is in any sense new in Europe. Old accoucheurs used to apply towels in a similar fashion during labor. The bandage in common use immediately after delivery, and fastened with a series of safety pins, is not unlike it. The novelty doubtless lies in the wearing of it systematically as a prophylactic by a young normal woman.

Thrombosis of Arm Veins from a Blood Pressure Instrument.—Mohr describes a case of this peculiar character which tends to show that it is not absolutely safe to take pressures repeatedly in cachectic, bed-ridden subjects. The patient had caseous pneumonia of tuberculous nature and was very ill. The pulse was unusually good considering, ranging from 74 to 100 only although the fever ran high at times. On this account probably, readings were taken daily for two weeks. At first 132 mm. was recorded, but the figure sank steadily to 110. At this period it was noted that thrombophlebitis had developed in the median cubital vein. The process extended to the cephalic and basilic veins. The fact that a mild thrombosis also affected the veins of the left leg showed the strong element of predisposition which had been present, but the reporter had no doubt whatever that the arm thrombosis would never have occurred in the absence of the sphygmomanometry. The bandage had doubtless caused a minute endothelial lesion. The patient recovered alike from the thrombosis and pneumonia.

Deutsche medizinische Wochenschrift.

March 21 and 28, and April 4, 1912.

Chemotherapeutic Problems.—Blumenthal has for some years past studied the affinities of various chemical substances for the organs of the body from a two-fold viewpoint. First, by this means he has hoped to arrive at a knowledge of scientific therapeutics, and second, because light might be thrown thereby on physiological processes. For over a year he has worked with the aromatic arsenicals. It had been believed that many healthy animal tissues possess a decided affinity for arsenic but the author was unable to confirm this. On the other hand there seems to be an affinity on the part of arsenic for certain tissues in diseased animals. More recently he has studied mercurials from this viewpoint. The toxicity is naturally dependent on the solubility or ionisability of the combinations. When syphilis yields to mercuric bichloride only a trace of the latter is actually concerned in the reaction. When thus administered, as in hypodermic injections of solutions, mercury shows a notable affinity for the liver, and for no other organ. But if the metal is used in colloid suspension there is no affinity shown for the liver; the remedy is therapeutically weak because it is very promptly eliminated. It therefore appears that there is a direct relationship between an ionisable preparation, attraction for the liver with temporary sojourn in the latter, tardy elimination and therapeutic efficiency. But there is no parallel between organotropism on the one hand and toxicity or therapeutic effects on the other. Iodine has an affinity for cancer cells yet does not modify them in any way. This kind of organotropy may perhaps be of use in the future for transportation, or for displacing some active organotropic substance from an organ. For example iodine might be so incorporated in an arsenical molecule as to carry some of the arsenic into tumor tissue. Again iodine by displacing mercury from the hepatic cells might be made doubly efficacious in the treatment of syphilis if given after a period of mercurial treatment. If given side by side as in the mixed treatment, iodine doubtless weakens the action of mercury. This could be an advantage or drawback, according to circumstances.

Toadstool Poisoning.—Schurer states that our knowledge of this subject has been somewhat advanced by recent labors in Kobert's laboratory. Two poisons are now known to be active in these cases, an alkaloid and a hemolytic principle which is termed phallin and is believed to be a toxin in the narrower sense, i. e., a substance capable of forming antitoxins and against which animals may be immunised. A recent episode of mushroom poisoning in man has been studied in the light of the new discovery. An adult male who had eaten heartily of the fungi was seized at night with violent persistent vomiting, diarrhea and painful tonic muscular spasms in the calves of the legs, which eventually became generalized. The general reaction was not very marked. On the third day there was swelling of the liver which soon subsided. The urine showed no evidence of hemolysis or of destruction of the hepatic parenchyma. The wife and four children of the patient presented similar symptoms and all recovered save the youngest child, who in addition to the evident predisposition of youth had eaten very heartily of the toadstools. In this case there was absence of the usual incubation stage. The convulsions were very severe, clonic as well as tonic and were succeeded by fatal coma. In this case, therefore, the higher nerve centers were involved, as was abundantly shown by autopsy. The type was not that of encephalitis but represented purely a degeneration of the nerve cells. The fungus eaten was the amanita phalloides and the syndrome set up was typical of toadstool poisoning. There is not the slightest evidence of a hemolytic component in these human cases, save that there was slight icterus in one case and urobilinuria in another. The incubation period of ten hours or thereabouts is the sole feature which suggests a toxemia. But neither is the syndrome especially suggestive of alkaloidal poisoning. A complicity of two poisons seems involved and at present we can only assume that the alkaloid sets in motion some disintegrating process in virtue of which a secondary autointoxication results. As yet we have no rational or even empirical treatment of toadstool poisoning.

Treatment of Laryngeal Tuberculosis.—Killian states that this is a tertiary lesion, hence necessarily of unfavorable prognosis. He believes with Römer that the great majority of tuberculous adults were infected in childhood. Practically laryngeal tuberculosis represents an autoinfection from the lungs at the time at which a closed pulmonary focus opens. Other portions of the upper air and food passages are exposed, but the larynx is almost always the part to be infected. In making an exact diagnosis it is sometimes advisable to inject morphia subcutaneously in addition, of course, to the use of local anesthetics. Brüning's magnifying laryngoscope also facilitates examination. Not every consumptive who is hoarse is a victim, although some of them may have suffered and recovered spontaneously, for

mild and benign cases are known to occur. There is also a class of suspects who present equivocal lesions in the larynx to the mirror. If the lungs also show evidences of the disease the suspicion is much intensified. However, the disease does not develop in the larynx, although there may be a possibility of arrested development. Such cases are probably encountered chiefly by the inexperienced laryngoscopist. The general principles of treatment remain much the same as they were a generation ago in regard to cautery, excision, laryngo-fissure and extirpation and it remains only to consider the value of new discoveries in this field. Radiography and solar rays have a favorable action and may be used as accessories. Galvanocaustic deep puncture, introduced by Grünwald in 1907, has been found of value by the writer in cases with much infiltration. He has no doubts whatever that there is a hematogenous form of the disease; in fact, he has almost witnessed the evolution of miliary nodules on a healthy looking mucosa. If there is any suspicion of this component in a case it is best not to attempt anything radical until the case has been watched.

Treatment of Surgical Tuberculosis with Tuberculin.—Rosenbach uses the tuberculin which goes by his name both for diagnosis and treatment. He reports 48 cases of a miscellaneous character—tuberculosis of bones, lymph-nodes, serous membranes, and skin. His method may be illustrated by a case of very severe and disfiguring nasal lupus in a child. Patient otherwise healthy. She was treated with tuberculin and the curette. The lesions healed promptly, but showed a notable tendency to recur *in situ*. The recurrences, however, were progressively less prompt and extensive and finally ceased. The patient had been under treatment over two years and made a fair cosmetic recovery.

Collateral Activity of the Peristaltic Hormone.—Hesse refers first to the early work of Zuelzer, who studied the peristaltic hormone for two years before pronouncing the latter absolutely safe in practice. He admitted that it might cause slight nausea, vomiting, and temperature rise (hormone fever). Other investigators verified his statements fully in these particulars. The author, however, is compelled to take issue with them all in the matter of the safety of the preparation as it occurs in the markets. Dittler and Mohr have described a case of serious collapse from an intravenous injection, the blood pressure falling from 125 to 100; so that it was necessary to give camphor as an analeptic. Investigation has since shown that the blood pressure always falls after these intravenous injections, even in very small dosage. In other words this is the really typical feature of its action. Kretschmer has also reported a case of collapse requiring the use of adrenalin and saline infusion. Finally the present writer adds the third case. Collapse occurred during the injection and was very severe in character. The possibility of anaphylactic shock in these cases may be excluded. In the absence of complete data the author concludes that if a patient has at the outset an abnormally low blood pressure, the hormone produces collapse by acting merely in the normal fashion. Hence a reading should always be obtained just before the remedy is to be exhibited. There is another factor in evidence. The commercial preparations cannot be standardized and do not always represent one and the same substance. Popielski has shown that they exhibit considerable variation in their action on the blood pressure.

The Neisser-Seibert Lues Prophylactic.—Sklepinski recalls the fact that two years ago the two authors published a fat free ointment for inunction after coitus or other possible exposure to syphilis. The only bactericidal substance was mercuric chloride, the other ingredients comprising starch, tragacanth, gelatin, alcohol, glycerin and water. It appears that a preparation represented to be the foregoing has been placed on the market under patent rights. Those physicians who believe in practising medicine with "package goods" will be interested in learning the success of this idea in the present case. Since stability and low cost are of first importance the author has investigated the specimens obtained from the viewpoints of permanence and fidelity to the published formula. The proprietary was found to be faithfully prepared. The author also had prepared an ointment from the original recipe and compared it with the market specimen. Both ointments were found to be unstable on standing, and this was readily shown to be due to too much alcohol, the content of the latter being 25 per cent. By the simple expedient of substituting 10 per cent. of glycerine at the expense of the alcohol the ointment became permanent. The modified formula is as follows: Take tragacanth pulv. 2, glycerin 27, and mix. Then add gradually, warming, sodium chlorate, 1, amylum tritic. 4, gelatin alb. 0.7, distilled water 50. Under continued stirring, and allowing the mass to cool add sublimate 0.3 dissolved in alcohol 15, and finally add enough distilled water to make 100 grams of ointment.

Treatment of Acute Peritonitis.—Henri Hartmann believes that in the treatment of acute peritonitis medical treatment has now no place. Cathartics should never be given and there is no advantage in waiting until acute conditions of infection have arisen before operating. Diagnosis must be early and precise, and should be followed by rapid and simple operation, the aim of which should be to destroy the original focus of infection and to empty the abdomen of most of its toxic and infectious contents, while trusting to the absorptive powers of the peritoneum to remove the rest. If drainage is employed the tube should descend to the bottom of Douglas' cul-de-sac.—*Annales de Gynécologie et d'Obstetrique.*

Local Anesthesia of the Uterus with Cocaine.—F. Febres advocates the performance of many operations on the cervix, both in gynecology and obstetrics, with local anesthesia by means of cocaine. The application of the cocaine is interstitial, and is made by four injections into the cervical tissues: in front, behind, and on the sides, with an amount of solution which will equal four centigrams of cocaine. In four or five minutes there is perfect local anesthesia. This method is applicable in all operations on the cervix: repair, incision of cysts, dilatation for treatment, curettage, and prolapse operations may all be done in this way. After labor the removal of adherent membranes and dilatation for rapid evacuation of the uterus may be done.—*Press Medicale.*

Radium Treatment of Cancer.—Dominici describes the different modifications of radium therapy in various forms of malignant growths, according to their nature and location. Not only superficial skin cancers, but also deep-seated growths are susceptible to the action of radium if the radium is properly placed. The tubes may be applied on the surface of the skin, in the natural cavities of the body, and in the substance of the growths themselves. With the author the use of radium has become a precise and definite agent. It cures many cases of both superficial and deep cancer; in other cases it causes marked improvement; and finally it renders operable certain inoperable cases of deep cancers. When the knife can easily and thoroughly remove a growth radium should be put aside; in some cases it should be simply an aid to surgery; and in still other cases in which a surgical operation is contraindicated it should take the place of operation. The author has studied histologically the method of regression of the tumor under the influence of radium; the process of regression is purely local, and in many cases it is aided by general processes such as are produced by ferments and toxins according to Coley, and by hypochlorites, according to Becker.—*La Riforma Medica.*

Insurance Medicine.

Medical Aspects of Life Insurance.—Sir Richard Douglas Powell in a series of three lectures delivered at the Middlesex Hospital, London, discussed the medical aspects of life insurance. It is pointed out that in no development of social science has medicine taken a greater part than in that of life insurance. In Great Britain, of the three factors upon which modern life assurance is based, the Registrar-General's returns of births and deaths, the census, and the prospective value of capital at compound interest, the first and in part the second largely depend upon modern data.

There is another aspect in which the relation of medicine to life assurance is important. Preventive medicine, in which not only expert health officers, but all practitioners in the kingdom, are zealously engaged year by year, diminishes the number of deaths from preventable diseases, and so by increasing the duration of life adds to the aggregate value of policies of insurance. Improved medical and surgical practice has told in the same direction.

Powell gives a brief sketch of the history of the origin and development of insurance reckonings. The first records of mortality ever published were collected by Captain John Graunt, F.R.S., during a period of twenty years while the plague was raging in England, and issued in 1662. Edmund Halley, the great astronomer, in 1693, presented to the Royal Society a study of the "Degrees of the Mortality of Mankind." At that time there was but one city of Europe in which a record of the age at death was kept, the city of Breslau in Silesia. Halley obtained the records from that city for five years, 1687-91, which included 6,193 births and 5,869 deaths. He made an estimate of the population at 34,000 and constructed a table showing the number of persons who will die annually from the age of one year onwards. Halley draws many ingenious and valuable deductions from this table, which is of historic interest as the first mortality table.

Marine insurance was the first in the field of business insurance at the beginning of the seventeenth century, and about 1638 the insurance transactions, which consisted in the underwriting of individual ships at risk on the high seas, were conducted at a certain Lloyd's Coffee House in the city of London, whence the name now universally associated with such risks was derived. Fire insurance next took the field in 1680, stimulated from small isolated ventures by the disasters of the Great Fire. It was more than three-quarters of a century later before life insurance except in the form of annuities was definitely established. A Frenchman, an Englishman, and a Dutchman went somewhat further into the matter than Halley, and in 1780 Dr. Price, living in the district of Northampton, analyzed the death registers of a certain parish of All Saints extending over a period of forty-six years, and compared them with the population, which he estimated from the baptismal entries and calculated therefrom the expectation of life, which he formulated in a table known as the "Northampton Table of 1780." This table was for nearly thirty years the basis for actuarial calculation of life assurance. In 1815 a somewhat similar calculation was made from the deaths that occurred in nine years out of an estimated population of 16,350 persons living in two parishes of Carlisle and formulated in a table, known as the "Carlisle Table."

Life assurance as a practical business commenced with the issue of policies by the Equitable Society of London in 1762.

According to Powell Great Britain is the birthplace and was for long the home of actuarial science, and therefore he restricted his observations to British insurance, although as he remarks, insurance societies soon made their appearance in Germany and America and in other countries. Up to the beginning of the nineteenth century the estimates of the general population of Great Britain were only obtainable by calculations based upon records, imperfect as they were, of baptisms and burials. The first census was taken in 1801, and since then has been renewed every tenth year. The reports of the Registrar-General first appeared in 1838, giving a careful analysis of the civil state of the population as regards marriages, births, deaths, occupations, etc. But the causes of death were yet only imperfectly certified, and it was not until 1874 that medical certification as to the causes of death was made compulsory. The Nomenclature of Diseases, instituted by the Royal College of Physicians, first appeared in 1869, giving a much increased uniformity and precision to the certificates of death. Powell dissects the composition of the modern actuarial table and of the Registrar-General's Table from which it is constructed. Powell thinks that a consideration of actuarial tables in Great Britain during the past decade suggests a marked improvement in the general health of the population, and does not lend support to the gloomy views now prevailing of the degeneracy of the British race. He also draws attention to the fact that unless the door of a life assurance office were well guarded medically all bad and doubtful lives would soon begin to pour in and bring the society to inevitable grief.—Lecture I., *The Practitioner*, April, 1912.

Tropical Risks.—H. Braun continues his study of this subject. He says that at present no separate premium table is necessary for tropical risks, but merely an extra premium should be charged according to the special dangers in certain tropical countries. Such tables of extra premiums have been constructed in the past and Braun reprints most of them. He repeats that not everyone who enjoys good health at his home may expect to have equal good fortune in the tropics. Certain physical conditions should count very much against removing to the tropics. Among them are various nervous states, sleeplessness, tendency to headaches, and irritability; disturbances of digestion and tendency to diarrhea or constipation; repeated attacks of appendicitis; heart disease, anemia; alcohol habit and excessive use of tobacco; morphia habit; deafness, inflammation of the auditory organs; nasal obstruction; repeated attacks of gout or rheumatism; renal disease of any nature; diabetes; pulmonary affections of any sort, that predispose the patient to tuberculosis; tendency to skin disease; existing venereal disease.

The best age for acclimatization is 26 to 30 years. Younger and older persons usually suffer more than persons between these ages. An applicant for insurance who expects to remove to the tropics should be enjoined to have his teeth put in good order and to try the effect of taking about fifteen grains of quinine. If this quantity of quinine produces marked untoward symptoms, beyond slight ringing in the ears, the applicant should reconsider his intention of life in the tropics. He should also be re-vaccinated if more than three years have passed since his last vaccination.—*Zeitschrift für die gesammte Versichcrungs-Wissenschaft*, March 1, 1912.

A HOME FOR AGED PHYSICIANS.

By HEINRICH STERN, M.D.,

NEW YORK.

I HAVE often put the question to myself: Is the New York Physicians' Mutual Aid Association doing all it can for its members when one considers its potential ability? How glad I would be if I could answer with an unqualified "Yes." It is a matter of great regret to me, in one point in particular, that we are not doing our duty. True enough, the insurance rate for the last few years has been comparatively low, but some insurance associations, fraternal and others, charge still less. Of course, our association has a better financial standing than any other similar institution in the State; however, the ultimate outcome of all assessment insurance will be fewer new applicants from year to year, fewer applicants in proportion to the then existing number of members.

The New York Physicians' Mutual Aid Association, in order to be kept alive and growing, and also for moral reasons, should try to offer a little more than the mere pittance of one thousand dollars, paid to those who are left behind by the death of a member of the Association.

This member himself had practically received no benefit whatever from this Association during his lifetime; and most young practitioners of this day, no matter in which way they are approached, are reluctant to join this body under the mere assumption that their prospective descendants will reap the benefit of his annual outlay. They would join, however, if something tangible were offered them for their own personal benefit.

Many of the fraternal orders and trade unions have their own homes for the aged and infirm. There are homes for old soldiers, a snug harbor for sailors, a home for worn out actors, and we even consider the animals which have served their masters conscientiously. But the physician who has labored conscientiously for humanity, and who, as we all know, rarely can lay by a store of worldly goods, and perhaps has no children on whom he can depend for sustenance in his old age—where is there a home for him? Nowhere! There is not a single place in this vast and wealthy country of ours where he can spend the last days of a busy and devoted life in careless retirement, free from worry, and in the company of his equals—his professional brethren.

It is not the business of the American Medical Association to found such institutions, for this body must accept as a member every physician "in good standing" in his respective State society; and what "good standing" in such associations is we all know. Should the American Medical Association, or any State association, ever attempt to establish a home or homes for aged or infirm physicians, it would soon find it a financial impossibility.

The New York Physicians' Mutual Aid Association, on the other hand, with its selected membership, which is confined to the State of New York, can very well afford to establish a small home for the possible fifteen or twenty dependents which a membership of 2200 would probably thrust upon it.

A farm, for instance, in Putnam or Dutchess county—a farm of one or two hundred acres with good buildings sufficient to give shelter to twenty inmates and five or six servants, may be bought at any time for a sum not exceeding ten thousand dollars. This farm would give welcome occupation to some of the inmates, while others could act as superintendent and in other official capacities. Many, if not all, the foodstuffs could be raised on this farm, and the cost of maintenance, including all the wages, should not exceed forty-five hundred dollars for fifteen inmates. One additional two-dollar assessment would defray the entire running expense for one year. Such an additional assessment would be gladly paid, I am sure, by every member of the Association. Furthermore, each member upon entering the home would surrender his policy, or any part of his claim, to the Association and its Home.

The purchasing of such a farm must, of course, be done by voluntary contributions. If a hundred members or charitably inclined non-members obligate themselves to pay one hundred dollars apiece, the necessary funds would accrue very quickly. I, for one, pledge one hundred dollars, or more if necessary, for this purpose.

Such a home may, as a matter of fact, be demanded by every member of our Association. They need not consider it a charity, for each member has contributed his share toward its support for years. Each member is rightfully entitled to a place in the Home. He is simply receiving the benefit of his contributions to the Association while he is alive, instead of some of his relatives after his death.

"Where there's a will there's a way."

Gentlemen, this institution is needed—is needed to calm the despair of the old physician and his wife—is needed for the gentle but now decrepit old doctor who has dried many a tear, but was not sufficiently callous to make the extraction of dollars from a suffering clientèle his only purpose in life. With starvation staring him in the face the old doctor very often terminates life in a manner which I may term "accidentally on purpose."

Mr. Chairman and Members of the Board of Directors: It is not an unsurmountable task to establish a home for our aged and infirm members, and now, Mr. Chairman, I ask you to submit this question to the Board of Directors, and I move that a committee of three be appointed to consider the feasibility of establishing such an institution.*

250 WEST SEVENTY-THIRD STREET.

*The motion was carried unanimously, and the Chairman appointed as members of this committee Dr. Heinrich Stern of Manhattan, Chairman; Dr. A. Edward Davis of Manhattan, Secretary, and Dr. Edward H. Squibb of Brooklyn; Dr. William F. Mittendorf, President of the Association, is to be a member ex-officio.

Address to the Board of Directors of the New York Physicians' Mutual Aid Association, February 13, 1912.

Typhoid Fever in Nurslings.—A. Brelet notes that typical typhoid fever in infants is rare, although the infection is rather frequent and of grave import. It is characterized by continuous fever, digestive disturbances, sometimes severe meningitic symptoms, purpura, convulsions, intestinal hemorrhages, etc. There may be no ulceration of Peyer's patches or solitary follicles, but hemorrhage may occur from the intestinal walls. The spleen and mesenteric glands are enlarged. Rose spots may be present, but are usually absent. Owing to the irregularity of the course of the disease the diagnosis is often not made; the Widal reaction is not always present, but bacteriological examination of the feces shows the bacillus of Eberth. Bronchopneumonia may be a prominent symptom. The disease is exceptional during the first six months of life; if it occurs in the mother during pregnancy the infant generally dies *in utero* or it may live but a few days. The child may be infected by the mother while at the breast or by a nurse.—*Gazette des Hôpitaux.*

Book Reviews.

Tumors of the Jaws. By Charles L. Scudder, M.D., Surgeon to the Massachusetts General Hospital. Octavo of 391 pages, with 353 illustrations, 6 in colors. Cloth, $6.00 net; half morocco $7.50 net. Philadelphia and London: W. B. Saunders Company, 1912.

The practice of writing monographs covering a limited and well-defined subject has much in it to be commended and encouraged. The writer's interest is apt to be more active, for he is not mentally exhausted as he would be in attempting to produce a long text-book on the whole of surgery. The material is apt to be his own and his individual judgment is more frequently and freely expressed than in a formal and more elaborate treatise intended to cover all aspects of a large question. It is with especial interest, therefore, that we have examined this handsome volume on tumors of the jaw. It is excellent in many respects. The illustrations, some 353 in number, are many of them entirely new, and those which have been borrowed from other works are selected with judgment and intelligence. One suggestion might be made, and that is that the deformities produced by tumors of the face are so hideous that even in a volume not generally accessible to the public it might be well to limit as far as possible reproductions of the advanced types of malignant disease. They are much less instructive than the pictures taken at an earlier stage and are not at all useful in diagnosis.

The microphotographs of morbid tissues are, in general, good, and give very well all important points. One seems to illustrate very successfully the use of such reproductions as a matter of record. On page 119 there is a case reported of sarcoma of the lower jaw, followed by carcinoma and extension to the lymphatic glands. Without venturing to presume to doubt the diagnosis of sarcoma it is quite certain that the microphotograph, which is probably selected to illustrate a typical portion of the growth, shows nothing more than some granulation tissue infiltrated with numerous leucocytes and does not in any way demonstrate the characteristic morphology of a sarcoma. Indeed, the clinical history of the case rather suggests that this growth may have been one of the soft epulides of the jaw, and that the carcinoma developed entirely independently and at a later stage. Except for such minor points the pathological side of the book is satisfactory and is of a type which will be useful to the surgeon. It is very satisfactory to note that in the first chapter, on epulis, the absolute clinical harmlessness of these growths is so firmly insisted upon. Much confusion has resulted from the loose designation of these tumors as giant-celled sarcomata and the assumption by the surgeon that a large portion of the jaw must be resected in order to prevent recurrence, whereas in many cases a very moderate removal of bone will guarantee the patient against recurrence of the trouble.

A very good chapter is the one on the tumors arising from vestiges of the teeth, such as the odontomata and the dentiferous cysts. The condition is so rare that but few persons have an opportunity to study many cases, and the admirable illustrations give a better picture than any text with which the reviewer is familiar. There is a very satisfactory chapter on the tumors of the palate, including that peculiar group of growths known as mixed tumors. The methods of supporting the jaw after extensive resection are quite fully treated.

Dr. Scudder is to be congratulated on the production of a most successful study of an interesting surgical and pathological field.

Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College Khartoum. Volume A. Medical. Andrew Balfour, M.D., B.Sc., F.R.C.P. (Edin.), D.P.H. (Camb.), Director. Fellow of the Royal Institute of Public Health, the Society of Tropical Medicine and Hygiene, and the Incorporated Society of Medical Officers of Health; Member of the Association of Economic Biologists, etc. Published for Department of Education, Soudan Government, Khartoum, by Baillière, Tindall & Cox, London. New York: Toga Publishing Co., 1911. Price $5.00.

In this handsome volume of 400 pages are embodied the results of the recent labors of the small but energetic company of scientists who are doing such excellent work on the banks of the Blue Nile. The report is in two volumes, of which the present is devoted to medical research, while the other deals with general science. Over thirty contributions are presented, nearly all of them of the highest possible interest from the standpoint of tropical medicine. As is to be expected, very many of them have to do with blood infections of different sorts, due to trypanosomes or other protozoan parasites. An article of especial value to all laboratory workers is one by the director on fallacies and puzzles in blood examination, in which the artefacts that so often lead astray beginners and even more advanced workers are discussed and excellently illustrated. Other papers of particular interest are on the water supplies of tropical towns, on the fevers observed in the Sudan, on the treatment of kala azar with salvarsan, on diphtheria in the tropics, on tropical sanitation, and on mosquitos and malaria. The mechanical execution of the volume is remarkably fine and the very numerous colored plates, maps and photographs deserve the greatest praise. While the report will probably appeal chiefly to the rather limited circle of readers who are directly concerned with tropical medicine, for all of these it will prove of the utmost interest and value, and they will feel deeply indebted to its authors for the devotion with which they have accomplished wonders under the most difficult and trying circumstances.

Diseases of the Skin and the Eruptive Fevers. By Jay Frank Schamberg, M.D., Professor of Dermatology and Infections Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Second edition, revised, fully illustrated. Cloth, $3.00 net. Philadelphia and London: W. B. Saunders Company, 1911.

Dr. Schamberg is well known to medical readers as a writer of distinction and authority on the subjects with which this volume deals. It is eminently suitable that diseases of the skin and the eruptive fevers should be considered together, and the promptness with which a new edition of the book has been required shows that the plan has met with general approval. Among the subjects in which new matter has been introduced are sporotrichosis, grain itch, a peculiar form of pediculosis described by the author in 1901 and 1909, vaccine therapy, and the use of carbon dioxide in treatment. The recent developments in the treatment of syphilis and the Wassermann reaction are also detailed. The truly remarkable collection of photographs with which the work is illustrated has been added to and forms one of the most useful features of the book. The only omission of note that occurs to the reviewer is the absence of any mention of Brill's disease, concerning the status of which it would be interesting to have the views of so experienced an observer as the author. It is hardly necessary to emphasize the unusual excellence of the book, which has already acquired a high place among the treatises on dermatology.

Delayed and Complicated Labor. By Robert Jardine, M.D. Edin., M.R.C.S. Eng., F.R.F.P. & S. Glas., F.R.S. Edin., Professor of Midwifery in St. Mungo's College, Glasgow; Obstetric Physician and Gynecologist to the Glasgow Maternity and Women's Hospital, Glasgow; Examiner in Midwifery and Gynecology to the Scottish Conjoint Board, and also to the Victoria University, Manchester; formerly Examiner to the University of Glasgow; late President of the Glasgow Obstetrical and Gynecological Society; Author of "Clinical Obstetrics" and a "Practical Text-Book of Midwifery for Nurses," etc. With one hundred and seven illustrations and three colored plates. Price $3.00 net. New York: William Wood and Company, 1912.

This is a small book, but one which can be cordially recommended to students and practitioners alike. It contains the result of the very extensive experience of the author and is, throughout, a record of personal work and not a compilation. It is concise and well written, admirably arranged and clearly printed; above all, it is trustworthy.

Handbook of Mental Examination Methods. By Shepherd Ivory Franz, Ph.D., Scientific Director and Psychologist, Government Hospital for the Insane; Professor of Physiology, George Washington University. With 33 Figures and Diagrams. Price $2.00. New York: The Journal of Nervous and Mental Disease Publishing Company, 1912.

Dr. Franz's monograph consists of twelve chapters on the methods of examination of a patient in reference to sensation, movement, speech and aphasia, attention, apprehension and perception, memory, association, calculation ability, time of mental processes, and general intelligence. An endeavor has been made to select the simpler yet adequate methods of examination which require neither elaborate apparatus nor any special and difficult technique. Any additional information sought by the reader can be found in books and articles of reference named after each chapter. The monograph is very well written and should prove of value and interest to neurologists and to internists as well.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Sixth Annual Meeting, Held at Albany, April 16, 17, and 18, 1912

(Special Report to the MEDICAL RECORD.)

GENERAL SESSION.

(*Continued from page 788.*)

The Prevention of Deafness and the Instruction of the Deaf Child.—Dr. G. HUDSON MAKUEN of Philadelphia, Pa., read this paper. He stated that deafness was a much more serious affliction than blindness; in blindness but one corticalcenter of the brain was affected but in deafness two were useless. In blindness touch could be substituted for sight but in deafness no such substitute had been discovered. Good hearing was an absolute necessity. In deafness the corticalcenters showed atrophy. Dr. Makuen considered his subject in three parts: 1. To what extent blindness was preventable. 2. How it was preventable. 3. What could be done for children irrevocably and irremediably deaf. The great obstacle in the prevention of blindness was the almost fiendishness of the insidiousness of the affection, coming on as it often did before the patient or the physician was aware of it. He believed that 50 per cent. of deafness was preventable. There was, however, no specific recipe for prevention until the race had reached perfection. There were two kinds of deafness, congenital and acquired, the latter being the result of disease. The first could be prevented by strict application of the principles of eugenics. It was said that 50 per cent. of this type of deafness was due to consanguinous marriages. Acquired deafness might be primary or secondary. The most immediate cause of deafness was inadequate ventilation of the tympanic cavity and causes leading to this should be combatted. The greatest preventive lay in securing normal nasal breathing and palatal efficiency. It has been said that two-thirds of deafness resulted from measles and scarlet fever. Was it too much to hope that with modern knowledge these infectious diseases of childhood might be diminished. The day had passed when the practitioner could overlook complications of this nature; he must know the right thing to do and when to do it. Pain was the danger signal and in nine out of ten cases paracentesis the measure demanded. The key to the situation in the matter of the prevention of blindness was in the hands of the general practitioner. Dr. Makuen then considered educational methods applicable to the deaf but said that it should be remembered that deafness did not imply mental enfeeblement. The deaf child should not be classed with the mentally defective. Those but slightly deaf should be instructed in classes with normal children; those of greater degrees of deafness in special classes. The instruction of the deaf child should begin at home under the direction of an intelligent mother or governess and a physician as frequently the deaf child was not as far developed at the age of seven years as the normal child of two years.

The Prevention of Blindness and the Instruction of the Blind Child.—Dr. G. E. DE SCHWEINITZ of Philadelphia read this paper. He referred to a few conspicuous types of acquired blindness and chiefly to the ravages of ophthalmia neonatorum. He pointed out that while there were no complete statistics showing the prevalence of ophthalmia neonatorum, an approximate idea could be obtained by studying the admissions to schools for the blind, and in any list of carefully tabulated causes of blindness this disease far exceeded in potency any of the other etiological factors, the percentage of blindness from it being approximately 36, rising in some countries to fully 40, and rarely if ever falling below 25 or 26. In order to illustrate the economic loss from blindness from this source, the essayist showed that the annual expenditure of public funds for the blind in excess of the cost of educating seeing children in public schools in Massachusetts, New York, Ohio, and Pennsylvania was about $150,000. From these figures it was evident that the cost of blindness throughout the entire United States must be enormous. Many schemes for the elimination of this preventable disease had been brought forward, and Dr. de Schweinitz discussed the punishment by law of offenders against properly constructed legal regulations and compulsory prophylaxis. Concerning education he pointed out while this necessarily concerned most intimately the midwife, nurse, and other persons having charge of a new-born child, medical students should be carefully instructed in the dangers of the disease and in their responsibilities in obstetric practice in this respect, and doctors all over the country should be urged to join in an effort to secure the passage by legislative assemblies of needed laws which might be enforced by local boards of health. He further discussed the importance of education among women living in poor districts who were the mothers of families, and described the methods adopted in this respect by the Health Committee of the Philadelphia Civic Club. Concerning compulsory prophylaxis and the free distribution of a prophylactic, Dr. de Schweinitz pointed out that the frequency of ophthalmia neonatorum had diminished since the introduction in 1881 of the Crede prophylactic treatment, that this treatment either in its original or modified form was often, and perhaps always, necessary in all large institutions where poor women are assembled for the purpose of giving birth to their children, and where prior to birth it had been impossible to remove the danger of infection. Unfortunately, in spite of the existence of laws compelling the reporting of ophthalmia in various States, they are not actively operative in many of the States, notable exceptions being Massachusetts and Ohio, where it had been possible to secure prosecutions when there had been failure to give notification of ophthalmia neonatorum. Dr. de Schweinitz pointed out that while all of the present laws contained some good provisions, a satisfactory uniform law containing all such provisions as registration of births, instruction on ophthalmia neonatorum, reporting of cases by midwives, parents, nurses, physicians to health authorities, control of midwives, and free medical attendance, was most desirable. The writer of the paper also discussed the history and ravages of trachoma and the methods employed by the immigration officers to check the entrance of this disease into our country. He commended the ocular examination of school children because it enabled the physicians in charge of this matter early to detect the presence of contagious and other diseases of the eye, notably phlyctenular keratitis, and also to detect the refractive anomalies and to urge their correction in order that the ravages of eye-strain might be averted. Referring to the care of the blind child, he agreed with those who maintained that inasmuch as blind children were at least two years behind seeing children of identical age, the education of these afflicted ones must begin early, if possible in the homes from which they come. He pointed out that it was a mistake to believe that the loss of any special sense itself improved remaining senses, and showed that in point of fact the loss of sight tended, if anything, to make other senses less sensitive. He urged, however, a more thorough study of pupils in institutions for the education of the blind, and urged also that this kind of education would be materially helped if there was an appeal to the principles of modern psychological research. Such psychological researches might furnish certain data which would help to solve the vexed question as to the best alphabet for the blind, and would certainly help to decide whether the mentally deficient or the backward blind child should or should not be included in the general classes of blind childdren. Discussing the education of the blind still further, the essayist pointed out that in the best regulated schools for the blind the fundamental motive in teaching made an appeal to the motor centers. It was shown how by reason of practical and industrial education wide fields of usefulness have been opened to blind children. The over-cautiousness of the blind was described, and it was shown that this was in largest measure best controlled by developing among blind children a love of and an activity in athletic sports. The various occupations of the blind and the methods of instruction were described, and the method of training fundamental muscles before the finer accessory muscles are brought into action was also discussed. The higher education of blind children and their ability to enter advanced courses with seeing children were referred to. The essayist illustrated his remarks with numerous lantern slides showing the method of teaching, etc., in the Pennsylvania Institution for the Instruction of the Blind at Overbrook.

Second Day—April 17, 1911.

THE PRESIDENT, DR. WENDELL C. PHILLIPS, IN THE CHAIR.

Annual Oration in Surgery: The Duty of the Family Physician in the Management of Surgical Cases.—Dr. JOHN M. T. FINNEY, Professor of Surgery at Johns Hopkins University, Baltimore, Md., made this address by invitation. He considered his subject from the standpoint of the patient, from that of the physician, and from

that of the surgeon. It was to the glory of the profession that its individual members, with few exceptions, had always stood ready to sacrifice their own interests to those of the patient. There were instances where the interest of patient and physician conflicted as when a physician had under his care a wealthy patient, and the question arose as to whether some one else might not do more for that patient than he was doing. In such a case should he ask for a consultation or bluff it out and trust to luck? When the question of the selection of a surgeon arose the general practitioner was in the nature of things better fitted for this than the family. It was necessary, however, that he should have a knowledge of surgery and all that it involved. The time had gone by when they could belittle the surgeon. It was also obvious that no surgeon without a thorough training should attempt to practise surgery. The man who was not efficient might meet with success in a fair percentage of cases, but he was apt to go far and then meet with disaster. He quite agreed with the belief that was growing so general that the hospital was the only place in which to be surgically sick. This was true provided the surgeon in the hospital was competent. Hospitals were multiplying so rapidly everywhere that there were many without skilled surgeons. There was not the same feeling of responsibility in a hospital as in a home, and the surgeon was tempted to do things and take risks that he would not take if he alone were responsible. The most elegantly equipped operating room might be the place of heinous surgical crimes. The moral was that surgery should be restricted to the trained surgeon. There was no royal road to surgery; it could not be acquired in a ten days' course, or just by watching some one operate. The family physician should not attempt to operate, as both his judgment and his execution were at fault. He was also putting himself in a wrong position before the community; he should not put himself in a place where he could not defend himself in court before a jury; in a place where he could not prove that he was competent to do the work he had undertaken. The question then arose as to whether the general practitioner should act only as a "barker" and "catcher" for the surgeon. Only a small percentage of the cases coming to the general practitioner were surgical, so that referring them to the proper surgeon could not appreciably affect his income. On the other hand, the surgeon should follow the golden rule and not so deplete the finances of the patient that nothing was left for the family physician. After denouncing fee splitting Dr. Finney said that the family physician gave valuable services when he helped in the selection of a surgeon, when he gave that moral comfort and support which a family needed at such a time, when because of his acquaintance with the financial affairs of the family he arranged for the compensation of the surgeon. The surgeon should make clear the value of these services to the family. In regard to the responsibility for the after-care of surgical cases there should be no division of responsibility; the surgeon was responsible. On the other hand, the family physician should not interfere with this treatment by ordering favorite remedies or failing to comply with the directions of the surgeon. Since the making of an early diagnosis was so important in many conditions it was necessary that the family physician should be an expert diagnostician. He should not delay too long in calling in a surgeon. "Surgery should be a last resort but never a late one." There were two types of practitioners, those who regarded themselves as the servant of their patients and those who regarded their patients as so much material to be manipulated for financial gain. The trouble was that there was a plethora of physicians and too many unfit to practise their profession. In regard to the physician's duty at the time of operation, Dr. Finney said that he should by all means be with the patient at the time of operation, both because of his psychic influence on the patient and because he could not afford to miss an opportunity of confirming or revising a diagnosis. Too frequently the surgeon limited his services merely to the performance of an operation, leaving the after-care to others; this practice was not to be commended. They would have to overcome the notion that surgery was simply carpenter work. After the patient left the hospital there was often a long period during which the family physician could be of the greatest service in making complete recovery possible. The tactful physician could guide a nervous patient through this period of convalescence as well as it could be done by sanatorium treatment. The question of fees had to be considered and there was no doubt but that the surgeon frequently charged fees out of all proportion to the services rendered. The surgeon should see that the family physician got his deserts by showing the family his value. These criticisms were meant in good faith, and it was their duty to face facts as they were. If the profession did not recognize these failings and correct them itself it would soon stand convicted before the public. After speaking of the needs of the higher educational standards Dr. Finney urged those who held professorships in medical colleges to set an example of higher professional honor by refraining from exploiting their offices for the purpose of making money.

Oration: The Benefits of Vivisection to Mankind.—Dr. Walter B. Cannon, Professor of physiology, Harvard Medical School, Boston, Mass., made this address by invitation. He said in part that there were two ways open of obtaining a knowledge of nature: one was merely to watch events as they transpired naturally; the other was to arrange the environment and to watch the effects of this controlled environment. You might simply plant a grain of wheat and watch it grow or you might plant it so that you could regulate the amount of light, moisture, wind, heat, etc. The latter method was the scientific method. The cautious person put explanations, however plausible they might be, to the test before he accepted them. The practical application of the experimental method had transformed society. In medicine no noteworthy progress was made so long as knowledge was limited to the results of the observation of sick people. The beginnings of experimental medicine were extremely difficult. This method began to be applied to medicine about 1850. According to Osler, experimental physiology had done more for medicine than all the work of physicians from the time of Hippocrates to that of Jenner. The discovery of the relation of microorganisms to disease, which was one of the greatest steps in advance, was the result of the experimental method. Dr. Cannon related Pasteur's early experiments with sour wine and later with silk worms which had laid the foundations for the science of bacteriology, and called to mind that Koch's discovery of the tubercle bacillus was affected through animal experimentation. Our present campaign against tuberculosis would never have been possible without the experiments on animals. Trudean demonstrated the benefits of diet and fresh air in tuberculosis by animal experimentation. That tuberculosis was not inherited, was communicable, and therefore preventable, were facts demonstrated by animal experimentation. As a result of this knowledge the death rate from tuberculosis in Boston had fallen from 42 to less than 18 per 10,000 population. This decline in the death rate from tuberculosis had been noted throughout the entire civilized world. Dr. Cannon dwelt on the horrors of the bubonic plague and depicted scenes in London during the epidemic of 1665; then people sought to ward off the plague with charms, incantations, and resorted to astrologists. In 1894 the germ of the bubonic plague was discovered, and it was shown that the disease was spread by fleas among rats and when rats were not available these fleas preyed upon man. Now, instead of resorting to astrology, they used rat traps. To rats, guinea pigs, and monkeys we were indebted for this deliverance. The speaker next proceeded to describe the experiments of Loeffler which led to our understanding of the mechanism of immunity, and as a result we now had an antitoxin for diphtheria. Dr. Park had shown that in 1895 in 19 large cities of the United States the death rate from diphtheria was 80 per 100,000 population; in 1907 it was 17 per 100,000. Recently in Boston in 431 cases treated with antitoxin on the first day there was not a single death. Dr. Cannon quoted from a description of this disease written in 1870, which showed the harrowing distress of little children stricken with diphtheria and the helplessness and hopelessness of the physician in its presence. He then described cerebrospinal meningitis, 75 per cent. of the victims of which died and the remainder were left hopelessly blind, deaf, paralyzed, or imbecile. Dr. Flexner's experiments on monkeys had made possible the reduction of the death rate to 25 per cent., had shortened the duration of the disease, and had prevented the frightful after effects. This was one of America's cleverest contributions to the betterment of man's estate. The speaker then went on to consider the awful mortality from blood poisoning and gangrene before the time of Lister. The consequences of Lister's work were beyond calculation. Holmes had guessed that childbirth fever was contagious, but it remained for animal experimentation to prove it. Maternity hospitals were formerly regarded as portals of death; in one of the Paris hospitals the death rate was 57 per cent. There were puerperal epidemics that were to women what war was to man, and, like war, took the best and fittest members of society. Pasteur showed us the streptococcus and now the mortality from this infection was one-tenth of one per cent. This

was the result of animal experimentation. The whole science of drug action had been discovered by animal experimentation. Ergot was tested on animals before it was put on the market, and this seemed more fitting than that it should be tested on a woman who was bleeding to death. Antivivisectionists might think this over and take their choice. The Wassermann test for syphilis and Ehrlich's triumph were the result of animal experimentation. Animals were useful in making a diagnosis in some conditions, and in detecting typhoid and cholera carriers. If they were to prevent epidemics it was important to find these carriers, and without animal experimentation sanatoriums would be deprived of their weapons of defense. For their knowledge of physiological phenomena, vascular, cardiac, digestive, and the intricacies of the nervous system they were indebted to animals. A striking example of the value of physiological study was its revelations that had made possible the cure of cretinism. All these things showed an immense saving of human life, but the animals had shared in this benefit as well as mankind. Rabies could now be controlled and some diseases of animals had been entirely done away with owing to the fact that animals were more easily controlled and quarantined than man. Yellow fever had prevented the building of the Panama Canal by the French, while modern sanitation had made this feat possible, and sanitation owed its achievement to animal experimentation. During the Spanish-American War 90 per cent. of the army in one camp had typhoid fever, while last summer among 18,000 men mobilized on the Texas frontier, where typhoid fever was prevalent, not a man had the disease. Such were the results of protective vaccination. Had antivivisectionists no knowledge of these facts that they thrust forth hostile opinions of men long dead or engaged in other professions? Their whole course was characterized by fraud, duplicity, and ignorance. Why was it immoral to use animals for experimental purposes when they were destroyed in so many other ways: for food, for their skins, for plumage, simply to get rid of an annoying surplus. If the destruction of animal life was immoral, why single out this one instance, animal experimentation, and pass by the others in many of which animals were killed in much less humane ways. The animal experimenter never justified the infliction of needless pain. This statement the British Royal Commission, which had investigated animal experimentation, had endorsed. Directors of laboratories exercised enlightened compassion, yet in spite of this fact each year saw mild restrictive measures presented to our legislators. They pretended merely to investigate, but experienced laboratory workers were excluded from these investigating committees and only antivivisectionists appointed. These bills were merely initial efforts, opening wedges, to take from our hands the most powerful weapon of medical progress. There were fifteen such societies in Great Britain and six in this country. There was still much work to be done: scarlet fever, measles, and cancer were unsolved problems. "Who shall say that experimental progress shall cease? The antivivisectionist pleads for the animal that it may not suffer pain; the scientist for humanity, that man may live. Society must determine which shall prevail."

SECTION ON MEDICINE.

DR HENRY L. ELSNER OF SYRACUSE IN THE CHAIR.

First Day—Tuesday, April 16.

A Clinical Study of Relapses in Typhoid Fever.—Dr. HERMAN F. L. ZIEGEL of New York showed a chart of 21 relapses in typhoid fever which had occurred in a series of 168 cases. The condition was first recognized by Shultz and the speaker passed around a copy of the original monograph. As early as 1830 the pathology was shown to differ from that of other conditions. Relapses, he said, might be attributed to (1) a reinfection; (2) a difference of strains of typhoid bacilli in the system or the persistence of the organisms in the gall-bladder, or (3) the carrying of the scab of an old ulcer to another part of the intestine. Relapses were not due to hospital infection, because since hospital preventive measures had been instituted relapses were not less frequent than previously. The author defined a relapse as a characteristic repetition with a regular evolution of the cardinal signs of typhoid fever after defervescence of the original attack. A recrudescence was defined as the condition when the temperature had been low and then rose with increased severity of symptoms. The relapses were either mild or severe. Frequency was 26 per cent. and the ages varied between 16 and 56 years. Children were more predisposed. The onset came on after 4 to 5 days of apyrexia and freedom from symptoms during the convalescence from typhoid. There was a persistence in these cases of tumefaction of the spleen even after the apyrexia in 8 cases. No prodromi were noted, and there were no subjective symptoms the first few days. The symptoms were: a rise of temperature; enlarged spleen in 25 per cent.; roseola in 17 cases; leucopenia in 55 per cent.; a positive Widal, where it had been negative previously in 1 case, and a positive blood culture in 2 cases. The average duration of the relapse was 14.28 days, as compared to 22 days of the original attack. On account of partial immunity the attacks were mild. Temperature was intermittent. The diagnosis was made from the prolongation of temperature after a period of apyrexia; the reappearance of the roseola; the enlarged spleen, and the positive blood culture. Differentiation from typhoid sepsis; Brill's disease; typhoid pyelitis, pneumonia, and a recrudescence had to be made. The mortality was nil, complications were rare. The treatment in the future, the writer suggested, was to be the use of typhoid vaccines as a prophylactic measure to prevent relapses. The results were to be compared with those of cases not so treated.

Congestion of the Liver.—Dr. BENJAMIN W. STEARNS of Unadilla said the function of the liver was to safeguard the body by modifying the digestive products before entering the circulation. He quoted Moore, who said that it was the great metabolic laboratory of the body. Hemoglobin was broken up into pigments and the carbohydrates were modified for use in the body. In addition there were other unknown functions. The blood from the intestines to the liver was diluted with blood from the spleen. Nearly one-fifth of all cases seen by the general practitioners were due to the liver, and of these about one-third were being recognized. The symptoms of liver congestion were headaches, constipation, coated tongue, interrupted sleep, poor appetite, chilly spells, with diarrhea. The symptoms were relieved by cathartics and gastrointestinal treatment for short periods, only to recur in a few weeks. The physical signs were those of an enlarged liver. He mentioned that by placing the closed fist in the ninth or tenth intercostal space in the mammary line on the right side, by pushing in one inch and then giving a short punch, in congestion of the liver, an increased resistance could be noted. This condition, as a rule, existed in his cases for from a few months to two or three years. Jaundice was rare. Congestion of the liver was frequently the cause of parenchymatous nephritis. The treatment was calomel, gr. ¼, every fourth day and the administration of small doses of tincture of iodine and camphor by mouth. This produced regular bowel evacuation and a cure.

Vaccine Therapy in Medicine.—Dr. T. WOOD CLARKE of Utica said that practically all the known and many of the unknown infectious diseases were being treated by means of vaccines. He stated that vaccines were more beneficial in chronic infections than in acute ones. They were not indicated in acute processes like sepsis or pneumonia, but in chronic ones like acne and furunculosis. They might even do harm in short acute diseases. Vaccines were supposed to act in from five to seven days. In acute conditions, during the early stage the body, as a rule, was being overburdened in the effort to create immunity, and the administration during this negative phase might cause harm and perhaps death. The value of vaccines had been proved in typhoid fever prophylaxis. In the British and American armies they had proved very efficacious. To prevent relapses and complications they had been shown to be of inestimable value as well as in curing typhoid carriers. During the acute stage the benefit was questionable. In pyelitis, cystitis, and bacilluria due to the *Bacillus coli communis* doses of from 200 to 1000 million of autogenous and stock vaccines had been used with marked benefit. In genitourinary tuberculosis, where the distress was due to a secondary colon infection, tuberculin and colon vaccine gave great relief to the symptoms. Furunculosis was the ideal disease for treatment by vaccines, as it complied with the indications, being chronic, a local infection, and its pus easy of access for the manufacture of an autogenous product. Injections of from 50 to 600 million at intervals of from five to seven days should be given. In acne the *Bacillus acne* and staphylococcus vaccine were to be recommended. After the first injection there was noted an increase in the number of lesions and increased inflammatory reaction in those that existed. Those disappeared and the disease was cured in from three to ten injections. Other skin diseases had also been cured with vaccines, such as eczema, erythema multiforme, etc. The efficacy of streptococcus vaccines in septicemia and erysipelas in the author's experience was very doubtful. In vulvovaginitis he succeeded in curing the cases in about 1.7 months, as compared to 10 months in cases treated

by other means. In Riggs' disease good results were obtained by making a vaccine from the pus of the sockets of the teeth. In conclusion, he stated, the patients must be selected cases; the vaccines should be autogenous. He recommended the use of small doses to begin with. The patient should be watched for reaction symptoms. The physician should be familiar with the indications and contraindications and the symptoms of a reaction.

Graphic Methods in the Diagnosis of Heart Lesion.—Dr. LEO H. NEUMAN of Albany demonstrated the polygraph and made a plea for the use of the instrument by the general practitioner. He mentioned the advantage of using an arm band instead of taking tracings from the radial artery, as the artery moved from side to side and the resulting tracing was untrue. He then demonstrated the various curves in charts.

The Signs of Overdosage in Digitalis Administration.—Dr. WALTER A. BASTEDO of New York said that poisoning from digitalis almost always occurred from therapeutic use of the drug. In a recent study of ninety cases at the Bellevue Hospital 25 per cent. showed some toxic manifestations of the drug. Some of these manifestations might be due to other causes. The toxic symptoms of digitalis might appear two or three days after the administration and disappear in the same manner. The subjective symptoms were (*a*) loss of appetite; (*b*) oppression about the heart, palpitations; tachycardia and consciousness of skipped or premature beats; and (*c*) headache. The objective signs depended on the manner of examination, and the electrocardiogram showed the following parts of the heart to be affected: *a*, the sinus node, with either alternation in rate of beat with slowing and acceleration, sinus arrhythemia; *b*, the auriculoventricular bundle with partial or very rarely complete heart block; *c*, the ventricular muscle with excitability, an early indication of toxicity, with the production of extrasystole, occurring frequently, and *d*, all three might be combined and evidenced by coupled rhythm, phassic arrhythmia or pulsus alternans. The coronary artery might be affected and the pulsus alternans might perhaps be caused, in the author's opinion, by a deficiency in the cardiac nutrition due to the spasmodic action of digitalis on the blood-vessel.

The Physical Treatment of Arterial Hypertension.—Dr. EDWARD C. TITUS of New York opened this subject by remarking that the cause of the hypertension must always be first ascertained, and the physician should not be contented with a diagnosis of arteriosclerosis. In the treatment of hypertension he said the diet must be modified according to the individual and according to the condition of the kidneys. The amount of food was to be reduced, as well as the proteids. A liberal milk, buttermilk, and vegetable diet was advocated. Alcohol, tobacco, tea, and coffee should not be interdicted. Many women were overfed and underexercised. The amount of exercise should be gauged by the blood pressure. Hydrotherapy was to be guided by the general condition of the patient. Cold baths were not recommended. Prolonged warm immersions, followed by showers and a rub down, seemed rational to the speaker. Massage was recommended when the patient was unwilling to take exercises. Electricity in the form of autocondensation was recommended in daily treatments of from twelve to fifteen minutes with the patient on a couch and when the blood pressure lowered at great intervals. He said that this treatment relaxed the vascular spasm of the peripheral vessels, increased the perspiration and amount of urine excreted; caused increased oxidation and hastened elimination and stimulated cell metabolism, as shown by the well-being of the patient. The pulse became softer and more regular, and there seemed to be a general improvement in the circulatory system.

Hydrotherapy and Mechanotherapy of Arteriosclerosis.—Dr. JOHN M. SWAN of Rochester defined arteriosclerosis as a progressive degeneration of the vascular system characterized pathologically by thickening of the walls of the blood vessels and clinically by an increase in blood pressure. The pathology might vary from a slight internal thickening to atheroma. The symptoms were, as a rule, variable, and referred to the heart, brain, kidneys, and skin, and often resembled neurasthenia. The treatment with drugs was unsatisfactory. Recently physiological methods had been instituted by means of rest, massage, hydrotherapy (various baths) and electricity. He mentioned one case where by means of rest in bed for two weeks he reduced the blood pressure of a patient sixty-eight years old from 170 mm. mercury to 140 mm. within two weeks, and in the same patient with baths alone the blood pressure only went down 10 mm. The Nauheim baths he strongly condemned, and said they were harmful. He recommended the Russian vapor or neutral full immersion baths. Autocondensation electrical treatment he had tried, and one patient after several daily twenty-minute treatments developed an attack of acute cardiac dilatation with an increase in blood pressure. As a rule, however, the blood pressure of patients so treated was somewhat lowered. In other cases it remained the same or was slightly lowered. His conclusions were that rest in bed with massage were beneficial when done daily, that the total amount of food should be limited, and the measures that tended to produce sweating—as baths, vapor and neutral full baths, either salt or fresh—were indicated. The faradic, galvanic and high frequency currents relieved the sensory skin disturbances when used judiciously.

Dr. LOUIS F. BISHOP of New York said that Dr. Bastedo did not use the term physiological instead of toxic in speaking of digitalis. The toxic symptoms of digitalis might be preferred to the symptoms of cardiac insufficiency in a few cases. Mackenzie recommended, he said, the administration of the digitalis until toxic symptoms appeared. It was much safer than supposed. Autocondensation, he remarked, killed many people who had no business to use it.

Dr. BASTEDO remarked that digitalis was a very safe drug if stopped when effects of cumulative action were noticed, but the symptoms might come on some time after use.

Dr. TITUS said he had never seen ill effects from autocondensation when properly used. One should not use cheap apparatus, and ill effects were due to a poor case or overdosage.

Dr. SWAN said we were too prone to pay attention to the sphygmomanometer and not enough to the patient clinically. In order to get the best results both were to be considered together.

Hyperacidity.—Dr. GEORGE R. LOCKWOOD of New York said that hyperacidity was an abnormal increase of hydrochloric acid in the stomach during the digestive period, and that during the fasting period the stomach was empty. In hypersecretion there was present a large amount of gastric juice in the fasting condition. Hyperacidity must always be considered a symptom. It was present in his series cases in 13.8 per cent. It was always thought that dietetic errors were an etiological factor, but he could not find it so. Those individuals with narrow costal angles were susceptible as well as those with enteroptotic predispositions. Of his cases of hyperacidity 22.5 per cent. were in gastroptosis; 19 per cent. in ulcer of the stomach or duodenum; 9.5 per cent. in chronic appendicitis; 11 per cent. in gastric atony; 5.5 per cent. in gall-bladder disease; 5.5 per cent. in chronic gastritis; 4 per cent. in cancer. The remainder, about 20 per cent., were functional or undiagnosed. In 80 per cent. there was some organic cause. All had motor atony in common. Of 233 cases of gastroptosis 27 per cent. showed hyperacidity. The greater the degree of muscular error the greater was the acidity. In ulcer the pyloric obstruction was a factor as in cancer; 30 per cent. of all gall-bladder cases had hyperacidity, and these may have been due to pylorospasm, as shown by Moynihan. In most cases hyperacidity meant a latent course.

The Significance of an Acid Gastric Juice in the Fasting Stomach.—Dr. HAROLD BARCLAY of New York read a paper based on 1700 examinations of gastric juice. The normal stomach emptied itself in from 5 to 7½ hours after a meal. The presence of 5 to 30 c.c. of fluid was supposed to constitute a hypersecretion. Those that contained food particles after 10 hours did not belong to this class. In fifty-five cases of hypersecretion the volume obtained varied from 50 to 130 c.c. of clean, straw-colored fluid, in which there was no starch. These examinations were repeated time after time. This condition was found in a variety of conditions, including salpingitis, prostatitis, cancer of the rectum, and the diseases mentioned in Dr. Lockwood's paper. Over 60 per cent. were in neurasthenics. The motor error alone was not responsible. Symptoms were not always due to a definite lesion in the gastroenteric tract. Many were reflex.

Dr. DASH of New York emphasized the fact that he could not diagnose gastroenteric lesions without functional estimations. The nervous manifestation could be caused by an excessive activity of the stomach due to reflex stimulation. Patients ought to be given double tests, one on fasting and the other after a test meal. This would give an idea of the relative function. There were not to be found any organic changes in the glands of the stomach during hyperacidity. This might also be found in tabes and early in carcinoma.

Dr. NEUMAN of Albany said hyperacidity might be dependent on many causes. He said we must recognize a physical basis for reflex conditions. A spasm in the pylorus would produce stagnation of food in the stomach, and nature's attempt to be rid of this food was by in-

creased acidity. This again was followed by hypoacidity.

Dr. Stockton of Buffalo said there was a tendency to localize the disease in the mucosa, pylorus, gall-bladder, and appendix, but the nervous system should be considered.

Second Day—Wednesday, April 17

Toxemia of Pregnancy: A Consideration of Treatment.—Dr. Wm. M. Brown of Rochester divided the subject into the prophylactic and curative treatment. He said the individual manifestations of the condition and the case treated should be studied. Because of the lack of knowledge there existed many theories as to the origin of the toxic substances. For this reason scientific prophylaxis was not easy. The pathology was shown by a marked protoplasmic degeneration in the liver, kidney, heart, and brain. Therefore, he recommended the establishment of a well balanced elimination of metabolic products with the least possible cell energy. The presence of a large ammonia coefficient and acetone in the urine was to be ascribed to cell destruction. Therefore tissue energy must be conserved and the patient fed up. There was usually present an increase in the sodium chloride and a decrease in the calcium salts. To illustrate the use of lime salts he cited the following case: A primipara was admitted to the hospital with marked vomiting and albumin in the urine. Proctoclysis by the slow method was given. In twenty-four hours she voided sixteen ounces of urine containing a large amount of albumin and acetone. Nutritive enemata were added, and the vomiting still continued. Then 30 grains of calcium lactate were administered in the enemata. She had vomited once since that time and had continued her pregnancy without trouble, being put on a regular diet. In severe cases with symptoms of central origin as hypertension, coma, and convulsions, watching the circulation had been of great value. Administration of magnesium sulphate, hot packs, venesection and intravenous infusion of saline or cane sugar solution were highly recommended. Veratrum viride might be dangerous, as he considered it as adding another poison to the toxins present in the body. Vigorous elimination by the use of active cathartics should be begun early and delivery should not be hastened. That was to be considered the last resort.

Dr. Walter B. Chase of Brooklyn said the question was whether to save the patient or not, and what means should be used. Delivery ought not to be hastened. To the cathartics mentioned he added elaterin and croton oil as valuable adjuncts. The amount of fluid lost in this way was to be replenished as soon as possible.

The Results of the Early Diagnosis of Urinary Tuberculosis.—Dr. Wm. F. Braasch of Rochester, Minn., read this paper. He said that most cases of renal tuberculosis came to operation when the process was already well advanced, and that of all cases seen only 10 per cent. came during the first six months of symptoms. This was due to the fact that the true nature of the disease was unrecognized, that it was not generally known that surgery was the best means of treatment and that there existed a widespread belief in other cures. Regarding the early diagnosis, he said any case with diurnal bladder irritability with pyuria lasting over a period of several months should be considered tuberculous until otherwise proven. In many cases the irritability might be neurotic, but usually it was then not nocturnal and not attended with pyuria. The usual diagnosis made was Bright's disease, on account of the presence of albumin; because pus was not looked for. A careful examination of the urine should be made. If no pus was to be found tuberculosis could be excluded. With pus present, the diagnosis was to be established either by the presence of the tubercle bacillus or by guinea pig inoculation. This, he said, occurred in every early case. The physical examination in some cases revealed an important sign, a thickened epididymis. Thickening of the ureter and enlargement of the kidney were late signs. By cystoscopy, the localization of the process and degree of bladder involvement were to be made out; whether the infection was ascending or descending; which kidney was involved; whether both kidneys were diseased and the functional capacity of the organs. In the writer's opinion the use of tuberculin was valueless. The cure of renal tuberculosis without surgery was exceptional. The mortality during the last ten years at the Mayo clinic from nephrectomy was 29 per cent. Complications outside the genitourinary tract did not necessarily contraindicate operation. Marked involvement of the prostate rendered the prognosis less favorable.

Dr. Furniss of New York emphasized the importance of an early diagnosis. His experience was mostly with female patients. He said one might get pyuria in young women with irritability of the bladder. In neuroses or chronic urethritis the diurnal irritation was greater than the nocturnal. Hemorrhage was an early sign in this disease. Cystoscopy showed both ureter openings apparently normal until late in the disease. In women it might be possible to palpate the ureters per vagina. In young women bladder irritability usually meant tuberculosis.

Relative Value of Air, Food, and Rest in the Treatment of Pulmonary Tuberculosis.—Dr. Lawrason Brown of Saranac Lake gave a summary of the recent advances in the treatment of tuberculosis. He said fresh air was used in other diseases besides tuberculosis. Coolness, dryness, and active motion of air were essential factors. The temperature in good health resorts should have a daily variation of about 20 degrees and he gave as an example the climate of Arizona. In 1200 patients at Saranac Lake the maximum weight increase took place from August to December. Very prolonged or very intense cold was too exciting to the patient. On the dryness of the air depended the amount of moisture that was absorbed from the body. He recommended the use of the roof rather than the window tent, as there were less bacteria present, the air was cooler, dryer, and in motion. Regarding diet, he quoted: "Eat once for yourself, once for weight, and then once for the bacteria." The scales, he said, were the best criteria of diet, in a patient with no temperature or complications. The aim was to bring the patient slightly above his normal weight, by gaining one pound per week. Then the diet was to be reduced to the lowest point of table comfort and not enough to cause any loss in weight. Milk should be cut out, and three meals given, with plenty of carbohydrates. Digestive disorders must be treated. Rest was imperative, with the author, in treating these cases, even when no temperature was present, and in his opinion autoinoculation by means of exercise was injurious, and fraught with great peril. Rest of lungs could only be obtained with the patient in bed. It oftentimes relieved the cough. The energies were to be used in combating the disease. Boating and driving could gradually be carried on, with the patient in bed afterward. The exercises were fitted at the sanatorium to the various callings of the patients.

Dr. Henry B. Doust of Syracuse said that rest was the cornerstone in the treatment of febrile cases. The physician, he remarked, always thought first of the fresh air and food. The emphasis was to be placed on rest. He believed in rest until the lesion in the lung became inactive, and said that exercise killed many patients. Superalimentation was to be carried on only until the patient was brought up to weight.

Dr. Solomon Solis-Cohen of Philadelphia said the paper represented a decided advance in the sanatorium treatment of tuberculosis. Treatment by rest alone or food alone was injudicious. Both were to be combined.

Dr. Brown, in closing, said that by rest he meant a combination of rest in bed and the work the patient was fitted for. He said tuberculosis was never cured, the process was only arrested, as no one could tell when the tubercle bacillus was killed, but the patient was to be benefited by rest and work. The pulse, he said, was a good indication of the amount of work the particular patient could stand.

The Treatment of Typhoid Carriers.—Dr. Frederick M. Meader of Syracuse said that it was a difficult matter to detect and treat typhoid carriers. The treatment he recommended was by immunization. He explained the usual processes of immunity, mentioning the presence of complement in the blood and the manufacture of amboceptors. The latter, he said, could be increased by injecting a vaccine of typhoid bacilli, in which the organism's vitality was partially impaired, but not totally destroyed. It was better in some instances to use a stock vaccine rather than an autogenous one, as the organism might have become immune to that particular host's antibodies. He reported a carrier in which he had given several injections of vaccine, where typhoid bacilli were found in the stools. As the dosage increased, the amboceptor content in the blood became greater and the bacteria disappeared from the stools. A similar case gave a like result, but he could not say that it was a cure, as she had cleared up spontaneously before. A third case, he said, was under treatment at the present time. This one also showed a gradually increasing amboceptor curve. His conclusions were that (1) frequent administration of vaccine did not rush antibody production; (2) comparatively large doses were needed; and (3) recent work indicated that stock were better than autogenous vaccines for this purpose.

Dr. Charles F. Bolduan of New York said that 3 to 5 per cent. of all typhoid patients became carriers, giving New York State 20 to 30 yearly. The discharge of bacilli as a rule was intermittent. He said the most logical treatment was the one above described and should be tried.

Dr. Edward C. Rosenow of Chicago mentioned a case of a woman with a fibroid who had an attack of typhoid with marked anæmia and sepsis, with two recurrences of the fever. He thought perhaps the fibroid might have harbored some of the typhoid organisms. He said bacterial immunity was the main means by which to get rid of the typhoid organism.

Dr. Abraham Jacobi of New York said that we ought to begin at the beginning. We should get rid of typhoid fever by supplying pure water and pure milk.

Nonsurgical Treatment of Exophthalmic Goiter.—Dr. Solomon Solis-Cohen, of Philadelphia, remarked that the medicinal and surgical treatment of Graves' syndrome were good in their places. The disease was not always due to hyperthyroidism. Many cases had been described by the author with all the symptoms but no goiter, and these cases recovered without surgery. He hesitated in reporting them because he thought some were spontaneous cures. The enlarged thyroid gland was a secondary factor with additional symptoms working in a vicious circle. The first factor in medicinal treatment to be considered was an early diagnosis. Then individualization of the cases was commented upon by the author, as one line of treatment might be of benefit to one case and not to another. Under this head, heredity and tuberculosis, 6 were considered as important factors. By recovery the author meant a disappearance of the symptoms, although the enlarged gland might have remained. He believed that spontaneous recoveries took place in many cases. Rest was the greatest factor in the treatment. The diet was to be carefully regulated not to overtax the system with proteids and carbohydrates. Open air was advocated. Enteric intoxication was to be corrected by flushing and with drugs such as calomel, naphthol, guaiacol, etc., to produce partial intestinal antisepsis. Systematic application of hot and cold by means of electricity or water in order to bring up the vasomotor tone of the patient was of benefit. In order to obtain success with organic extracts, their reliability must be ascertained. The best results were obtained with fresh extracts injected hypodermically or with the gland eaten fresh. The posterior lobe of the pituitary gland, the thymus or reliable preparations of the adrenal glands might be used. The parathyroid might prove a valuable adjunct in controlling the tremor, which might be due to pathological or mechanical involvement of the gland. Drugs, he said, were all symptomatic reliefs. Much benefit had been obtained by the use of neutral hypobromide of quinine. Cactus with rest and strophanthus or digitalis had been found to steady the blood pressure. It had no effect upon the heart unless the rhythm and tone were disturbed. Application of iodine as an ointment locally to the gland in some cases promoted absorption, where the enlarged gland was one of the early symptoms. Electricity had proved useful in the author's hands, in the form of a high frequency current, during the past three years. He said that now there was no specific treatment for this disease. Beebe's serum was of value in some cases. Thyroidectin and autothyroidectin were valueless. The points of importance were, early diagnosis, individualization of cases, rest, and the medicinal adjuncts.

Dr. Eliza Mosher of Brooklyn reported a case illustrating the difficulty in diagnosis, where the onset was with cardiac symptoms. The case was entirely cured by rest.

Dr. George Stockton of Buffalo said the cases must be worked out individually. He was glad that Dr. Cohen has spoken well of cactus and strophanthin.

Dr. Joseph Collins of New York remarked that we should be able to distinguish between the various types of cases for treatment. Otherwise the treatment had to be empirical. Rest gave the best results, together with a purin-free diet. Electricity was of no avail.

Dr. Henry Elsner of Syracuse said the disease was a self-limited one, and that the patients cured themselves. The thyroid gland in its hyperactive state wore itself out during hyperthyroidism and finally this was followed by a condition of myxedema. He thought it dangerous to prescribe organic extracts without specific instructions. He also mentioned that he had frequently noticed the association of goiter with fibroid, especially of the uterus.

Dr. Cohen, in closing, remarked that disappointment from the use of cactus was due to the fact that one did not know what preparation he got. He thought regarding the theory that the reciprocal actions of the hormones lay at the bottom of the etiology of exophthalmic goiter. Hyperthyroidism was, he said, a late symptom. He remarked that Dr. Collins was correct in the statement that spontaneous recovery takes place in a certain percentage of cases, but some were left open for discussion. He repeated that electricity was a valuable aid in very many cases. He also noted the presence of fibroids as well as petechiæ, and papillary excrescences in exophthalmic goitre. He also said that in many cases the thyroid gland finally atrophied and thyroid extract must be administered.

Reciprocal Relations of Cardiac and Hepatic Disease.—Dr. Alfred Stengel of Philadelphia said that the liver was a very elastic organ, which varied in size with changes in the circulation. It distended very markedly under saline infusion, and by experiment it had been shown that it would accommodate 100 per cent its original volume of blood. The changes in cardiac disease were of three types: (1) passive congestion or nutmeg liver; (2) cholangitis, and (3) fibroid perihepatitis. In the first condition, when the heart failed the liver swelled, and vice versa. At times the large liver had been mistaken for tumor formation, because there was as yet no evidence of failing cardiac compensation. However, it was to be interpreted as a conservative effect, for in this way the liver acted as a buffer, when the heart was being overtaxed. On frequent repetition, these cells became degenerated near the central veins and on the periphery a fatty change occurred, and a nutmeg liver was the result. This capacity of this type of liver was only 0.6 per cent. additional. Fibroid changes in secondary cardiac cirrhosis of the liver then followed, further impairing the elasticity to .45 per cent. capacity reserve. He illustrated this condition by reporting a case under treatment for six years, where the first sign of a failing compensation was given by pain in the right side. This was followed by ascites, enlargement of the spleen and fully developed cardiac cirrhosis. In the early stages the liver acted as a reservoir of the blood for the heart, in the end it acted the reverse and made the heart act with difficulty. Jaundice of the severer grades was not to be interpreted as a cirrhosis, as it occurred but rarely. Perihepatitis, also known as Pick's disease, occurred with cardiac affections. Toxemia, due to impaired liver function, affected the heart and caused in some instances degeneration. Pent up infection in the gall-bladder by toxemia and reflex irritation of the vagus might cause cardiac manifestations. In the writer's belief the above facts pointed to active treatment to unload the liver when affected by indiscretions in diet, and to regulate the latter.

Clinical Vagaries in Certain Forms of Liver Disease.—Dr. Nathan E. Brill reported two interesting cases. A young man aged 18 years gave gastric symptoms of pain and vomiting for 3½ years. He was admitted to the Lebanon Hospital and a diagnosis of ulcer of the duodenum or stomach was made. Exploratory laparotomy disclosed no abnormality. The appendix was removed. Two months later the symptoms returned. For six weeks he had had chills, fever and jaundice. Was admitted to speaker's service at Mt. Sinai Hospital, where he developed pain radiating to the right shoulder. Physical examination revealed only an enlarged liver. Test meal was negative. The liver became larger and he became so anemic that his hemoglobin fell to 11 per cent. He was transfused with benefit to his anemia. Analysis of food from a duodenal bucket showed an absence of pancreatic ferments. Three possibilities were thought of: (1) postoperative adhesions; (2) tumor, and (3) Hanot's cirrhosis. Operation disclosed fluid in the abdomen. The liver was olive green in color and very much wrinkled. On puncturing it a few drops of gelatinous fluid escaped from the parenchyma. An autopsy finally revealed the true condition, when an annular sarcoma was found to involve the duodenum, completely obstructing the pancreatic and bile ducts. The second case was that of a man whose liver enlarged daily, without ascites, the liver extending to the ilium. Dr. Brill thought this was probably a case of hyperplastic cirrhosis of the liver, with an increase in the number of cells and in the intercellular fibrillar connective tissue.

Further Studies in Endocarditis.—Dr. Edward C. Rosenow of Chicago, Ill., said that Osler first called attention to the chronic septic or what was now called malignant endocarditis. He said this disease began insidiously, with no history of previous infection, with little or no fever. The cases ultimately, however, became septic and ended fatally. These were now clinically recognized. He said this disease was due to an organism variously termed the *Streptococcus viridans, Streptococcus attenuans* or saprophytic streptococcus. It was to be found in other conditions quite commonly. He believed that this organism was a modified pneumococcus perhaps originating from the tonsil, where it was normally present. He said its properties were: it grew green in blood agar, adhered tightly to the surface, and grew in clumps in the liquid media. In rabbits it had produced endocarditis, affecting principally the valves and chordæ tendineæ. Out of 25 attempts he succeeded in 18, by intravenous inoculation. It was nonvirulent to animals in the ordinary sense of the term,

yet it is said to kill almost every patient that it infected. It usually was found to occur in a previously diseased and vascularized valve. He demonstrated specimens of rabbit's hearts showing lesions varying from hemorrhages to vegetations produced by the intravenous injection of this organism. He believed that these infections were embolic in origin. During the final course of the disease, however, they might have a mural implantation. He spoke in detail of one protracted case where he isolated the organism on almost every attempt and he tried 50 or 57 times. He observed these facts in the case. When the temperature was low the number of colonies per ccm. of blood was high, and when the temperature was high the opposite was true. At the same time when the temperature was low, the bacteriolytic power of the blood was increased, and the phagocytic power was normal. This indicated to him immunity of the bacteria to the host's immune bodies, and he said that was the reason why these patients as a rule could not be cured. Vaccines as tried by him simply did harm, as evidenced by chills and an increased number of bacteria in the blood cultures. The chills meant that the patient had succeeded in destroying a large quantity of organisms and had liberated a large amount of toxic material.

Dr. LIBMAN of New York said that, compared to human lesions in the endocardium, those of the rabbit were somewhat drier. He emphasized the frequency of this type of endocarditis. He said it was a great deal more frequent than was thought. Regarding the causative organism he remarked it never caused hemolysis in the blood plate until 48 hours later. In some, capsules had been demonstrated. He did not believe it should be called the pneumococcus and suggested the name *Parapneumococcus viridans*, as being a diagnostic one to the general physician. There was no real treatment to advise. He said he had collected evidence from ten cases that this disease can heal itself quite often. Old, typical lesions of this type of endocarditis had been seen by him post-mortem. Those that gave positive blood cultures usually died. He mentioned a few cases in the literature reported as recovered.

Dr. BROCKETT of Oneida reported one case of endocarditis following scarlet fever, in which he found an organism corresponding in its characteristics to the coccus described.

Dr. ALEXANDER LAMBERT of New York agreed with Dr. Libman that this disease was very frequent. He said since his connection with Bellevue Hospital he had seen many such cases, but in them no positive blood culture was obtained. Many of these patients died without the organism having been found in the blood.

Dr. HENRY ELSNER of New York said he had seen 7 cases of this type of endocarditis within the last three months. Dr. Rosenow was right in his statement that these infections were always engrafted on a previous endocarditis. These cases were not all easy of diagnosis. He said they often simulated typhoid fever, as there might be no evidence at first of local endocardial change, which might appear only suddenly. A valuable sign, he said, was terminal hemorrhagic infarction. A negative blood culture meant nothing, a positive one, everything. With a chronic type of fever, with or without chills, a characteristic blood count, petechiæ, enlarged spleen and evidences of infarct, with no other cause for the symptoms, a suspicion of the above condition should be borne in mind. He had not seen a case of recovery.

Dr. ROSENOW in closing said when a patient came to him with cardiac trouble, he always advised total removal of the tonsils, as a prophylactic measure. The organism, he said, could be missed in two ways technically. Agar plates should always be made and not too little or too much blood must be added to the fluid media. In the former the growth was found to be practically nil and in the latter it was so enmeshed in the fibrin, clumped together that it could not be seen. The proper balance in the mixture must be obtained. He obtained positive cultures in every case that ended fatally, and of 4 cases in which the cultures were negative recovery occurred in all. Regarding the name of the organism he said that was unimportant. The importance lay in finding it. It should certainly *not* be named *Streptococcus endocarditidis*.

SECTION ON SURGERY.

THE CHAIRMAN, DR. PARKER SYMS OF NEW YORK, IN THE CHAIR.

First Day—Tuesday, April 16.

Surgery of the Battle Field.—Surgeon General GEORGE H. TORNEY read this paper by invitation. He said that within fifty years there had been a radical reorganization of armies. Weapons had changed, and this necessitated a change in the surgical methods of the army. The system used on the battlefield consisted of three divisions—collecting, dressing and distributing. In war, sentiment and even humanitarian feeling had to give way to success in battle. Wars in the future would consist in a quick succession of battles, thus enormously increasing the number of wounded that had to be cared for within a short time. There was never a sufficient personnel in the medical department of an army, no matter how well organized. Because of the long range of rifle fire in modern firearms the danger of surgical service of the army was vastly augmented. The danger in the rear was almost as great as in the front. Their first aid and dressing stations were within rifle range. In spite of this a comparison of the number of wounded in several battles of the Civil War with those of the Russo-Japanese war showed that the number of wounded was not much greater now than during the time of the Civil War. In the future, surgery on the battlefield would have to be limited to emergency cases. The speaker described the work of handling the great number of wounded. In one instance 1,200 men were given surgical attention during one afternoon and evening. Neither did the work of the military surgeon cease with the campaign. During the Civil War 97,000 men died in battle, while 164,000 died of epidemics and sickness. This condition was now changed. Lantern slide pictures were shown illustrating the work on the battlefield.

Surgical Treatment of Old Dislocations of the Shoulder and Elbow.—Dr. LUCIUS W. HOTCHKISS of New York read this paper. After relating the history of the operation of arthrotomy he said that these dislocations might be divided into two groups. First, those which were irreducible from their inception, and second, those which had become so through luxation and the formation of adhesions. In the first group the conditions which might prevent primary reduction were numerous. The head of the displaced radius might be thrust through an overlying muscle, or the head of the humerus might be restrained by an interposing tendon or muscle, or there might be a complicating fracture of the head or neck or process of the bone which rendered reduction impossible without resection. In the second group, which was the larger one, adhesions, contraction of the aperture in the torn capsule and contracting adhesions and atrophy of the muscles and soft parts secondary to trauma, together with other conditions, might make manipulation difficult and dangerous. In old people the closed method was extremely dangerous because of the danger of involving blood vessels, tendons or nerves. It was only by direct inspection that such an operation could be made safe and effective. The mortality in these operations by the open method was about two per cent., which was the same as for the closed method. The speaker had operated on 15 cases, eight of which were of the shoulder, and seven of the elbow, with no mortality. Some stiffness might be expected, but this was amply compensated for by the movable scapula, or restoration of the contour of the shoulder and freedom from pain. Arthrotomy consisted in incision into the affected joint for the purpose of determining on further procedure, and consisted in the division of adhesions, careful conservation of certain tendons, nerves and vascular trunks. Much depended, therefore, on the judgment of the surgeon. In his experience he had dealt only with anterior displacements of the shoulder. Operation on the elbow was more difficult; he used the anterolateral incision described by Kocher. He thought the method of Stimson, carefully followed, best enabled one to open the olecranon fossa, chisel off new growth of bone and deal with various constructing bands.

Dr. I. S. HAYNES of New York said that in attempting to reduce not too old dislocations of the elbow he extended the forearm, adducted it to bring the head of the radius down below the capitellum, then by abducting the forearm, the head of the radius acting as a fulcrum, the olecranon fossa was brought down over the capitellum. When it was necessary to excise the head of the humerus he made the line of section oblique so that the plane of section would look in the same direction that the head did.

Treatment of Simple Fractures by the Open Method.—Dr. JOHN B. WALKER of New York read this paper. He said that in no class of injuries was the prognosis so uncertain as in fractures. Surgeons had been neglecting this subject for abdominal surgery. In Pennsylvania there had been appointed by the State Society a committee to inquire into end results of fractures of the femur and the results had not been as satisfactory as was supposed. The time occupied in recovery was frequently unexpectedly long, especially in the recovery of function. The degree of function that had been secured could usually not be deter-

mmed until after the lapse of one year. He considered the open method applicable to fractures of the patella, olecranon, with wide separation of the fragments, in articular fractures with displacements of the head, fractures of the carpal scaphoid with displacement of the proximal fragment. Operations were indicated in these cases because the resulting disturbance of function was greater when the non-operative method was employed. Other types of articular fractures should be examined at the earliest moment under anesthesia, reduced, fixed and an *x*-ray picture taken, and then there should be careful deliberation before attempting operation. The operation might be said in a general way to be applicable to fractures of the upper and lower third portions of the long bones and on the joints. The question as to the advisability of employing the open method in these cases was propounded to a body of surgeons some years ago and 85 per cent. favored the open method; recently the same question was put to a similar body of surgeons and 85 per cent. favored the open method. Dr. Walker presented a number of slides comparing results obtained by the two methods and showing a number of cases in which the closed method had signally failed and which had been restored to a normal condition by operation.

Treatment of Simple Fractures by the Closed Method.—Dr. JAMES M. HITZROT of New York read this paper, in which he showed what could be done by the closed method in cases of fracture, provided the surgeon possessed sufficient skill and knowledge of mechanical forces. The closed method was less dangerous, as it avoided the danger of infection, and it was by no means as limited in its application as many seemed to believe. The reason results were unfavorable in so many cases was the patients were negligent or the surgeon did not possess sufficient knowledge and good judgment to deal properly with them. The earlier the fracture received attention the better were the results. If reduction was impossible, of course they had to resort to resection. The closed method was particularly applicable to Colles' fractures and Pott's fractures and to those of the forearm and lower leg. He thought there was nothing better than the moulded plaster splints used by Stimson. In robust and muscular individuals and in those of extreme age or those in whom for other reasons reduction could not be effected, some form of extension and fixation, permitting continuous traction, should be applied. This method by traction could not be properly carried out by men not capable of appreciating mechanical details. The degree of abduction and flexion was a problem for each case. Where immediate reduction was possible, and control palpation, measurement, and alignment of the limb as compared with the opposite side were satisfactory, fixation should be at once applied. The results of traction should be controlled by daily measurements, palpation, and adjustment of the alignment. It was folly to take off the weight and move the patient to take an x-ray picture after a week or ten days, as it would give little or no value as to the worth of the extension. Dr. Hitzrot exhibited a number of lantern slides showing how the extension apparatus was used and the perfect results that had been obtained in a number of cases.

Dr. SAMUEL LLOYD of New York said that in his opinion one should be prepared to treat these cases by either method. In cases where the displacement could be overcome completely and retained in apposition readily, when crepitus was clearly made out, no surgeon should think of operative measures. On the other hand, when it was evident that the fragments could not be held in position or when the fracture was complicated or multiple, especially where there were small fragments, he operated and put the fragments in position. In cases where crepitus could not be obtained it was evident that there was a shred of tissue or a blood clot separating the fragments. These cases must be operated upon. When complete reduction could not be obtained in fractures of the elbow operative treatment was absolutely essential. He referred to a paper which he had read before the society in which he showed that ankylosis of the elbow joint was nearly always due to bone deformity, either displacement of fragments or callous, and not to fibrous bands. He said he wished Dr. Walker had spoken of the treatment of fractures of the head of the femur by the open method. He believed that good results in fractures of this class could be obtained if the fragments were brought in apposition by plates or nails.

Dr. A. T. BRISTOW of Brooklyn said there were two objects to be attained in the treatment of fractures, the restoration of function and the prevention of visible deformity. It was quite possible for the *x*-ray to show considerable deformity when as a matter of fact little actually existed. It did not follow that because the *x*-ray plate showed a want of apposition one should resort to the open operation. An infection in an ordinary wound of the soft parts was rarely serious, but it was far different in a bone operation, because here one had to deal with an infected compound fracture, which was one of the most serious of conditions which confronted the surgeon.

Lateral Curvature of the Spine.— Dr. WALTER TRUSLOW of Brooklyn read this paper, in which he made a distinction between functional weak back and structural scoliosis. He said that in functional weak back they should hunt out some cause for the condition by examining with great care as to detail into the habits of life of the patient, into the clothing, nourishment and hours of study, etc. This condition was principally due to muscular weakness, and the treatment indicated was proper training as regarded posture, exercises of various kinds and muscle building, and the child that was not remedied by these hygienic measures should have mechanical support. The question for the physician to decide was whether the child could in the short time that could be given to treatment secure the training needed; if not, a brace should be applied. In structural deformities these measures fould be of no use; it was necessary to apply force to the deformity and then to maintain the corrected posture by means of a plaster of Paris jacket. The attention should be directed to pressure and traction on the thorax when the patient was in the extended position. In 1911 Abbott had obtained greater correction by applying the jacket in the flexed position (dorsal decubitus). The writer said he could not give any opinion as to the relative value of these methods. The benefit of the treatment depended upon progressive untwisting of the spine and upon the use of chest developing windows at the sites of thoracic depression.

Operations in Pott's Disease.—Dr. RUSSELL A. HIBBS of New York read this paper, in which he described his operation for Pott's disease, illustrating it by lantern slides. The operation had been performed in three cases one year ago, and at this time the results were excellent. Few cases, however, recovered with movable joints.

Dr. H. B. WHITBECK of New York called attention to the importance of early diagnosis in Pott's disease as in pulmonary tuberculosis. By early diagnosis and efficient treatment with a plaster jacket or brace, cure with little or no deformity could be obtained. He emphasized the importance of efficiently applied jackets or braces immobilizing the spine in the greater part of its extent.

Dr. CARLTON WALLACE of Syracuse said that Dr. Hibbs' operation was a good one if he could shorten the period of treatment to one year, when it usually took from three to five years to effect a cure. Most cases got well, with motion at the site of the disease; motion was likely to be better in the cervical or cervicodorsal region. It was poorer or there was very little at from the fourth to the twelfth dorsal vertebra.

Radiographs of Argyrol or Collargol Injections of the Urinary Tract.—Dr. HENRY DAWSON FURNISS of New York read this paper and gave a lantern slide demonstration. Argyrol, 10 to 50 per cent., and collargol, 5 to 25 per cent., were substances most generally used, as these solutions mixed readily with urine. In case of stone that had lodged in the ureter at a point for any length of time there was always a dilatation above it. Here they obtained the relation of the shadow suspected of being the stone and its relations to the ureter and the dilatation above. In cases of floating kidney, with symptoms of renal pain, they had nearly always found some dilatation of the renal pelvis. In renal tumors encroaching upon the kidney pelvis the amount and degree of distortion was graphically depicted. This was of great differential diagnostic importance. During two years he had seen five cases of three ureters and one of four. The method had been useful in the determination of stricture, both of the upper and lower ends of the ureters. They had had several cases of obstruction of the ureter near the pelvis of the kidney. It occurred in the forward and downward direction. They had had ten cases of stricture at the vesical end of the ureter. Nearly all of this work had been done by Dr. Leopold Jaches. The technique was as follows: The patient took 1½ ounces of castor oil the night before and the next morning tea, coffee, or broth. Radiographs were then first made of the entire urinary tract before any injection was given. This was to determine the presence or absence of stones. The suspected side was then catheterized to the renal pelvis. The patient was then put into position and the compression diaphragm adjusted over the area to be radiographed. The silver salt was then introduced. After two or three minutes the exposure was made.

(To be continued.)

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Original Articles.

CLINICAL INDICATIONS FOR DIRECT TRANSFUSION OF BLOOD, WITH THE AUTHOR'S TECHNIQUE.*

By A. L. SORESI, M.D.,

NEW YORK.

DIRECT transfusion of blood should interest not only the surgeon as formerly, but the general practitioner as well. Although the procedure of transfusing blood belongs to the domain of surgery, the general practitioner should have as clear an idea as possible nowadays of its clinical and curative value; a number of patients who could derive great benefit from it, when indicated and properly performed, belonging to the domain of the family physician.

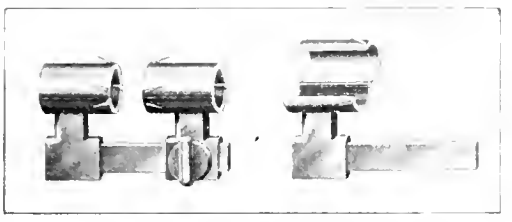

Fig. 1.—The complete Soresi instrument; the figure on the right shows how the instrument opens on a hinge.

It is not possible yet to formulate any final conclusion as to its value; no man has had enough cases to enable him to do so. One thing I can affirm from the experience gained in my experimental work on animals and twenty-five transfusions on human beings is that transfusion performed with the method to be described later is absolutely safe for both donor and recipient, and that there is the positive certainty that blood will always flow freely from the blood-vessel of the donor to the blood-vessel of the recipient, so that technically transfusion is easy to perform and absolutely perfect. It would take too much space to give a detailed history of the twenty-five cases in which I have performed transfusion; in the majority, having been called by other physicians, I will only mention the pathological condition which caused dangerous symptoms that could be benefited by transfusion. Two ruptured ectopic pregnancies, five patients necessitating an operation on the biliary tract, one pneumonia, two cases of hemorrhage in typhoid fever, one ulcer and one cancer of the stomach, three miscarriages, one delayed expulsion of placenta, one sarcoma of leg, one large ovarian cyst, one large myoma necessitating hysterectomy, one carcinoma of sigmoid, one asphyxia from illuminating gas, one Bright's disease, one bleeding hemorrhoids, three severe post-operative shock. In six other cases in which I was called in consultation I thought transfusion should not be resorted to; in two cases the patients were suffering from pernicious anemia, another one was a case of advanced and inoperable cancer of the uterus, in three others the would-be donors were, according to my judgment, in too poor condition, so that their blood would not have greatly benefited the patient, and they might have suffered from its loss. In a few instances I was convinced that transfusion would not benefit the patients, but some of the relatives were so anxious to try it as a last resort that, there not being any danger for the donor, I thought it was only humane to satisfy their wishes.

As seen at a glance the cases can be divided into two classes: in one, the patients needed to have replaced the blood lost through hemorrhages; in the other the blood was used as a therapeutic agent, to better the condition disturbed by a pathological process, and to accelerate the final recovery; while in some both indications were present.

Very gratifying results have been obtained in hemorrhage from all causes, provided the condition that caused the hemorrhage was removed. The important problems of treating hemorrhage lay in the nature of the hemorrhage, and in its gravity *per se*, and in relation to each patient. The bleeding may come from large blood-vessels easily accessible, or which require a surgical operation to be reached; or there may be oozing from capillaries, such as from ulcers of the stomach and intestines, hemoptysis, bleeding from the biliary tracts after operations on the same, in hemophilia, etc. In the former class, after tying the bleeding blood vessels, the indication is to replace the liquid tissue lost; in the second class when surgical procedures cannot be resorted to, the blood is transfused not only as a liquid, but as a therapeutic agent which may stop further bleeding. Keeping these considerations in mind, the first problem to be answered is, "When is saline solution sufficient, and when is direct transfusion indicated?"

It is clear that when the hemorrhage comes from oozing from tissues or ruptured small capillaries, and bleeding is frequent, severe, and repeated, it is because there is lack of coagulability of the blood. Whether this happens because the blood does not

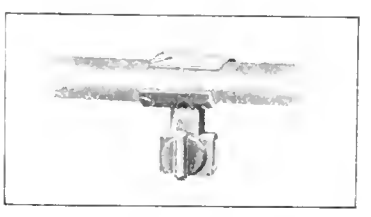

Fig. 2.—Showing how the blood-vessel is laid in the cylinder

contain enough of the principles that make it coagulate, which are not yet well known, or because it does not stimulate the small blood-vessels and capillaries to contract, it is a fact that such conditions are present in the normal healthy blood, and direct

*Read by invitation at the meeting of the Brooklyn Medical Society, February 16, 1912.

transfusion is thereby indicated, because saline solution will only dilute the active principles which cause coagulation, and therefore retard or oppose the same. In hemorrhages caused by a condition which can be absolutely cured surgically, such as

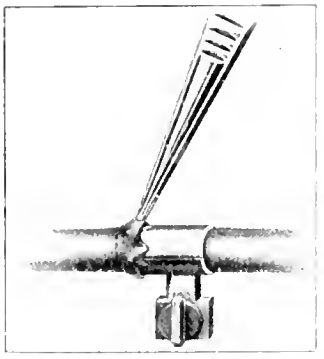

Fig. 3.—Showing how the blood vessel is cuffed over the hooks while blood is still flowing in it; the dotted line shows where the vessel must be cut.

a wound of a blood-vessel, ruptured ectopic pregnancy, etc., saline solution is in the great majority of cases sufficient. Blood transfusion should be employed only when the loss of blood has been very severe, and shock is present, and the hemopoietic organs would be unable to supply in a reasonable time new active elements of the blood which must carry on the work of general metabolism. So it is clear that, if the patient is young and strong, he will be able to stand a loss of blood greater than a person in poor health and anemic, and the severity of the hemorrhage must be judged on these lines: what is very dangerous for an anemic person would hardly be felt by a vigorous, healthy youngster. I give an example which will make things clear: Loss of a certain amount of money might be the ruin of a poor person, and a matter of absolute indifference to a wealthy one. Transfusion will not help a patient who has lost a great amount of blood and has not ingested any liquid for a certain time; his external blood-vessels especially will be contracted, and the blood transfused either from an artery or a vein of the donor will not pass into his vascular system. The old surgeons suspected this and tried to force the blood in the vascular system either with pumps or by using the carotid artery of human beings or animals, so as to make it reach the heart, which would put it in circulation. There is no need of insisting that such a practice would be very dangerous. The physician must know that there is a limitation to the specificity of the blood in treating hemorrhages.

In my series of cases transfusion, although successful technically, did not help the patient in one case of hemorrhage from miscarriage, and in another from ulceration of the intestines in typhoid fever; the patients died while transfusion was going on. The other miscarriage cases were saved and in the other typhoid fever patient the hemoglobin from twenty per cent. rose to fifty, and kept so to the end of the disease without any new hemorrhage. I will discuss later the cases of hemorrhage and shock which have been operated upon.

Another series of patients can be made of those in whom the blood was used as a therapeutic agent exclusively, no hemorrhage having occurred, as in the cases of asphyxia, pneumonia, and Bright's disease; in these cases the system was loaded with poisonous products, such as those found in those pathological conditions. The therapeutic principle was to bleed the patient while new blood was transfused. Transfusion was performed, using the blood-vessels of the arm, and blood-letting from a vein of the leg. In the cases of asphyxia and of pneumonia, the patients derived benefit from transfusion; a remarkable fact is that it was very hard to obtain blood from the patient's vein; in the Bright's disease case transfusion was useless, and performed only because the brother of the patient insisted on having it tried as a last resort, patient being only thirty-two years old. I would not dare to draw any conclusion as to the benefit that can be derived from transfusion and blood-letting combined in pneumonia, but I think the subject worthy of study.

We will come to the last series—patients who have been transfused and had to undergo some surgical operations. Of this series there are two classes: in one the patients had lost prior to the operation a great amount of blood; in the other transfusion had been done to prevent or cure shock, hemorrhage, or other complications which might arise from the poor condition of the patient prior to and after the operation. In the three severe cases of postoperative shock transfusion was useful in only one; the other two patients died, one after about forty-eight hours, the other two hours after transfusion; both patients had received previously saline solution and one blood serum. The two cases of ruptured ectopic pregnancy were helped by transfusion and recovered; of the three cases of miscarriage and placenta previa, one died as said above.

I have come to the conclusion that transfusion should be performed in any case which requires operation, during the operation. Many patients could be saved if the shock which is caused by the anesthetic and hemorrhage during operation could be prevented; this is especially true of cases requiring operations on the biliary tract, pylorus, pancreas, or for large tumors of abdominal organs. I feel positive that in these cases transfusion performed during the operation is really a life-saving procedure. Of the five cases of operation on the biliary tract two patients died: transfusion in one was performed three days after operation; blood serum and saline solution had been used previously; in the other transfusion was performed five hours after operation and the patient died a few hours later. In the other three transfusion was performed during the operation, and the patients made an uneventful recovery, although one had only thirty per cent. hemoglobin before the operation: in none did postoperative hemorrhage occur. The importance of transfusing blood while the operation is going on lies in the fact that shock is pre-

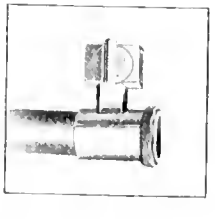

Fig. 4.—Appearance of the blood-vessel after being cut.

vented, because new fresh blood is coming in while operative hemorrhage occurs; the effect of the anesthetic is lessened, and in cases of operations on the biliary tract, pylorus, and pancreas, the new blood prevents postoperative hemorrhage.

Of all the other cases it can be said that transfusion was a great help to the patients, their hemoglobin increased after the operation, and they made uneventful recoveries. As a conclusion I think that when a patient is in poor health conditions his hemo-

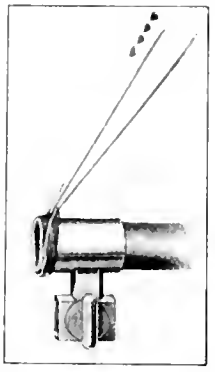

Fig. 5.—Showing how easily the intima is completely everted.

globin is below fifty per cent., and he has to undergo a severe operation, transfusion will help him to final recovery and very probably save his life. Transfusion is absolutely contraindicated in pernicious anemia and in anemias caused by malignant diseases unless the cause is removed.

As I want to make a complete study of transfusion I will be thankful for anyone reporting to me the results obtained; and I am willing to perform the same, of course without any charge, for any hospital patient requiring it.

I will limit myself to the description of the technique of transfusion from vein to vein, because I have lately been so well satisfied with it that I do not see any use of sacrificing an artery when a vein of both donor and recipient can be advantageously used.

The technique of using the radial artery of the donor is identical with the technique described for the vein. The objection to using venous blood I think is absolutely worthless. The arterial blood of the donor would become venous immediately after transfusion, because it has to go into the vein of the recipient, and as long as the blood has to go into the venous system of the recipient I think there is an advantage in using venous blood from the donor, because the two bloods will be more homogeneous.

My instrument is composed of two small metal cylinders, about three mm. in diameter, which are put and held together by means of a small bar and screw (Fig. 1). Each cylinder is opened on its longitudinal axis by a simple hinge (Fig. 1), and at one end a little below the edge is encircled by a crown of six small hooks, the points of which are turned toward the other end, as shown by the illustrations 1 and 2. In order to make the instrument durable the same is made of sterling silver; it is very easily kept clean, and can be sterilized by simply boiling it. The hooks are made of very hard gold and are very sharp and must be kept so, because they must readily catch the blood-vessels when cuffed over them. It is easy to keep the hooks sharp by not injuring them, and in case they are not very sharp they can be filed with a small jeweler's file. I think that the illustrations make the procedure very plain to anyone who will take the trouble to follow them.

The blood-vessels of both donor and recipient must be isolated for about six or seven cm. and care must be taken not to injure them by pulling on them too hard, or by any other rough handling, which is, moreover, absolutely unnecessary. Every lateral branch is ligated about two or three mm. from the main trunk. The isolated blood-vessel is lifted up and one of the two cylinders is opened and the blood-vessel laid in it (Fig. 2). The instrument is then closed. With a thumb forceps the blood-vessel is cuffed over the hooks of the cylinder (Fig. 3). The cuffing of the blood-vessel must begin over the two hooks which are near the opening and are the only ones shown in Figs. 1B and 2, so that, when the blood-vessel is so cuffed over the hooks, the instrument cannot open. The cuffing is done with small thumb forceps, the points of which must be blunt and the two blades grooved on the inside, so as to enable the surgeon to catch the blood-vessel firmly without puncturing it. Sometimes on account of having chosen a blood-vessel of not very large size, it is difficult to cuff it all around the cylinder as shown in Fig. 3. In Fig. 3 is shown the ideal way of cuffing the blood-vessel over the hooks, that is, starting from the two hooks near the opening and finishing as shown in the illustration, with the one nearest to the opening; but if any difficulty is experienced in doing so, the surgeon need not worry, for as long as the blood-vessel is cuffed over the two hooks near the opening, and one or more hooks around, that is entirely sufficient, because when the blood-vessel is cut it will not retract, and it will be easy to finish the eversion of the intima, when the vessel is cut as explained later. Exactly the same procedure is repeated for the blood-vessel of the donor. The two cylinders have to be put with the screw and the bar toward the operator, so as to make twisting of the blood-vessel absolutely impossible. When both blood-vessels have been cuffed over the hooks, the limbs of the donor and recipient are closely approximated. First the vein of the recipient is cut about 1 mm. from the edge of the cylinder as shown in the dotted line of Fig. 3. The other end is clamped and ligated later. When the blood-vessel is cut the appearance of same will often be as shown in Fig. 4, that is the intima will not always drop back completely. This is very easily and rapidly accomplished by pulling down with the thumb forceps (Fig. 5) the cut edge of the blood-vessel, so that its appearance will be as shown in Figs. 6, 7, and 8. The vein of the recipient everted over the cylinder will be covered immediately with gauze soaked in warm saline solution. The vein of the donor will

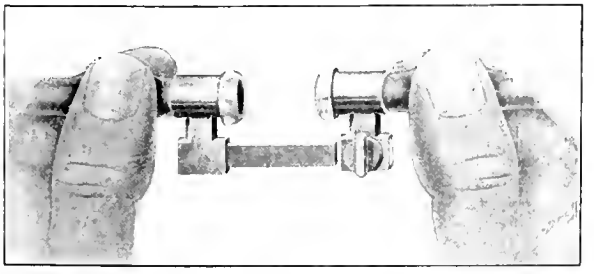

Fig. 6.—How to get hold of the blood-vessels to prevent them from bleeding, and how the bar of one cylinder is introduced into the corresponding hole of the other.

be cut in the same way, while the assistant makes pressure on the side whence the blood is coming with his index and thumb fingers as shown in Fig. 6. When the blood-vessels of the donor and of the recipient are everted over the cylinders the

surgeon will place the thumb and index finger of each hand around the blood-vessels close to the cylinders, as shown in Fig. 6, and so prevent bleeding without injuring the vessels in any way. The bar of one of the cylinders will then be introduced into

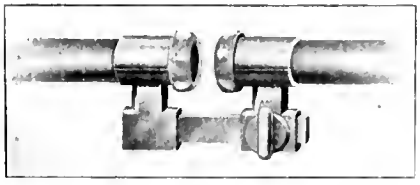

Fig. 7.—Showing how to keep the blood-vessels so that blood flows from them, assuring the operator that the blood is freely flowing before the ends are approximated, as shown in Fig. 8.

the corresponding hole of the other cylinder, the pressure of the fingers released (Fig. 7) so that some blood will flow from the vessels. *In this way the surgeon is positively sure that there is no clotting and that the blood is actually flowing from the vessel of the donor to the vessel of the recipient.* When the surgeon has assured himself that the blood is flowing freely, by leaving for a few moments the blood-vessels as shown in Fig. 7, he will approximate them closely as shown in Fig. 8. *While the blood is flowing* tighten the screw, and the procedure is finished. It is easily understood that the blood will flow from the vein of the donor to that of the recipient, as though the two were only one continuous blood-vessel.

When performing transfusion between adults, the veins of the forearm of both donor and recipient can be used as shown in Fig. 9. It has to be remembered that the limbs of both of them must be put in the same direction, because the blood is flowing from the periphery of the donor toward the heart of the recipient, and in order to help the flowing of the blood the donor is advantageously put on a higher plane so that gravity helps it. While performing transfusion during a surgical operation, if the use of the forearms should interfere with the work of the surgeon, the vein of the lower limbs for both donor and recipient or for only one of them, according to circumstances, can be used. In transfusing from adults to children, a vein of the thigh of the child must be used, and the most accessible vein is the external saphenous, and the position to be given to both donor and recipient can be as the one shown in Fig. 10. If the external saphenous be too small the femoral vein has to be used. The former must be preferred, when possible, on account of its accessibility, and the fact that no other important structure can be injured.

There are certain precautions on which I insist when performing transfusion from vein to vein,

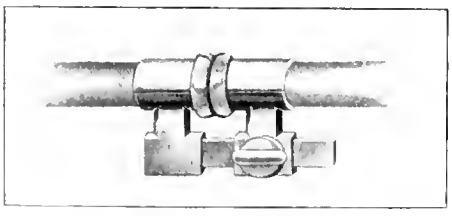

Fig. 8.—[illegible] approximated; screw tightened; procedure completed.

and unless the surgeon conforms to these rules the procedure will be unsuccessful. The blood-vessels of both donor and recipient must be kept constantly covered with gauze soaked in warm saline solution, which must be kept warm by pouring on new warm solution all the time. *This is absolutely indispensable, because in order to have the blood flow from the vein of the donor to the vein of the recipient the veins must be put in the same conditions as they are in the normal human body, that is, they must be surrounded by a warm moist medium.* If left exposed to the air the veins will contract and the *vis a tergo* of the blood in the vessels of the recipient will not allow the blood of the donor to enter the vascular system of the recipient himself. I insist again on this point, because I have seen surgeons looking all the time at the anastomosed vein, and afterward complain that the blood was not running from the donor to the recipient. Once the surgeon is sure that, when he has put the two blood-vessels in contact, the blood was running freely from the vessel of the donor, it is useless to look at the blood-vessels. The only way to assure oneself that transfusion is going along satisfactorily is the improving condition of the patient and the hemoglobin test. By starting the hemoglobin test with any one of the simple methods of blotting paper and comparing it with the hemoglobin scale, before transfusion is commenced, and examining the blood at frequent intervals of about five minutes, the surgeon will know that the blood of the donor is passing into the system of the recipient.

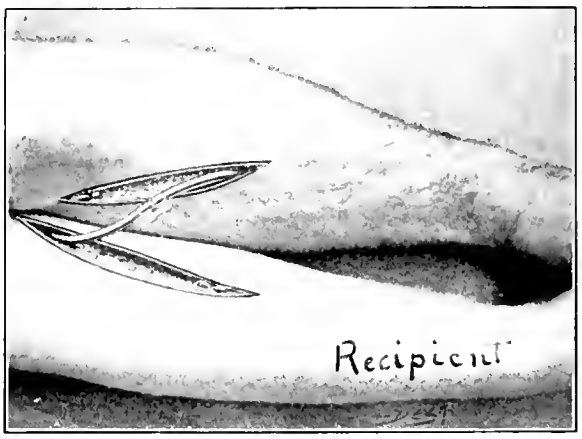

Fig. 9.—Position of the arms of the donor and recipient when transfusion is made from vein to vein.

Another important point is that there must be no tension between the two blood-vessels.

The time to stop the flowing of the blood from the donor to the recipient must be left to the judgment of the surgeon, but I should say that when the hemoglobin of the recipient has been increased by from twenty-five to thirty per cent., it is time to stop. One thing that the surgeon must be careful about is the condition of the donor. He must be put in a very comfortable position, because otherwise, by getting fatigued, will need to change it. He must be laid on a table well padded, with the head on the same level with the body or even a little lower if necessary. The limbs of both donor and recipient must be closely approximated, but in a comfortable way, in order to avoid stretching of the anastomosed blood-vessels and any movement on the part of the donor. The donor must be watched very carefully in order to detect any sign of weakening on his part, so that his life may not be put in danger. The care that we give to the donor is the same as we would give to anyone who was suffering a severe hemorrhage, and if the surgeon keeps this point in mind he will understand that at the least sign of weakening on the part of the donor transfusion should be immediately

stopped and saline solution if necessary given him by proctoclysis, hypodermoclysis, or simply by giving him some water with whiskey, brandy, or coffee, putting his head low and keeping him in a horizontal position as long as the surgeon thinks it is necessary to keep him so. I must warn the surgeon against the danger of the rapid passage of the blood from the donor to the recipient. This can occur especially in cases of severe hemorrhage, because a few minutes after transfusion has been started the vascular system of the recipient actually sucks the blood from the donor in order to supply the necessary amount of liquid that is indispensable for its own work, and the danger of this condition is acute dilatation of the heart on the part of the recipient and severe shock to the donor. This has never occurred to me when using vein-to-vein transfusion. I think this is one of the advantages of using vein-to-vein instead of artery-to-vein transfusion, because the blood of the donor is not under a higher pressure, and the passage is uniform and slow.

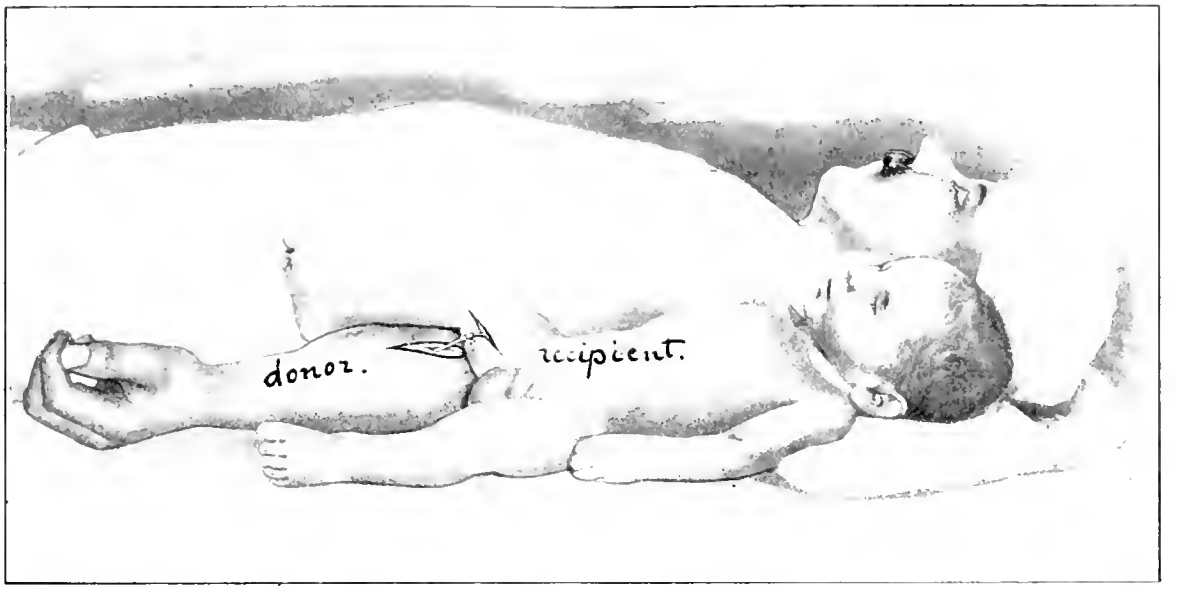

Fig. 10.—Position of the child (recipient) and adult (donor) in arm-to-leg transfusion.

I will call the attention of the surgeon to the fact that in the method just described the anastomosis of the two blood-vessels takes place between the intimas of the two vessels which have in no way been traumatized, because the instruments which traumatize the blood-vessels over the point of the anastomosis, such as hooks, needles, and thread, are not used at all. Another point to which I want to call the attention of the surgeon is the absolute safety of the procedure. There is no danger of injuring the blood-vessel of either donor or recipient and so cause clotting, because no serrefines, clamps, or anything else intended to stop the flow of the blood while preparing for the anastomosis have to be used.

Finally the surgeon has the absolute certainty that the blood from the donor will run into the blood-vessels of the recipient, because, as explained above, before he brings the two vessels in contact, he lets the blood flow from the cut vessels, so that he is sure that there is no clotting or any other obstacle which will interfere with the free flow of the blood; while with any of the other methods no one can be sure that when releasing the serrefines or the clamps the blood will flow from the donor to the recipient, because the anastomosis has to be completed, while the clamps or serrefines are in place, and this requires sometimes a considerable time. That with other methods the blood frequently does not flow after the anastomosis is completed has been verified by everyone who has used them and followed the advice given by their authors to massage the blood-vessels. Such procedure cannot be condemned strongly enough, even if no serious accident has been reported from it. There is a great possibility that by massaging the veins the emboli so produced might block an important blood-vessel, and the risk is so apparent that I do not think it is necessary to do more than mention it. Local anesthesia with cocaine solution 1 to 500 is sufficient. No adrenalin should be added on account of its action in causing contraction of the blood-vessels.

75 West Fifty-fifth Street.

SOME SUGGESTIONS ON THE TREATMENT OF INTRANASAL CONDITIONS.

By A. EMIL SCHMITT, M.D.,

NEW YORK.

INSTRUCTOR IN OPERATIVE SURGERY, COLUMBIA UNIVERSITY; ATTENDING SURGEON GERMAN HOSPITAL, O.P.D.; MEDICAL ADVISER ETHICAL CULTURE SCHOOL, ETC., ETC.

In acute and chronic rhinitis and nasopharyngitis more or less frequent cleansing of the nasal cavity is accepted as a proper procedure. Heretofore this has been carried out by the patient by the use of sprays or douching or sniffing of salt water or of solutions with combinations of drugs, such as sodium chloride and bicarbonate with boric acid; or as found in the various detergent solutions usually containing thymol, eucalyptol, sodium chloride, bicarbonate, and biborate, with or without glycerine and alcohol. With a dry condition of the membranes, solutions containing glycerin seem to be contraindicated and solutions free from glycerin and alcohol are advisable.

When using the nasal douche, the patient should be instructed to hold his head sideways, over a basin, instead of backwards, and to apply the douche to one nostril and permit the fluid to pass through and run out of the other nostril. The mouth should be kept open in order to fix the soft

palate and allow breathing to go on through this passage. The patient is cautioned not to swallow, which would relax the palate and cause the fluid to enter the pharynx or larynx and produce a paroxysm of cough. After clearing the nose the

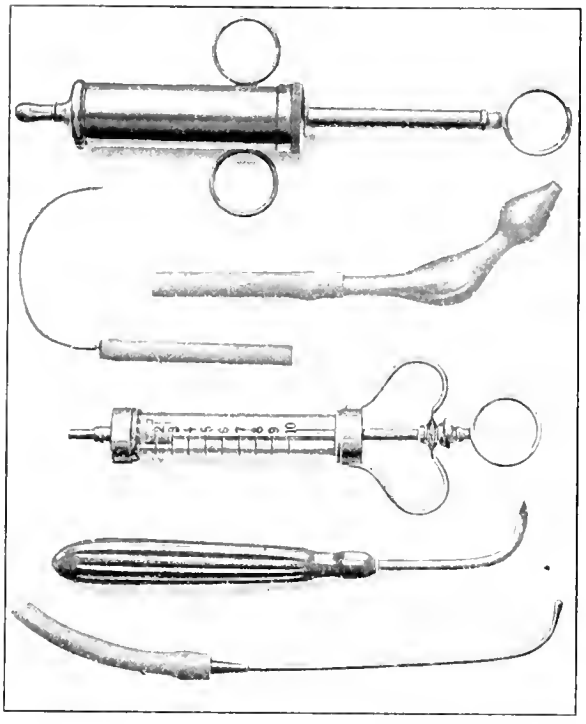

Fig. 1.—Suction pump, glass nozzle, probe cannula, irrigating syringe, trocar for maxillary antrum, cannula for trocar opening.

douche is refilled and applied to the other nostril; the fluid then flows in the opposite direction. This is less harmful than the use of an atomizer, as it does not so much injure the epithelial lining.

Far superior to any spraying or douching of the nose or the nasopharynx and, especially for prolonged use, is the cleansing of the nose from behind forward. This might be called nasopharyngeal gargling and is performed as follows: After brushing the teeth and rinsing the mouth, the throat is gargled to free it from food particles and mucus, which would be liable to be projected into the nose. After taking a long breath, a mouthful of the cleansing solution chosen is taken, the head is thrown back, as with ordinary gargling, but instead of fixing the palate and projecting the air through the mouth, as in ordinary gargling, the palate is relaxed and the air is blown through the nose with the same gurgling force. The fluid thus mounts higher and higher into the nose until it is discharged from the anterior nares. The head is now thrown forward over the basin to allow the fluid to flow out. This procedure is repeated three or five times until the nose is thoroughly cleared and open. Spraying the nasopharyngeal space is usually most unsatisfactory on account of the uncontrolability of the soft palate, the constriction of the nasopharyngeal space, due to the spasmodic contraction of the muscles of that region, and the possibility of trauma from upward projecting nozzles necessary for the purpose. On the other hand, the nasopharyngeal gargling just described is as harmless to all the tissues as douching and far more effective because it reaches all the crevices and, on account of the natural slant of the turbinals, the fluid, passing from behind forward, cleanses both the inferior and superior surfaces of these bodies and flushes the meatuses as well as the septum. Besides this there is no injury to the tissues, as with the projecting spray or nozzle of the atomizer. The nasopharynx and the posterior nares, which are the most important places for harboring disease germs and infectious material, are reached more effectively than is possible by any other method.

This procedure, so beneficial as a curative agent, is far more so as a prophylactic measure. From personal experience it has been determined that with its daily application as a part of the morning toilet, severe inflammatory processes which previously thereto had been of most frequent occurrence, have been prevented and aborted over a long period of months. The procedure requires some experience and skill before it can be acquired, but if each step of the instructions is faithfully carried out and persisted in, success eventually will come and the benefits thereby derived will many times repay the effort used in acquiring it.

The objection may be raised that with a forcible projection of fluid into the nasopharynx the solution might enter the relaxed orifices of the Eustachian tubes and cause middle-ear infection. If any fluid should enter the tube a very simple procedure will withdraw it. This consists in compressing the nostrils with thumb and forefinger of one hand and at the same time swallowing a glass of water without taking a breath. This will produce sufficient suction to withdraw the fluid and thus clear the tubes. This is the method I have used for several years in all otitis-media cases, having it repeated frequently during the day for clearing the tubes of secretions and causing an exchange of air in the middle ear.

In cases of severe rhinitis due to ordinary infection or more particularly to influenza, extension to the sinuses often occurs. The ostia of the sinuses are so situated, that for ordinary purposes they are in the most protected places to prevent entrance of extraneous matter; but if infection enters and a secretion in the form of serum or pus is present, the ostia are placed most disadvantageously for proper drainage. Nevertheless, in carrying out conservative treatment it is possible, by resorting to the posture of the head, to have the ostia placed at a most dependent point, and then by means of

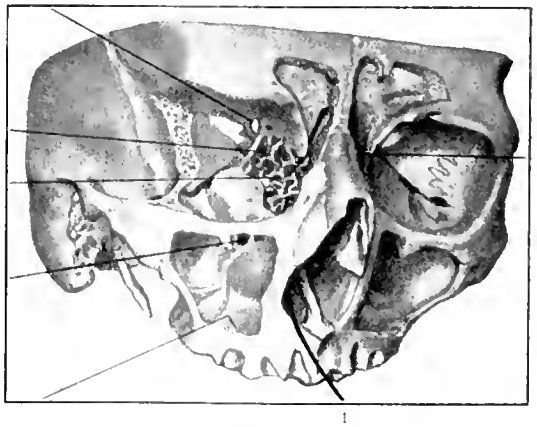

Fig. 2.—1, Probe cannula passed through infundibulum and nasofrontal duct into frontal sinus. 2, Ostium of maxillary antrum is seen at upper inner angle of sinus. 3, 3, Ethmoidal cells are seen with orbital wall removed.

suction, or irrigation and medication combined with suction, to defer operative procedure or to render such unnecessary.

In inflammations of the nose that have extended through the hiatus semilunaris into the nasofrontal

duct or into the ostium of the maxillary antr[illegible] through the ostium of the sphenoidal sinus. I h[illegible] found the following procedure most effective [illegible] nasal membrane receives an application of one [illegible] the penetrating non-irritating silver preparation[illegible]

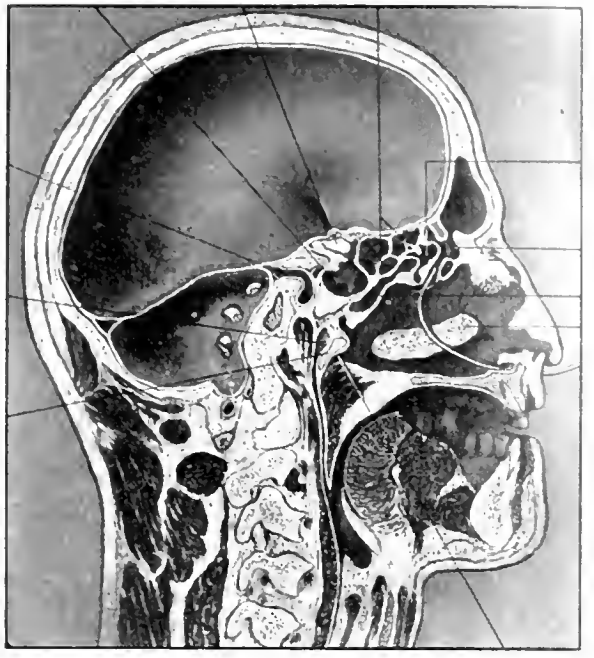

Fig. 3.—Middle turbinal removed to show probe [illegible] through hiatus semilunaris and infundibulum. The frontal sinus communicates with the nose indirectly through the ethmoidal cells. Removal of ethmoidal cells would be necessary to penetrate into the sinus with a cannula.

It is then sprayed or douched with a detergent solution, as would be done ordinarily for disinfection and treatment of acute or chronically inflamed membranes. In the case of frontal sinusitis, cocain is then applied to the region of the nasofrontal duct, particularly on account of its non-irritating, astringent effect. Thereafter suction is carried out by means of a glass nozzle and suction pump, the former connected with the latter by a small piece of rubber tubing, thereby minimizing the shock when the piston is brought down. The glass nozzle has an ampulla below which catches the secretions and prevents them from entering the pump. The amount of suction is regulated by compressing the nostril of the other side, the inrush of air counteracting the suction as well as sweeping the secretions from the nostrils into the glass nozzle. The glass nozzle completely clogs the nostril into which it is inserted and the pressure of the finger against the other nostril occludes both openings, preventing access of air from this source, otherwise no negative pressure would result. The patient is instructed to take a few deep inspirations and after expelling the air to keep his lips tightly closed. The suction pump is now put into action and continued until the patient shows distress in the region of the sinuses or is again compelled to take breath. The interval permits cleansing of the nozzle which by this time has received some of the secretion from the nose or even from the sinus. The suction is to be repeated from four to six times on the affected side, or on both sides if both sinuses are involved. The treatment is repeated every second or third day according to the acuteness of the condition. Relief usually is immediate and lasts for many hours, each subsequent treatment prolonging the time the patient is free from pain. We thus effect not only withdrawal of retained secretions and an exchange of air in the sinuses, but also a temporary hyperemia which is most effective in all inflammatory processes. At first only mucus from the nose or mucus, mucopus, or pure pus from the sinus itself may appear in the ampulla of the glass nasal nozzle. If pure pus appears at the first and the second treatment, this is rapidly changed on subsequent treatments to mucopus or pure mucus with a corresponding relief of pain or discomfort over and within the sinus. The patient is instructed repeatedly to use suction at home by means of compressing the nostrils and swallowing with or without fluids. This, with internal medication in the form of salicylates, purging, drinking of alkaline waters, douching or gargling the nose, and the application of heat or cold to the affected sinus will effect a rapid cure.

In the treatment of inflammation of the maxillary antrum a similar procedure is carried out, and here the location of the opening of the sinus, being situated at the upper inner angle of the sinus and requiring a dependent position of the head if drainage through the ostium is to be effected, is taken into consideration. During suction the patient must lie on his side with the head as low as is consistent with comfort, the affected side being uppermost, the maneuvers with the suction pump and nozzle being the same as described for the frontal sinus. The posture for effective suction treatment with sphenoidal sinusitis should be with the head forward and low down, the ostium being situated well up on its anterior wall. If suction and cleansing and internal medication do not suffice for clearing the condition, irrigation combined with other treatment becomes necessary.

In frontal sinusitis a probe cannula with a di-

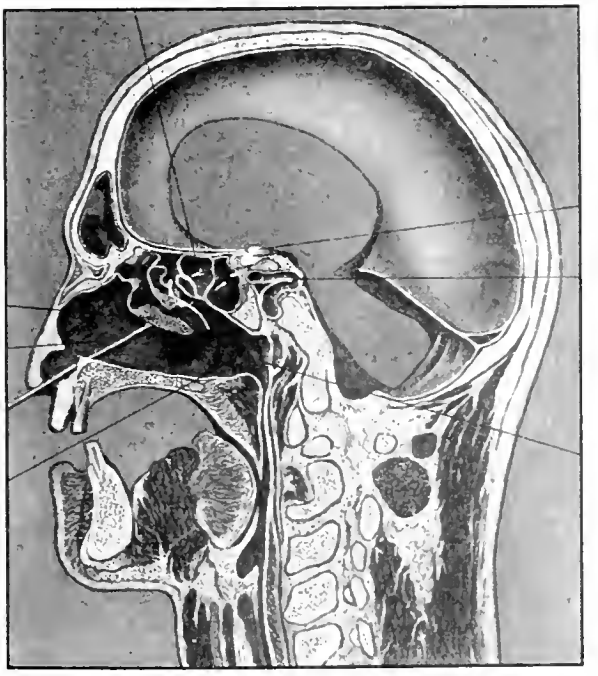

Fig. 4.—Probe cannula introduced at an angle of 45° with the floor of the nose into the ostium of the sphenoidal sinus. Section represents middle turbinal, ethmoid and sphenoid cells and septum lifted from previous specimen.

ameter of eight centimeters and bent in the form of a semicircle is introduced, with the aid of the nasal speculum and good illumination, into the middle meatus, through the hiatus semilunaris upward and forward along the infundibulum and

nasofrontal duct into the frontal sinus. The end of the instrument will be free in the sinus and permit thorough irrigation and medication of the part. The cannula should be of the smallest size and of good length, and it is well first to bend the tip to conform to the side of the affected sinus. Usually the anterior part of the middle turbinal forms a fold or curtain or bridge where it is attached to the lateral wall of the nose. It is behind this fold that the cannula must pass into the nasofrontal duct. Sometimes the hiatus semilunaris can be seen for a good distance upward, and the cannula can be introduced at its upper part instead of traversing the entire length of the infundibulum. The medicating and irrigating fluids are now introduced through the cannula to which a small piece of rubber tubing is attached. This serves for the easy application of the syringe, the patient steadying the cannula with two fingers while the irrigating and medicating fluids are being introduced. This is immediately followed by suction heretofore described. If introduction through the natural passage is impossible, it is sometimes necessary to remove the anterior part of the middle turbinal, especially the part forming the bridge above mentioned and also the air cells contiguous to the nasofrontal duct.

In the case of the maxillary antrum the probe cannula has its tip bent at right angles for a distance of half an inch. This is introduced through the middle meatus and hiatus semilunaris to the lowest or posterior end of the infundibulum to pass through the ostium into the antrum itself. Medication and irrigation are carried out in the same manner as in frontal sinusitis, with the patient in the erect posture and suction in the recumbent posture with the patient on his side and the head low down.

If a decayed tooth projecting into the antrum is the cause of the sinusitis, it will be necessary to remove the offending root; but it is preferable to make the intranasal opening for treatment and drainage instead of a large opening through the socket. It is true that in the latter instance a more dependent point in the antrum can be reached, but reinfection from the mouth prolongs the process. If on the other hand the opening through the socket is plugged between treatments to prevent infection, retention of the secretions has the same disadvantage as in the case of constant drainage but reinfection without the plug.

With involvement of the sphenoidal sinus, a cannula with the tip slightly bent is passed upward and backward, at an angle of 45 per cent. with the floor of the nose through the ostium into the sinus itself. The ostium is at times located a little distance out from the septum. This is medicated and irrigated as in the case of the other sinuses but should be followed by air pressure with the head bent forward and low down and suction carried out in the same posture.

If introduction of the cannula into the frontal sinus is unsuccessful owing to the fact that the nasofrontal duct does not directly communicate with the meatus but opens into an ethmoidal cell, a passage is made by removing the upper and anterior portion of the middle turbinal and contiguous ethmoidal cells, until a sufficiently large opening is made to introduce a cannula and to give sufficient drainage.

When the ostium of the maxillary antrum is inaccessible for irrigation or insufficiently open for proper drainage, an artificial opening is made about half way back through the lateral wall of the nose as close to the floor as possible. A trocar one half centimeter in thickness, with the tip three and a half centimeters long bent at right angles to the shaft, is used for the purpose. In the middle of the lateral wall the mucus membrane and the parchment-like bone can be pierced readily. The part is cocainized, the instrument is introduced perpendicularly, and then so turned that the point impinges on the lateral wall. Pressure is now made outward and as the handle is moved upward and downward a good-sized opening is effected with the least degree of pain. Through this opening the cannula is now introduced and treatment is given as before described. Medication and irrigation are repeated for a number of sittings, the cavity draining between times; or the patient is instructed to resort to irrigations at home, introducing the cannula himself.

If the opening cannot be kept patent sufficiently long to effect a cure—as it usually heals up within two weeks—more of the wall can be removed by means of a forceps or with an instrument having the same curve as the trocar, but with a fraize-like end, which with a similar movement will break up and carry away a greater amount of bone and produce a more permanent opening.

If the ostium of the sphenoidal sinus cannot be reached, a portion of the middle turbinal must be removed to make it accessible. If the ostium is too small for the introduction of a cannula and for proper drainage, a portion of the entire anterior wall below the ostium must be removed with a drill, chisel, or bone-biting forceps.

Only when the various stages of this more conservative treatment have been found insufficient to effect a cure are more radical methods, with the exposure of the sinuses from without, permissible.

50 Central Park West

A SCIENTIFIC SYSTEM OF ADMINISTERING ETHER.

By RAYMOND C. COBURN, M.A., M.D

NEW YORK.

In an article prepared under the direction of and cooperation with the Anesthesia Commission of the American Medical Association, and published by this commission, the following *disadvantages* of the present day methods of administering ether were set forth:[1]

The closed method: 1. Decreased oxygenation and increased carbon dioxide. 2. Impossibility of regulating the dosage (even approximately) because of the necessity of pouring the ether into the cone or inhaler intermittently. 3. Disagreeable and prolonged induction.

The open drop method: 4. Cold vapor. 5. Incomplete diffusion of vapor because of the close proximity of the application of the ether to the face. 6. Waste of the ether by the exhalations and saturation of the surrounding air with ether vapor. 7. Long period of induction.

It might be added that these are the usual objections urged against each method.

In the apparatus which I have devised especially for the administration of nitrous oxide and oxygen with ether as an adjuvant, and which was described in the *Journal of the American Medical Association*,[2] I have overcome each and every one of these objections except the increased carbon dioxide in rebreathing; but in the light of Henderson's work

on carbon dioxide and its practical application in the administration of anesthetics by numerous anesthetists, it has been practically proven that this heretofore considered disadvantage is, in reality, when properly regulated, a distinct advantage, as respiration and circulation are thereby better maintained and surgical shock either prevented or alleviated.

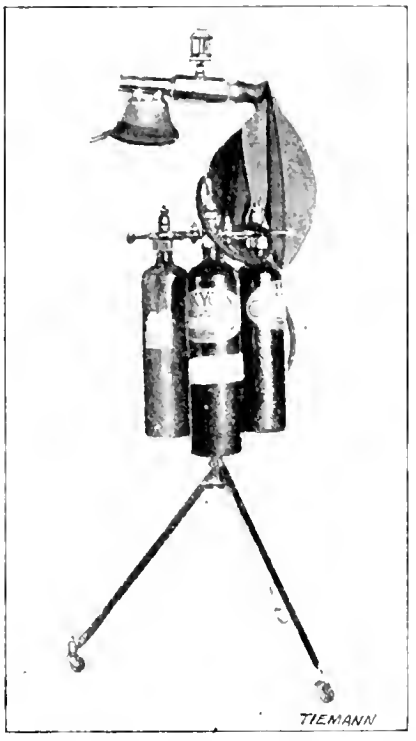

Fig. 1—Coburn Apparatus, with the folding, portable stand and a cylinder each of nitrous oxide, oxygen and carbon dioxide in position, for inducing anesthesia and furnishing either oxygen or carbon dioxide in the closed method.

*1. Proper oxygenation may be secured by allowing a small amount of air to be inspired with each inspiration, or by adding pure oxygen to the rebreathing bag, or by a combination of these two sources of supply of the requisite oxygen. In this manner a superoxygenation of the blood may be maintained throughout the operation if desired.

As carbon dioxide is diffusible it readily transpires through the walls of the capillary blood vessels into the air whenever there is considerable exposure of these vessels. Therefore in abdominal operations, with the viscera exposed, in order to maintain even a normal amount of carbon dioxide in the blood, it is necessary that there be considerable rebreathing or its equivalent; so in this class of operations where it is desirable to maintain a normal or slight excess of carbon dioxide the air supply should be greatly restricted and pure oxygen added direct to the rebreathing bag, or, with the air supply sufficient for proper oxygenation, pure carbon dioxide should be added direct from a cylinder to the bag. With this method of procedure the carbon dioxide retention and the oxygenation of the blood may be easily controlled at all times, as the rebreathing, with its concomitant carbon dioxide retention, or the pure carbon dioxide, and the oxygen supply may thus be completely separated, and each governed according to its own special requirements. A patient undergoing an abdominal operation with the viscera exposed will tolerate to good advantage double the amount of rebreathing that the same patient in the same anesthesia will tolerate before the abdomen is completely opened, or in a separate operation where there is little exposure of the capillary blood vessels, such as in the amputation of a limb and kindred conditions. Accordingly, if the closed method of administering ether is to be placed upon a scientific basis, rebreathing, with its accompanying carbon dioxide retention, or the carbon dioxide gas, and the oxygen supply must be, at certain times at least, under separate control so as to fulfill the widely varying requirements of each of these important but not necessarily correlated factors in the proper maintenance of anesthesia, for otherwise, in abdominal operations and kindred procedure, when the air supply is sufficient for proper oxygenation there is not sufficient rebreathing to retain even a normal amount of carbon dioxide; and when the rebreathing is sufficient to maintain the proper amount of carbon dioxide a sufficient amount of air is not inspired properly to oxygenate the blood. A mixture of carbon dioxide and oxygen may be used, if desired, instead of the pure carbon dioxide. Either the pure or mixed carbon dioxide may, also, be administered in the open method, thereby securing the complete benefits of the carbon dioxide prophylaxis and alleviation of shock, and its other beneficial physiological effects, without rebreathing.

2. This objection I have overcome by what I call "the closed drop method"—the ether being administered drop by drop and the rate of administration under constant sight and complete control of the anesthetist. This continuous and even administration of the anesthetic produces a vapor that is constant in strength and temperature and therefore causes no unnecessary irritation of the upper respiratory passages, as is the case when the ether is poured on in quantities at intervals.

3. It has been the practice in this city for many years to secure a pleasant and rapid induction of anesthesia with either nitrous oxide or ethyl chloride, and the immense, practical, and scientific advantage of this method of procedure is well set forth by Crile[2] and Henderson.[4] Few physicians realize the far-reaching and detrimental effect of preanesthetic fear, and its distinctly pathological basis is clearly shown in the references cited.

4. "In order to ascertain the temperature of the vapor inhaled when ether is administered by the open drop method, I placed a specially constructed and delicately calibrated thermometer within an inch of the gauze in the herein described inhaler—the approximate distance of the patient's respiratory

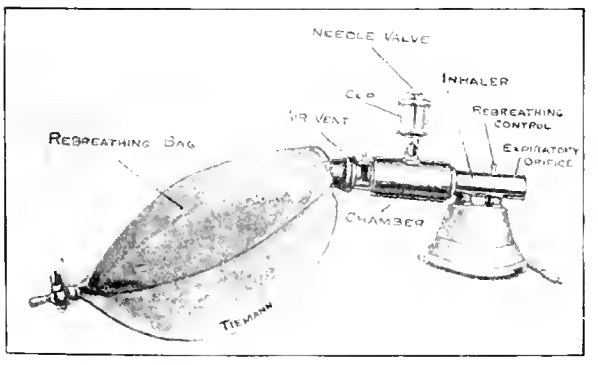

Fig. 2.—Same as Fig. 1, with stand, cylinders and tubing removed, for administering ether by the closed method when oxygen or carbon dioxide is not needed

*This and subsequent numbers refer to the disadvantages outlined by the Anesthesia Commission, and which I have overcome with the exception mentioned

passages from the gauze of the usual open mask—and, since the expirations did not influence the thermometer, this gave the temperature accurately of the inspired vapor. Sufficient ether for a light anesthesia quickly reduced the temperature to 55° F., a moderate anesthesia to 45° F., a deep anesthesia to 35° F., and a profound anesthesia to 32° F., operating room temperature 75° F."[2]

When these observations were made I did not then know that the temperature of inspired ether vapor by the open drop method had ever been previously determined, but I have since learned that Joss reports his observations[5] that ether cools the air inspired through the mask so that it averages 33° F. below the temperature of the room, and the difference is frequently 44° F. during certain periods of the anesthesia. The temperature was often below 32° F. and in one case the thermometer registered below the freezing point for twenty-six minutes.

These observations are reported in a little different language, yet, practically, they are identical.

"After determining the temperature of the cold vapor I attached the electric heater to the ether

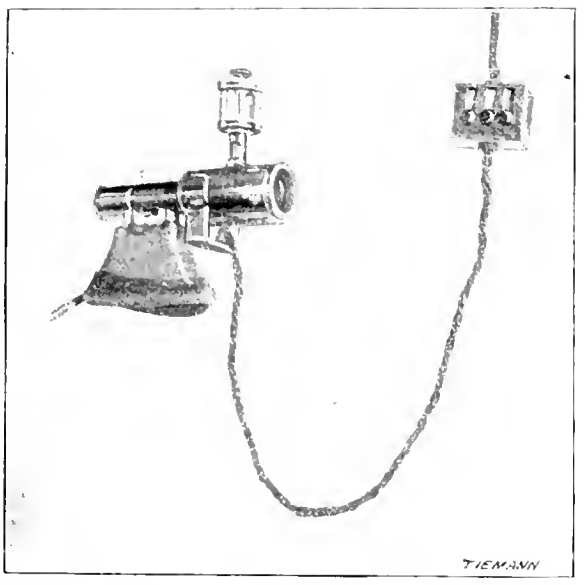

Fig. 3—Same as Fig. 2, with the rebreathing bag removed and the electric heater attached, for administering ether by the open drop method, vapor warm.

chamber and I found the temperature then to vary from 80° F. to 88° F., average 84° F., in a room temperature of 75° F. In other words, the electric heater raised the temperature of the vapor on an average of 42° by the thermometer. But in this apparatus, after passing over the thermometer the vapor passes through three inches of a metal tube maintained at a temperature of about 110° F., which further elevates the temperature of the vapor several degrees, and on account of a low specific heat of gases the vapor was warmed to practically body temperature at the time it was inhaled."[3]

While it would require very extended clinical observation to establish any reliable statistics on the difference in post-operative complications, it can be said with a certainty that when the warm vapor is used the respirations are quieter and smoother, and the secretion of mucus less—facts strongly indicative of less trauma to the respiratory passages. And this is all the more significant when it is recalled that pneumococci and other pathogenic organisms are practically ever present in the respiratory tract and that ether, through its action on the phagocytes, materially weakens the patient's natural defences against infection in general, as well as that against pneumococci in particular.

While the vapor by the closed method is somewhat cold I have detailed that of the open drop method because this is the method that is in the most extensive use at the present time, and because the temperature involved is the most extreme and has previously offered insurmountable obstacles as to control in this respect in any appreciable degree.

5. In the apparatus mentioned the gauze is about three inches from the patient's face, and this insures that the ether vapor and air will be well mixed before being inhaled.

6. As the exhalations escape from the mask without passing over the gauze there is no waste of the anesthetic from this source, and consequently there is no unpleasant saturation of the operating room with ether vapor. It necessarily follows from this that a considerable saving in the cost of the anesthetic results from the prevention of this needless waste.

7. See under 3.

Summary.—A rapid, pleasant induction; a mechanical drop method; a regular, constant administration; a warm, bland vapor; a smooth, even anesthesia; a pliable control of oxygen and carbon dioxide; a real, marked economy; a practical, scientific system of administration.

REFERENCES.

1. Cunningham and Anderson: "Methods of Administering Ether," *Journal A. M. A.*, Nov. 7, 1908, p. 1574.
2. Coburn, R. C.: "A New Apparatus for Administering and Warming General Anesthetics and New Methods of Administration," *Journal A. M. A.*, March 23, 1912, p. 833.
3. Crile, G. W.: "Nitrous Oxide Anesthesia," *Surg., Gyn. and Obst.*, Aug., 1911, p. 170.
4. Henderson, Y.: "Primary Heart Failure in Normal Subjects under Ether," *Surg., Gyn. and Obst.*, Aug., 1911, p. 161.
5. Joss, F.: "Über Abkühlung der Inspirationsluft bei der Aethernarkose, ihre Bedeutung und Verhütung," *Mittheilung a. d. Grenzg. d. Med. u. Chir.*, Bd. 22, p. 529.

Hotel Bretton Hall, Eighty-sixth Street and Broadway.

DEATH FROM RENAL ADENOSARCOMA.

BEING THE FINAL NOTES OF A CASE REPORTED IN THE MEDICAL RECORD, AUGUST 26, 1911.

By VICTOR COX PEDERSEN, A.M., M.D.,

NEW YORK.

In the previous report alluded to in the title, the writer promised to add briefly the notes of the death of the patient, so soon as that expected result might occur. For a brief period after the operation the patient continued to do very well, and hope was felt, as expressed in the original notes, that life might be prolonged for a considerable time. At the end of about three months, however, signs of ascites and of venous obstruction of the lower extremities, more marked on the left than right side, began to appear. The progress of the obstructions was rather rapid and naturally associated with emaciation, as shown in the photograph (Fig. 1). This photograph compared with those which were published in the first paper is really pathetic in its marked changes from a happy, rosy-looking baby to one who was rapidly wasting into dissolution.

A radiograph of the thorax was taken at about this time, and is shown in Fig. 2 herewith. The relapse of the tumor on the left side and upper segment of the abdomen is rather distinctly shown. Before the ascites itself was sufficient to account for embarrassment of breathing and heart action,

these symptoms appeared and augmented rather distinctly. It was desired at this time to take also a radiograph of the abdomen, but the family delayed matters until the weakness was so pronounced in the patient as to render her removal from her tenement house home to the laboratory inadvisable. The circumstance of the absence of the radiograph of the chest is therefore explained in this manner.

The venous obstruction with ascites, swelling, and edema of the lower extremities, especially the left, and embarrassment of the heart and lung action, steadily advanced, combined, of course, with greater and greater emaciation, until the end came almost to a day, six months after the operation, namely, September 28, 1911. Autopsy was denied much to my regret.

This case was briefly reported at the October, 1911, meeting of the Genito-Urinary Section of the New York Academy of Medicine. Dr. Leo Buerger kindly volunteered to make another pathological examination of the kidney for me at the laboratory of the Mount Sinai Hospital. The following are the notes with which he has very courteously furnished me, obligations and thanks for which are hereby gratefully acknowledged.

"No. B1300.—Microscopic examination reveals a mixed tumor in which two types of tissue predominate. A striking feature is the presence of glandular tubules which in places are to be found irregularly interspersed in a spindle-celled stroma; in other places, these have a different relation to the type of growth (spindle cells) in that the connective tissue elements are grouped in smaller and larger alveoli or are solid nests around the glandular elements.

Fig. 1.

The gland tubules are seen mostly in cross-section where they are narrow acini made up of a single layer of cuboidal cells. A narrow basement connective tissue membrane surrounds these tubules often surrounded by a single layer of flattened spindle-cell elements that pass imperceptibly into the surrounding tumor cells. Occasionally these tubules are cut so as to present elongated and slightly convoluted acini.

"The second type of tissue has the general ap-

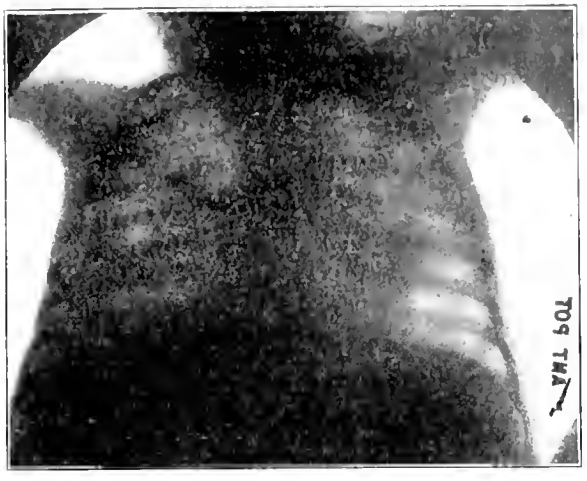

Fig. 2.

pearance of spindle-celled sarcoma of the small celled variety. Another interesting feature is the presence of small and large cysts. Even a casual examination of the smaller variety makes it certain that their origin can be attributed to dilatation of the epithelial tubules. The larger cysts, however, are aggregated in areas where the general appearance resembles that of a cavernous angioma, the individual compartments being separated by rather cellular connective tissue, the lining being formed by a single layer of flattened endothelial-like cells. Although some of these contain red blood cells most of them are filled either by a homogeneous mass that takes the eosin stain strongly, or by spheroidal bodies that may possibly be the result of the action of the fixative. That the cysts lined by endothelial-like cells owe their origin to the gland tubules seen elsewhere in the specimen is shown by the presence of cysts of an intermediate type characterized by an irregularly shaped branching element into which papillary projections clothed in part by flattened endothelial-like cells and in part by typical cuboidal cells are found in large numbers. Marked necrosis is seen in most of the tissue.

"Diagnosis—Mixed tumor of the type described by Wilms', and of not uncommon occurrence in the kidney."

It seems to the writer always more satisfactory to publish a final report of cases like the foregoing at the time when death is the outcome, as it always is sooner or later in such lesions.

45 West Ninth Street.

Pathology of Chlorosis.—U. Archangeli advances the theory that chlorosis results from an intoxication caused by the internal secretion of the corpus luteum which, on account of uterine insufficiency, is not sufficiently eliminated. Chlorosis is accompanied by several symptoms that are similar to those which women experience before and during the menstrual period, especially when it is delayed, absent, or increased. The anemia is only a part of its clinical picture. Hypoplasia of the uterus and ovaries is an associated condition. The effect of ovarian castration in animals varies with the age of the animal, no anemia being produced in adults and a slight anemia being produced in the young. The reason why iron improves this condition is not that it stimulates the formation of red blood corpuscles, but that it neutralizes the intoxication.—*Rivista Ospedaliera.*

PEDIATRIC MEMORANDA.

TETANISM.

By HERMAN B. SHEFFIELD, M.D.,

NEW YORK.

THE term "Tetanism" is intended to denote a peculiar form of more or less *continuous* muscular hypertonicity occasionally observed in marantic infants under three months of age. I have been watching this group of cases for several years and am thoroughly convinced that it represents a typical symptom-complex based upon a distinct pathological entity entirely apart from any of the different forms of spasmophilia thus far described. It is almost invariably associated with faulty assimilation of the food,—be this due to faulty feeding, intestinal tuberculosis, or syphilis,—and is most probably the result of intestinal autointoxication. When I first described this condition* I was under the impression that it occurred only in bottle-fed babies. I have since learned, however, that breast-fed infants are occasionally affected with it as well.

The case here recorded was the third living child of healthy German parents. She weighed six pounds at birth and seemed free from any constitutional affections. Following the abominable, but generally accepted, rule, the baby was put to the breast *every two hours*—awake or asleep. It did well for the first few days, but as the mother's milk supply became abundant, it soon began to vomit, especially after each nursing, and to suffer from constipation and colic. As usually the baby's crying was attributed to hunger, and hence the nursing

Fig. 1.—During acme of the spasm.

time prolonged, and the more it nursed the more it cried, and *vice versa*. Home remedies and medicines failed to improve the child's condition, so that when at eight weeks of age it came under my observation, it was a mere skeleton, weighing a little over three and a half pounds. The face was senile, its muscles were contracted, and the jaws were tightly set together requiring considerable manual force for their separation. During the acme of the spasm

Fig. 2.—During partial relaxation of the spasm.

(see Fig. 1) the head was sharply retracted, greatly resembling opisthotonos. The forearms were firmly flexed upon the arms while the hands were clenched, the fists coming in close contact either with the clavicles or chin. The thorax was arched forward, bending the ribs acutely almost to the point of breaking. The abdomen was slightly bulging and extraordinarily tense to the touch, giving the sensation of overstretched leather. The lower extremities were bent angularly and the feet either overlapped each other or were strongly flexed. Now and then a partial relaxation of the muscular contraction was observed (see Fig. 2) during which time the head straightened and the lower parts of the legs assumed a more natural position. Handling of the baby invariably increased the spasm, the muscular contracture often reaching extreme intensity, so much so that when the infant was put in reclining posture upon the palm of a hand it lay there still and rigid like a log of wood, for minutes at a time showing not a sign of muscular activity. However, notwithstanding this extreme hypertonicity of the entire body musculature the baby was able to urse without the slightest difficulty; in fact it evinced a desire to drink everlastingly. This symptom alone was amply sufficient to eliminate genuine tetanus or eclampsia, and it could readily be differentiated from tetany by the spasm in tetanism being almost continuous; by occurring in infants under three or four months of age, and by the peculiar general muscular contracture. Furthermore, the "triad of tetany" was absent. In tetanism the contracture ceases almost entirely during profound

Archives of Pediatrics, August, 1910.

sleep, in which state, by the way, these babies very rarely are. As a rule they are half awake, crying and tossing for something to appease their voracious appetite. The tetanic spasm is not fatal *per se*, though being reduced to so low a vitality the infants suffering from it ordinarily succumb to the accompanying gastrointestinal derangement or complications. This is especially true with babies treated in hospitals, where "hospitalism" or, in other words, lack of motherly, affectionate attention and exposure to germ-laden hospital-ward-air greatly contributes to the high mortality. With motherly care and strict supervision of the feeding quite a number of these infants recover completely, the spasm subsiding gradually with the improvement in their general health. The child under consideration made a perfect recovery (see Fig. 3). Finding that her mother's milk averaged about 5 per cent. of fat, I restricted the breast feeding to five minutes' nursing, at three to four hours' intervals, immediately to be followed by a two-ounce highly diluted malt soup feeding. The baby received also daily two intestinal irrigations of one drachm of sodium bicarbonate to

Fig. 3—The same child as shown in Figs. 1 and 2 three months later.

one quart of hot water. During the first week lavage was resorted to once a day. In the beginning I also administered ten drops of fresh infusion of digitalis t.i.d., hesitating to give strychnine owing to the muscular hypertonicity. The baby was kept very warm and, weather permitting, as much as possible outdoors. The mother's breasts were emptied regularly after each nursing by means of a breast pump and fats and sweets were eliminated from her usual diet. After a standstill of about ten days the child began to gain in weight, the gain becoming gradually more pronounced from week to week, so that at five months she weighed over eleven pounds. The general management of the case was, of course, slowly changed according to indications. It is self-understood that every case calls for special therapeutic measures. Bottle-fed babies should be put on suitable breast milk, or, if this is not obtainable, on properly diluted malt soup. In view of its tendency to develop gradually and to subside on prompt treatment, tetanism offers ample opportunities for its prevention in its early stages.

127 West Eighty-seventh Street.

JUXTA-EPIPHYSEAL FRACTURE OF THE UPPER END OF THE HUMERUS.

A NEW POSTURAL TREATMENT.

By FRED H. ALBEE, M. D.,

NEW YORK.

ASSISTANT PROFESSOR (HEAD OF DEPARTMENT) OF ORTHOPEDIC SURGERY CORNELL MEDICAL COLLEGE; ADJUNCT PROFESSOR OF ORTHOPEDIC SURGERY, POST-GRADUATE HOSPITAL AND MEDICAL SCHOOL; PROFESSOR OF ORTHOPEDIC SURGERY, UNIVERSITY OF VERMONT; ETC.

The following is a report supplemental to one which appeared in the *Post-Graduate*, June, 1908:

Epiphyseal disjunction of the upper end of the

Fig. 1.—Case 4, before reduction. Note the three fragments. This plane does not show the marked forward tilting of the fragments which existed.

humerus is an accident of youth and occurs from birth to the twentieth year. It is generally conceded to be the most common of epiphyseal fractures. The most frequent period is from the tenth to the eighteenth year, and one authority states that it never occurs under the sixth year. In the writer's experience with a large number of fractures, separation at the epiphyseal cartilage has occurred in all bones rarely under ten years. The upper epiphysis of the humerus comprises the head and both of the tuberosities. It originates in three ossification centers, the head and the two tuberosities, which unite to form the epiphysis at an indefinite period. The union with the shaft takes place at about twenty Thus these fractures are situated between the anatomical and surgical necks and may be confused with a fracture of either. In some cases the dis-

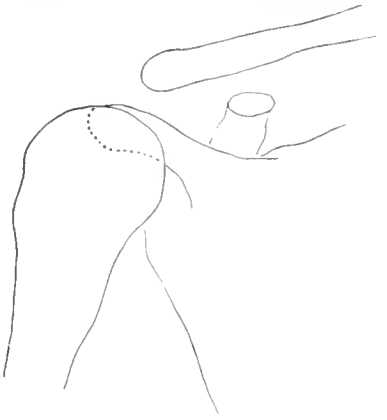

Fig. 2.—Case 4, after union. From a skiagram taken at the end of six weeks, after firm union had taken place.

placement does not occur until a few days after the injury. The diagnosis is usually made by palpation, which reveals the normal convexity of the shoulder, due to the presence of the humeral head in the glenoid cavity, thus distinguishing it from a

dislocation. The upper end of the lower fragment, somewhat rounded in its contour, can usually be felt under the coracoid process. The crepitus is of a softer quality than in cases of ordinary fractures, *i.e.* cartilaginous. Localized pain and swell-

Fig. 3.—Case 4, showing the dressing and position.

ing are present. A wrinkling of the skin, caused by the hooking of the upper end of the lower fragment into the subcutaneous tissues, is very characteristic. Abduction is especially limited and muscular spasm interferes with all motions. A high injury near the joint in a young individual, showing displacement forward and inward of the shaft, is very suggestive of epiphyseal disjunction.

This is the most difficult fracture of the humerus to treat by conventional methods, *i.e.* such as the plaster-of-Paris shoulder cap, the triangular axillary splint and Bardenheuer's extension method, there being a strong tendency always to a recurrence of the displacement. It is frequently impossible to hold the upper fragment in position without an open operation and wiring. One of the best known textbooks on fractures states that where there is much displacement the epiphysis of the humerus may have to be removed. These difficulties are due in the writer's opinion to the following causes: First, because of the position taken by the upper fragment, when complete disjunction has occurred, namely, the fractured end of this fragment is strongly rolled upward and forward and fixed in that position by the combined pull of the tuberosity muscles, and the counter impingement of the greater tuberosity against the acromion process, thus preventing further elevation. In old fractures remaining unreduced for any length of time, contractures of these muscles and the surrounding soft tissues are added to the already mentioned fixation forces. Codman in his paper on subdeltoid bursitis in the *Boston Medical and Surgical Journal*, May 31, 1906, was the first to publish the anatomical observation, that when the arm is rotated inward and elevated to the horizontal position the greater tuberosity impinges on the acromion process and prevents further elevation of the humerus on the scapula, and that rotation outward of the arm is necessary to allow further elevation on the scapula. This being true, it will be seen that it is not necessary to elevate the long fragment above a horizontal plane when attempting to adjust it in alignment with a position which the capital fragment takes by unopposed muscular pull.

Second, because there is no efficient method of reducing and holding the displaced upper fragment in alignment with the shaft, when the latter is persistently and invariably fixed to the side of the thorax. Splints fail because of the spherical contour of the fragment and the thickness of the overlying soft parts. Extension fails because of its inefficiency to overcome the antagonistic pull of the tuberosity muscles, chiefly from the fact that none of the arm muscles have their origin or insertion on this fragment and therefore presents the same mechanical condition as when a cylinder or sphere is placed between two tense cords. Simultaneous traction on the ends of these cords does not rotate the object between them. Again, when the short fragment remains rotated upward the upper end of the long fragment comes into apposition with the slippery side of the head of the humerus and therefore presents a small chance of union and a strong propensity to slipping and dislocation.

The following are illustrative cases:

Case I.—A. O., a young man, sixteen years of age, was seen by the writer May 25, and the following history was obtained: Past history negative. Fell from a tree April 13, 1906, striking on the left shoulder. The father claimed that he procured the best surgical talent obtainable and that the boy, in the two weeks following the injury, was etherized three times for the purpose of replacing fragments. A plaster-of-Paris shoulder cap with an auxiliary pad was used each time as a retaining apparatus. The reduction seemed satisfactory each time, but displacement had always recurred when the shoulder cap was removed. A physical examination at the time the writer saw him revealed that practically all motion between the humerus and scapula was absent. The injured arm was about one inch short. The shoulder was still considerably swollen. A

Fig. 4.—Case 7, Dr. Hawley's second case. This shows the tilted up position of the capital fragment.

sharp prominence could be felt directly under the skin, just to the outer side of the coracoid process, which was apparently the upper end of the lower fragment. The skin was dimpled and somewhat fixed over this prominence. No crepitus could be

elicited. A skiagram was taken which showed an epiphyseal fracture with much overlapping of the fragments. The upper end of the lower fragment was displaced upward and in front of the head. On account of the malunion and the above described

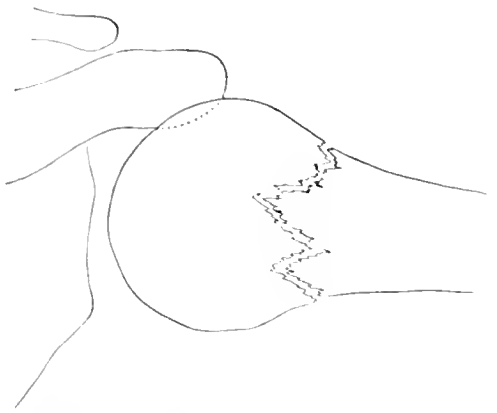

FIG. 5.—Case 7, Dr. Hawley's second case. From a skiagram taken, under the direction of Dr. Hawley, after the arm had been elevated anteriorly to a right angle with the trunk; it demonstrates the efficiency of that position in securing alignment in these cases.

difficulties of treatment, an open operation was decided upon. The fracture was exposed by a large U-shaped incision with its apex about 1½ inches above the insertion of the deltoid muscle. The skin, fasciae, and deltoid muscle were turned upward *en masse*. The *x*-ray findings were verified. The fragments were so firmly united in their faulty position that some difficulty was experienced in accomplishing a separation. The fractured surface of the head was found rotated strongly upward and forward, and firmly fixed in this position apparently by the pull of the tuberosity muscle upward, the contracture of muscles and soft tissues, and the counter impingement of the greater tuberosity against the acromion process. After the removal of a few spicules of bone the fragments were brought into good apposition by strongly elevating the arm forward and slightly outward, so as to come into alignment with the upper fragment. They were then firmly wired with silver wire. But upon attempting to bring the arm to the side, the head would not rotate downward, and the wire began to cut through. It was decided to fix the arm in this position anteriorly elevated to horizontal plane with the humerus rotated inward. The deltoid muscle was approximated by interrupted chromic catgut No. 1 sutures through its substance and its fascia which had purposely been left adherent. The shoulder and arm were then incorporated, with the elbow flexed to a right angle, in a plaster-of-Paris spica from the wrist to the umbilicus. The best technique for applying this cast to a patient under an anesthetic is to have the patient's head and shoulders pulled beyond the head of the operating table and that part of the body supported by an orderly sitting on a stool, with his foot on the round of the stool and his knee in the interscapular space. The thorax is best padded with complete sheets of cotton wadding. Traction is produced by an assistant pulling upward as the cast is applied. If the patient is not anesthetized for any reason he can be seated in upright position on a stool. Two old people not reported at this time have been treated in this way with very satisfactory results. The convalescence of the above case was uneventful. The patient was kept in bed one week. During this time the weight of the arm and the cast was taken from his chest by suspending the same to a pole placed longitudinally over the bed. This suspension, however, has not been necessary in any of the succeeding cases. The cast was removed at the end of three weeks and massage and passive motion were instituted. At the end of nine weeks the motions were practically normal. He was presented at the New York Academy of Medicine in February, 1908. The patient stated at that time that he considered the injured arm as good as the other. April 26, 1910, just four years after the operation, this young man came to the writer, complaining of a sensitive swelling the size of a walnut on the outer side of his shoulder. An *x*-ray examination was made which showed that the silver wire had dropped out of the humerus and was apparently located in an abscess which it had produced in subcutaneous tissues. On May 6, 1910, under ether, an incision was made over the fluctuating swelling and the wire and about four drams of thick pus were evacuated. The convalescence was uneventful. The function of the shoulder was not affected and the arm remained as good as the other. However, the fact that an abscess occurred about this wire four years after it had been placed there, and also the fact that the wire had dropped through and out of the bone, of its own weight, has, with other similar experiences induced the writer to practically never use metal plates or wire for immobilizing bone. Absorbable material, such as coarse kangaroo tendon, or large chromicized catgut, holds quite as well and quite as long as metal wire, because of the very early occurrence of absorption of bone about the metal. When direct splint action is needed such as a Lane plate, autotransplantation of live plates of bone has been practiced with the greatest of success, especially in long standing cases of pseudoarthrosis. Where live bone is used there is the opposite of absorption, viz., proliferation of bone is stimulated in the recipient bone as well as from the bone graft itself. However, as will be seen from the remaining cases herein reported, operations and retaining internal splints and sutures are rarely needed when the above described holding position is used.

The first mention which I am able to find of the use of abduction in the reduction of this type of fracture was by E. M. Moore of Rochester, N. Y., in 1874. He described his success in replacing the fragments by abduction, but emphasized his great difficulty in retaining the reposition when he brought the arm down to the side of the thorax for fixation in the old conventional way. He apparently always fixed the arm to the side. He also stated that some of his cases finally came to an excision of the head, on account of his inability to hold the fragments. In 1902 and 1908 Beck and Whitman, both of this city, respectively, described successful results from fixing the arm in a position of lateral abduction.

CASE II.—The next case which came under my care was a muscular young man of eighteen years. Previous history negative. While playing football, November 2, 1907, the patient dove for the ball, striking the ground on his left shoulder with a good deal of force. A severe injury resulted and the patient was taken to a nearby hospital, where attempts to reduce the shoulder were made, and a plaster-of-Paris shoulder cap with axillary pad was applied. The diagnosis at the time of reduction was dislocation. After six weeks the young man's family finally became anxious about the unsatis-

factory progress of the arm and the writer was consulted. The physical examination was almost precisely that of my first case. The upper end of the lower fragment, however, was not as near the skin. The arm was 1¼ inches short. The fracture was approached by the same route as the former case. The fragments were separated by means of a chisel. The bone ends were freshened as slightly as seemed wise for fear of destroying the epiphyseal cartilage. The fragments were then brought into apposition by the method described above. From my experience in the first case I felt perfectly safe in relying upon the position of anterior elevation to hold the fragments without aid from a metal suture. The wound was closed and a plaster-of-Paris spica was applied as before. The plaster was removed at the end of two and one-half weeks and massage with passive motion begun. This patient, within three months after the operation, in competition won a position on a college swimming squad. Also a few months later he played third base on a semi-professional baseball nine. He has continued to the present time as active in athletics as formerly, especially in basketball, swimming, and baseball.

Case III.—For the third case I am indebted to Dr. H. Winnett Orr, Lincoln, Neb. A young man, sixteen years of age, who had fallen from a scaffold in the barn, striking on his head and shoulder, with the arm thrown out to catch himself, was brought to Dr. Orr, June 26, 1908. A diagnosis of fracture of the upper end of the humerus was made. The next day an *x*-ray examination was made and it was determined that an epiphyseal separation of the upper end of the humerus had occurred. Dr. Orr, having read a few days before a report of the writer's first two cases, put the arm and shoulder up in a plaster-of-Paris spica in the position I have just described. A slight modification of extending the plaster over the hand was made. The patient was discharged from the hospital July 16, 1908. The arm was continued in the same dressing for four weeks, following which it was gradually lowered and passive motion was begun. At the end of eight weeks he was practically well, and Dr. Orr stated May 14, 1909, that while a difference can be noticed in the two arms, nevertheless for all practical purposes the injured arm is just as good as the other. He does general farm work and plays baseball as well as ever.

Case IV.—A boy, seven years old, fell two weeks before being seen by the writer at the Hospital for the Ruptured and Crippled. The parents stated that the boy was playing on the table and fell, striking his shoulder on the stove. The boy was seen by the family physician and the arm was put up in a plaster-of-Paris shoulder cap. An anesthetic was used. The family became skeptical about the progress of the arm and came to the hospital, May 12, 1909. A skiagram and a fluoroscopic examination were made, and a high fracture of the surgical neck was found, with marked displacement forward. The displacement was overcome and the arm was put in the anterior elevated position in a plaster spica from the umbilicus to the wrist. At the end of four weeks the plaster was removed and a skiagram was taken, which showed the fragments in perfect position. The patient was seen again at the end of five and one-half weeks, when very slight limitation of motion was found and the boy could do almost everything with that arm that he could with the other. There was no shortening.

Case V.—For this case I am indebted to Dr. J. M. Berry of Troy, N. Y., who has written me about his success in treating several difficult cases by the above described method. This case was that of a boy, sixteen years old, who sustained an epiphyseal fracture of the shoulder. It was put up under an anesthetic by Dr. Berry in the elevated anterior position. The case was reported in full in the *Albany Medical Journal* of March, 1911. An excellent functional result was obtained.

For the following nine cases I am greatly indebted to G. W. Hawley of Bridgeport, Conn.:

Case VI.—January 10, 1910, M. S., fifty-six years of age, a stationary engineer, while on his way to work slipped on the icy pavement and fell, striking left arm. After rising to his feet he found his left arm very painful and useless. Examination a few hours later showed evidences of contusion about the upper arm and shoulder, with marked bowing of the anterior surface of the arm in its upper third. False motion and crepitus were present at a point about 6 inches below the upper end of the humerus. At this point the ends of the fractured bone could be distinctly felt. The upper fragment was held in a position of moderate flexion and adduction, and could not be easily forced downward into alignment with the lower fragment. The effort was then made to bring the lower fragment into line with the upper, and it was found that this was possible only when the arm was raised forward and upward to the horizontal plane. It was observed that as the lower fragment was elevated the upper fragment was also carried upward until it became fixed by the head of the bone locking under the acromion process when the lower fragment readily came into alignment with it. Fixation of the arm in this position was maintained after the method of Albee for juxtaepiphyseal fracture of the upper end of the humerus by a plaster-of-paris dressing extending from the wrist to the umbilicus over the shoulder. The following day, radiographs were taken showing oblique fracture of the humerus about 6 inches from its upper end, with the fragments in satisfactory position. At the end of the fifth week the dressings were removed and massage with moderate motion was instituted. At the end of the tenth week examination revealed an apparently perfect functional and architectural result.

Case VII.—J. J., twenty-five years of age, fell from a second story window December 7, 1910. He was admitted to St. Vincent Hospital with the diagnosis of dislocation of the right shoulder and fracture of the right radius. Examination revealed a Colles fracture and an apparent upward and backward dislocation of the head of the humerus. A radiograph taken at once and examined in the wet disclosed a high fracture of the anatomical neck with the head in the glenoid fossa and the end of the shaft displaced upward, fully 1½ inches. The axes of the two fragments were at an angle of 90 degrees. The arm was then abducted slowly with strong traction, and a second radiograph taken and developed at once. This showed the two fragments in such good apposition that the line of fracture was difficult to make out. The fracture of the radius was then reduced and the shoulder was immobilized in Albee's position, the plaster being carried down to include the wrist. The fixation was removed at the end of the fourth week. Good union and in good position. Massage and passive motion. Practically normal function at seventh week.

Case VIII.—J. G., eighteen years of age, sustained a spiral fracture of the middle and upper thirds of the right humerus while playing ball, May 30, 1911. Examination showed a marked tendency for the upper fragment to draw upward and inward. Accurate alignment only obtained by drawing lower fragment upward and inward into line with upper fragment. Immobilization with plaster-of-paris in Albee's position, inward rotation, abduction, and flexion to 60 degrees. Radiograph gave satisfactory position. Perfect functional result.

Case IX.—G. D., five years of age, sustained an oblique fracture of the surgical neck of the left humerus, and a fracture of the middle one-third of the left femur, as the result of being run over by a wagon May 9, 1911. A radiograph of the shoulder with the arm rotated outward disclosed considerable overriding and angulation. With a shoulder sling and the arm placed in Albee's position under strong traction, plaster-of-paris was applied. On account of a similar strong tendency of the upper fragment of the femur to flex the thigh was immobilized in hyperflexion. The plaster was removed at the end of the third week. Final architectural and functional results perfect.

Case X.—T. G., eight years of age, was struck by an automobile and received a dislocation of the head of the left humerus with a fracture of the surgical neck. After radiographic examination and under ether the head of the humerus was easily reduced and the shoulder was immobilized in Albee's position. Recovery and full functional restoration.

Case XI.—M. B., twenty-six years of age. Oblique fracture left humerus, upper and middle one-third, sustained by a fall on sidewalk when intoxicated, May 15, 1911. Had previously, three years before, broken same arm. Arm immobilized in Albee's position, flexion to about 60 degrees. Radiograph showed slight overriding. Result excellent. Union delayed.

Case XII.—G. O'B., sixteen years old. Fracture surgical neck right humerus from fall from a shed, June 7, 1911. Marked tendency of upper fragment to flexion and adduction. Reduction and immobilization in Albee's position. Final appearance and function, normal August 1, 1911.

Case XIII.—M. B., forty-seven years of age. Fracture middle one-third left humerus; tripped and fell against a porch post. Some tendency of upper fragment to flexion. Alignment not satisfactory with arm at side. Immobilization in Albee's position because of better alignment, more secure fixation, and more comfort to patient. Excellent result.

Case XIV (Dr. Hawley's last case).—J. C., fifty-six years of age. Spontaneous fracture middle one-third left humerus. Carcinoma metastases of the bones from mammary cancer of six years' standing. During the night, while pulling up the bed covering, felt arm snap. Disclaims using any unusual force or sudden movement. An untreated scirrhus growth of right breast, firmly adherent to chest wall. Radiographic examination shows mottled areas of osteoporosis of shaft of humerus with nearly transverse fracture. Immobilization in Albee's position in 60 degrees flexion. At present in fixation.

Case XV.—An old woman, seventy years old. Fracture of high surgical neck of humerus. Was put up by the writer in the dispensary of the Hospital for the Ruptured and Crippled, without an anesthetic. On account of the weakness of the patient the plaster over the thorax was extended downward, so as to get its bearing on the pelvis. The functional results were excellent.

Case XVI.—D. T., a laborer, sixteen years of age, was admitted to the Muhlenberg Hospital, Plainfield, N. J., April 10, 1911. He had fallen April 6 from a bicycle and sustained an epiphyseal fracture of the upper end of the right humerus. The writer was called in consultation on April 11 by Dr. W. H. Murray. An x-ray examination confirmed the diagnosis, also, that the upper fragment was tilted upward and forward. The arm was put up, under ether, by the method herein described in a plaster-of-paris cast. The convalescence has been uneventful and very satisfactory. Final result excellent.

In view of the cases herein reported, the clinical observation of a considerably additional number, and the careful examination of a large number of radiograms taken both before and after treatment, in the writer's opinion the following are some of the advantages which may be claimed for this method of treatment:

1. This posture relaxes the prehensile or most of the strongest muscles of the shoulder and arm, namely, the pectoralis major, the biceps, the supraspinatus, the coracobrachialis, the strongest part of the deltoid, and the subscapularis muscles.

2. The lower fragment is controlled accurately and held very securely.

3. As in the case of a subtrochanteric fracture of the femur the capital fragment cannot be controlled on account of its shortness and the pull of the trochanteric muscles, therefore the lower fragment is placed in alignment with it in strong flexion and abduction. This treatment of the femur has for a long time been accepted, the same mechanical reasons holding here—that is, the long fragment of the humerus is placed in alignment with the position the short one mechanically takes on account of the pull of the tuberosity muscles.

4. If limitation of motion at the shoulder occurs this relation of humerus to scapula is the one of selection, both because it is a position of usefulness and because it permits the scapulothoracic muscles to functionate the most efficiently.

5. From the experience of Drs. Orr, Berry, Hawley, and the writer it is a more comfortable position than the classical position of fixation to the side of thorax.

6. The distal fragments can be controlled and the overriding prevented much better than in any other position.

7. The arm can be held and traction applied very easily while the plaster-of-paris cast is being applied.

125 West Fifty-eighth Street.

Carcinoma of the Cervix and Pregnancy.—E. Pisani reports a case of carcinoma of the cervix uteri in which pregnancy occurred. When labor pains began a cesarean section was performed and twins were delivered alive, after which the uterine body and ovaries were removed. The author considers that in such cases, in which the cancer is so diffused that cure is impossible, it is necessary to operate in the interests of the fetus. If there is a possibility of curing the mother by operation this should be done early, disregarding the interests of the fetus, whether it is viable or not. One should not await labor, nor should one induce it so as to operate by hysterectomy after or during the puerperium. The pregnancy should not be permitted to go to term. The best method of operation at any period of pregnancy is the abdominal one. —*Rendiconti della Societa Toscana di Ostetricia e Ginecologia.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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RECENT INVESTIGATIONS ON THE DISORDERS OF GROWTH.

THE phenomena of aberrant growth comprise one of the most interesting groups of clinical manifestations, nevertheless one which has not been adequately explored. The spontaneous character of growth, like that of life itself, has apparently diverted attention from the slight disturbances of the former function, while the exaggerated forms of arrested development alone have been deemed worthy of careful study. The minor degrees of defective development have been regarded as falling within the limits of normal variation, and for this reason the definite factors in their causation have been largely overlooked.

In the evolution of the undersized body heredity plays an important rôle. One need only mention the instances of stunted growth occurring in the offspring of the insane, the syphilitic, the tuberculous, the alcoholic, and the underfed. An undersized body is frequently the unmistakable index of a vitiated ancestral stock. The relentless struggle against the odds of overcrowding and other unhygienic conditions, operating through many generations, stamps its unmistakable seal upon an entire race or tribe. In addition to these inherited tendencies may be mentioned the effects of a vicious hygiene during infancy an dearly childhood, particularly an insufficient or inappropriate diet and a lack of fresh air, both of which are important factors inhibiting a normal development.

Former studies along this line have been conducted chiefly with reference to the phenomena of loss or gain in weight, while scant attention has been paid to the effect of malnutrition or of disease upon the normal increment in length. In a recent investigation W. Freund (*Jahrbuch für Kinderheilkunde*, Vol. 70, No. XXI) took up this phase of the subject and discovered a number of interesting facts. He found that temporary disturbances of nutrition resulting in loss of weight, as well as the acute infectious diseases, have no effect upon the increment in bodily length, but that long continued nutritional defects and chronic infections, such as tuberculosis, have a decided influence in the inhibition of the normal increase in stature. The effect of these conditions in causing loss of weight, however, is much more pronounced. Similarly, W. Birk (*Berliner klinische Wochenschrift*, 1911, No. 27) found that the cessation of growth accompanying malnutrition in the very young infant does not in any way compromise subsequent development, provided the nutritional defect is removed. In other words, the energy of growth in the young is an extraordinary one and is not impaired by temporary though total inhibition. In the older child this energy is still less vulnerable, and even the severest form of malnutrition cannot entirely check the process of growth.

This topic naturally leads to the discussion of the significance of infantilism, a subject to which considerable attention has been paid within recent years. This term was first used by Lasègue to denominate the persistence of the physical and mental characteristics of the child, and following him French clinicians have devoted to this subject considerable attention and have written extensively about it. They have recognized two forms of infantilism, that of Brissaud, or the myxedematous type resulting from thyroid insufficiency, and the type of Lorain which may be the result of any one of a great many causes. These are tuberculosis, syphilis, chronic malaria, and other infections; chronic drug intoxications; and cardiovascular affections such as mitral stenosis and underdevelopment of the arterial system (anangioplasia).

The tendency of modern writers is to broaden the conception of the term infantilism. It is no longer regarded as signifying a mere persistence of infantile characteristics, but is rather defined as a retardation of development. The disease begins chiefly in infancy and during intrauterine life, but may begin even after the age of puberty. It may be the result of various toxic or organic conditions as in the type of Lorain. On the other hand there is a group of cases which cannot be assigned to any discoverable cause and it is to this group that the term "essential infantilism" has been applied. The most important variety of this group has been described by Hastings Gilford under the name "ateleiosis." This is a retardation of development that may begin at any age, and results in the persistence of the physical characteristics that exist at the age of onset. If it begins in early childhood, the disease is easily recognized by the persistence of the short stature, large head, the features, and the intelligence characteristic of the young child. In the extreme cases the sexual organs remain infantile throughout life, and the individual retains the infantile characteristics. In those cases in which the sexual organs develop the facial traits of the mature individual may develop though the other characteristics of infantilism persist. Gilford (*British Journal of Diseases of Children*, July, 1911) believes that ateleiosis may be explained as a mutation, since it occurs spontaneously and is occasionally transmitted by heredity. On the other hand, symptomatic infantilism is a continuous variation or fluctuation and is not inherited.

The most comprehensive conception of infantilism is that which has been elaborated by the German clinicians. They regard it as a retardation of development that does not affect equally all parts of the body and that may manifest itself chiefly in a retardation of development of the nervous system, or of the cardiovascular system, or of the sexual or-

gans, etc. Tandler of Vienna was the first to point out the clinical types of partial infantilism, such as cryptorchism, while a host of German gynecologists have written voluminously on the rôle of infantilism in their particular specialty. Chief among these may be mentioned Hegar who has pointed out the close relationship between underdevelopment of the ovaries and the infantile type of uterus. In a recent monograph Paul Mathes deals largely with this phase of the subject. He believes that the term infantilism signifies not merely a retardation in organic development but also, and sometimes solely, a retardation or arrest in functional development. Therefore he regards the conditions of asthenia universalis congenita as a manifestation of infantilism, visceroptosis, scoliosis, flatfoot, etc., being included in this category.

Thus the term infantilism is one whose connotation has broadened beyond the definition given to it originally by the French observers. The increasing knowledge of the ductless glands has added a number of important factors in the etiology of infantilism. To the cases due to thyroid insufficiency have been added those caused by defective secretion of the suprarenals. Bramwell has described a form caused by pancreatic insufficiency, and lately Jameson Evans (*Birmingham Medical Review*, January 15, 1912) has pointed out the relation between some cases of infantilism and hypopituitarism. The type of intestinal infantilism described by Herter has been accepted by many other observers as a definite clinical entity. Not to omit mention of the form of infantilism associated with the "lymphatic-chloratic diathesis" described many years ago by Paltauf, one may conclude that the term infantilism has acquired a comprehensive connotation. It includes a most heterogeneous group of cases which have little in common except the retardation of development, which in turn may vary within wide limits and affect almost any part of the body.

THE VENEREAL PROBLEM IN THE ARMY AND NAVY.

THE venereal problem is insistent in all lands and in all classes of society, and particularly so in the aggregations of healthy, lusty young men which chiefly make up armies and navies. It is necessarily the object of those in authority to keep the physique and staying powers of soldiers and sailors at the highest possible standard. The sole *raison d'etre* of armies and navies is to be able to strike hard, and in order to do this its individual members must be constitutionally and physically efficient. Venereal diseases have been always the bane of both services and the despair of army and navy medical officers. The prostitute is generally recognized as the main means of dissemination of venereal diseases among soldiers and sailors, and therefore the logical way to counteract the evil effects of these infections would seem to be to exercise sanitary supervision and control over diseased women of the streets. However, this is no easy matter, for the views and prejudices of many must be taken into account ere steps of this character can be taken. Prostitution in this country is regarded from a different standpoint as regards its legal and municipal aspect from that of the majority of other civilized countries. In America the old theory of the English law is followed, that prostitution is merely a matter with which the police should deal as a nuisance. In Anglo-Saxon communities the question is not looked squarely in the face, facts are blinked at, and the consequence is that outward appearances alone are considered; decency is thereby preserved, but the sore is festering, and indeed the effects of this prudish conduct are becoming so obvious that social reformers everywhere are clamoring for a general movement calculated to cleanse our Augean stables. The labor will be one worthy of Hercules, but much can be accomplished by concerted endeavors.

In the *Military Surgeon*, March, 1912, Lieut-Col. J. R. Kean, Medical Corps, U. S. Army, has a long article in which he discusses the subject from the service officer's outlook. The article teems with figures and carries conviction. According to the author, the venereal records of the American Army for the latter half of the nineteenth century were far better than those of the British Army at home stations for the same period, and might have been favorably compared with those of any of the armies of Europe. But while these have been steadily improved the American Army has retrograded, until at the present time it maintains, and for longer than ten years has maintained, a shameful preeminence in this respect over the army at home of any of the great powers. Kean is of the opinion that the cause which tended most potently to this deplorable result was the granting of discharges to all soldiers who had served through the Spanish War. The places of most of the trained professional soldiers were taken by recruits. But by 1902 these should have become seasoned soldiers and the venereal rates for the home army should have approximately reverted to normal. Then the canteen was abolished and the soldier was driven outside the limits of the post, where he found fiery drinks and the lowest type of prostitutes.

A close study of British Army venereal statistics and comparison with those of our army statistics is made, for, as Kean truly remarks, these statistics are of the utmost importance on account of the close kinship of race, temperament, laws, and customs of the two nations, the similarity of ethical standards, and the susceptibility of both peoples to be moved by sentimental and emotional propaganda, especially when carried on in the name of morality. Statistics, then, seem to show that, while the British Contagious Disease Act certainly exerted a considerable amount of influence in controlling venereal diseases in the British Army, especially in the control of secondary syphilis, this beneficent action was to a great extent educational. In India Lord Kitchener waged a vigorous campaign against venereal disease in the Indian Army. He caused to be promulgated new cantonment rules with a view of controlling such diseases, and, needless to state, had the rules enforced with iron hand. The outcome has been most satisfactory. Of the European armies, the Russian Army has the best record for low venereal rates. The system is, as is everything Russian, of a beaureaucratic and paternal nature, which probably would not com-

lend itself wholly to the liberty-loving American and Briton. Prostitution in Germany is not forbidden by law, but it is subject to very strict rules and ordinances.

In this country and in Great Britain there are two parties who hold views diametrically opposed on the question. One party believes in regulating prostitution and the other does not.

So far as the army and navy are concerned, the question of controlling venereal disease therein resolves itself into the question of controlling prostitution. Lord Kitchener's policy with this end in view has been eminently successful among the British troops in India. There is no reason to doubt that similar measures would be equally effective in American army posts, at any rate in the Philippines. Kean advances a scheme for the American Army, one of the chief features of which is the recommendation that athletics and wholesome amusements should be encouraged. He also advises the education of the soldier in sexual matters and moral standards, the promotion of total abstinence, and methods of venereal prophylaxis for those who cannot be persuaded to practise continence. The methods for the navy at shore stations should be, of course, identical with those of the army. When afloat the crew should be carefully instructed in sexual hygiene and in the danger of promiscuous incontinence; the men on return from shore leave should be questioned as to exposure, and if this be admitted, methodical cleaning and disinfection should be ordered. Col. Kean states that the navy, like the army, suffers at present from the failure of the highest military authority to adopt a clear cut, systematic policy, vigorously enforced. He thinks that this is the most valuable lesson which can be learned from Lord Kitchener's administration in India.

False Amaurotic Idiocy.

Amaurotic family idiocy is now recognized as one of a considerable number of forms of mental defect associated with a definite material substratum. It by no means follows, however, that a similar association could not arise upon some other kind of soil, or that the amaurosis and idiocy could not be combined in the same subject by merely fortuitous association. In hereditary syphilis there might be a combination of mental defect with retinochoroiditis, both due to the transmitted dyscrasia. At a recent session of the Gesellschaft für Natur und Heilkunde, Dresden, Schob exhibited a patient with both idiocy and amaurosis in which it had been necessary to consider both the Tay-Sachs disease and syphilis before arriving at the conclusion that the association of the two conditions was probably due to neither of these affections. The patient was a girl aged 12, daughter of an imbecile mother, and of Christian ancestry. These two facts alone should serve to exclude the familial affection, for the latter is confined to the children of sound parents and seemingly occurs in Hebrews only. There is no mention of other children in the family. The patient was in every way normal at birth, and only upon beginning her school studies was mental inferiority apparent. At about this period epilepsy developed, and this and the mental state became progressively aggravated. The sight had failed within two years and at present the child showed a high grade of idiocy with atrophy of both retina and optic nerve. The serodiagnostic tests for syphilis were inconclusive, but all the evidences obtainable from the cerebrospinal fluid spoke against this affection. Some rapidly progressive process was evidently at work in the nervous centers, but to assume that it could only have been syphilis is much too narrow a view. The Tay-Sachs disease seems to be easily excluded. On the other hand the association of the intracranial and intraocular mischief could not have been accidental. The case was evidently of the border line type, suggesting that a number of toxic substances may be able to cause diffuse nerve lesions in predisposed individuals, and for the present it may be styled false amaurotic idiocy.

Chemotherapy of Pneumonia.

It is evident that ethylhydrocuprein, the quinine-like synthetic which is able to prevent and cure artificial pneumococcus sepsis in mice is not to be successful in pneumonia in mankind. There is nothing remarkable in this discrepancy for Hiss's leucocyte extract was also able to antagonize various kinds of mouse sepis and very good results were also claimed for it in human pneumonia; yet we no longer hear reports about it.. It is evident from a very recent discussion before the Berlin Medical Society (*Münchener med. Wochenschrift*, March 26) that the earliest reports as to the use of ethylhydrocuprein in man have led to disappointment. Morgenroth had given samples of it to numerous clinicians and one of the latter, A. Fraenkel, had tested it in twenty-one cases, in which there occurred a mortality of four, or about 19 per cent., which considering the mild nature of most of the cases was fairly high. Three double pneumonias and a deliriant case comprised the fatalities. Morgenroth then announced that further work with mice had shown the importance of the new synthetic against certain strains of pneumococcus. Fraenkel also stated that the remedy was by no means free from drawbacks, as several patients developed amblyopia. Meyer believed that the autolysis toxins formed at the crisis would antagonize a merely bacteriotropic therapy.

News of the Week.

Decrease in Infant Deaths.—The Department of Health of New York City announces that during the week ending April 20 there were 251 deaths of infants under one year of age as compared with 334 for the corresponding week of 1911. From January 1 to April 20 there were in New York City 357 less deaths under one year of age than during the same period of 1911. The decrease in deaths from diarrheal diseases during this time was 220. The department ascribes this decrease in part to the work of the infants' milk stations, of which the department at present maintains fifty-one, and in part to the campaign of education which has been carried on for the last two or three years.

Plague in Venezuela.—The State Department has received warning from the American Legation at Caracas, Venezuela, of an outbreak of bubonic plague there.

Charges of Concealment of an Epidemic of Meningitis.—From San Antonio, Texas, comes the report of a mild epidemic of cerebrospinal men-

nights with 20 deaths [illegible] of the conditions, the wife of an army officer [illegible] testing against the lack of proper quarantine regulations, states that most of the cases have originated in the schools which, nevertheless, are allowed to remain in session, that the Board of Health does not allow cases of the disease to be reported, and that little is done in the way of prevention, the excuse being that publicity might cause a panic. The city is a great center for the tourist travel of the Southwest, and the writer thinks that active measures should speedily be taken to protect those who are now kept in ignorance. The army post has been placed under effective quarantine, but the townspeople are apparently unaware of the existence of an epidemic.

Human Embryos.—The Department of Anatomy of Cornell Medical College announces that it would be glad to receive human embryos from any physician who may obtain such material. The embryos are to be used in a study of normal and abnormal development, and specimens will be duly credited to the persons contributing them. On notification to Prof. Charles R. Stockard, Department of Anatomy, Cornell University Medical College, a messenger will be sent for the specimen, which should be kept until called for in a moist cloth or placed in formalin.

Echoes of the "Titanic" Disaster.—The Daughters of Jacob of New York have decided to dedicate the entire hospital ward in their home to the memory of Mrs. Isidor Straus, one of their number, who lost her life when the *Titanic* sank. The ward will be known as the "Ida Straus Ward of the Home of the Daughters of Jacob."

At St. Vincent's Hospital, New York, a committee has been formed for the purpose of raising funds for the endowment of a pathological laboratory for the hospital in memory of Dr. William Francis O'Loughlin, surgeon on the *Titanic*. He was well known at St. Vincent's to which he had sent many patients in his capacity of physician in the service of the White Star Line for forty years.

Charitable Gifts.—By the will of the late Lewis S. Wolff of Rumson, N. J., Mt. Sinai Hospital and the Montefiore Home, New York, each receive $2,000, and the General Memorial Hospital $1,500.

In Honor of Koch.—The German Emperor recently ordered in recognition of the thirtieth anniversary of the announcement of the discovery of the *B. tuberculosis*, that the Royal Institute for the Study of Infectious Diseases in Berlin shall henceforth bear the name of Robert Koch. Prof. Koch worked at the institute for over twenty years. The Emperor says: "Prof. Koch by his discovery opened the combat against the greatest scourge of mankind, which has since been conducted with unprecedented success and has made suffering humanity his eternal debtor."

Dr. D. Bryson Delavan of this city has removed from 1 East 33d street to 40 East 41st street.

Dr. James W. Holland, professor of medical chemistry and toxicology in Jefferson Medical College, has resigned his chair and also the office of dean, positions that he has held for more than twenty years.

Suit for a Five Dollar Fee.—A physician of Albany has brought suit against Governor Dix's military secretary for $5, a fee for treating the Governor's butler. The doctor claims that the defendant summoned him to attend the butler and agreed to pay his fee. This last is denied by the defendant, who says that the suit should have been brought against the butler himself. Just how much it will cost the doctor to collect that $5 is uncertain.

Civil Service Examination.—The United States Civil Service Commission announces an examination to be held on June 5, 1912, to secure eligibles from which to make certification to fill two or more vacancies in the position of medical interne, Government Hospital of the Insane, Washington, D. C., at $600 per annum, with maintenance. Promotion is regular for satisfactory service. Applicants must be over twenty years and unmarried. Women will be admitted to the examination, although at present there are no vacancies for women. Further particulars may be obtained from the United States Civil Service Commission, Washington, D. C.

To Study Malaria.—The Tulane University School of Tropical Medicine has sent out a commission, under the leadership of Prof. Charles C. Bass, for the purpose of studying malaria, and of completing some experiments undertaken by Prof. Bass for which a large clinical material is necessary. The headquarters of the commission will be at Ancon, Panama, where Col. Gorgas has placed at their disposal all the facilities of the Canal Commission's hospitals and laboratories.

Sterilization.—The Louisiana State Medical Society recently adopted resolutions urging the enactment of a law to provide for the sterilization of criminals, male and female.

Appendicitis Prevalent.—Seven students at Cornell University operated on for appendicitis within three days is the record made at the Cornell Infirmary recently.

Diphtheria Closes School.—Seton Hall College at South Orange, N. J., has been closed on account of a small epidemic of diphtheria. One death and four cases in the infirmary was the report up to April 27, with a dozen students under observation. The rest have been sent to their homes.

Smallpox.—Several cases of smallpox in a mild form have been reported to the State Board of Health of New York from Whitney Point, Broome County.

The Johns Hopkins Hospital in Baltimore reports that during one week in April 132 patients were admitted to the institution, breaking all records. The largest number received in any one day was thirty-two.

Common Towel Passes.—The Massachusetts State Board of Health has issued regulations making it unlawful after June 1, 1912, to provide a common towel in any public building, hotel, theater, school, etc., or in any railroad station or car, or steam or ferry boat.

Preventorium Dedicated.—The Nathan Straus Preventorium for Children at Farmingdale, N. J., was dedicated on April 25, being the first of its kind in the country. Among the speakers at the exercises were Governor Woodrow Wilson, Dr. Abraham Jacobi, Borough President George McAneny of New York, and Mayor Imlay of Farmingdale. The buildings provide accommodations for over 500 children. In the temporary quarters 350 children have been cared for.

Sanatorium Burns.—The St. Louis County Tuberculosis Sanatorium situated at Midway, Minn., housing forty patients, was burned on April 21.

Bronx Maternity Hospital.—Some of the residents of the Borough of the Bronx, N. Y., have

started a campaign to obtain funds for the establishment of a free maternity hospital in the congested tenement house district in that borough. It is planned to develop the present dispensary maintained on Bathgate avenue into a first-class maternity hospital.

The Bronx Hospital Dispensary was formally opened on Saturday, April 20. Dr. A. Jacobi, who is one of the consultants of the Bronx Hospital and Dispensary, made the opening address. Speeches were also delivered by Dr. S. S. Goldwater, superintendent of the Mt. Sinai Hospital, and Anthony J. Griffin, Senator of the district.

American Proctologic Society.—The fourteenth annual meeting of this association will be held in the Hotel Chalfonte, Atlantic City, N. J., on June 3 and 4, 1912, under the presidency of Dr. John L. Jelks of Memphis, Tenn. Dr. Louis H. Adler of 1610 Arch street, Philadelphia, is the secretary of the society.

Michigan State Health Officers.—A meeting of the health officers of Michigan will be held at Ann Arbor on May 22 and 23.

Ohio State Medical Society.—The annual meeting of this association will be held in Dayton on May 8 and 9. A very interesting program has been prepared by the president, Dr. Horace Bonner.

Louisiana State Medical Association.—It has been found necessary to postpone the annual meeting of this society which was scheduled for April 23 and 24, because of the floods and high water throughout Louisiana.

Southwest Missouri Medical Society.—The annual meeting will be held at Springfield on May 8 and 9. Dr. H. S. Hill of Springfield is the secretary of the society.

Nebraska State Medical Association.—Arrangements have been completed for the meeting which will be held at Lincoln on May 9 and 10, under the presidency of Dr. Nesbit of Tecumseh.

Utah State Medical Society.—The next meeting of this society is announced for October 1 and 2, at Ogden.

Mississippi State Medical Association.—At the annual meeting held on April 9 to 11 at Jackson, the following officers were elected: *President*, Dr. S. W. Glass, Dublin; *Vice-Presidents*, Dr. J. C. Walker, Houlka; Dr. W. W. Parks, Louisville; Dr. E. C. Parker, Gulfport; *Secretary*, Dr. E. F. Howard, Vicksburg; *Treasurer*, Dr. L. B. Sparkman.

South Carolina Medical Society.—The sixty-fourth annual meeting was held in Columbia recently, the following officers being elected: *President*, Dr. Charles M. Reese, Charleston; *Vice-Presidents*, Dr. A. B. Knowlton, Columbia; Dr. D. M. Michaux, Dillon, and Dr. C. P. Aimer, Charleston; *Secretary-Treasurer*, Dr. E. V. Hines, Seneca. The next meeting will be held at Rock Hill in April, 1913. The association has endorsed the plan to erect a monument in memory of the late Dr. J. Marion Sims, the State Legislature having offered to appropriate $5,000 on condition that the Medical Association raise a like sum.

Second District (N. C.) Medical Society.—The following officers were elected at the annual meeting held in Williamstown on April 12: *President*, Dr. W. E. Warren, Williamston; *Vice-President*, Dr. E. M. Long, Hamilton; *Secretary-Treasurer*, Dr. K. P. B. Bonner, Morehead City.

Marengo County (Ala.) Medical Society.—At the annual meeting held on April 18 at Demopolis, the following officers were elected: *President*, Dr. J. B. Whitfield, Demopolis; *Vice-President*, Dr. A. B. Stone, Linden; *Treasurer*, Dr. E. B. Bailey, Demopolis; *Secretary*, W. H. Abernathy, Old Spring Hill.

Lewis and Clark Medical Association.—At a meeting of this association held in Helena, Mont., on April 10, officers were elected as follows: *President*, Dr. Rudolph Horsky; *Vice-President*, Dr. T. D. Tuttle; *Secretary-Treasurer*, Dr. B. V. McCabe. Dr. B. C. Brooke was elected a delegate to the Montana State Medical Society which will meet in Helena on May 8 and 9.

LaSalle-Frio Counties (Texas) Medical Society.—A meeting of the physicians of these counties was held in Cotulla on April 11, and a reorganization of this society was effected with the following officers: *President*, Dr. Glen Bartlett, Cotulla; *Vice-President*, Dr. Hock, Pearsall; *Secretary-Treasurer*, Dr. Graham, Cotulla.

Montgomery County (Md.) Medical Society.—At the annual meeting held in Rockville on April 18, the following officers were elected for the ensuing year: *President*, Dr. Frederick N. Henderson, Rockville; *Vice-President*, Dr. Charles H. Nourse, Darnestown; *Secretary-Treasurer*, Dr. John L. Lewis, Bethesda.

Tolland County (Conn.) Medical Society.—The one hundred and twentieth annual meeting was held in Rockville on April 16, when the officers for the ensuing year were elected, as follows: *President*, Dr. John P. Hanley, Stafford Springs; *Vice-President*, Dr. Wright B. Bean, Rockville; Secretary-Treasurer, Dr. E. P. Flint, Rockville.

Plymouth District (Mass.) Medical Society.—At the annual meeting held in Brockton on April 18, the following officers were elected: *President*, Dr. W. B. Brown, Plymouth; *Vice-President*, Dr. E. P. Linfield, Avon; *Secretary-Treasurer*, Dr. Alfred C. Smith, Brockton.

Windham County (Conn.) Medical Association.—The one hundred and nineteenth annual meeting of this society was held in Willimantic on April 18, officers being elected as follows: *President*, Dr. E. F. Perry, Putnam; *Vice-President*, Dr. Clarence E. Simonds, Willimantic; *Secretary-Treasurer*, Dr. W. S. P. Keating, Willimantic.

Georgia State Medical Society.—The following officers were elected at the annual convention held in Augusta: *President*, Dr. W. W. Pilcher, Warrentown; *Vice-Presidents*, Dr. J. W. Palmer, Ailey, and Dr. T. H. Hall, Macon; *Secretary-Treasurer*, Dr. W. C. Lyles.

Obituary Notes.—Dr. Rawley W. Martin of Lynchburg, Va., a graduate of the Bellevue Hospital Medical College, New York, in 1858, a member of the American Medical Association and the Virginia State and Campbell County Medical Societies, and president of the Virginia State Board of Health, died at his home after a brief illness of pneumonia on April 20, aged 77 years. Dr. Martin was a member of the Confederate Army, and at the battle of Gettysburg led the Fifty-third Virginia infantry in Pickett's charge.

Dr. Francis Bacon of New Haven, Conn., a graduate of the Yale University Medical School in 1853, a surgeon in the Connecticut Volunteers, and later Medical Director of the Army of the Potomac during the Civil War, an expert on yellow fever, having served during the epidemic in Galveston, Texas, in 1852, professor of surgery at Yale from 1866 to 1877, and a member of the Con-

necticut State and New Haven County Medical Societies, died at his home after a long illness on April 20, aged 80 years.

Dr. DANIEL K. PEARSONS of Chicago died on April 27 at the age of 92 years. He was born in Bradford, Vt., and was graduated from the Vermont Medical School at Woodstock in the early '40s. He had before that tried to work his way through Dartmouth College and at the end of a year was nearly ruined in health by overwork and a starvation diet of corn-bread, potatoes, and bacon. It was the recollection of these hardships that turned his mind in later years toward helping impecunious colleges and students. He went to Chicago to practise and later to Wisconsin. When about 40 years old he began to invest his small savings in Michigan timber lands and later in Chicago real estate, and in twenty years had accumulated a fortune of several million dollars. He then began to give his money away to struggling colleges throughout the West, from Chicago to Walla Walla, and in the South. By strenuous efforts in this line he succeeded in giving away over six millions and died, as he wished, in comparative poverty, with only about $30,000.

Dr. J. EVERETT LUSCOMBE of Fitchburg, Mass., a graduate of the Boston University School of Medicine in 1885, and a member of the Worcester Medical Association, died at his home on April 11, aged 67 years.

Dr. JOHN W. PECK of Amoret, Mo., a graduate of the Bellevue Hospital Medical College in 1865, died at the home of his son on April 9, aged 70 years.

Dr. SAMUEL FRY, formerly of Washington, D. C., a graduate of the George Washington University, Department of Medicine, Washington in 1902, and a member of the Medical Association of the District of Columbia and the American Medical Association, died at his home in New Orleans on April 9, after a long illness, aged 41 years.

Dr. HENRY C. HOLLOWELL, city physician of Quincy, Mass., a graduate of the Hahnemann Medical College and Hospital of Philadelphia in 1887, and a veteran of the Civil War, died at his home on April 13, aged 64 years.

Dr. LOUIS NELSON, assistant instructor in pharmacology in the Harvard University Medical School, Boston, died in the Eliot Hospital, Cambridge, on April 15, from intestinal infection with the "gas" bacillus contracted during the course of experimental work, at the age of 34 years.

Dr. ARNATT READING GULICK of Perth Amboy, N. J., a graduate of the Bellevue Hospital Medical College, N. Y., in 1888, died in the Queen City Hospital, New Brunswick, of pneumonia on April 25, aged 48 years.

Dr. EDWIN ROSENTHAL died of apoplexy at Philadelphia on April 22, at the age of 54 years. He was graduated from the Philadelphia College of Pharmacy, and in 1880 from Jefferson Medical College. He was assistant demonstrator of chemistry in his alma mater for a number of years. He was a member of the medical staff of Mt. Sinai Hospital. He was a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania and of the American Medical Association. He was one of the first in this country to use tuberculin, and also diphtheria antitoxin.

Dr. TALBERT SLENEAU of Port Huron, Michigan, a graduate of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, in 1883, and a member of the American Medical Association and the Michigan State and St. Clair County Medical Societies, died at his home after a long illness on April 21, aged 66 years.

Dr. ARTHUR JACKSON BREWE of Philadelphia, a graduate of the Jefferson Medical College in 1905, was among those lost with the *Titantic* on April 15.

Dr. MARTIN J. LUNN of Chicago, Ill., a graduate of the College of Physicians and Surgeons of Chicago in 1902, and a member of the Illinois State and Cook County Medical Societies, died at his home after a long illness on April 19, aged 42 years.

Dr. WILLIAM R. MOOD of Summerton, S. C., a graduate of the Vanderbilt University Medical Department, Nashville, Tenn., in 1888, and a member of the American Medical Association and the South Carolina State and Clarendon County Medical Societies, died at his home suddenly on April 21, aged 48 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

LISTER'S WILL—SPIRITUALISM AND ITS MATERIAL OBLIGATIONS—ANGINA ABDOMINIS—IMMUNITY—OBITUARY.

LONDON, April 12, 1912.

THE will of Lord Lister (made in 1908) has been proved, the gross value of his estate being £66,166. He bequeathed £10,000 each to the Royal Society, King Edward's Hospital Fund, King's College Hospital, and University College Hospital, and states he does not wish his name to be in any way associated with these sums in future. He gives £20,000 to the Lister Institute of Preventive Medicine. His scientific manuscripts and sketches to Miss Godlee and Hugh Lister to arrange and then present to the Royal College of Surgeons. His orders, medals, decorations, etc., to the University of Edinburgh, expressly declaring his intention that the authorities for the time being are at perfect liberty to dispose of all or any part at any time or in any manner (*e. g.* by having medals melted down or diplomas or other writings destroyed) that may seem to them desirable. There are legacies to relatives and executors, and annuities to faithful servants, and the residue to his nephews and nieces equally.

The Harveian Society's annual oration this year was delivered by Dr. Claye Shaw, who took for his subject the "Material Obligations of Spiritualism and Allied Phenomena." I cannot say that he shed any great light on the way in which the topic has been regarded, but perhaps that is hardly to be expected. At any rate, he displayed some courage in tackling a number of obscure but continually disputed matters. At the outset he referrred to universal belief in the existence of a spiritual power or mysterious agency of a controlling kind and the material way in which this belief has been exploited. As to the ghost theory, he dwelt on the necessity of its physical obligations, concluding that is is impossible to accept the common notion, which is simple superstition. Spirit rappings and messages from the dead cannot be, and pretenses that there have been such things must be classed as impostures. Telepathy was then discussed and pronounced equally impossible. Next the relation of spiritual force to dead matter was considered. Any

such force could only have relations with living matter, and the upholders of "the occult" were altogether illogical inasmuch as they profess to be able to control what they regard as the higher spiritual essence through the lower, admitting it to be the baser, material. It was not a tenable hypothesis that the lower could control that which made it and by which it is ruled, and must therefore be higher. The ideas which have been put forward by spiritualists were always and in all respects material, and have never brought forth anything but absurd trivialities. The orator suggested a theory of his own that the eccentric projection of ideas was mainly responsible for the common notion of the externality of force. As to hypnotism and suggestion, they had no connection with a special force and might be practised by anybody anywhere.

The word angina has become so closely associated with the chest that we do not always think it necessary to add pectoris to signify the old English "breast pang." It has, however, been applied by Bacelli and some other continental writers to paroxysms of pain in the abdomen, and it seems possible that we may follow the example with our usual indifference to accuracy of nomenclature. Under the term angina abdominis, Sir L. Brunton and Dr. E. W. Williams read at the Medical Section (R. S. M.) an account of a case of severe seizures of pain on making any exertion, which reminded them forcibly of angina pectoris, only the pain was confined to the region of the umbilicus in every attack. The patient was a man of 68 with a history of glycosuria extending over 25 years and treated by Pavy and others. In August last pains which had troubled him at times for the previous 18 months, and were attributed to flatulence, became so severe that he consulted Dr. Williams and, with his advice, Sir L. Brunton. The attacks came on suddenly after exertion, as walking or playing billiards, and in other respects resembled angina pectoris. So trinitrine was tried and that at once cut short the paroxysms just as it does the pectoral attacks. The patient's sister had suffered for seven years in the same way and she took some of her brother's medicine, which proved equally efficacious in her case. Some of the foreign cures were said to have shown symptoms of tabes, so Dr. Williams examined the kneejerks and pupils. He found the sister's kneejerks normal, but the pupillary reflexes sluggish and contracted more than they should be. The brother's kneejerks were abnormally active, the pupils a good deal contracted and almost insensible to a bright light.

Dr. P. Weber remarked that a good deal had been written on the subject abroad and various names proposed for it, one being "dyspravia intermittens angiosclerotica intestinalis," or if the stomach was believed at fault, "gastrica." Surely this looks more like an attempt at description than a name. In some reports it is distinctly stated there was general arterial sclerosis with high abdominal blood pressure; in others the pain came on with desire to defecate, but only mucus passed. He mentioned one case with arterial sclerosis and high blood pressure relieved by nitrites. He had heard of diuretine being prescribed for such a condition, and a hip bath relieving.

Dr. Crookshank had such a case, which had been thought to be due to intestinal obstruction, and was relieved when the bowels acted. But later the patient died and at the postmortem they found extensive arteriosclerosis of the celiac axis with necrosis of the pancreas. This might have been due to the obliteration of the pancreatic artery, perhaps beginning as an "intermittent claudication," and he suggested that name as preferable to angina abdominis.

Dr. F. Taylor (President), asked if the condition might not be linked up with other paroxysmal abdominal pains such as we sometimes see at the beginning of diabetic coma. He did not like the word angina for it, as that meant more than pain—a suffocating pain.

In *The Bedrock*, a new scientific quarterly, Dr. A. M. Gossage gives its readers some remarks on immunity, warning them not too accept too readily some plausible ideas about it, such as that races develop it in proportion as they come in contact with diseases. Thus the comparative immunity from measles results from direct transfer from mother to child. If the mother had never had measles she could not convey a degree of immunity to her offspring. The immunity is individual, not racial. In malaria, of which he recognizes several kinds, the natives of West Africa or of India suffer less than visitors from Europe, and it might be thought that whites are more susceptible than colored races. But it is possible that adult blacks have acquired immunity through previous attacks from residing in the locality, and that there would be no difference between the two races at birth. This hypothesis would explain why white settlers who do not die become "salted," as it is called, after long residence in malarial districts. So, too, it accounts for the fact that colored children suffer and die from malaria. Indeed, it has been found that in some districts they suffer more than white children.

The death took place on the 5th inst. of Sir James Jenkins, Inspector-General of Hospitals and Fleets and Honorary Surgeon to the King, at the age of 93. He graduated M.D. at Glasgow University in 1839, entered the navy 1841, became full surgeon in 1854, staff surgeon in 1863, department inspector in 1872, and inspector-general in 1878. He was in charge of the naval brigade in the Crimea until the capture of Sebastopol. He was present at Kinburn, and landed to attend the wounded. He received the Crimean and the Turkish medals and the Legion of Honor. He was in the China War from 1857 to 1861, and awarded the medal with two clasps. He was made C.B. in 1867 and K.C.B. in 1887.

The death occurred on the 2d inst. of Dr. Angus Fraser, consulting physician to the Aberdeen Royal Infirmary, of which he had been a student as well as at the university there, graduating M.A. in 1858 and M.D., C.M., with honors in 1862. In 1902 the university conferred upon him the honorary degree of LL.D. He had filled various offices in the university, as assessor in the court and representative in the General Medical Council. So in the Royal Infirmary, from the resident offices upward to the consulting physiciancy and lectureship on clinical medicine.

Dr. J. Dixon Mann, Professor of Forensic Medicine at Manchester University and physician to Salford Royal Hospital, died on the 6th inst. He was a member of the General Medical Council and examiner in medical jurisprudence for the Oxford and the London Universities. He graduated M.D. at St. Andrew's in 1880 and was elected F.R.C.P. ten years later. His textbook of forensic medicine and toxicology reached a fourth edition. He con-

tributed to Quain's Dictionary, the Encyclopedia, *Brain*, and other journals valuable articles. He had been president of the Medical, the Pathological, and other societies in Manchester.

Dr. George Reed, a former physician of the Royal Salford Hospital, has also died this week, at the age of 78. He qualified in 1858 and took M.D., St. Andrew's, in 1862.

William H. Folker, F.R.C.S., consulting surgeon to the North Staffordshire Infirmary, died March 26 at the age of 85. He qualified in 1851. He contributed surgical papers to the journals and societies.

Dr. Charles James Wills, late medical officer H. B. M. Telegraph Department in Persia, author of the "Land of the Lion and the Sun" and other works on modern Persia, died at Hove on March 24, aged 69. He qualified in 1864 and graduated at Aberdeen, M.D., 1866; M.D., 1867.

Dr. John Morison, consulting physician to the St. Albans and Mid-Herts Hospital, died on the 1st inst. He took M.R.C.S., England, and M.D., Edinburgh, in 1865, and D.P.H., Cantab., 1875. He held the M. O. H. and other appointments. He was deeply interested in natural history and contributed many papers to the transactions of the county society devoted to that subject, of which he had been president.

Dr. P. R. J. B. Minns died on the 31st ult., aged 71, at Thetford, where he settled in 1862 and practised until 1910, when he retired. He was M.D., St. Andrew's, 1862; for several years physician to the local hospital, and a member of the Town Council.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

SMALLPOX IN CANADA AND NEGLECT OF VACCINATION—BILL INTRODUCED INTO ONTARIO LEGISLATURE TO PROVIDE FOR THE EFFICIENT VACCINATION OF SCHOOL CHILDREN—NEW PUBLIC HEALTH ACT FOR ONTARIO—DECREASE OF CONTAGIOUS DISEASES IN ONTARIO—ANNUAL REPORT OF BRITISH COLUMBIA BOARD OF HEALTH—REPORT OF MEDICAL OFFICER OF HEALTH OF MONTREAL—MEETING OF THE CANADIAN HOSPITAL ASSOCIATION IN TORONTO—HOSPITAL BUILDING IN TORONTO—VENTILATION OF SCHOOLS—PROPOSED AMENDMENT OF MEDICAL ACT OF QUEBEC IN ORDER TO ADMIT BONE SETTERS TO THE PRACTICE OF MEDICINE—TORONTO MEDICAL GRADUATE AT BELLEVUE—MEETING OF THE ONTARIO MEDICAL ASSOCIATION IN TORONTO.

MONTREAL, April 23, 1912.

As regards smallpox in Canada, the situation shows no improvement, but rather matters in this direction appear to be going from bad to worse. The disease exists in many parts of the Dominion, and in certain districts, notably in the province of Quebec, is remarkably prevalent. Furthermore, reports now at hand seem to indicate that the malady is becoming epidemic and the type virulent. In British Columbia three hundred cases or so have been reported during the year. In Ontario a considerable number of cases have been reported during each recent month. As mentioned in a former letter, much of the prevalence and spread of smallpox is attributed to neglect of vaccination. In connection with this question of vaccination, a great deal of dissatisfaction has been aroused among the anti-vaccinationists by a bill recently brought forward by the Hon. J. W. Hanna, in Ontario. This bill contains two very important changes from the former Ontario "Vaccination Act." Sections 16 and 17 have been omitted, or rather replaced by one section. Section 16 in the previous act provided that it should be lawful for school trustees to enforce the production of a certificate of vaccination before allowing children to attend school. Section 17 provided that where it was thought necessary by the medical officer of health, owing to the presence of smallpox, he might require a certificate of vaccination from pupils attending high schools, colleges and universities. In the section which replaces these sections the provision for vaccination has been made uniform, the government taking the view that no distinction should be made between private and public schools, and that the health authorities, in preference to the Board of Education, should exercise medical control over pupils of schools, seeing that to them falls the duty of enforcing the health laws. Thus the vaccination of children has been taken away from school trustees and placed in the hands of the health authorities, where it obviously belongs.

A new public health act for Ontario has been introduced into the Legislature by the Hon. W. J. Hanna, doubtless stimulated by the suggestions of Dr. McCullough, the Secretary to the Board of Health of Ontario. This bill provides that the Province be divided into ten districts, with a great deal of the power concentrated in the headquarters of the Board of Health, Parliament Building, Toronto. District health officers, who are to be paid an annual salary not exceeding $2,500, with $1,000 for expenses, are to be created; local boards are to be reduced in number; compulsory notification of tuberculous diseases is provided for, better inspection of meat is demanded, and altogether many excellent reforms are recommended.

The February returns of the Provincial Board of Health of Ontario show a reduction of nearly 60 per cent. in the number of contagious diseases over the corresponding month of the previous year. The total number of cases was 719, with 130 deaths, compared with 1766 cases and 224 deaths in February, 1911. The reduction in the number of cases of scarlet fever was from 610 to 108; of diphtheria, 213 to 176. Few cases of typhoid fever occurred, a gratifying change from the records of 1911. Dr. Fagan, of British Columbia, issued recently the annual report of the British Columbia Board of Health. He points to the menace of infectious disease, owing to the large immigration and to the position of the province on the seacoast. He also makes certain recommendations with regard to the sanitation of the city of Victoria, and refers in particular to the evils existing in the logging, railway, and mining camps in the vicinity.

A report has just been presented to the Board of Control of Montreal by Dr. Laberge, medical officer of health of the city, in which he shows that out of a total of 59,688 children examined by the municipal health authorities during the past year, 27,349, or almost 50 per cent., were in an unhealthy condition. Of this number, 19,843 were suffering from mouth affections, defective and decayed teeth and gum affections. Two thousand, one hundred and forty children were found to be unvaccinated.

The sixth annual meeting of the Canadian Hospital Association was held in Toronto on April 4, 5, and 6, last, under the presidency of Dr. H. A. Boyce.

Kingston, Ont. The program was lengthy and many papers of much interest were read. Dr. Bruce Smith conducted a round table conference and question drawer, and stated in the course of his remarks that the hand picking process in the running of hospitals has got to cease. This is to say, that it must cease in Ontario, as the new Public Health Act, which will shortly become law in that province, provides that any hospital refusing to accept cases of tuberculosis for treatment will not receive a grant from the government. In a paper on the administration of the smaller hospitals, Miss M. M. Carson, of Brantford, made a plea for the more considerate treatment of nurses and employees of hospitals. Dr. E. H. Young, of Kingston, Ont., read a paper on the hospitalization of asylums, and Dr. C. K. Clarke, discussing this paper, said that the general public has felt a great horror of the insane, and until they got over that horror the hospitalization of asylums will be checked. According to the speaker, the curse of the whole service in the asylums for the insane in Ontario has been politics, and until politics are eliminated from the service it will continue backward. Miss Amy Armour, of New York City, contributed a paper on hospital housekeeping, in which she demonstrated the necessity for expert dietitians and for training nurses to be expert dietitians. She urged strongly the need for more and better food for nurses, the universally poor food served to nurses being, in her opinion, one of the reasons for the decreasing number of pupils available. The relation of the hospital to the public was discussed by Dr. Helen MacMurchy, who drew attention to the efforts through hospitals to establish a race of healers and to advance medicine. Miss Brent, superintendent of the Hospital for Sick Children, Toronto, discussing the question of hospital treatment of babies, said that babies do better in their homes than in hospital, and the policy of those responsible for the management of the Sick Children's Hospital in Toronto, was to send the babies home as quickly as possible and have the district nurses follow them up and educate the mothers as to the proper food for babies. If the babies require further treatment at any time they are brought back to the hospital, but returned to their homes at the earliest opportunity. More district nurses, according to Miss Brent, are needed in Toronto. Perhaps the most interesting statement made at the meeting was that by Dr. Hurd, president of the American Hospital Association, who declared that the Canadian meeting was better attended and the papers of a higher standard than those contributed to the American meeting. Dr. Hurd also stated that in his opinion the standard of nurses is lowering. The better class of girls will not train because the strain is too great. Unless the hours on duty are shortened and better food is served, the standard will continue to lower. At present, said Dr. Hurd, many of the nurses who graduate from hospitals are no higher in standard than those who receive their diplomas from a school of correspondence, that has a course of only a few weeks. The officers elected were: President, Miss M. J. Morton, Collingwood; vice-presidents, Dr. Donald Robertson, of Ottawa; Dr. H. A. Boyce, of Kingston; Miss Rogers, of Niagara Falls; Dr. Lincoln, of Calgary; Dr. G. H. Young, of Kingston; secretary, Dr. J. N. G. Brown, Toronto; treasurer, Miss Matheson, Toronto.

Hospital building in Toronto proceeds apace, and soon instead of being regarded as a city in which the hospital accommodation was inadequate and not commensurate with the size and wealth of the chief city of the English speaking provinces, Toronto will be looked upon almost as a model so far as hospital buildings and equipment are concerned. A new site for the Toronto Hospital for the Insane has been chosen. The pathological building of the magnificent general hospital now in course of erection in Toronto is open. A new wing of St. Michael's Hospital was opened on March 19. It contains eleven public wards, 28 semi-private and 16 private wards. A fine isolation hospital is to be built, the Western Hospital is being enlarged, and last but not least, the splendid Hospital for Sick Children, the best built and equipped in the world, and whose erection and upkeep were largely due to the generosity and public spirit of J. Rose Robertson, proprietor of the *Evening Telegram,* is to be considerably added to. The addition is to consist of an out-patient department, infectious department, and pathological department. The top floor of the existing building will be used for operating purposes, and will be provided with new equipment. The alterations will cost about $250,000. Dr. A. B. Le Mesurier, of the staff of the Children's Hospital, Toronto, and a medical graduate of Toronto University, has passed the competitive examination for house surgeon at Bellevue Hospital, New York, at the head of the list.

A proposal to amend the Medical Act of the Province of Quebec in order that bone setters might be allowed to practise was defeated on February 29, by a vote of 32 to 23. The Ontario Medical Association will hold its annual meeting in Toronto on May 21 to 23. The chief feature of the program will be a symposium on headaches, a symposium on exophthalmic goiter, and an illustrated lecture on experimental medicine by Professor Alexis Carell, of the Rockefeller Institute.

Progress of Medical Science.

Boston Medical and Surgical Journal.

April 18, 1912.

Aims and Purposes of the Robert Dawson Evans Memorial. F. C. Richardson.
The Significance to Neurology of the Robert Dawson Evans Memorial. J. J. Putnam.
The Significance of a Homeopathic Foundation for Clinical Research and Preventive Medicine. E. E. Southard.
Some Observations on the Symptomatology of Chronic Duodenal Ulcer. H. S. Rowen.
Diagnosis of Solitary Kidney, Blocked Ureter and Kidney Inactive by Reason of Previous Disease. E. Garceau.
Mental Hygiene and the Special Child. A Chapter in Social Pathology. B. C. Downing.
Two Cases of Precocious Cerebrospinal Syphilis, One Occurring after Salvarsan, the Other with Post-Mortem Findings. A. Myerson.

Chronic Duodenal Ulcer.—H. S. Rowen states that the usual history of a case of this condition is that of a young male adult who develops symptoms of stomach trouble, marked by bitter, sour, acid belching and regurgitation and pain coming on at from two to three hours after meals and relieved by taking food. These spells gradually begin to recur at closer and closer intervals. Vomiting is almost unknown, and hemorrhage may be disregarded in the early diagnosis and considered as a late complication. Physical examination is practically negative.

Diagnosis of Solitary or Inactive Kidney or Blocked Ureter.—E. Garceau states that if one can totally, effectually, and continuously plug one ureter with an appropriate catheter, at the same time laying another catheter in the bladder, one will be sure of collecting the total output of urine from the kidney in whose ureter the catheter has been placed; at the same time, if urine is drawn from the vesical catheter one will know that a kidney discharging

urine exists on the opposite side; if no urine is drawn with the vesical catheter one will know that one of the following conditions is to be reckoned with: (1) solitary kidney; (2) blocked ureter, from stone, kink, obliterative disease, etc.; (3) a kidney inactive and non-secreting from previous disease. Having determined the absence of urine on the suspected side, it remains to make a differential diagnosis. If the patient has never had any symptoms whatever on the side in question the probability is that the condition is one of absent kidney, especially if no ureteral orifice can be found in a smooth bladder. Blocked ureter may be of the acute or the chronic variety. The acute form is usually due to stone. Here the fulminating symptoms, colic, local tenderness and general disturbance, leave no doubt as to the diagnosis. In the chronic form, also usually due to stone, the *x*-ray will be of assistance; also a history of previous pain in the kidney together with other localizing symptoms. A kidney inactive and non-secreting is diagnosed by the previous history. If the patient has had renal pain, if there has been a tumor, and especially if there has been abundant pyuria in former times, one may suspect some suppurative process which has gradually destroyed the kidney and has rendered it inactive.

Mental Hygiene and the Special Child.—B. C. Downing states that neither heredity, environment, nor personal choice alone explains the facts of social life. One of the most significant statements of Dugdale in his book on the Jukes family is: "The tendency of heredity is to produce an environment which perpetuates that heredity." This seems to be largely overlooked by the present students of heredity in man, who stand for eugenics in the United States. The pioneer workers in the field of the feeble-minded and insane in the United States were influenced by this statement of Dugdale, which is backed by two significant facts: "One pair of the Jukes family moved away from the original home, and in the new neighborhood the children developed fairly well. One of the women who was both a harlot and a criminal died in the poorhouse leaving a daughter a year old. The child was adopted into a normal family and lived a normal life." This side of the story of the Jukes needs to be better known. Preventive eduction and preventive medicine should work hand in hand. Open-air hospital schools for neurotic children should be established in every city.

New York Medical Journal.

April 20, 1912.

Etiology of Perineal Lacerations. J. Edgar.
The Use of Spinal Fluid (Autotherapy) in the Treatment of Chronic Syphilides, Especially of the Central Nervous System. W. Browning and W. Lintz.
Report on the Activity of the Department of Physical Therapy of Mt. Sinai Hospital Dispensary. H. F. Wolf.
An Analysis of the Results of Dorsal Root Section in the Treatment of the Spastic State of Cerebral Diplegia. L. P. Clark and A. S. Taylor.
The School and the Doctor. G. Straubenmüller.
Recurrence of Syphilitic Manifestations after Combined Salvarsan and Mercurial Treatment. L. Neuwelt.
A Summary on the Techniques Employed in the Administration of Salvarsan. S. H. Likes and H. Schoenreich.
Ranula. L. G. Hanley.
A Contribution to the Study of the Physiology and Pathology of the Skeleton on the Oral Extremity of the Thorax (Stethographic Method). C. M. Desvernine.

Etiology of Perineal Lacerations.—By J. C. Edgar. (See MEDICAL RECORD, March 23, 1912, page 570.)

The Use of Spinal Fluid in the Treatment of Chronic Syphilis.—W. Browning and W. Lintz point out that the antibodies or immune bodies are recognized as curative agents in specific affections. During the earlier and systemic period of lues the antibodies appear in the general circulation and not in the spinal fluid. In the later spinal and parasyphilitic stages this tends to be reversed; the antibodies then being in abeyance in the general circulation, but occurring in somewhat concentrated form in the spinal fluid. The spinal subarachnoidal sac in the human subject has no absorbents. It consequently retains whatever material accumulates in it. During the active hours of life this is practically a suspended sac, a kind of settling tank for the cerebrospinal fluid and its ingredients. Not only biologically (as exemplified by the Wassermann test), but even macroscopically the spinal fluid in these cases usually shows that it carries abnormal constituents. Antibodies and antigens are known to exist in a solution in a colloidal state, and therefore cannot diffuse through any retaining membrane. Consequently those in the spinal sac cannot reach injurious toxins or organisms in tissues near or far. The rational thing then is to transfer them from this inert position to the general circulation and thus give them a chance to exert their proper activity.

Dorsal Root Section in Treatment of Spastic Cerebral Diplegia.—By L. P. Clark and A. S. Taylor. (See MEDICAL RECORD, Vol. 80, page 643.)

The School and the Doctor.—G. Straubenmüller states that if the duty of the school physician outside of the detection of contagious diseases is to be advisory and preventive; if he is to help teachers and principals in the treatment and training of children by expert advice, based on personal observation; if he is to assist in determining the point of mental fatigue, beyond which a child cannot go without harm to itself; if he is to determine the causes of the increase of myopia as the children advance in school; if he is to visit classrooms to study his problems—then there is needed a co-operation between school and doctor quite different from that which prevails at present under systems devised by boards of health in this country. As no one can serve two masters equally well at the same time, as the doctor's relation to the school department in his new duties will be closer and more intimate than to any other city department, as his recommendations in most cases will concern the school authorities more than the authorities of the department of health, it is quite obvious to which department he should be assigned. This work calls for trained physicians and for mature judgment. Even if we did not know of the experience of other large cities, common sense would indicate that the young and inexperienced physician, now usually assigned to the schools, with no training for this higher kind of work, could not possibly measure up to the right standards.

Intravenous Administration of Salvarsan.—S. H. Likes and H. Schoenreich state that the apparatus which they employ is very simple and consists of a graduated syringe, with metal plunger and slip-on joints, a detachable two-way stopcock, two pieces of rubber tubing about 30 centimeters in length, a glass rod, a pipette, a 250 c.c. graduate, and two medicine glasses. The ampoule of salvarsan is placed in one of the medicine glasses previously filled with alcohol. The powder is prepared in the graduate according to the official directions. The advantages of the graduate are, first, mixing the powder in this receptacle prevents pouring and repouring, all of which help to contaminate the fluid. Second, being of thick glass, and being used immediately after sterilization, it maintains the heat of the salvarsan solution more uniformly and longer than a thin beaker, or it may be conveniently placed in a basin of warm water during the process of injection. Third, it is simple and inexpensive. The stopcock is connected to the syringe, and the rubber tubes are connected to the stopcock. By introducing the tube ends into the medicine glass, which has been previously filled with saline, the syringe and rubber tubes are filled with the latter, and so manipulated as to expel all air. To one rubber tube is attached the needle and the other is placed in the salvarsan solution. Thus the operation is simple; one operator holds the needle very steadily, whereas the other manipulates the syringe.

Journal of the American Medical Association.

April 20, 1912.

Experimental Research in Syphilis with Especial Reference to *Spirocheta Pallida* (*Treponema Pallidum*). H. Noguchi.
The Pseudomalarial Types of Pyelitis. D. Vanderhoof.

The Germicidal Action of Basic Fuchsin. E. S. May.
The Value of Bran as a Foodstuff. H. B. Lewis.
Contribution to the Surgery of Bones, Joints and [illegible] (continued). J. B. Murphy.
Malignant Pneumococcus Tonsillitis. L. K. Hirshberg.
Multiple Diverticula of Ileum. F. E. Walker.
A Case of Extensive Pigmented and Hairy Nevus of the "Bathing Trunk" Type, Presenting Genital Tumors. H. Fox.
A New Traction Frame. P. W. Roberts.
Orchitis Secondary to Tonsillitis, Treated with Hexamethylenamine. Report of a Case. I. H. Prouty.
A Practical Ophthalmodynamometer for Office Use. E. J. Gardiner.
A Practical Bone Clamp. F. Reder.
Syphilis, Diabetes and Salvarsan. J. R. Longley.
A Case of Acetonemia. E. O. Houda.

Pseudomalarial Types of Pyelitis.—D. Vanderhoof states that of forty-seven cases of pyelitis which he had seen during the past five years, twenty-one had been treated for malaria. The clinical features of these two affections may be almost identical. The differentiation, however, is not difficult, but the confusion of the two conditions will continue until physicians realize that quinine is a specific in malaria, and that it is useless to continue this remedy if the febrile disturbance persists. Furthermore, quinine, even in moderate doses, is irritating to an infected kidney. The constitutional symptoms of a low-grade chronic infection of the genitourinary tract simulate pulmonary tuberculosis, but in the absence of cough the condition is often regarded as a chronic malaria. The urinary findings in these cases may appear almost insignificant, but a urine that is apparently clear on gross inspection will show the presence of a few pus-cells, often accompanied by an occasional red blood cell. Pyelitis is the cause of many unexplained fevers, and this is especially true in the case of young children.

Germicidal Action of Basic Fuchsin.—E. S. May concludes from the results of his investigations with basic fuchsin that this is a germicidal agent which is more powerful than phenol (carbolic acid) and one which has a greater diffusibility and is less toxic. It has a marked stimulative action on epithelial and granulation tissue growth.

Malignant Pneumococcus Tonsillitis.—L. K. Hirshberg states that about the second week of January, 1912, it became evident in Baltimore that an unusual type of tonsillitis, with adenitis, peritonitis, and septicemic complications was epidemic. Physicians practising internal medicine could not fully differentiate the variety of tonsillar-pharyngeal infection prevailing from the common streptostaphylococcic variety. The most striking clinical picture in this epidemic was the sharp onset, with the invasion always in the throat; general adenitis; great virulence; the fulminate type of death in forty-eight hours in the lethal cases; the impossibility of proving milk, water, or food responsible in the spread of the epidemic; and the constant presence of the pneumococcus as a possible causative organism.

Multiple Diverticula of Ileum.—F. E. Walker reports the case of a girl, aged eleven years, who was suffering from typhoid fever. She complained of pain in the appendiceal zone, and within ten hours the pain was so marked as to signify an intense infection and inflammation, having all the appearance of an oncoming rupture. The pulse and temperature rose steadily, the thermometer registering 106° F.; the pulse was 164. Vomiting set in and was profuse. An incision of liberal length was made along the outer border of the rectus muscles. A large amount of straw-colored fluid was released and a portion of the omentum, completely free from any adhesions, presented itself in the opening. The cecum was almost rigid and the appendix was not visible. A large semisolid and irregular-shaped mass was felt about two inches from the ileocecal valve; it consisted of the apendix, greatly enlarged and inflamed and firmly adherent to the under surface of the ileum and to one small and one large diverticulum of the ileum. A third diverticulum was in close proximity to the tip of the appendix, but not attached to it. The large diverticulum was filled with a fecal mass. The tip of the appendix carried three small concretions. The base of the appendix was slightly gangrenous, the body and tip were injected and the blood-vessels stood out prominently. The appendix was removed. The small diverticulum was pursed into the bowel, while the other two pouches were removed, inverted and sutured over as in an enterostomy. All the symptoms rapidly subsided after the operation; the wound healed nicely, although the typhoid condition ran its usual course, and the patient finally recovered sufficiently to return to her home.

Orchitis Secondary to Tonsillitis.—I. H. Prouty reports a case of orchitis which was in all probability a metastatic infection derived from the primary foci in the tonsils. In view of the bactericidal properties of hexamethylenamine when decomposed within the body, it occurred to the author that possibly the drug might favorably influence the course of the orchitis. What appeared at first to be a severe inflammation of the testicle very rapidly improved within forty-eight hours after the administration of the drug was begun.

The Lancet.

April 13, 1912.

Modern Views Upon the Significance of Skin Eruption. H. G. Adamson.
A Contribution to the Study of Secondary Infections in Pulmonary Tuberculosis. A. C. Inman.
Corneoscleral Trephining (Lieutenant-Colonel R. H. Elliot's Operation). B. T. Lang.
The Treatment of Condylomata Acuminata. D. Watson.
Three Consecutive Cases of Carcinoma of the Jejunum. E. T. Tatlow.
Telegraphists' Cramp. An Extract from the Report of the Department Committee, General Post Office, on the Subject, with Additional Matter. H. T. Thompson and J. Sinclair.

Skin Eruptions.—H. G. Adamson states that the toxic erythemas, urticarias, and purpuras may be regarded as inflammatory reactions to the action of poisons, which act particularly upon the vessel walls and upon the tissues around. Possibly these poisons are toxins or products of living cells, either introduced as such or manufactured by the damage of the living cells by chemical or physical agents—i. e. they are foreign proteids. These foreign proteids act as do the toxins of microbes. They give rise not only to the local reactions (seen in the erythematous rashes) but to general reactions of defence. Hence they tend to produce a condition of hypersensitiveness, which is really the result of an effort of the body to rid itself of alien proteids, a stage toward the production of immunity.

Secondary Infections in Pulmonary Tuberculosis.—A. C. Inman concludes that in nearly every case of open tuberculosis of the lungs the tubercle bacillus is the predominant infecting agent. The blood examinations have shown that "secondary infections" do occur. In all cases "resting febrile" there was evidence of such infection. Even in the "ambulant afebrile" group such infection could not be excluded. The temperature chart alone cannot determine the presence or absence of a secondary infection. A consideration of the morbid anatomy of advanced tuberculosis, and of the uncontrolled autoinoculations spontaneously occurring in such cases, precludes the hope of a successful issue from specific treatment directed against the secondary infections; the situation is more encouraging in afebrile cases.

Treatment of Condylomata Acuminata.—D. Watson states that the treatment which has been found to be most simple, effective, and free from objection is the application of lactic acid. The mode of employment depends upon the condition present. In the male circumcision is performed when necessary, pedunculated warts may be removed with scissors, and pure lactic acid is applied to the base after the bleeding has been controlled. Other growths are treated with a continuous 1 per cent. wet dressing or the occasional application of a strong solution. In the female, when there

are several large masses, each portion is isolated and [illegible] surrounded by strips of lint wet with a ½ to 1 per cent solution. The base of these growths may in addition be touched at intervals of a few days with the pure acid. Smaller growths are painted with the undiluted acid or a strong solution, and when there is a large field of minute growths the wet dressing is employed. The dressings are changed as frequently as the amount of discharge necessitates, and at each change the parts are thoroughly bathed with an antiseptic, in the case of females a sitz bath being used. The largest masses wither and drop off, small growths are inhibited, and cure results without the formation of any cicatrices and without pain. The only disadvantage the author has encountered in the use of lactic acid is the occasional occurrence of a general erythema when the treatment is pushed too energetically. This erythema is of trifling significance and quickly subsides on the temporary withdrawal of the acid and the substitution of a zinc and calomel dusting powder or ointment. On this account, however, it may be necessary when large areas are involved to intermit the treatment for two days in each week, and to protect the surrounding healthy tissues with vaseline in order to discourage excessive absorption of the acid. As soon as the seats of gonorrheal infection—urethra, cervix, rectum, etc.—can be reached appropriate treatment is initiated, and this, combined with strict cleanliness, has an important influence in preventing the appearances of fresh growths.

Carcinoma of the Jejunum.—E. T. Tatlow notes that statistics on the subject of intestinal carcinomata differ considerably with regard to the relative frequency of cancer of the small intestine. According to Sutton, in every 100 cases of intestinal cancer 75 occur in the rectum, 23 in the large intestine, and 2 in the small. Possibly these statistics indicate that carcinoma of the small intestine is rarer than it really is. All authorities agree, however, that carcinoma becomes more infrequent in the higher portions of the intestinal tract, and that carcinoma of the ileum is not so uncommon as carcinoma of the jejunum. The author reports three cases of this condition. All three patients showed the characteristic group of symptoms due to the toxemia of intestinal putrefaction, together with the mechanical obstruction of the bowel—namely, impaired digestion, loss of appetite, loss of weight, loss of color, and increasing constipation, accompanied by colic more or less severe in character.

British Medical Journal.

April 13, 1912.

A Clinical Lecture of the Precise Relationship of Cystocele, Prolapse and Rectocele, and the Operations for Their Relief. W. E. Fothergill.
A Clinical Lecture on Gastroenterostomy. By J. C. Renton.
Retroversion of the Uterus Treated by Gilliam's Round Ligament Ventrisuspension, with an Analysis of 100 Consecutive Cases. F. Ivens.
Twin Monsters with Acute Hydramnios. A. E. Turnbull.
Rupture of the Uterus with Expulsion of the Fetus into the Abdominal Cavity. H. R. Andrews.
A Suggestion for Treatment of Certain Forms of Coccygodynia. O. Beddard.
On the Causation of Parenchymatous Nephritis. G. W. Watson.
Pyonephrosis, Operation, Recovery. E. O. Bowen.
Acute Pyelonephritis Complicating Pregnancy. F. D. Crew.
Foreign Bodies in the Vermiform Appendix. S. Boyd.
On Threadworms in the Vermiform Appendix. C. Wilson.
Foreign Bodies in the Intestine. A. S. Hosford.
Observations on an Infant Fed with Barley Water and Cow's Milk. R. C. Verley.
Boracic Acid Poisoning. V. Harley.
Acute Epididymitis Produced by Muscular Strain. A. Edwards.

Gastroenterostomy.—J. C. Renton states that this operation is indicated in the following conditions: dilated stomachs, due to chronic dyspepsia; stenosis of the pylorus, due to ulceration and contraction; ulceration of the stomach with hemorrhage; in cases of ruptured gastric ulcer at the pylorus; in cases where an ulcer has been cut out, the operation is of great value; in hour-glass contraction of the stomach, due to an ulcer contracting in the middle of the stomach, in such cases a double gastroenterostomy being necessary, or a gastrogastrostomy; atonic conditions of the stomach in which all medical treatment seems to be of no avail; duodenal ulcer with hemorrhage; malignant disease of the pylorus and stomach, either with or without gastrectomy. The author has performed gastroenterostomy in 81 cases with a mortality of 5 per cent.

Gilliam's Operation for Retroversion of the Uterus.—F. Ivens describes Gilliam's operation of round ligament ventrisuspension. This operation is practically extraperitoneal and almost as safe as the Alexander operation. The author concludes that Gilliam's operation is uniformly successful in suitable cases—that is, when the round ligaments are not too attenuated. If the operation is done under good conditions there is little risk beyond that of the anesthetic. As it causes no dystocia, it is strongly indicated in young women. There is no tendency to relapse after labor or abortion. Owing to the hypertrophy of the round ligaments, the operation is a valuable adjunct to a perineorrhaphy in cases of uterine and vaginal prolapse.

Treatment of Coccygodynia.—O. Beddard has had occasion to treat a few cases of coccygodynia in which the pain was so obviously resulting from pressure upon the coccyx, particularly in the sitting posture, that he sought for some apparatus which would obviate this and prove not inconvenient in use. Three such cases occurred in nulliparous unmarried women with a history of pain coming on after sitting for a length of time—as, for example, in church or on a bicycle. Examination showed a prominence of the coccyx which would render it liable to pressure on an ordinary seating surface, and it seemed as though such pressure could be avoided if the tubera ischii could be maintained on raised supports. The author found that this could be effected by a simple contrivance made of fine longcloth shaped on the lines of a napkin provided with two hollow rubber rings to receive the tubera. The rubber rings are 1 inch in depth and 2½ inches in diameter, their contained circles being 1¼ inches in diameter. They are held within circular pockets, which close with snap fasteners, with their centers 4½ inches apart. The garment should accurately and closely fit the body, and be worn next the skin. It is kept in position by a broad silk elastic band passing round the waist, and a similar band passes across just above the pubes; narrower silk elastic bands lie in the folds of the groins, and can be almost instantly undone or done up with the snap fasteners.

Causation of Parenchymatous Nephritis.—G. W. Watson concludes that acute nephritis is not a very common disorder. It is usually due to the direct effect of some infectious fever, catarrh, or septic process. The great majority of cases recover completely. The diagnosis of primary acute nephritis can seldom be made with certainty during the acute attack, and therefore a prognosis cannot safely be given until after an interval of at least a few weeks.

Foreign Bodies in the Vermiform Appendix.—S. Boyd states that according to Kelly and Hurdon the commonest foreign body met with in the appendix is a pin. These authors give a list of 40 cases in which this was found. All the cases were complicated by periappendicular suppuration, and many of them were fatal. Bullets and shot have also been met with, in most cases derived from eating game. Other foreign bodies recorded are the following: Pieces of bone, pieces of fish-fin, bristles of a toothbrush, fishbones, a nail and parasites—*Ascaris lumbricoides, Oxyuris vermicularis*—and a segment of tapeworm. Barnet and Macfie have published a case of gangrenous appendicitis in a hernial sac in which a clove was found protruding from the perforation in the appendix. Apple-pits, grape-seeds, and fig-seeds have also been found. Calcareous enteroliths and true gallstones are very rarely seen. Battle has suggested that the increase in the frequency of appendicitis in recent years may be due to min-

ute particles of iron derived from the rollers used in grinding wheat. He suggests that these particles find their way into the appendix, where they form the nucleus of a concretion, and he has been able to demonstrate the presence of such a nucleus. Battle also collected four cases in which hairs were present, and in some of these cases concretions had formed around the hairs.

Münchener medizinische Wochenschrift.

April 9, 1912.

Severe Anaphylaxis in Practice.—Asam reports a case in which he nearly lost a patient following an injection of antidiphtheritic serum. The case occurred in an adult who about ten years before had gone through two attacks of diphtheria in consecutive years. He received serum on each occasion, and the second application caused no anaphylactic phenomena, although the patient suffered commonly both from hay fever and asthma. On the present occasion he waked up with a diphtheritic patch on one tonsil, and from the previous history no time was lost in injecting serum. Prophylactic calcium chlorate was given as usual. Fifteen minutes after injection patient was attacked with paroxysms suggesting acute asthma and hay fever. The face swelled greatly, exactly as in erysipelas, and a scarlatinoid rash appeared on the chest, and spread over the entire surface. At the site of the injection in the thigh an erysipeloid rash had already appeared. The diphtheria seemed to have been arrested. The rash was attended with intense itching and occasional appearances of wheals. The patient was menaced in several ways. The extreme degree of swelling in the face involved the upper air passages to some extent. Recovery occurred. In cases of this sort (the patient was always unpleasantly affected by proximity to horses and stables) the danger of anaphylaxis from horse serum leads the practitioner to test serum by oral exhibition. The author urges that a trial be made of this possibility on a large scale.

Anaphylaxis from Repeated Intravenous Injections of Salvarsan.—Iwaschenzow describes the following syndrome which sometimes develops after consecutive injections of salvarsan in nerve syphilis: sudden redness and swelling of the face, dyspnea, cough, sense of heat and pressure in the head, twitchings and paresthesias in the extremities, feelings of anxiety and oppression. These symptoms last for a short time only—half a minute to five minutes. The heart is not implicated. The anaphylaxis is due to salvarsan purely and in no wise to the solvent or technique. The reaction is dependent on the dose and interval and the intravenous method. The author states this anaphylaxis is favored by simultaneously reducing the dose and prolonging the interval.

Multiplicity of Bacterial Toxins.—According to Bessau there are already known to exist three distinct types of bacterial poisons. The first, or toxin in the old and common sense, is the specific toxin of the particular species of bacterium which because of this specificity brings about the formation of specific antisubstances, antitoxins, which neutralize the toxins. The second form is the endotoxin. These form so-called immune bodies which do not neutralize endotoxins. The third form of toxin, that which produces anaphylactic phenomena, and is known as anaphylatoxin, is nonspecific. We already possess tests for the recognition of the presence of these bodies under certain circumstances, and may in time be able to trace the influence of each in a given disease picture.

Deutsche medizinsche Wochenschrift.

April 11, 1912.

Hyperemesis as a Pregnancy Toxicosis.—Seitz first mentions the great frequency of the vomiting of pregnancy (about 50 per cent.). Between the harmless morning vomiting and the severest types with fatal termination we have every transition. That a reflex factor is present may be conceded, but the growing uterus on the one hand or the retrodeviated or adherent uterus on the other can hardly be the efficient cause. The psychogenic theory is based chiefly on the fact that the affection is sometimes amenable to suggestion. The destructive visceral lesions often found at autopsy show conclusively that hyperemesis is no neurosis, although hysterical mimicry of the clinical picture no doubt sometimes occurs. We may conclude that in the recovered case, similar lesions in the liver or kidneys have been present in slight or minimal degrees. The parenchymatous alterations are followed by the formation of autolytic toxins which irritate the vomiting center. That psychotherapy seems at times to save these patients is not strange when we bear in mind that other remedies of a detoxicating character are always employed (certain diet, enteroclysis, etc.). Moreover, the irritated vomiting center is to some extent controllable through suggestion. This center is evidently sensibilized to minute quantities of some autotoxic substance. It is possible to give apomorphine to a suggestible person and then prevent its action by suggestion. The pathological finds in the fatal cases bear a notable resemblance to those of acute yellow atrophy of the liver and eclampsia, yet the finds are by no means identical. Clinically there is more or less parallelism between acute yellow atrophy and hyperemesis. We see in both cerebral disturbance, subcutaneous hemorrhages, and icterus. Cases occur in which the two affections appear to be one and the same or at least a transition form. For the present, however, it is well to regard them as distinct entities. There is a considerable resemblance, clinically, between cases of hyperemesis and cases of eclampsia, but it is rare to find structural alterations of the kidneys in hyperemesis, and moreover convulsions do not tend to occur in this condition. On the other hand, the author says, the atypical eclampsias, especially the forms which occur without convulsions, resemble notably certain cases of hyperemesis of pregnancy.

Treatment of the Climacteric Disturbances in Women.—Jung states that the involution of the female genitals may be attended with hardly any disturbances. The most common among the latter have reference to the circulation and are vasomotor in character—hot flushes, vertigo, palpitation. There may be a general nervous irritability, alterations in personality, moodiness, and even increased sexual desire. In the normal subject the disturbances are mild and transitory. When they are serious and persistent, resembling those produced by castrating young women, they may be looked upon as abnormal; although some women may be castrated without much disturbance of function. The element which may render these cases abnormal is by some held to be simply the general neuropathic or psychopathic constitution, but the author is not an adherent of this view. In any case the symptoms are severe enough in the majority of women to call for relief. As organotherapy has failed in this respect we have no certain causal therapy. The author would treat the vasomotor irritability by withholding every substance or practice which raises the blood-pressure—notably wine and coffee. Diet should be bland and incline toward the vegetarian. Regulation of the bowels and one or two hours daily in the open air are necessary. Hydrotherapy is of great benefit, and the only drugs recommended are valerian and an effervescent bromide at times. Of much greater significance may be the local treatment, there being some danger from climacteric hemorrhages and carcinoma. In any doubtful state of affairs, Jung maintains, it may be advisable to extirpate what he calls the now useless genitals. Nevertheless the author admits that a cutting operation may not be necessary, as the same end may perhaps be gained more simply by radiotherapy.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

UNDERWEIGHT.—Underweight seems to exert no harmful influence as long as it does not exceed 20 per cent. below the standard. The mortality rises, however, to a point where it is of consequence when the weight of applicants as a class goes below the 20 per cent. mark.

The bad effects of underweight are especially noted in the younger ages. While moderate overweight is a favorable condition in this stage of life, underweight on the contrary is unfavorable and in some cases indicates a tendency to or the commencing of disease. This is particularly true of young lightweight dyspeptics, this class having a decidedly excessive mortality rate, many of these applicants developing pulmonary disorders. A mortality of about 110 per cent. may be expected among young underweights when the weight runs from 20 to 25 per cent. below the standard; in other words, when they are moderate underweights. The rate increases as the weight falls still lower.

As age advances, lower mortality rates are encountered, so that during the ages of from 30 to 40, the rate may be estimated at about 100 per cent., which is still rather high. After the age of 40 the mortality becomes fairly satisfactory, as it ranges from about 90 to 95 per cent. General experience teaches that moderate underweight in those over 50 years of age is by no means a disturbing element, for these are the applicants who may be expected to stand acute illnesses far better than the stout ones, and who have more chance of living to become octogenarians, finally "drying up and blowing away."

Underweight as an Advantage.—By consulting the table of the Causes of Death in a previous section on "Obesity an Abnormal Condition," it is seen that underweights have the advantage in a varying degree in typhoid, malaria, diabetes, diseases of the nervous system, diseases of the circulatory system, diseases of the liver and digestive system and diseases of the kidneys and genito-urinary system. It is also seen that in none of the cases considered did any person die of old age among the overweights, whereas a fairly good percentage is noted for the underweights.

Sir Dyce Duckworth during a discussion of relative weights (Proceedings of The Life Assurance Medical Officers' Association, London, 1901), recounted a story told him by Sir William Jenner; the latter had been called down to the country to see a patient suffering from pneumonia. The family practitioner met him at the station to say, "I am afraid this is a bad case and I do not expect the man to pull through. He is a lean, poor, miserable, thin man and spitting up large quantities of blood." Jenner answered, "You have told me two good things that make me think favorably of the case, because the leaner the patient and the more blood he spits up in pneumonia, the more likely he is to pull through." The patient recovered.

Underweight as a Disadvantage.—In the same table the excessive rate of deaths due to disease of the respiratory system is evident. For instance, pneumonia is seen to be nearly twice as fatal among underweights as among overweights. This is apparently a glaring inconsistency to much that has been said, as it has been asserted that the prognosis is more serious in the overweights. The seeming contradiction may be explained by the assumption that overweights have a certain immunity from pneumonia but do badly when attacked, while underweights are more than usually susceptible to the pneumococcus.

Underweight and Tuberculosis.—The association of underweight and a tubercular family history in the young is undeniably serious, the mortality running as high as 180 per cent. in the ages below 35. Above that age the influence of tuberculosis depends upon the number of cases in the family, the mortality dropping to about 107 per cent. among the lightweights who have two or three or even more cases of tuberculosis in the family record.

Dr. Marsh gave some facts (6th Annual Meeting of the Association of Life Insurance Medical Directors) which are of interest in connection with the subject. While studying the deaths from consumption of 1,994 cases with no tuberculosis in the family history and 2,700 with tuberculosis in the record, he deduced the following facts from a consideration of the personal condition of weight in each class. The list of cases with untainted record showed nearly twice as many deaths among those below as among those above the average weight. The cases with tainted records showed a larger amount of consumption in both those above and below the average weight, but again there were twice as many deaths from consumption in those below as in those above the average weight. By further analysis it was plainly seen that, while the combination of a record of consumption in the family history and a personal condition of underweight indicates an unusual liability to consumption, these factors differ considerably in their degree of influence. The effect of family history is almost insignificant compared to that of the weight and a good record of weight largely overbalances a badly tainted family history. The combination of the two factors indicated the *maximum*, and the absence of both the *minimum* of susceptibility.

ENDOWMENT POLICIES FOR OVERWEIGHTS AND UNDERWEIGHTS.—Some of these cases, while not desirable for a policy on the life plan, are nevertheless entitled to something better than rejection. The examiner, however, having given full details of the weight, measurements and other facts, should usually leave the question of acceptance or rating up to the home office.

Overweights.—The chief factors for consideration in selecting heavyweights are the family history, personal history, habits, occupation, residence and physique. If all or most of these elements are satisfactory, there will usually be no hesitation in granting a policy on the life plan to moderate overweights (between 20 and 30 per cent. above standard), and an endowment policy to excessive overweights (over 30 per cent.), provided the weight is not too excessive.

The family history is of some importance as indicating the longevity, and a record of deaths in early or middle life, especially from diseases denoting degeneration, such as diseases of the blood vessels, heart or kidneys, would be an adverse factor.

A personal history of rheumatism, gout, albuminuria, glycosuria or digestive disturbances would add materially to the liability.

The question of habits is of the highest importance in deciding upon overweights, for they should

not be accepted unless the consumption of alcohol is limited to a small daily amount. Total abstinence is a decided point in favor of these risks.

Occupation affects the life of an overweight, according as it is one requiring outdoor, active life, or the contrary.

Residence would chiefly affect the risk on account of climate. It may be safely assumed that an overweight will thrive better in a cool, bracing climate than in one where inertia and the debilitating effects of heat must be reckoned with.

The physique will naturally have to be studied. The risk is better or worse according to whether his overweight is due to a preponderance of fat or muscle, and whether the abdominal measurement is at least a half inch less than the expanded chest.

As overweights are liable to be cut off by the degenerative diseases which do not usually appear before 50 or 60 years of age, an endowment policy maturing in this period of life may be granted if the overweight and other conditions are not so adverse as to point to the danger of death at a still earlier age. Unfavorable overweights would be carried at an excessive loss, even on the endowment plan, and consequently would have to be balanced by an unusually good mortality among the normal policy holders, clearly an injustice.

Underweights.—The endowment policy is not often appropriate for the undesirable risks in this class, as the risk incurred by the company is too immediate and not deferred as in the case of overweights. The only intelligent plan for dealing with many of these cases is that by which a policy at a rated-up age can be issued. Occasionally, however, companies which do not accept sub-standard risks or write policies with rated-up premiums, may issue endowment policies in individual cases in which there is some merit.

The Mortality and the Causes of Death in the First Five Years After Insurance.—Georg Florschütz says that the Life Insurance Bank of Gotha in 1904 constructed a table of premiums not only according to the expected mortality because of age of the insured but likewise because of the years of insurance. The latter data were, of course, taken simply from the experience that the company has had in the previous years. The expected mortality table thus constructed proved, however, much higher than the actual occurrence, the mortality figures being something like 40 per cent. better than those derived from the figures. Florschütz has taken great pains in studying the causes that have been responsible for this favorable outcome, and presents numerous tables of the causes of death among those insured by the company from 1904 to 1910. The following table is an abbreviation of one of his and shows the actual number of deaths from various diseases as compared with the expected deaths, and the percentage of the actual deaths in terms of calculated deaths:

Causes of Death	Actual Deaths	Expected Deaths	Percentage
1. Infectious diseases	92	132.60	69
2. Tuberculosis	66	233.12	28
3. Cancer	36	25.72	140
4. Apoplexy	20	23.13	86
5. Progressive paralysis	10	7.52	133
6. Appendicitis	19	11.04	174
7. Accident	37	37.97	97
8. Suicide	48	40.80	118
9. Other causes	117	227.19	51
Total deaths	445	739.09	60

The most striking item in this table is the remarkable drop in mortality from tuberculosis. While previously the mortality from this disease among those insured by the Gotha Company was about equal to the general mortality from it, between the years 1904 and 1910 it sank to 28 per cent. of the expected mortality. Of course, the fall in general mortality explains a certain amount of this drop, but the effect of careful medical examination of the applicants is responsible for the greatest part of it. This is a great argument for competent medical insurance service: the high percentage of deaths from tuberculosis during the first few years of insurance is not an argument against medical examinations of applicants, but against incompetence in such examinations.

Of course, medical examination is of no value in preventing deaths from infectious diseases, and the diminution of deaths from these causes (69 per cent. of the expected number) simply shows the effect of modern prophylactic and therapeutic measures. The difference of over 30 per cent. between this drop and the drop in mortality from tuberculosis is a good measure of the efficiency of examinations. Tropical diseases show seven deaths in Florschütz's tables, only one of them being due to "black water" fever or, perhaps, to malaria. This is another indication of the wide-felt effect of modern sanitation.

The number of actual deaths from progressive paralysis is higher than was expected. As signs and symptoms of this disease usually precede death by a few years, medical examination seems to have been at fault in this case. Florschütz wonders whether the advent of the Wassermann reaction and of salvarsan will change the picture for the future years.

The deaths from appendicitis show the highest rise over expected numbers, and mere increase in exactness in making this diagnosis is not enough to explain the difference. The common belief of the increased frequency of appendicitis is supported by these insurance figures. The deaths from cancer, likewise, show an increase, and the explanation of this must be similar to the increase of deaths from appendicitis, that is, an actual increase in the incidence of the disease.

The increase in the number of suicides may be explained by numerous social causes, but it is quite possible that one important cause is the new insurance policy, which includes a "suicide clause" that vitiates the policy if death from suicide takes place before the expiration of two years from date of insurance. The effect of this is shown by the increase of such deaths over the expected number as soon as the two years have elapsed. It is quite possible that the danger of leaving one's family without the proceeds of insurance acts as a great deterrent to suicide in the first two years of insurance.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, March 1, 1912.

Group Insurance.—A contract has just been closed by an insurance company to insure all the employees of a Chicago firm who have been six months or more in its service, by a blanket policy under what is known as the group plan. More than 2,500 lives are covered, and the insurance aggregates $4,000,000. The employees are covered on the basis of their salaries. The firm is also qualifying under the Illinois Workmen's Compensation act, and is providing health, accident, and disability insurance to its employees.

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Sixth Annual Meeting, Held at Albany, April 16, 17, and 18, 1912.

(Special Report to the MEDICAL RECORD.)

(*Concluded from page 834.*)

SECTION ON MEDICINE (JOINT SESSION OF SECTIONS ON MEDICINE AND SURGERY).

Thursday, April 18—Third Day

Symposium on Poliomyelitis.

Symptoms, Difficulties and Possibilities in Early Diagnosis.—Dr. R. FOSTER KENNEDY of New York said that this disease was a primary general infection with local meningeal symptoms due to vascular changes and general symptoms produced by the specific virus. It was often difficult to diagnose early. As an example he cited the case of a boy who was to go on a sea trip who began to complain of headache, and while on the companionway of the steamer fell, and when he was picked up a paralysis from the neck down was noted. He developed incontinence of urine and hyperesthesia, but finally made a practically complete recovery. The speaker said the onset of this disease was usually sudden, with febrile manifestations, the temperature ranging between 101° and 102°. This might be accompanied by headache and vomiting. The pulse as a rule was not accelerated. The symptoms might not be severe enough to cause the patient to take to bed for the first two or three days. Coma and stupor might be indicative of cerebral involvement, although that diagnosis could only be made later, when the cerebral symptoms became marked. Hyperesthesia, pain in the neck and legs, Kernig's sign, and rigidity of the neck were symptoms also present. Influenza was said to differ from this disease in that catarrhal symptoms were present, the specific organism could be obtained from the discharges, and it occurred in a different time of the year, namely, during the spring and winter. Summer diarrhea differed in the occurrence of diarrhea, high fever, and sweating. In rheumatic fever the typical swellings were found. In tuberculous meningitis there always was a long prodromal course. The various meningitides, as tuberculous and cerebrospinal, could be distinguished by lumbar puncture. In tuberculous meningitis the fluid obtained appeared clear or slightly turbid, with a fibrinous flocculus on standing for a short time. The globulin reaction was positive and Fehling's solution was not reduced. To be noted was an increase in lymphocytes, and in 80 to 85 per cent. the presence of the tubercle bacillus was to be shown by testing the clot and appropriate staining on a slide. In epidemic spinal meningitis the fluid was turbid, and only in the early stages could a reduction of Fehling's be obtained. A polynucleosis of from 94 to 65 per cent. and the presence of Gram negative extra- and intracellular diplococci could be demonstrated. In poliomyelitis the fluid was clear or slightly opalescent, with a less marked clot formation. Early the globulin content was slightly raised, to disappear in three weeks. Fehling's solution was reduced. During the first one or two days the cytology was mainly polynuclear cells, and then changed to a marked lymphocytosis. No organism could be demonstrated by ordinary bacteriological means. He remarked that by serological tests the presence of abortive cases had been proven. The reflexes should be taken many times during the day, as a change, especially if unilateral, might be indicative of this disease. Differentiation from postdiphtheritic polyneuritis was also mentioned.

Pathology.—Dr. FRANCIS W. PEABODY read this paper. The infection, he said, was always from the upper respiratory tract, along the lymphatics, accompanying the filaments of the olfactory nerves. There occurred first a hyperemia, with a collection of round cells about the vessels. This caused a perivascular infiltration, which occurred early, and might be so great as to compress the vessel. This was followed by hemorrhage varying from minute to extensive in degree. The final process was an edema in the tissues. All three factors, he said, were dependent on the vascular changes. The degeneration of the nerve cells was ascribed to these factors. If early improvement of this vascular involvement occurred recovery might take place. The nerve cells showed granular degeneration and necrotic changes. These were then invaded by phagocytes, which removed the detritus, due to degeneration. The section might not even show the presence of any nerve cells. These changes were found mainly in the anterior horns, and to a marked degree in the cells of the posterior ganglia, and to a lesser degree in the medulla, pons, and brain. The other organs of the body showed parenchymatous changes. There was a general adenopathy, with enlargement of the lymph nodes and Peyer's patches. Under the microscope these showed an endothelial hyperplasia, the latter cells, in the author's opinion, partaking of the qualities of phagocytes. The liver showed areas of focal necrosis, especially in the neighborhood of the blood-vessels, and this lesion was very constant. In the liver regeneration of liver cells was noted to be very rapid. All these changes, the author remarked, resembled very much those seen in typhoid fever, and he believed that they were toxic in origin, due to the virus, as was shown by experiments on monkeys. He also said that the evidence was strong that the mode of ingress and egress of the organism was by means of the tonsil and the nasal mucosa. The lesions above mentioned were then shown by lantern slides.

The Acute Stage.—Dr. GEORGE DRAPER of New York presented this subject. He classified the cases as the flaccid type, in which the lesion was in the lower neurone tract and the spastic, in the upper neurone, and those in which no paralysis occurred. In the flaccid type, he said, the child lay on its back with a tired apathetic look, chin pointed up, and occasional slow movement of the eyeballs. It was easily aroused from this drowsy state, and when doctor or nurse approached the bedside for the purpose of manipulation it was easily aroused, would appear to be annoyed or cry, and lapse into the sleepy state again when left alone. Some might even assume a meningitic attitude. A few of the cases did not seem to be sick. There was a constant enlargement of the cervical and axillary lymph nodes. The rigidity of the neck varied in degree, sometimes being quite pronounced. This sign and also Kernig's symptoms were protective and voluntary on the part of the patient. In Landry's ascending type of paralysis, when the respiratory muscles were involved, the child became alert and concentrated all its attention and efforts to the task of breathing. For this reason he regarded on exceptional clear mentality in this disease as a very bad prognostic sign. The onset of the other paralyses in this group were usually abrupt and only in a few cases preceded by pain. Paralysis was hard to discover at first in infants, and in some none was found, the only evidence of muscular involvement being shown by the child crumpling up when stood on its feet. In some the head became flaccid. The superficial or deep reflexes varied, but were, as a rule, present. Sweating was not constant, and was found to be localized to a certain portion of the body. All cases were constipated, and in a few there was retention of urine. Pain in some form was always present, and was most frequently due to passive manipulation, mostly on bending the spine, as in preparation for lumbar puncture, and bending of the neck. These symptoms varied in persistence from a few days to several weeks. Spontaneous pain was less frequent, but in some cases severe, or paroxysmal. The spastic paralyses due to an upper neurone affection the writer called the bulbospinal group. In these cases the stupor was apt to be deep. The onset did not differ from the usual type. Coma-vigil, with waxy, mask-like, immobile features, and twitching or tremors was found. These cases were also easily aroused and resembled very much cases of tuberculous meningitis or of drugged individuals. The temperature in this type varied. The duration was from four to six days. All recovered in the same way from the first to the fourth week. The convalescence was steady. In this type there might be a change of mental condition. The third group of cases were those termed the abortive type, in which the toxic symptoms occurred but no paralyses were found.

Medical Treatment.—Dr. DAVID E. HOAG of New York divided the medical treatment into the early stage and the stage of paralysis. He said there was no satisfactory treatment for the early stage. Urotropin might be given in divided doses as a spinal antiseptic. Rest, counterirritation, and diet were the important things, with change in the child's position from time to time. Hot, wet packs, turpentine stupes, or ice bags should be applied to the spine. The bowels were to be kept open with calomel, rhubarb and soda, or castor oil and enemata. In the later stages, he said, the child should be treated with the aid of the orthopedist. Improvement was never due to treatment. Sometimes one or two muscles only were affected. The limbs should always be kept in normal positions. Physical and mechanical treatment were to be combined. There were two varieties of muscle training with exercise, he said. The first was passive, which was done by the parents or nurse under the direction of the

doctor. This form should act as suggestive to the patient, and the latter should attempt the same motions. The second form was advanced exercises with appliances which could be used for play or work. Fear of pain and discomfort should be overcome. Child should not be spoiled by petting. Massage might be useful, done 15 minutes before exercising, as it prevented tendency to muscular wasting. Electricity in the form of galvanism or faradism was useful. Treatment was to be persistent and hope for final improvement was not to be lost.

Prevention and Correction of Mechanical Deformities by Mechanical Treatment.—Dr. Wisner R. Townsend of New York said that the cases recovering from this disease varied from 20 to 25 per cent. Deformities could be prevented. Allowing them to occur and then treating them he considered unscientific. The occurrence of deformities depended on the factors: gravity, on non-paralyzed muscles producing traction, on the arrested growth and development of the tissues around the paralyzed muscles and upon weight. The effects might often be remote from the paralysis. Treatment for prevention, he emphasized, should be instituted early. Deformities developed at an average time of within three months, in severe cases earlier. At the Hospital for Ruptured and Crippled results where mechanical appliances were applied early were very gratifying. He said the prevention of deformities depended on the general practitioner. With the application of braces other forms of treatment should not be neglected.

Surgical Treatment.—Dr. Henry Ling Taylor of New York said the most frequent condition treated by the surgeon as a sequel to poliomyelitis was the inability to stand and walk. Station and locomotion were hampered by the deformities. The patient should be examined for unstable knee, hip, or spine, and for the distribution of muscular power. The latter might be more important than the estimation of total power in the limb. The limb should be brought into proper alignment with the body by dividing contracted tissues and lengthening others. Stability could be maintained by braces or proper surgical procedures. Braces should only be worn during the day. The surgical means mentioned were tendon transplantation, silk tendons, and arthrodesis. After operation careful mechanical treatment should be instituted and braces worn for a year or more, until the limb became strong. Failure to splint was responsible for most failures. Neuroplasty the writer condemned. In adults, in extreme cases, he said good results were not uncommon. Even after twenty years muscular action has been found to be present. Trunk palsies might be responsible for inability to walk, and here the brace or corset might be of benefit.

Dr. Rufus I. Cole of the Rockefeller Institute, New York, emphasized the fact that in poliomyelitis the nerve cells were degenerated more as the result of vascular changes than of toxins. At the Rockefeller Hospital the cases were studied, in the early stage first to limit the spread of the disease, and second to provide specific serum treatment if possible. In the first the disease should be recognized early for the purpose of isolation. Regarding treatment, after nerve cell degeneration took place, he said, treatment was inadequate. The blood count in this disease varied between 12,000 and 20,000 leucocyte, with a relative diminution of the lymphocyte. He thought the term encephalitis applied to the spastic types.

Symposium on Perverted Thyroid Function.

Symptomatology.—Dr. George Dock of St. Louis, Mo., said that he was convinced that a state of hypothyroidism existed before hyperthyroidea set in. He cited two cases in proof of this. Also he mentioned the following facts in support of the statement. The early dysmenorrhea and menorrhagia had a common hypothyroid basis. The so-called rheumatism of thyroidism was due to the hypothyroid state preceding hyperthyroidea. Some cases were improved after the administration of thyroid extracts. These facts, he said, pointed to a condition of hypothyroidea antedating the hyperthyroidea and were frequently overlooked. Hyperthyroidism he considered due to an excess of functionable thyroid tissue, and was modified by the interrelation of other glands in the body with the thyroid. He explained the term dysthyroidism by defining it as a dissociation of thyroid function from that of other organs as the adrenals, thymus gland, etc. The swelling of the thyroid gland was, in his opinion, the most constant symptom of thyroidism, and it was nearly always enlarged, although the degree of the enlargement might be small. The vascular murmur was more frequent than the thrill and easily recognized. Alterations of the pulse and heart action were always present, and in the latter the hypertrophy and dilatation with good compensation were characteristic. Tachycardia, which he called a hyposymptom, also occurred. He said the pigmentary changes were unimportant, although vasomotor changes, as a feeling of warmth, occurred. Nervous symptoms resembling neurasthenia were most marked. In one-half the cases there was insomnia. Tremor was present and always appeared early. By observing Litten's shadow a weakness of the diaphragm was noted. The gastrointestinal symptoms were not important; fever was rare. The eye symptoms appeared only very late and were probably due to secondary irritation of the adrenals. The diagnosis was to be made only by studying the symptoms present and looking for those that were absent. In cases of doubt he said it was better to resort to surgery rather than to wait for a diagnosis by therapeutic tests.

Atypical Types.—Dr. Alexander Lambert of New York said that if typical cases were those where the four cardinal symptoms of exophthalmos, tachycardia, thyroid enlargement, and tremor existed, very few cases could be considered typical and very many atypical. When one considered the interrelation of the thyroid with other ductless glands of the body and its effect on the pancreas, on the sympathetic nervous system, etc., one could see how variable the types were. For instance, he mentioned that in disease of the thyroid the adrenal and sympathetic systems were stimulated and the pancreatic function was inhibited. The degree of reciprocal action taking place in any of these correlated organs, and the amount of hormone liberated, governed the type of case and the variety of symptoms. One might get only a tachycardia or a change in the heart action, with hypertrophy and dilatation, combined with slight or no tremor. Single or double exophthalmos, a high blood pressure, gastrointestinal symptoms, such as vomiting and diarrhea, and pigmentation might be present in combined adrenal and thyroid disease. The gastroenteric disturbances were due to inhibition of pancreatic function and were unreliable. For these reasons he was unable to classify the atypical types, as the disease was not a single entity, and the atypical forms depended upon other ductless glands besides the thyroid. The latter might be the least affected and yet upset the equilibrium of the ductless glands.

Pathology.—Dr. William C. MacCarty of Rochester, Minn., said that as a result of examining 2,500 thyroids removed at operation in the Mayo Clinic the specimens could be divided into two groups: Those that were symmetrical and those that were of an asymmetrical, nodular type. The first group varied from normal to many times the normal size. On cut section they were acinous and non-acinous, and distended with a jelly-like material. This amount of colloid material varied and showed no relation to the size of the specimen. Microscopically there were noted small acini lined with epithelum, with and without colloid material, with and without epithelial hyperplasia. The size of the acini varied, but not enough to destroy the symmetry of the gland. When a normal gland became abnormal was not determined as yet, he said. In his reports to the clinician the author stated that he used no diagnostic terminology, but sent in a descriptive one. The asymmetrical glands usually contained adenomata and cysts. In these the capsule was thickened, fibrous and even calcareous. Some might contain no colloid material, while others contained some colloidal acini. Occasional hyperplastic areas occurred.

The Medical Treatment.—Dr. S. S. Beebe of New York emphasized the importance of an early diagnosis of this condition. He saw many cases of from four to eight years' duration which had not been recognized. Every case of increase in pulse rate and nervousness should be investigated, he believed. He said exophthalmos was the least important symptom to consider. The patients should be treated as though they were affected with a serious disease. It was safe to believe that the overactivity of the thyroid was the fundamental disturbance. For this reason he produced an anti-serum by inoculating the nucleoproteid extract of a diseased gland into a sheep for six or eight weeks. The sheep's serum was then administered by hypodermic injection in 2,200 cases. The early typical cases occurring in young women from 16 to 24 years of age gave the best results. Serum restored the normal activity in from 60 to 80 per cent. of cases. In the later typical cases very many were improved, while the late mixed cases were difficult to treat and went on to hyperthyroidism. In these all treatment was unsatisfactory. He said that rest in bed was imperative for from three to eight weeks, while total abstinence from tea, coffee, alcohol, tobacco, meat, and meat soups must be insisted upon. It was also important to guard against throat infections, as these disturbed the progress in treatment. He said the disease was not necessarily a surgical one.

The Surgical Treatment.—Dr. Martin B. Tinker of Ithaca said that in determining whether operation should or should not be advised the general condition and symptoms of the patient should be investigated. Operation should always be delayed until the marked symptoms had been allayed. Goiter, he remarked, was not an exclusively surgical or medical condition. The physician and surgeon should always cooperate. All cases should have a judicious after-treatment. In his experience the fatalities during the past three years from operation on the thyroid had been few. The fatal results were in very large goiters, of long standing, with serious impairment of vital functions. He had refused to operate on many cases, which died a short time later. He spoke of the benefits of Kronlein's operation for resection of the outer wall of the orbit to relieve exophthalmos. He said that partial removal of the gland relieved many patients and cured a number of them. He had never removed too much. He remarked that the number of medical fatalities had been much greater than under surgery. He said he was now doing preliminary ligation of the thyroid artery.

Syphilis of the Stomach.—Dr. Jerome Meyers of Albany reported a case of a male, twenty-four years of age, whom he saw May 27, 1911. The patient had had syphilis five years before and was well treated until one year since. In the past three months he had lost about twenty pounds in weight. For the past six or seven weeks he had been complaining of a dull pain in the right costal region, which later was localized on the left side, and came on one-half hour after eating. He vomited but once. Physical examination disclosed a slightly palpable spleen, with some resistance over the gastric region. The knee jerks were absent and the blood count was normal. On May 31 test for blood in a gastric extraction and in the feces was negative. He was put on ulcer diet and medical treatment for ulcer. He was in the hospital at this time, and a careful physical examination revealed a mass in the stomach. He also ran a temperature suggestive of tuberculosis. A von Pirquet reaction was negative, as was a blood culture, but the Wassermann was strongly positive. A radiograph showed a pyloric stenosis and cleared up the diagnosis of syphilis of the stomach. This diagnosis was corroborated when, by antisyphilitic treatment, the patient recovered. This condition occurred mainly in males between the ages of thirty and forty and forty and fifty years. The diagnosis, the author said, was to be made: (1) by the history of luetic infection and the positive Wassermann test, (2) by failure to cure the condition by other means, and (3) by the group of symptoms, namely, pain, gastric tenderness, emaciation, and hemorrhage. The pain in 67 per cent. of reported cases occurred immediately after meals. The gastric tenderness as a rule was very marked in 30 per cent. The emaciation was a marked symptom in 47 per cent., and the hemorrhage depended upon the site of the lesion and might be fatal. Vomiting was indicative of the site of the lesion. The physical examination in these cases revealed the same signs as ulcer, carcinoma, etc. The prognosis, he said, was good provided the patient was not too debilitated from stenosis or adhesions. Treatment was of the usual antisyphilitic character.

SECTION ON SURGERY.

Wednesday, April 17—Second Day.

The Chairman, Dr. Parker Syms of New York, in the Chair.

Cancer of the Prostate.—Dr. Eugene Fuller of New York presented this paper, the object of which was to emphasize certain points, the appreciation of which would aid in the diagnosis and management of this class of cases. He said that it was his impression that one in seven or eight cases which had come under his observation with symptoms of prostatic obstruction had been found to have cancer as a cause rather than benign senile hypertrophy. The great majority of individuals so afflicted were elderly, corresponding in age with those harboring senile hypertrophy. In a small minority of cases the patients so suffering were younger than one would expect to find with senile hypertrophy, perhaps around fifty or in the late forties. In this class of cases the disease was terribly rapid in its development and fatality. These cases might be divided into two groups. In the first and principal one cancer grafted itself on the part as a primary pathological process. In the second and minor group a senile hypertrophy became cancerous. In these latter cases the irritating effects of trauma and infections were favorable to the implantation of malignancy. In considering the clinical histories of the first group, an increase in urinary frequency was first noted. The urinary discomfort increased until overflow or retention ensued. The most striking clinical differential point in this connection between cancer and senile hypertrophy was the quickness of development and progression of the urinary symptoms in the cancerous condition. In senile hypertrophy one usually got a history of three years or more from the commencement of the urinary symptoms until the advent of serious evidence of urinary obstruction. In the cancerous cases perhaps not more than a month, and usually not more than six months marked the period in question. In cancer pain was apt to be a more pronounced feature than with benign hypertrophy. Where the neoplasm had progressed beyond the confines of the prostate so as to involve the pelvic nerve trunks, pains radiated from the pelvis down one or both thighs, and there were also deep-seated suprapubic or sacral pains. There was apt to be a loss of weight and strength with a considerable degree of cachexia. Hematuria was more usual with cancer than with other forms of prostatic obstruction. When bleeding occurred during tenesmus at the end of urination, in a case free from vesical infection, the surgeon should always have the existence of this condition in mind in making a diagnosis. In cases of the second group the advent of this secondary complication was apt to be associated with an aggravation of the previously existing symptoms together with the appearance of some of the features already described in connection with the first group of cases. In making a physical examination in these cases the evidence presented to the touch per rectum was of great importance. The feel was apt to show the prostate not only enlarged but nodular, irregular, and unusual in outline, often hard and in unyielding areas. The margins of the organ were found to have been obliterated. Extensions in a lateral direction filled up the space between the gland and the pelvic wall, soldering the prostate to the bony structure of the pelvis. The extensions backward filled the postprostatic space so that sometimes the seminal vesicles could not be outlined. The final aid to diagnosis lay in urethral and bladder exploration. Urethral exploration by itself was generally of little aid. The cystoscope might be of much positive aid, especially the instrument with a small caliber and a brilliant telescope which allowed a view of the vesicle neck. An absence of muscular hypertrophy in connection with the bladder was a suspicious circumstance. The management of these cases, especially those of the main group, was of importance. If a diagnosis could be made very early while the disease was wholly confined to the prostate proper, a prompt prostatectomy with a careful and radical removal of the entire gland would be the ideal treatment. Such a diagnosis was rarely made in the early stage of the disease. When such a radical operation was suggested the patient in the early stage would rarely consent to the operation without confirmatory evidence and much time was wasted so that the main chance was lost. Where the disease had extended beyond the confines of the prostate there was no likelihood that any operation could radically free the patient of his trouble. The aim of the surgeon in these cases was to prolong the patient's life and to secure him the greatest possible comfort. In these cases he was not inclined to operate until the obstruction to urination had become so marked that the necessity for radical treatment was evident to the patient. If in cases of this class the operation was performed before the patient had become especially inconvenienced by his disease it was probable that the development of the growth subsequent to operation would soon render the patient as uncomfortable or more so than before operation. Such being the case it was easy to picture the state of his mind. On the other hand, if operation was delayed until it would give relief to serious and painful symptoms the patient would appreciate this relief and would bear with equanimity the minor ills and discomforts associated with a non-obstructive progression of the growth. In cases of the second group this argument did not hold. In these cases prostatectomy should be urged and performed as soon as the consent of the patient could be obtained. When symptoms of grave discomfort gradually developed many months after prostatectomy they were generally due to the gradual progress of the disease into other parts. The writer further considered extensions involving the ureters and the development of uremic symptoms.

Dr. Nathan Jacobson of Syracuse said he was one of the first men in this country to have written on this subject and he wished to emphasize the point that these cancers of the prostate were not so uncommon as supposed. Metastases sometimes declared themselves in other parts of the body before the presence of the primary growth in the prostate was recognized. These cancers sometimes attained great size; one case was reported in a man seventy-seven years of age where the growth weighed two and one-half pounds. There was no way to make a diagnosis clini-

cally so long as the cancer was confined to the gland. It was more likely to be sarcoma when occurring in men under thirty and cancer when in those over fifty years of age. It was best to assume when hard nodular masses were present that they were dealing with cancer. He called attention to pain as a diagnostic point in cancer, especially when referred to the sacral and lumbar nerves. When the disease had spread beyond the gland there was no operation that justified the hope of cure. When the disease had extended to the bladder he had obtained better results with suprapubic drainage than with perineal.

Dr. James N. Vander Veer of Albany emphasized Dr. Jacobson's remarks in regard to pain as a diagnostic point especially when it radiated down the legs; in few did it radiate over the suprapubic region until the disease was well advanced. When pain of this character and hard nodular masses were present operation should not be delayed. The trouble was that the general practitioner did not recognize the condition, and the cases came to operation too late. He favored operation by the perineal route.

Dr. Albert Vander Veer of Albany spoke of the great progress that had been made in the last twenty-five years in the treatment of these cases and thought they were now at a place where they might go still further and emphasize the necessity for earlier operation. In his series of nearly one hundred cases the return of the disease after operation was not so serious. His patients lived longer than eleven or eighteen months.

Dr. Fuller in closing the discussion, said that there was no class of cases in which there was so much need of a careful pathologist as in these. Owing to the structure of the gland, it required care and experience in order to differentiate cancer from benign conditions. In insidious cases in young men it was not well to rush too precipitately into operation. One should remember that tuberculous conditions and encysted calculi might cause a great deal of pain.

Rupture of the Kidney in Children.—Dr. Charles L. Gibson of New York read this paper in which he reported four cases of rupture of the kidney in children. This accident was more liable to happen to children than to adults and the lesion might be of any degree of severity from a contusion to a complete rupture. Where there was doubt as to the lesion an exploratory lumbar incision should be made as practically all cases of rupture of the kidney died if not operated upon, while the mortality of those cases subjected to operation varied in different series from 14 to 20 per cent. The main indication was to provide free drainage. In borderland cases a few hours might be allowed to elapse before determining upon operation.

Dr. Eugene Fuller of New York agreed with the reader of the paper in regard to the advisability of an exploratory operation when there was a suspicion of rupture of the kidney.

Dr. Irving S. Haynes of New York said that hemorrhage was not a reliable sign in lesions of the kidney. This symptom was only indicative of the milder lesions; there was an absence of blood from the urine in the severer forms. He cited two cases of extensive lesions of the kidney in children where there was an absence of pathognomonic symptoms.

Intestinal Injuries Due to Contusion of the Abdomen.—Dr. Gilbert D. Gregor of Watertown read this paper in which he considered such injuries as were apt to occur in rural districts and where hospital facilities were not at hand. The most frequent mechanism was in the nature of a blow-out instead of crushing and tearing of the bowel between two contusing forces. The elements entering into such injuries were the high velocity of the blow and the small point of impact, surprising the abdominal muscles which were unprepared to resist and inflicting more severe injury in an inflated condition of the bowel. In diagnosis the primary shock was to be disregarded, but shock continuing or developing after four or five hours or increase of pulse rate at that time, associated with increasing abdominal pain, vomiting, and rigidity was sufficient evidence to warrant an exploratory operation. In severe injuries the mortality depended on the length of time that elapsed before operation. In those operated upon after the lapse of twenty-four hours the mortality was from 70 to 80 per cent. He reported four cases; one unoperated case died and of three cases operated upon two recovered and one died.

Dr. Robert T. Morris of New York made two points. 1. He agreed as to the importance of rigidity but it should be remembered that it required some strength on the part of the abdominal muscles in order that they might become rigid; this was nature's splint. The shock might be so severe as to prevent this effort of repair on the part of Nature. 2. It was wise not to do too much to these patients in an operative way shortly after the injury, at a time when the patient was not prepared to withstand an additional attack. Make provision for drainage if necessary and conserve the strength of the patient, leaving subsequent work to a later time.

Dr. A. T. Bristow of Brooklyn endorsed what Dr. Morris had said in regard to conserving the strength of the patient and cited a case in illustration in which it seemed very evident that this procedure had saved the life of the patient.

Dr. E. M. Stanton of Schenectady called attention to the obliteration of liver dullness as an early symptom in these abdominal injuries.

Bismuth Paste (Beck's Paste): Its Therapeutic Uses in Surgery.—Dr. Emil G. Beck of Chicago read this paper. He said that during the past five or six years he had done considerable experimenting with this method and he wished to bring out a few points that were misunderstood. This paste was useful first as a diagnostic measure; sinuses and fistulas could be filled with it for the purpose of taking radiographs. In the second place it was used for the purpose of healing these old sinuses and fistulas; and in the third place it could be used to prevent sinus formation by employing it in abscesses and thus avoiding the development of sinuses. It could be used in sinuses of the bones and joints, in empyema, in the accessory sinuses of the nose and face, in rectal fistulas and in sinuses after surgical operation. In a series of over 800 cases he had never had a fatal case of bismuth poisoning. Where such accidents occurred they were due to faulty technique. The two reasons for failure were faulty technique and using the paste in an inflammatory condition that would get well without it. It was a strange fact that old sinuses were cured easier than those of shorter duration. Other reasons for failure to get good results might be the presence of a foreign body in the sinus or the fact that the sinus was not completely filled by the paste; if there was the smallest area remaining unfilled there would be reinfection. Dr. Beck gave a lantern slide exhibition illustrating the conditions in which he used this paste.

Dr. Moschcowitz of New York said that the value of Beck's paste for diagnostic purposes could not be gainsaid, but in his hands it had not given as favorable therapeutic results as Dr. Beck had reported. He had visited Dr. Beck's clinic and was sure he had learned the method of using the paste correctly. He thought it had a very limited field of usefulness. This remark was not to be taken as disparaging to the method but merely as a report of his personal experience.

Dr. B. H. Whitbeck of New York related his experience with Beck's paste at Sea Breeze, Coney Island, where they had children with tuberculosis of the bones and joints; they had had some good results. In some instances good results were obtained only after several months' treatment and there were several instances in which, after apparent cure, the sinuses broke down later.

Gastric and Duodenal Ulcers.—Dr. Grant C. Madill of Ogdensburg read this paper. He said that operation was indicated as soon as the diagnosis could be established. He spoke of hemorrhage as a symptom and said that it occurred in 90 per cent. of the cases of chronic ulcer. Obstruction of the pylorus was a positive indication for operation. When carcinoma developed the pathology was different and operation depended on indications, but a cure was seldom effected. Acute ulcer belonged to the province of the internist. In one-half to three-fourths of the cases a cure could be effected in from four to six weeks; if they were not cured by that time surgery became necessary. Now that the operative mortality was only a little more than 1 per cent. in simple cases, more cases should be operated upon in the early stage.

Dr. Edgar Vander Veer of Albany said that in considering this subject the question of diagnosis was the important one. Ulcer in the stomach or duodenum should be treated like ulcer in any other part of the body. The minute a case was diagnosed as one of ulcer it became surgical. He had had two cases of perforating gastric ulcer both of which had occurred suddenly and he had made the diagnosis on the histories of the cases rather than on clinical evidence. If a bismuth x-ray was taken they would find that where there was no triangular shadow in the upper portion of the duodenum no ulcer was present, but that this triangular portion of the duodenum disappeared in the presence of ulcer and the mucosa was thrown up into puckers. This point had been proved in all such cases operated upon.

Dr. John B. Deaver of Philadelphia called attention to pain and rigidity as symptoms of perforating ulcer and said that but a small percentage of hemorrhage was due

to ulcer. Hemorrhage might occur from varicose veins, cirrhosis of the liver, and septic appendicitis.

Dr. Robert T. Morris of New York called attention to three points: 1. That the value of the *x*-ray was as great in these cases as in fractures. 2. That fibroid appendix caused a disturbance of function which gave symptoms similar to duodenal ulcer. 3. That the death rate might be lowered by giving attention to little refinements in operation.

Dr. W. W. Skinner of Geneva said that he agreed with those who had stated that many cases diagnosed as ulcer of the stomach or duodenum were cases of appendicitis; several cases of this nature had come to his notice.

Dr. Grant C. Madill of Ogdensburg, in closing the discussion, said that in answer to Surgeon General Stokes' question as to the operation of choice in a patient having pylorospasm in whom the first operation, a gastroenterostomy, was not successful, he thought that either an infolding or an excision of the pylorus would answer the requirements.

A Plea for Early Diagnosis in Surgical Affections.—Dr. Alvah H. Traver of Albany read this paper. He said it was unfair on the part of the general practitioner to delay calling in the surgeon until surgical measures could no longer be satisfactory. In early operation there was practically no mortality and the layman should be made to understand that the danger lay not in surgery but in *delayed* surgery. It was better to operate occasionally unnecessarily than to be responsible for deaths due to neglect of operative procedures. The writer then gave statistics showing the advantages of early operation in appendicitis, intestinal obstruction, and cancer of the breast. The technique of surgical operations for these conditions was about perfect and the only hope for a further reduction in mortality rates was in earlier diagnosis and earlier operation.

Dr. Robert T. Morris of New York said that one way to persuade patients to submit to an early operation was to tell them that if the operation was performed at once it would be a slight one; if delayed it would be an extensive one.

Dr. Moschcowitz of New York said he wished to make more emphatic the point that surgery had done about all it could. He had operated upon 100 cases of cancer of the breast and had not lost a single case. He had not cured all, but in not one instance did the disease recur anywhere near the primary lesion; deaths had been due to metastases in the spine and other parts of the body far distant from the primary lesion, which metastases were in existence at the time of operation.

Insufflation Anesthesia: Its Value in Thoracic and in General Surgery.—Dr. Charles A. Elsberg read this paper. He said that up to within the last few years, the advance of intrathoracic surgery was prevented by the fear of the dangers of open pneumothorax. The negative pressure chamber of Sauerbruch and the positive pressure apparatus of Brauer sufficed to overcome these dangers but both methods were complicated. Two years ago, Meltzer and Auer discovered a simple method which they called intratracheal insufflation of air and ether. Experiments of Meltzer and Auer, Elsberg and Carrel showed that intratracheal insufflation was very efficient as a method of anesthesia in animals, and by its means all of the dangers of open pneumothorax were avoided. In a large number of experiments, one or both pleural cavities in dogs were opened and many intrathoracic operations performed. The method was first tried in the human being by Elsberg, who devised an electrically-driven apparatus for the purpose. With this apparatus many hundreds of patients were anesthetized, and many intrathoracic operations performed. For intubation silk woven catheters are used, the catheter being introduced into the trachea through the larynx by the aid of the Jackson laryngoscope. The method of introduction was described in detail, and remarks made on the size of the tube to be used and the depth to which it should be inserted. Dr. Elsberg described in detail the apparatus he had devised and demonstrated its workings. He then spoke of the characteristics of the anesthesia, and emphasized that vomiting was relatively rare after intratracheal insufflation anesthesia. Experience had shown that the method of anesthesia was very valuable for many other operations than those within the thorax. The anesthesia seemed to be especially well borne by weak and cachectic individuals and shock seemed to be rare after insufflation anesthesia. The patients awoke very quickly after the anesthesia was stopped. The method was of extreme value in operations upon the head and neck. The anesthetist could be a number of feet away from the patient and was never in the way of the operator or his assistants. The method was valuable in operations in the mouth, for there was no danger that blood could run down into the larynx because the stream of air and ether which was passing upward in the trachea alongside of the catheter blew out all of the blood that was in the pharynx. As aspiration of vomitus was impossible, this method of anesthesia was to be used in operations for intestinal obstruction. Dr. Elsberg then described in detail the advantages of intratracheal insufflation in thoracic surgery and reported a number of intrathoracic operations which he had performed. He referred also to a number of other operations which he had performed under insufflation anesthesia. Finally, he recommended the method of insufflation of pure air as an ideal one for artificial respiration.

Dr. John B. Deaver of Philadelphia, Pa., congratulated Dr. Elsberg on his work and said that they were using this method in the University Hospital in Philadelphia most satisfactorily.

Dr. Samuel Lloyd of New York said that the lungs would not collapse as long as only one side of the thorax was opened and the patient was not completely under anesthesia. He had resected the lower lobe four or five times and his rule was to stop the anesthesia before opening the pleura. As soon as the anesthetic was stopped the reflexes reasserted themselves and the lungs expanded.

Dr. Clarence McWilliams said that he did not consider Dr. Elsberg's method free from danger. He had seen it used in a case of suspected adherent pericardium; the patient died and there was nothing else to which the death could be attributed except the anesthesia.

Dr. Elsberg said that in empyema with adhesions the lung would not collapse when the chest was opened, but in the majority of cases it did collapse when one pleural cavity was opened. They had found that in every case in which something had gone wrong there had been an error in technique.

Surgery of the Bile Ducts.—Dr. John B. Deaver of Philadelphia, Pa., read this paper. After dwelling on the importance of studying living pathology he stated that with the exception of malignant disease all conditions which called for surgical interference upon any part of the biliary tract had their origin in infection; even malignant disease seemed to bear some relation to antecedent infections. The infecting agent seemed in all likelihood to arrive by way of the portal circulation. Microorganisms might, however, enter the biliary tract directly from the duodenum; this seemed to be the case in those instances of cholecystitis and cholangitis directly consequent upon an intestinal catarrh. In these infections there seemed to be a preponderance of those due to the colon bacillus In one series of cases the *Bacillus typhosus* had been found in a greater percentage of cases. In contradistinction to the old view that most cases of gallstones had no symptoms, it was now known that all of them had symptoms and most of them very evident ones. Since infection was the underlying cause they must rely upon drainage in treating this condition. Every operation upon the biliary tract must serve a double purpose; it must meet the immediate mechanical demands of the conditions found, and it must furnish drainage for a sufficient time to cure the disease. If the surgeon could get these cases in the early stage there would be nothing to meet but the infection, but unfortunately it was at this time that the disease was most difficult to diagnose. All cases of indigestion should be carefully scrutinized for evidences of localization in the gall-bladder. Slight epigastric distress, occasional tenderness in the right hypochondrium, sometimes accompanied by slight rigor, a catch during inspiration, excessive flatulency, a faint icteroid tinge of the skin, a perceptible increase in the tension of the upper rectus muscle as compared with its fellow, were highly significant of beginning disease of the bile passages. This was the field for medical therapy. The time for operation was when medical treatment of these inaugural symptoms failed. Failing prompt relief the patient became subject to many dangers and complications, among them gallstones, adhesions, ulcerations, infiltration, perforation, gangrene, cicatricial contraction, and stenosis. Lastly, as the result of gall-bladder infections, they might have pancreatitis, acute or chronic. Aside from traumatic and neoplastic affections of the biliary ducts the conditions calling for surgery were non-calculous cholecystitis, calculous cholecystitis and its complications, and pancreatic disease. The indications for operation in disease of the biliary ducts and the gall-bladder were: (1) More than one attack of true biliary colic. (2) Symptoms suggestive of upper abdominal adhesions and chronic biliary insufficiency. (3) Hydrops of the gall-bladder. (4) Obstruction of the common duct. (5) The occurrence of acute infections com-

plicating previously existing biliary disease. (6) The evidences of pancreatic disease. Dr. Deaver thought the simple rule "fair, fat, and forty, and belches gas" would be a safer maxim for students if they wished them to recognize gall-bladder disease than the picture so faithfully embalmed in the textbooks. The average age at which patients were likely to develop this disease was earlier than formerly taught. In a series of 142 cases the average age was 40 years, the average duration of symptoms six years, so the average age of infection was 34 years. The most favorable time for operation was between attacks of complete occlusion. He took issue, however, with those seeing a patient during acute obstruction who decided to wait until the obstruction had been relieved before operating. When there was positive evidence of pancreatic disease operation was indicated even in the entire absence of symptoms pointing to disease of the biliary tract. He did not think much of the Cammidge reaction. Operation must accomplish three things; namely, meet the pathological condition and relieve it, remedy if possible the underlying cause, and prevent recurrence. He emphasized the importance of drainage in all grades of cholangitis and particularly after cholecystectomy in the presence of liver infection and pancreatic involvement. For stone in the gall-bladder he considered cholecystostomy the best operation. It had a slightly lower mortality and was followed by fewer adhesions than cholecystectomy and left the gall-bladder as a possible future outlet in case of serious biliary or pancreatic disease. He practised excision of the gall-bladder in cases of malignancy, hydrops of the gall-bladder, and chronic empyema. He urged the danger of procrastination and deplored the dawdling with duodenal buckets, fallacious laboratory methods, and the like.

Biliary Colic Without Gallstones.—Dr. IRVING S. HAYNES of New York read this paper in which he said that aside from gallstones, biliary colic might be due to several other causes, chief of which were "tarry" bile "sandy" bile, "sandpaper" condition of the mucous membrane of the gall-bladder, adhesions about the gall-bladder or ducts producing constrictions or kinks in them, stenoses of the ducts, and thickening in the head of the pancreas. Typical cases were cited of each of these conditions and a summary of the symptoms formulated with these conclusions: That it was impossible to construct a symptom-complex that would differentiate between biliary colics due to and those independent of gallstones. A possible clue was found in the fact that in spite of the long history of suffering the patients looked unusually well. That the attacks seem shorter and were so quickly recovered from. That these patients did not seek operative relief so early as where gallstones were the cause. Medical treatment could only be prophylactic. If the early indications of intestinal infection were appreciated and properly treated by diet, antifermentatives, and cholagogues it might be possible to relieve this precalculous stage and prevent the formation of gallstones. If the conditions here described were present there was no curative treatment except by surgical means. In most cases simple drainage was sufficient. With the "sandpaper gall-bladder," or in the presence of extensive adhesions, or active infection, the gall-bladder must be removed. Failure to do a radical operation would give the poor results quoted by Moynihan, Stanton, and Davis. The reason for this was that in this type of gall-bladder disease many times the simpler operation did not remove the infection. If the infection was not removed the disease would return as soon as the external wound closed. Only by a cholecystectomy could the infection be removed. In most cases, then, this must be the operation of choice.

Dr JOSEPH D. BRYANT of New York said that inasmuch as bile, and the arrest of bile, and its infection had to do with the development of stone, it was fitting to begin the study of the disease where the disease began, namely, in the mucous membrane of the biliary tract and this was characterized by the same inflammatory processes as the mucous membrane elsewhere in the body. All conditions which involved a change in the outline of the duct and gave rise to disease should be detected and removed or there would soon be a return of disease conditions. Running along the common duct there were lymphatics and a series of lymph nodes which by enlargement might interfere with the duct; if these were left undisturbed at operation they would soon cause the same obstruction as primarily. There was no doubt about infection, or that it got in through the portal system or the duodenum. Drainage should be thorough and should be kept in until the absence of infection was assured.

Dr. EDWIN M. STANTON of Schenectady said that as long as the operation secured free drainage cases could be cured, but that if there was a recurrence of obstruction there would be reinfection. The mortality of these operations was not high and the end results were as good as could be expected. He thought the operative mortality could be reduced about one-half. In a series of 702 bodies coming to autopsy 81 were found to have gallstones; this gave an idea of the possibilities in this branch of surgery. A committee should be appointed to investigate the mortality from gall-bladder operations in this State.

Dr. CHARLES G. MCMULLEN of Schenectady said that he did not think these cases were attended with very satisfactory results; not more than 50 per cent. were cured. They needed more careful diagnosis, and in cases not really cholecystitis some more efficient form of treatment. He thought they could accomplish their object better by cholecystenterostomy than by cholecystectomy.

Dr. I. S. HAYNES of New York said that though the point of the last speaker was well taken he remained unconvinced and still favored cholecystectomy because by other methods adhesions were formed which had to be attended to later.

The Diagnosis and Treatment of Intestinal Obstruction.—Dr. CLARENCE A. MCWILLIAMS of New York read this paper which dealt with mechanical ileus. In a case of possible acute obstruction the first care should be to exclude external hernia. The abdomen should be carefully examined by inspection, palpation, percussion, and auscultation; also the rectum and vagina. At times something might be learned by extending the colon with fluid or air through the rectal tube. Should a tumor be detected or a stricture felt by the finger inserted into the rectum, or blood and slime cover the finger thus inserted and a sausage-shaped tumor be detected, or the bowel be found to be loaded with hardened feces, one might make a diagnosis of tumor obstructing the bowel, or stricture of the rectum, or intussusception, or impaction of feces. When physical examination was negative the patient should be seen again in six hours. An initial dose of morphine was permissible but should not be repeated until a diagnosis was made. He outlined the symptoms attending acute and chronic obstruction and said that it should not be forgotten that chronic symptoms might at any time terminate in complete obstruction. Before determining that true obstruction was present it was important to examine the urine to exclude the possibility of uremia. Cases of acute intussusception presented puzzling symptoms, there being no acute condition in the abdomen which presented such variations from the typical text-book picture. The writer considered a class of cases comprising some of the rarer lesions of the abdomen, the diagnosis of which before operation seemed impossible, yet if the necessity for operation were recognized no harm would be done. He cited several illustrative cases. Obstruction might occur more than once in the same individual and it might occur a long time after an appendix operation. There were a few points common to the treatment of all forms of surgical obstruction. It was a good plan to empty the stomach by means of the stomach tube before anesthesia was started. Where the situation of the obstruction was not known a median incision above the bubes had best be made. In determining the location of the obstruction the cecum should first be palpated; if distended then the obstruction must be lower down in the large intestine; if the cecum was found to be collapsed, then the small intestine must contain the obstruction. This search must not be made in a haphazard way, thus increasing shock by unnecessary handling of the intestines. In the search one should not allow the intestines to escape from the abdomen. When the gut was extensively distended it might be deemed wise to drain it of its contents; this was only necessary when the distention was so great that it would probably be unable to empty itself by natural channels. If the patient was very much collapsed and standing the operation badly, or it was difficult to find the cause of obstruction, attempts should be given up and an enterostomy done in the most distended coil. A radical operation could be done later after the patient had recuperated. If the cause of obstruction was found to be irremovable it was best to establish an astomosis between the distended bowel above and the empty bowel below the obstruction. The author went briefly into the treatment of the individual causes of obstruction, and called attention to a curious cause of chronic obstruction and the most frequent cause of volvulus of the sigmoid colon, the so-called "retractile mesosigmoiditis." The treatment of this where the bowel was not severely affected was by dividing the bands of scar tissue which contracted the meson; if this failed it was better to resect the involved bowel.

Dr. MARTIN B. TINKER of Ithaca called attention to the bismuth test meal and the bismuth enema followed by x-ray pictures in determining the location of the obstruc-

tion. Ether was not the anesthetic of choice; many of these operations could be done under local anesthesia and if this was impossible nitrous oxide gas was preferable.

Dr. Joseph D. Bryant of New York emphasized the danger of giving cathartics in intestinal obstruction. One should work from below. Dr. Edward C. Janeway had suggested the use of copious injections of sweet oil which he had found very useful.

Dr. Clarence McWilliams of New York said local anesthesia would not be satisfactory in many of these cases but he agreed that nitrous oxide gas was preferable when it could be properly administered.

Surgical Constipation.—Dr. Samuel Goodwin Gant of New York read this paper, in which, after defining surgical constipation or obstipation, he said that atonic constipation and the forms of acute and chronic intestinal obstruction which killed or greatly endangered life were frequently discussed in medical societies and in current literature, but that obstipation of a lesser degree, which impeded the fecal current and delayed evacuations without causing other manifestations than those due to fecal retention, rarely attracted attention. The writer maintained that 50 per cent. of his patients treated for constipation suffered from the surgical variety and believed that in 25 per cent. of all cases of costiveness the trouble was due to mechanical defects. Dr. Gant reported cases previously unsuccessfully treated for habitual constipation which were caused by operative measures. He called attention to the many points of difficult passage to the feces which lay between the cecum and the sphincter muscle and showed how a slight distortion of the bowel might result in delayed or irregular evacuations. He enumerated thirty-five pathological conditions, any one of which was sufficient to induce surgical constipation, and said that in his cases there had been a single less often than multiple causes to account for the obstipation. Often the patient suffered from both atonic and surgical constipation, and in these cases both operation and after-treatment were needed. In making a diagnosis he had found it advisable to ascertain the duration of the costiveness and whether the patient had suffered previously from typhoid fever, peritonitis, ulcerative colitis, or other affections which might have led to the formation of adhesions, stricture, angulation, or twisting of the gut. Obstipation could be classified as rectal or abdominal, and was very much more easily located in the former than in the latter. Abdominal constipation could be diagnosed by percussion and palpation with or without the aid of inflation; in obscure cases the *x*-ray or exploratory incision was necessary to locate the lesion. Dr. Gant held that there was no excuse for a mistaken diagnosis when the obstruction was located in the lower sigmoid or rectum. When the block was located in the abdomen it required two or three quarts of water to secure an evacuation, but a pint or less would accomplish the same result when the impediment was in the rectum. The chief discomfort of abdominal constipation was incident to the retention of gas, while that of rectal obstipation was due to sensations of weight and fullness. Of 500 patients treated surgically by the writer for constipation the majority were permanently cured, many others were improved, while 10 per cent. received no benefit. With the exception of cancer and stricture the majority of rectal impedimenta responsible for constipation were simple in character and correctible under local anesthesia and the lesions which most often caused abdominal obstipation could be eliminated with but little danger under general narcosis. Dr. Gant then described operations indicated in the treatment of many of the conditions known to cause surgical constipation. In closing he emphasized the prevalence of surgical constipation, its comparatively easy diagnosis, and the good results which followed surgical treatment.

The Pathogenesis, Anatomy, and Cure of Prolapse of the Rectum.—Dr. Alexis Moschcowitz of New York presented this paper. He said that his theory and operation were based upon the demonstrable fact that prolapse of the rectum was a hernia. In all its features, etiological, pathological, clinical, and therapeutic, it conformed to the well-recognized principles of hernia in other parts of the body. He elaborated this theory in detail as he had done in a paper read before the Surgical Section, New York Academy of Medicine, December 1, 1911. The speaker considered the symptoms, medical treatment, and some of the surgical procedures which had been employed, of which latter there were over 200, which was good evidence that none of them were entirely satisfactory. He had tried some of these methods and recurrence was almost the universal rule. In the operation which he had devised he had endeavored to carry out the principles employed in an operation for the cure of hernia. He described his operation as published in the Medical Record, December 30, 1911. Thus far he had operated upon nine cases, but on account of the fatal issue of the ninth case there were but eight available for estimating the final outcome. This could be judged from the standpoint of the patient and that of the surgeon. It was surprising that the patient was better satisfied with this than the surgeon. Five of the cases which were reported were actually cured anatomically as well as symptomatically; the remaining three he thought were about 90 per cent. cured. Finally, Dr. Moschcowitz compared similar operations with this one, and showed wherein they had failed to grasp his theory and that they all recommended colopexy as a part of their operation. However, he did not consider priority a matter of importance, but only wished to throw light on the subject.

Dr. Dwight Murray of Syracuse emphasized the importance of making a thorough rectal examination in patients suffering from constipation, instead of merely prescribing drugs, as was too often done. He thought that constipation was the primary cause of all these conditions, and not the result. Medical colleges were at fault in not giving their students more instruction in rectal diseases instead of putting that branch of surgery under general surgery.

Dr. J. M. Lynch of New York thought the Dr. Moschowitz operation open to criticism because it narrowed the caliber of the bowel in an inconvenient place and stricture was liable to follow. He had done an amputation in five cases and had had good results.

Dr. Moschcowitz, in closing the discussion, said that it was a mistake to include intussusception in this subject, and that, of course, prolapse of the anus so-called should be excluded.

Third Day—Thursday, April 18.

Wounds of Naval Warfare.—Surgeon-General Stokes of the United States Navy made his address by invitation. He said that he welcomed the opportunity to speak because he thought the work of medical men in the Navy was not generally appreciated. Their work was by no means confined to surgery in times of war; they had 5,000 beds in their medical department. It was recognized that the men in the ranks were a military asset and must be kept in the best possible physical condition, and this involved systematic physical training and a great deal of military detail. They were constantly at work studying to improve the conditions under which their men worked; for example, they had been making observations in the fireroom and had found that some of the so-called heat prostrations were due to coal gas, and not to high temperature. When it was pointed out that gunnery at the present time was twelve hundred times more effective than it was during the Spanish-American War; that a battle between two dreadnoughts could not possibly last more than five minutes until the ammunition carried was exhausted; that a battle between the two largest fleets afloat could not last more than twenty minutes; that gun range was fourteen miles and a moving target could be struck at from nine to ten miles; that the battery of a single ship threw from ten to twelve tons of metal per minute; that each gun hurled a 1,400-pound projectile at 2,900 foot seconds; one might get some idea of the work for which the Naval surgeon must be prepared. In addition, the substances used in the propelling and bursting forces of the ammunition were poisonous, and the shells were hot, so that most wounds were both infected and seared. The effects of the powder-gas increased the shock beyond what would ordinarily result from the wound. In a single ship they planned for a casualty list of from 20 to 30 per cent. As this work was more than the surgeons and their corps of assistants could care for during and immediately after battle they trained the line officers and these in turn trained the men in first aid to the injured; they were instructed in the application of occlusive dressings, the control of hemorrhage, and the resuscitation of the drowned. They were planning for a medical reserve corps for the Navy, and Congress had promised that their measure should go through this year. They could then get transports and additional surgeons in time of war or disaster. The transportation of the wounded had always been a problem, and Surgeon-General Stokes had devised a wire frame which he exhibited, closed on three sides and so arranged as to splint the entire body and to prevent eversion. It would be found useful in many other circumstances where the sick or wounded had to be moved outside of naval and military service.

Induction of Labor at Term.—Dr. GEORGE W. KOSMAK of New York read this paper. He discussed the theories advanced for the onset of labor and said that the normal term of gestation, 280 days, had many exceptions; it had been estimated that 15 per cent. of all gestations were protracted. As the exact duration of pregnancy was often in doubt one had to be governed by the relative size of the child and the pelvis in determining the advisability of inducing labor. The growth of the fetus during the latter months of gestation was very rapid, so rapid that a child that weighed seven pounds at term would weigh nearly fourteen pounds if carried *in utero* another month. In addition to the increase in size the bones became much harder, as they all knew. The larger size of the child and the harder bones would point to a prolonged labor attended with possibly a mutilating operation and a slow recovery. With these facts in view the rational procedure was to induce labor within four or five days after term. This was a simple procedure either by the use of bags or gauze packing and was attended with no danger to the mother and offered far better chances of life to the child. He could not understand why physicians were so prejudiced in regard to interfering in such cases where the results of delay might be dystocia, loss of the child, a mutilating operation and a long convalescence.

The Use of Fetal Serum to Cause the Onset of Labor. Dr. ABRAHAM J. RONGY of New York read this paper, which gave an account of his experiments with fetal serum and the results.—As the cause of the onset of labor was still in the dark it was not surprising that some had been studying it along the lines of immunity. He described the experiments that had been performed on rats which demonstrated that the blood of pregnant rats produced a very severe reaction in those not in that condition, and that the blood of a rat at about term introduced into one in the early stages of gestation sometimes produced abortion. They then experimented with blood serum of parturient women. He related the history of eight cases in which he had succeeded in inducing labor by the injection of fetal serum. The fetal serum was prepared in the usual way employed with other human blood sera. He found that the most severe reactions were obtained when small doses were given followed by large ones. In one case serious urinary conditions were removed by the injection of the serum. It was too soon to draw any definite conclusions or to explain many of the phenomena attendant upon this procedure.

Dr. ROSS MCPHERSON of New York said that he had tried fetal serum in 28 cases and had had only one case in which labor pains were even simulated and in this case they subsided after two hours. He had given intravenous injections of ten to fifteen centimeters.

Dr. ABRAHAM J. RONGY of New York said it was his custom to give four or five c.c. at first and about three hours later to administer 25 or 30 c.c. The dose might have to be repeated; he had given as many as six doses before procuring the desired reaction.

Abdominal Cesarean Section.—Dr. ROSS MCPHERSON of New York read this paper, which was based on the records of 352 cases from the New York Lying-In Hospital. He thought the reason for the prejudice against this operation was that it had usually been performed only after every other resource had failed and when the mother and child were not in condition to undergo the operation. The mother was then exhausted and probably infected. The prognosis for the operation was good if a few cardinal principles were carried out. In operations determined upon before or at the time of labor the mortality was only two per cent; while it rose to four per cent. if the operation was performed after labor had been in progress for two hours. The speaker then considered the following indications: deformity, disproportion, placenta previa, neoplasms and rupture of the membranes. In the series of 352 cases 284 had been performed for some deformity; in eliminating those cases in which the women were moribund when operated upon the mortality was 9.5 per cent. This series reached back over a period of twenty years and the early mortality was much higher than that of more recent years. The speaker particularly emphasized the point that the eleventh hour was not the time to perform a cesarean section.

Dr. GEORGE W. KOSMAK of New York City said that this mortality seemed large, but it should be remembered that it was taken from the records of a large hospital where patients were received in all stages of labor. The fact should be impressed on the profession at large that cesarean section was not a last resort but an operation of choice. They should consider it in examining a patient and determine the degree of contraction. The pregnant woman should come under the care of an accoucheur at least three months before labor; she was frequently not examined until she came to labor. It was especially important that primiparæ should be examined. One should not limit a consideration of contractions to the anteroposterior diameter of the pelvis, but should include also the lateral dimensions and those of the pelvic outlet in deciding on a method of delivery.

Dr. ABRAHAM J. RONGY of New York said 40 per cent of the labors in New York City were attended by midwives, and sometimes the woman had been in labor forty-eight hours before the obstetrician saw her. What was to be done with these cases? Emphatically they were not cases for cesarean section. These were the cases in which a pubiotomy was indicated.

Dr. ROSS MCPHERSON of New York, in closing the discussion, said that he acknowledged that the mortality was too high, but it was not really so high when one remembered that some of the cases were operated upon eighteen or twenty years ago. In his own series of forty cases he had not lost a mother and only one child. Cesarean section in cases coming to operation late was about as fatal as any operation could be. While he did not like the operation of pubiotomy, there was a small class of cases to which it was applicable, but it was not applicable where the pelvis had a conjugate of less than seven and one-half cm.; in such a case it would have to be a choice between cesarean section and craniotomy.

Prolapse of the Uterus: Its Surgical Treatment.—Dr. CHARLES CLIFFORD BARROWS of New York presented this paper in which, after reviewing the results following the various methods of performing hysterectomy and those of the different fixation and suspension operations, he said they all told the same story, the patient returned in as bad a condition as before the operation. He believed that a reason for many of these failures was that the operation interfered with the blood supply of the tissues of the pelvic floor. His operation, which he described by means of charts, included amputation of the cervix, repair of the primeum, and shortening the broad ligaments by the Alexander method. He had been unable to follow up the hospital cases, but reported five cases occurring in private practice where the results of the procedure were very successful. The method was particularly applicable to fleshy women and to young women who had rapid prolapse. The essence of his theory was that prolapse of the uterus with the attached bladder and rectum was a hernia. Dr. Barrows exhibited charts by which he demonstrated the steps in his operation. He completed the procedure by removing a section from the lower anterior vaginal wall. In a series of 16 cases, 13 operated upon by Dr. Polk and three by himself, some three years ago and all over three months ago, the integrity of the pelvic floor had been retained in every case. It might be too soon to pass judgment upon the cases operated upon more recently.

Dr. RALPH WALDO of New York said he thought this method would prevent cystocele. He had been using an interposition operation and in over two hundred operations the results had been more satisfactory than by any other operation.

Uterine Fibroids Complicating Pregnancy.—Dr. RALPH WALDO read this paper, in which he first considered the salient points of fibroids in general. He said that during pregnancy they were apt to increase in size and they underwent involution with the uterus afterward, seldom becoming smaller than before the beginning of the pregnancy. Fibroids produced a tendency to abort during the early months of pregnancy, but after the third or fourth month the pregnancy was liable to go to term, even though the fibroid was multiple and very large. In many instances even a large fibroid in the lower portion of the uterus did not preclude delivery by forceps in a normal manner. In delivery at term where interstitial or submucous fibroids were present there was danger of postpartum hemorrhage and there might be such a weakening of the uterine wall that rupture took place. He did not think it a good practice in these cases to induce labor. If labor was established and the problem became serious one should resort to cesarean section. The induction of abortion because of the presence of fibroids was a great mistake, neither was it advisable to practice enucleation of the fibroid as abortion was liable to follow in a few weeks. The induction of abortion was dangerous owing to the possibility of the fibroid becoming gangrenous. In the presence of a gangrenous fibroid no time should be lost before resorting to a radical operation.

Dr. WILLIS E. FORD of Utica said that in six cases in which large fibroids were present he had seen practically normal delivery which was followed in three instances by

the partial disappearance of the fibroid. The blood should be removed only when it was so low down as to preclude the possibility of delivery. There was little danger from a simple intramural growth, but there was danger of hemorrhage from multiple fibroids.

Dr. WALDO said he wished to add his testimony to the statements that if the fibroids were not very large the patient could go to term without any harm and that the induction of abortion was dangerous owing to the tendency of the fibroid to become gangrenous.

Radical Operation for Cancer of the Uterus.—Dr LE ROY BROUN of New York read this paper. He reviewed the history of operations for hysterectomy for cancer of the uterus in Europe and in this country and this showed that the value of the operation had not been as fully appreciated in this country as abroad. He discussed the *pros* and *cons* of gland removal, stating that he did not think it advisable to prolong the operation on patients already in a weakened state by an exhaustive search for glands; if there were enlarged glands in the field of operation they should be removed. All were agreed that the operation should be extensive and there should be a thorough removal of parametric tissue. The steps of his operation were to sterilize the field, open the abdomen, and do an exploratory operation to find out if the glands on the uterosacral ligament were involved; if these were involved it was of no use proceeding. If they were not involved he did an extensive operation cutting off the uterosacral ligaments close to the sacrum, removing all the parametrium possible and going an inch or more down the vagina. Dr. Broun illustrated the operation with charts. Dr. Broun then spoke of the need of a more general dissemination of knowledge regarding cancer of the uterus among the laity, and said that the physician who when consulted by a patient did not make a physical examination and insist upon a microscopical one did not do his duty. In Europe women had been educated on this subject and statistics from a number of the large continental hospitals showed that 60 per cent. of the patients applying for treatment for this condition could be operated upon; in this country only 25 or 30 per cent. of those applying were still in the operable stage.

Dr. JOHN A. SAMPSON of Albany reported his results in 24 cases operated upon since 1905 by the Bertheim method. Of these five died. The presence of cancer in the lymph nodes was demonstrated in seven out of 11 cases examined. Four of these cases were free from cancer at the end of six years.

Dr. WILLIS E. FORD of Utica said the cancer problem was bigger than the tuberculosis problem. He lived in what was called the cancer belt of New York State, where the disease was very prevalent and he saw a great deal of it. He was not convinced that cancer was a local disease. He did not think an operation should be continued over an hour and one-half, certainly not for three or four hours, by a search for affected glands, as the attendant shock and loss of blood increased the probabilities of recurrence. He had had some success with autogenous serums and believed in following an operation by this mode of treatment. Even if one removed every gland he could not be sure there would be no recurrence.

Dr. WILLIAM SEAMAN BAINBRIDGE of New York said that he hoped the time would come when every woman over the age of forty would be examined at regular intervals. In cases that were inoperable so far as offering hope of cure for cancer it should be remembered that there might be other complicating pelvic conditions that might be relieved and that in this way the patient might be made more comfortable. In inoperable cancer he advised ligation of the internal iliac artery in two places on both sides, together with ligation of the ovarian arteries and removal of the ovaries.

Dr. H. C. TAYLOR of New York said that the question of radical operation hinged upon primary mortality; in early cases this should not be much higher than in the less radical procedures. He emphasized three points: 1. That they should get these cases earlier. 2. They should have a campaign among physicians at large. 3. They should instruct women in the first symptoms of cancer by all means available.

Dr. RALPH WALDO of New York said an operation was justified by its clinical results. Going beyond the perimetrium for enlarged glands subjected the patient to an increased danger out of proportion to the results thus obtained.

Dr. LE ROY BROUN of New York in closing the discussion, said that in 106 cases which Wertheim reported there were only five in which he had removed lymph nodes. He did not believe that it could be done in thirty minutes, as had been stated and it added very much to the seriousness of the operation.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

UNIVERSITY OF THE STATE OF NEW YORK MEDICAL EXAMINATION

January 30, 1912

ANATOMY

1. Locate the following bony points: (*a*) processus mastoideus, (*b*) olecranon, (*c*) malleolus lateralis, (*d*) acromion, (*e*) spina ischiadica.

2. State the names and give the attachments of the muscles of mastication.

3. Describe the arteria femoralis as to (*a*) origin, (*b*) course, (*c*) branches.

4. Describe the vena cava inferior.

5. State the origin and give the course of the musculospiral nerve (nervus radialis) and mention the names of *two* of its terminal branches.

6. Describe the spleen and give its relations to surrounding structures and organs.

7. State the origin, course, and distribution to the stomach of the left vagus (pneumogastric) nerve.

8. Give the minute anatomy of the lobules of the liver.

9. What muscles are attached to (*a*) the posterior border of the ulna, (*b*) the spine of the scapula?

10. Give the topographic anatomy of (*a*) the internal abdominal ring, (*b*) the external abdominal ring.

11. Describe the articulation of the head of a rib, in the middle of the series, with the vertebræ.

12. Give a detailed description of the rectum. State the blood supply and the nerve supply of the rectum.

PHYSIOLOGY.

1. State the number of white corpuscles in a cubic millimeter of blood. State the function of white corpuscles.

2. State facts relating to the ratio between the oxygen absorbed and the carbon dioxide given off in respiration.

3. Describe the nervous mechanism of gastric secretion and of stomach movements.

4. Describe in detail each step in the digestion of a meal containing proteins, carbohydrates, fats, water, and inorganic salts.

5. Describe the character and the physiological function of the secretion of the sebaceous glands.

6. Which of the cranial nerves are nerves of special sense? Give the origin of each nerve mentioned.

7. Describe the advantages and the disadvantages of sugar as an article of diet for (*a*) those living a vigorous out-of-door life, (*b*) those living a sedentary life, (*c*) those who are poorly nourished.

8. Define a calorie. How many calories are produced by the average male adult in 24 hours?

9. Describe the development of the spermatozoa.

10. State the effect on respiration of (*a*) division of one phrenic nerve, (*b*) division of both phrenic nerves.

11. Describe the movements of the spleen and state what is known concerning its function.

12. State the average weight of feces evacuated by a normal male adult in 24 hours. What proportion of feces is (*a*) liquid, (*b*) solid?

CHEMISTRY

1. Convert 41° Fahrenheit into centigrade degrees. State the Fahrenheit equivalent of zero centigrade.

2. Define (*a*) base, (*b*) salt, (*c*) acid. Illustrate, giving names and formulas.

3. Describe SO_2 as to (*a*) occurrence, (*b*) physical properties, (*c*) chemical properties, (*d*) uses as a disinfectant.

4. What is an alkaloid? What is the source of (*a*) atropine, (*b*) cocaine, (*c*) codeine?

5. Describe the process of manufacture of ethyl alcohol by fermentation and express in an equation the final reaction showing the formation of ethyl alcohol.

6. Describe a test for iodine.

7. Write the symbols of 10 elements and the formulas of 10 compounds, giving the name in each case.

8. State the physical and the chemical properties of ammonia.

9. Give the names, formulas, and chemical properties of *three* important potassium salts.

10. Where in the human system does lactic acid occur? How is lactic acid made?

11. Define carbohydrates and state their general properties. Where do carbohydrates occur in nature?

12. Describe chlorine as to (*a*) occurrence, (*b*) preparation, (*c*) properties, (*d*) important compounds, (*e*) chemical uses.

HYGIENE AND SANITATION.

1. Where should air inlets and air outlets for ventilating purposes be installed in a public hall? State reasons.

2. What are the essential requisites of a house water-filter?

3. What diseases are specially liable to be conveyed by the ingestion of milk?

4. State the procedure for disinfecting mattresses, blankets, and other heavy material of the sickroom.

5. What changes are effected in meats that are boiled? What points are to be observed in preparing soups?

6. Should the dead be buried or cremated? State reasons.

7. What controls the period of infectiveness of a disease? Illustrate.

8. State the course and relate the sequelæ of a successful vaccination.

9. What action have bacteria on sewage? What is the septic tank method of sewage purification?

10. How may articles of food and of drink be made sterile and safe for ingestion? Illustrate the procedure by at least *two* examples.

11. What pathological changes ensue from the constant use of alcohol as a beverage? Mention diseases the predisposition to which is increased by the habitual use of alcohol.

12. What is glanders (equinia)? How may glanders infection occur?

OBSTETRICS AND GYNECOLOGY.

1. Describe the nature and the functions of the amniotic fluid.

2. Give the management of the after-coming head in breech presentation.

3. Give the technique of obstetric asepsis and antisepsis during (*a*) pregnancy, (*b*) parturition, (*c*) the puerperium.

4. What are the causes of cystitis in the female? Describe methods of examination of the bladder of the female.

5. Give the management of the third stage of labor.

6. Differentiate erosion of the uterine cervix and ulceration of the uterine cervix. Give the etiology of each condition.

7. Describe the management of the various forms of placenta prævia.

8. Give in detail the immediate treatment of a severe laceration of the perineum.

9. Give the causes and the management of prolapsed cord.

10. What are the indications for the use of obstetric forceps?

11. Give the etiology of mastitis. What prophylactic measures should be applied to prevent mastitis during the puerperium?

12. Differentiate the ordinary morning sickness of pregnancy and the pernicious vomiting of pregnancy. What are the causes of the pernicious vomiting of pregnancy and what relation do they bear to the management of the condition?

SURGERY.

1. Describe tuberculous peritonitis. Give the surgical treatment of tuberculous peritonitis.

2. Give the surgical management of impacted fracture of the neck of the femur.

3. Give the technique of ether anesthesia. State the precautions to be observed and give the dangers and the danger signals in ether anesthesia.

4. Differentiate chancre and chancroid.

5. Discuss the dangers of expectant treatment of acute appendicitis.

6. Describe cholelithiasis and give its surgical treatment.

7. Give the surgical treatment of extensive burns.

8. Describe anthrax and give its surgical treatment.

9. Describe the operative technique and the after-treatment of penetrating wound of the stomach.

10. Describe a mechanical method of treating shock due to hemorrhage.

11. Give the signs and the symptoms of ectropion and state methods for its surgical relief.

12. Describe the objective and the subjective indications of compression of the brain.

DIAGNOSIS.

1. Describe the physical signs and the symptoms of acute pericarditis before and after effusion.

2. Give a clinical picture of epidemic cerebrospinal meningitis.

3. State the symptoms and the methods of diagnosis of dilatation of the stomach.

4. Describe the signs, symptoms, and usual course of toxic (commonly alcoholic) cirrhosis of the liver.

5. State the signs and the symptoms that warrant a diagnosis of diffuse (general) arteriosclerosis.

6. Give the clinical history of an average case of acute articular rheumatism.

7. State the symptoms of pus formation and retention.

8. In what diseases may enlargement of the spleen occur? Describe the methods of determining and identifying an enlarged spleen.

9. State the result of a microscopic examination of the blood in (*a*) typhoid fever, (*b*) malarial fever, (*c*) trichinosis.

10. Describe herpes zoster.

11. Differentiate cardiac asthma and bronchial asthma.

12. State the physical signs and relate some of the causes of ascites.

PATHOLOGY.

1. Describe the pathological changes in (*a*) simple fibrinous pleuritis, (*b*) serofibrinous pleuritis, (*c*) suppurative pleuritis.

2. What is the microscopic appearance of the affected tissues in acute hyperplastic splenitis?

3. Describe the alteration in structure of the mucosa in acute catarrhal enteritis.

4. How may carcinomata be disseminated through the lymph channels? State the appearance of the lymph vessels under such conditions.

5. Describe the hematozoon of estivoautumnal malaria and give its life history.

6. What organism is the probable exciting agent in syphilis? Give the macroscopic and the microscopic appearance of a syphilitic gumma in the liver.

BACTERIOLOGY.

7. In a suspected case of pulmonary tuberculosis what laboratory methods should be employed to establish the diagnosis? Give the methods in detail.

8. What are pathogenic bacteria and by what means do they incite disease processes? Does cultivation on artificial media affect the virulence of pathogenic bacteria? Illustrate.

9. Describe in detail Gram's method of staining. Mention *two* species of micrococci that may be distinguished from each other by this method.

10. State the general characteristics of *Bacillus pestis*. How may a pure culture of *Bacillus pestis* be obtained?

11. Mention *three* pathogenic anaërobic bacteria that may be conveyed from the soil.

12. What is disinfection? Give in detail a method of determining the strength of a fluid disinfectant.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

UNIVERSITY OF THE STATE OF NEW YORK MEDICAL EXAMINATION.

January 30, 1912.

ANATOMY.

1. (*a*) The *processus mastoideus* is behind the auditory meatus, on the mastoid portion of the temporal bone.

(*b*) The *olecranon* is the upper and back part of the ulna, at the back of the elbow-joint.

(*c*) The *malleolus lateralis*, or external malleolus, is situated at the lower extremity of the fibula, and forms the outer side of the ankle-joint.

(*d*) The *acromion* forms the outer end of the spine of the scapula, and overhangs the glenoid cavity; it can be felt immediately over the top of the shoulder-joint.

(*e*) The *spina ischiadica* is a triangular eminence near the center of the posterior border of the ischium.

2. The muscles of mastication are: Temporal, masseter, internal pterygoid, external pterygoid, and buccinator. For *attachments*, see Cunningham's "Anatomy" (1909), page 401; or Gray's "Anatomy" (1910), pages 377 to 380.

3. See Cunningham's "Anatomy" (1909), page 858; or Gray's "Anatomy" (1910), page 685.

4. See Cunningham's "Anatomy" (1909), page 892; or Gray's "Anatomy" (1910), page 751.

5. See Cunningham's "Anatomy" (1909), page 632; or Gray's "Anatomy" (1910), page 1040.

6. See Cunningham's "Anatomy" (1909), page 1210; or Gray's "Anatomy" (1910), page 1444.

7. See Cunningham's "Anatomy" (1909), pages 600 and 603; or Gray's "Anatomy" (1910), pages 1006 and 1010.

8. See Cunningham's "Anatomy" (1909), page 1121; or Gray's "Anatomy" (1910), page 1320.

9. *To the posterior border of the ulna* are attached:

Triceps, anconeus, supinator brevis, extensor ossis metacarpi pollicis, extensor indicis, flexor carpi ulnaris, and extensor carpi ulnaris. To the spine of the scapula are attached: Trapezius and deltoid.

10. See Cunningham's "Anatomy" (1909) pages 1205, 422, and 428; or Gray's "Anatomy" (1910), 438 and 427.

11. See Cunningham's "Anatomy" (1909), page 260; or Gray's "Anatomy" (1910), page 282.

12. See Cunningham's "Anatomy" (1909), pages 1087 and 1095; or Gray's "Anatomy" (1910), 1307 and 1311.

PHYSIOLOGY.

1. There are, normally, about 7,000 to 10,000 white corpuscles in a cubic millimeter of blood.

The functions of the white corpuscles are to: (1) Serve as a protection to the body from the incursions of pathogenic microorganisms; (2) take some part in the process of the coagulation of the blood; (3) aid in the absorption of fats and peptones from the intestine, and (4) help to maintain the proper proteid content of the blood plasma.

2. The ratio between the oxygen absorbed and the carbon dioxide given off in respiration is called the respiratory quotient. Thus inspired air contains 21 parts of oxygen, expired air 16; inspired air 0.04 of CO_2, expired air 4.04. The respiratory quotient is represented by the fraction $\frac{4.04 - 0.04}{21 - 16} = .8$. This is the normal figure, but the ratio is very variable, depending on age, temperature, food, air, and exercise.

"There are various reasons which account for these differences. It is to be borne in mind, in the first place, that the sources of carbon dioxide in the animal body are numerous. The oxygen which is absorbed at any given time does not immediately appear in the carbon dioxide given off; it may be absorbed and enter into combinations, which may retain it for a considerable time; so that at any given time the amount of oxygen absorbed may be greater than that given off in the carbon dioxide or *vice versa*. Then, too, more CO_2 is formed in proportion to the amount of oxygen absorbed by the decomposition of some substances than others. Thus when carbohydrates constitute the diet the amount of oxygen which they contain is enough to satisfy their hydrogen, but fats and proteids need more, and in the formation of water they use up oxygen; from this it follows that more oxygen is absorbed during an animal than during a vegetable diet. When the amount of carbon dioxide given off equals the amount of oxygen absorbed, the respiratory quotient is 1. It is found that before feeding the quotient is 0.84 to 0.89; when meat or fat is given, 0.76; with potatoes, 0.93; and with glucose, 1.03. The respiratory quotient is higher in adults than in children; during the day than at night; during wakefulness than during sleep; during activity than during rest." (From Raymond's *Physiology*.)

3. The *nervous mechanism of gastric secretion* is probably reflex. The stimulus is the presence of food and its passage into the stomach; the afferent nerves are fifth and ninth cranial, perhaps also the vagus and sympathetic; the center is in the nucleus of the vagus; the efferent nerves are the vagi; and the terminal organs are the gastric glands.

For the *movements of the stomach*, see Gray's "Anatomy" (1910), page 1280.

4. The *proteids* are digested in the stomach (by the pepsin) and in the small intestine (by the trypsin); the *carbohydrates* are digested in the mouth (by the ptyalin) and in the small intestine by the amylopsin; the *fats* in the small intestine (by the steapsin and the bile).

5. The secretion of the sebaceous glands is the sebum. *Sebum* is a fatty material; acid in reaction; contains isocholesterin, albumin, and fat. Its function is to keep the skin and hairs soft and pliable; it serves as a protection, and is an aid in the maintaining of body temperature; it may also be excrementitious.

6. *Cranial nerves of special sense:* First, or olfactory, special sense of smell; second, or optic, of sight; eighth, or auditory, of hearing. For *origin* of these nerves, see Cunningham's "Anatomy" (1909), pages 675 and 688; or Gray's "Anatomy" (1910), pages 976, 977, and 1003.

7. SUGAR AS AN ARTICLE OF DIET. (*a*) *Vigorous persons leading an outdoor life. Advantages:* The body sugars are an ever-ready source of energy, and as these are most readily and economically formed from ingested sugar persons leading a vigorous outdoor life require more than the average. *Disadvantages:* Sugar cannot be considered a substitute for the protein needed to replace that consumed in the wear and tear of life, and therefore sugar must not be used as the sole article of diet.

(*b*) *Persons living a sedentary life. Advantages:* Although these people do not require a great deal of handy fuel, nevertheless less protein is required to maintain the normal balance if a moderate quantity of sugar is taken. *Disadvantages:* Excessive sugar leads to a lessened intake of protein and fat, and therefore diminishes the mineral constituents (which usually follow with the fats used for food). Furthermore, in diminishing the fat intake it tends to produce bile stasis, with its usual results. Still further, an excess of sugar leads to intestinal fermentation with distension.

(*c*) *Persons who are poorly nourished. Advantages:* Here especially is a great demand for just such an easily available source of energy as is supplied by sugar. Sugar is easily digested and promotes the deposition of fat, and spares body protein. *Disadvantages:* Same as in (*b*), with special emphasis on the interference with the taking of the necessary mineral constituents.

8. A calorie is the amount of heat required to raise a gram of water through one degree Centigrade. The average male adult produces about 40,000 to 50,000 calories for each kilogram of his weight during 24 hours.

9. See Cunningham's "Anatomy" (1909), page 14; or Gray's "Anatomy" (1910), page 1382.

10. "*Section of one phrenic nerve* causes paralysis of the corresponding side of the diaphragm; *section of both phrenics* is followed by paralysis of the entire diaphragm. So important are these nerves in respiration that in most cases after section death occurs from asphyxia within several hours. In such cases not only is the work of inspiration thrown upon the other inspiratory muscles, but the effectiveness of the latter is greatly compromised by the relaxed condition of the diaphragm, which permits of its being drawn into the thoracic cavity with each inspiration, thus hindering the expansion of the lungs." (*American Text-Book of Physiology.*)

11. *Movements of the spleen:* "It has been shown that there is a slow expansion and contraction of the organ synchronous with the digestion periods. After a meal the spleen begins to increase in size, reaching a maximum at about the fifth hour, and then slowly returns to its previous size. This movement, the meaning of which is not known, is probably due to a slow vasodilatation, together, perhaps, with a relaxation of the tonic contraction of the musculature of the trabeculæ. In addition to this slow movement Roy has shown that there is a rhythmical contraction and relaxation of the organ, occurring in cats and dogs at intervals of about one minute. Roy supposes that these contractions are effected through the intrinsic musculature of the organ—that is, the plain muscle tissue present in the capsule and trabeculæ—and he believes that the contractions serve to keep up a circulation through the spleen and to make its vascular supply more or less independent of variations in general arterial pressure."—(Howell's *Physiology.*)

"It was subsequently shown by Schafer and Moore that the splenic volume is extremely responsive to all fluctuations of the arterial blood-pressure; that though the spleen may passively expand and recoil in response to the rise and fall of the blood-pressure, nevertheless the reverse conditions may obtain; viz., that the splenic volume may diminish as the pressure rises, if the splenic arterioles contract simultaneously with the contraction of the arterioles generally. On the contrary, the splenic volume may increase coincident with a dilatation of the splenic and systemic arterioles." (Brubaker's *Physiology.*)

The function of the spleen: The following theories have been held: (1) It is a source of production of the white blood corpuscles; (2) it is a source of production of the red blood corpuscles during fetal life; (3) it is a place where the red blood corpuscles are destroyed; (4) uric acid is produced in the spleen; (5) an enzyme is produced in the spleen and is carried by the blood to the pancreas, where it converts the trypsinogen into trypsin.

12. The average weight of feces evacuated by a normal male adult in 24 hours is about 7 or 8 ounces; of this about 70 to 80 per cent. is liquid, and about 20 to 30 per cent. is solid.

CHEMISTRY.

1. To convert Fahrenheit to Centigrade, we subtract 32, multiply by 5, and divide by 9.

$$\frac{(41 - 32) \times 5}{9} = \frac{9 \times 5}{9} = 5$$

So 41° F. = 5° C. 32° F. is the equivalent of zero C.

2. (*a*) *Bases* are ternary compounds capable of entering into double decomposition with an acid to produce a salt

and water. *Examples.* Potassium hydroxide, KOH; Calcium hydroxide, $Ca(OH)_2$.

(*b*) *Salts* are substances formed by the substitution of an electropositive element for part or all of the replaceable hydrogen of an acid. *Examples:* Sodium nitrate, $NaNO_3$; Monopotassic sulphate, $KHSO_4$.

(*c*) *Acids* are compounds of an electronegative element or radical with hydrogen, part or all of which hydrogen they can part with in exchange for an electropositive element, without formation of a base. *Examples.* Sulphuric acid, H_2SO_4; nitric acid, HNO_3.

3. *Sulphur dioxide* occurs in volcanic gases and in solution in some mineral waters. It is a colorless, suffocating gas, with a disagreeable taste; it is very soluble in water, soluble in alcohol, and liquefies at 14° F. It is neither combustible nor a supporter of combustion; it is a reducing agent, being itself oxidized to sulphuric acid. It combines with water to form true sulphurous acid.

As a disinfectant: "Sulphur (dioxide, SO_2), though not so positive in its action as chlorine, is much more frequently employed on account of the lesser risk and trouble connected with it. It probably kills the germs not containing spores if sufficiently concentrated and in the presence of moisture, and is, therefore, useful in the fumigation of rooms and of articles that cannot be subjected to steam heat or chemical solutions. But it will bleach or tarnish many articles, and for this reason and the fact that it is much inferior to formaldehyde, it will hereafter probably be almost entirely supplanted by the latter whenever that can be obtained. To secure sufficient concentration at least three pounds of sulphur should be burned for every 1000 cubic feet of air-space, care, of course, being taken that there may be no risk of igniting the floor or any articles in the room." (Egbert's *Hygiene.*)

4. *An alkaloid* is an organic, basic, nitrogenous substance, alkaline in reaction, and capable of combining with acids to form salts in the same way that ammonia does. *Atropine* is derived from *Atropa belladonna; Cocaine,* from *Erythroxylon coca; Codeine,* from opium.

5. The process of manufacturing ethyl alcohol is divisible into three parts: (1) The grain is *malted, i.e.* it is caused to germinate. In this stage of the process a peculiar substance, called *diastase,* is produced, which causes the transformation of starch into glucose. (2) The saccharine liquid is brought in contact with *yeast,* a plant whose nutrition is attended with *fermentation,* by which glucose is decomposed into alcohol and carbon dioxide: $C_6H_{12}O_6 = 2C_2H_5OH + 2CO_2$. (3) The alcohol is more or less perfectly separated from other substances by distillation.

6. Free iodine colors starch paste a dark violet-blue.

7. Hydrogen, H; Oxygen, O; Carbon, C; Nitrogen, N; Mercury, Hg; Silver, Ag; Lead, Pb; Sulphur, S; Arsenic, As; Iron, Fe.

Sodium chloride, NaCl; Potassium iodide, KI; Hydrogen dioxide, H_2O_2; Sulphuric acid, H_2SO_4; Nitrogen monoxide, N_2O; ammonia, NH_3; Phosphoric acid, H_3PO_4; Carbon dioxide, CO_2; Silver nitrate, $AgNO_3$; Mercurous chloride, Hg_2Cl_2.

8. *Ammonia* is a colorless gas, with a pungent odor and an acid taste. It is readily soluble in water, aso in alcohol and in ether. On being heated it is decomposed into nitrogen and hydrogen; it is not readily combustible, but it will burn in an atmosphere of oxygen.

9. (1) *Potassium iodide,* KI, is a transparent crystalline solid, anhydrous, soluble in water and in alcohol; it is decomposed by chlorine, and by nitric and nitrous acids. Its solutions dissolve iodine and many metallic iodides.

(2) *Potassium chlorate,* $KClO_3$, is a transparent crystalline solid, anhydrous, soluble in water; at a high degree of heat it fuses, and if heated still further it decomposes into potassium chloride and perchlorate. It is an active oxidizing agent, and if carelessly mixed with certain oxidizable substances an explosion may result.

(3) *Potassium permanganate,* $K_2Mn_2O_8$, is a crystalline solid, soluble in water, giving it a mahogany color; it is a valuable oxidizing agent.

10. *Lactic acid* is found in the stomach during the digestion of carbohydrates. Lactic acid is made by oxidation of alpha-propylene glycol:

$CH_3.CHOH.CH_2OH + O_2 = CH_3.CHOH.COOH + H_2O$.

Sarcolactic acid is found in muscular tissue (during contraction), spleen, lymphatic glands, thyroid, thymus, blood, and bile.

11. *Carbohydrates.* "The name carbohydrates was originally given to the group of compounds found chiefly in vegetables, and containing in the molecule *six* or a *multiple of six* atoms of carbon in combination with hydrogen and oxygen in the proportion to form water, as in glucose, $C_6H_{12}O_6$. The name is not well chosen, as it indicates carbon in combination with water, and also because at present members of the group are known which contain hydrogen and oxygen in other proportions than that of water. For convenience the name is retained, and applies to a group of substances including the various sugars, starches, gums, etc. They form the chief solid constituent of vegetables, and also are products of animal life, easily ferment or are readily converted into fermentable substances, are neutral, non-volatile, and, if soluble, optically active. They are usually white solids, and the sugars have a sweet taste. They are usually strong reducing agents, and by oxidation form saccharic, mucic, and oxalic acids." (McGlannan's *Organic Chemistry.*)

12. *Chlorine* does not occur free in nature, but is chiefly found in sodium chloride. It is prepared by heating together manganese dioxide and hydrochloric acid:

$$MnO_2 + 4HCl = MnCl_2 + 2H_2O + Cl_2.$$

Chlorine is a greenish-yellow gas, with a very penetrating and suffocating odor; it is heavier than air, soluble in water, and is very irritant to the air passages. It combines readily with the elements, a candle burns in chlorine with a faint flame and dense smoke; in the presence of water it is an active bleaching and disinfecting agent. *Important compounds* are: Hydrochloric acid, chloric acid, perchloric acids, and their salts; also chloroform and chlorals; chlorine is used for bleaching and disinfecting.

HYGIENE AND SANITATION

1. *Inlets and outlets for ventilating:* "There is considerable difference of opinion as to the best locations for inlets and outlets, and as the conditions are necessarily different in every case and so many factors are to be considered, it is difficult to lay down any general rules. It should be an aim, however, to have the air well distributed and to have no direct draughts from the inlets either upon the occupants or to the outlets. Usually the outlets should be located near the top of the room, owing to the tendency of the used air to rise, and because, in unventilated rooms, the foulest air for some time after its contamination will be found nearest the ceiling. The products of combustion from lights, etc., will also practically all be in the upper strata of air. If, however, provision is or can be made for a constant and sufficiently strong aspirating force in the outlet ducts, it may be advisable to withdraw the used air from near the floor level and below the inlet openings, though not in too close proximity to them, since in this way a more thorough distribution of the incoming air and a greater dispersion of its contained heat are secured. The location of the inlets should depend on the temperature of the incoming air: if it is cold it should be admitted near the ceiling, so that it may diffuse and be partially warmed before reaching the inmates of the room; if it is warmed it may come in near the floor or below the middle level of the room."—(Egbert's *Hygiene.*)

2. *The requisites of a good filter* are (according to Parkes): (1) That every part shall be accessible for cleansing or renewing the medium. (2) That the filtering medium shall have a sufficient purifying power and be present in sufficient quantity. (3) That the medium gives nothing to the water favoring the growth of low forms of life. (4) That the purifying power be reasonably lasting. (5) That there be nothing in the construction of the filter itself capable of undergoing putrefaction or of yielding metallic or other impurities to the water. (6) That the filtering material shall not clog, and that the flow of water be reasonably rapid; to which may be added: 7. That the filtering medium be such that it can be readily cleansed and sterilized, or else so cheap that the removal and replenishing may not be neglected when necessary on account of the expense.

3. *Diseases specially liable to be conveyed by the ingestion of milk:* Tuberculosis, typhoid fever, scarlet fever, diphtheria, tonsillitis, cholera, and gastrointestinal disorders.

4. Disinfection of mattresses, blankets, and other heavy material is best effected by steam under pressure; of course, the ideal plan would be to burn the articles.

5. *When meat is boiled* the hemoglobin is decomposed, the raw appearance is removed, the proteids are coagulated, the salts and extractives are dissolved in the water, the fats are split up (physically) and float on the surface of the water; the meat is made more tender, and the fibrous connective tissue is dissolved, thus allowing the fibers of the meat to become separated.

Points to be observed in preparing soups are, according to Friedenwald and Ruhrah: Both meats and vegetables should be cut into small pieces. The soup should be started with cold water poured over the meats and the

heat applied gradually and the soup allowed to simmer, in order to dissolve as much of the nutriment as possible. If heated rapidly the albumin in the meat coagulates, and little but the extractives passes into the soup. The vegetables are added when the soup is nearly done. The fat is then to be removed.

6. The dead should be cremated. *The advantages of cremation over earth burial* are: (1) Economy; cremation is very much cheaper, and there is no need for the community to purchase large tracts of valuable land for the accommodation of the dead. (2) Health; it is said that earth-burial causes the air to become poisoned, the burial grounds to become offensive, the soil to become laden with disease germs of every description, water to become poisoned, and diseases to be directly originated or propagated. (3) Body-snatching and desecration of tombs will be impossible.

7. The period of infectiveness of a disease is controlled by: The number and virulence of the bacteria causing the disease, the vitality and ease with which the bacteria can enter another person. Most of the pathogenic bacteria live only a short time outside the body; hence, speedy contact (either direct or indirect) is necessary.

8. See French's "Practice of Medicine" (1910), page 312; or Osler's "Practice of Medicine" (1909), page 125.

9. "The actual changes which take place in sewage, as the result of bacterial action, are somewhat complex and obscure, but they have been aptly described by Rideal as consisting mainly of three stages. In the first stage, or that of anaërobic liquefaction and preparation by hydrolysis, the albuminous matters, cellulose, and fats are broken up into soluble nitrogenous compounds, fatty acids, phenol derivatives, gases, and ammonia. In the second stage, or that of semi-anaërobic disintegration of the intermediate dissolved bodies, a further formation of ammonia, nitrites and gases takes place. In the third stage, or that of aeration and nitrification, ammonia and carbon residues are changed into water, carbon dioxide, and nitrates."

A septic tank is a specially constructed tank for the treatment of sewage; in it the sewage as such is destroyed, and new substances are built up in its place. In *Cameron's septic tank* system "the sewage is first led into a tank from which air and light are excluded. Digestive changes take place in the sewage within this tank as the result of anaërobic bacterial action, which is favored by the darkness, the absence of air, and the perfect stillness at which the sewage is maintained. The solid matter is rendered soluble and dissolved." (Notter and Firth's *Hygiene.*)

10. Meat and fish can be frozen and salted; vegetables and fruits can be dried.

11. See French's "Practice of Medicine" (1910), page 985; or Osler's "Practice of Medicine" (1909), page 370.

12. See French's "Practice of Medicine" (1910), page 455; or Osler's "Practice of Medicine" (1909), page 261.

OBSTETRICS AND GYNECOLOGY.

1. The *liquor amnii* is the fluid contained in the amniotic sac; it is alkaline in reaction, has a specific gravity of about 1.001 to 1.008, its quantity is variable, but is generally about two pints. It consists chiefly of water, but contains small amounts of albumin, epithelial cells, urea, phosphates, chlorides, etc. Its source is unsettled.

Function: (*a*) *During Pregnancy:* (1) As a protection to the fetus against pressure and shocks from without. (2) As a protection to the uterus from excessive fetal movements. (3) It distends the uterus, and thus allows for the growth and movements of the fetus. (4) It receives the excretions of the fetus. (5) It surrounds the fetus with a medium of equable temperature, and serves to prevent loss of heat. (6) It prevents the formation of adhesions between the fetus and the walls of the amniotic sac. (7) It has been supposed, by some, to afford some slight nutrition to the fetus. (*b*) *During Labor:* It acts as a fluid wedge, and dilates the os uteri and the cervix; it also slightly lubricates the parts.

2. See Jellett's "Midwifery" (1910), pages 427 and 1073; or Hirst's "Obstetrics" (1909), page 838.

3. See Jellett's "Midwifery" (1910), page 148; or Hirst's "Obstetrics" (1909), pages 732 and 778.

4. *Causes of cystitis in the female:* Various pathogenic bacteria, foreign bodies, traumatism, retention of urine, unclean catheters, cold.

For methods of bladder examination, see Rose and Carless' "Surgery" (1911), page 1210; or Da Costa's "Surgery" (1911), page 1297; or Hirst's "Obstetrics" (1909), page 244.

5. See Jellett's "Midwifery" (1910), page 350; or Hirst's "Obstetrics" (1909), pages 323, 339, and 343.

6. An *erosion* of the cervix is an area on the vaginal surface of the cervix which is covered with columnar epithelium, and consequently presents a reddened, inflamed appearance. Some confusion has resulted from the application of the term *ulceration* to this condition. There is no ulcer and no granulating surface, for the whole area is still covered with epithelium. The erosion is caused by an irritating vaginal or uterine discharge (*e.g.* gonorrhea, endometritis). An *ulcer* of the cervix presents a clear-cut border, sometimes raised and indurated, and the base of the ulcer is formed by granulation tissue; the cervix has lost some of its epithelial covering. It may be caused by irritation from pessary or discharge, chancroid infection, syphilis, tuberculosis, or malignant disease. (From Crossen's *Diseases of Women.*)

7. See Jellett's "Midwifery" (1910), page 716; or Hirst's "Obstetrics" (1909), page 577.

8. See Jellett's "Midwifery" (1910), pages 921 and 1016; or Hirst's "Obstetrics" (1909), page 807.

9. See Jellett's "Midwifery" (1910), pages 854 and 857; or Hirst's "Obstetrics" (1909), page 625.

10. See Jellett's "Midwifery" (1910), page 1031; or Hirst's "Obstetrics" (1909), page 809.

11. See Rose and Carless' "Surgery" (1911), page 940; or Da Costa's "Surgery" (1911), page 1421; and Jellett's "Midwifery" (1910), page 469; or Hirst's "Obstetrics" (1909), page 371.

12. See Jellett's "Midwifery" (1910), pages 475 and 605; or Hirst's "Obstetrics" (1909), page 237.

SURGERY.

1. See Rose and Carless' "Surgery" (1911), pages 988 and 989; or Da Costa's "Surgery" (1911), pages 1008 and 1011.

2. See Rose and Carless' "Surgery" (1911), page 539; or Da Costa's "Surgery" (1911), pages 593 and 599.

3. See Rose and Carless' "Surgery" (1911), pages 1351, 1353, and 1354; or Da Costa's "Surgery" (1911), pages 1193, 1196, and 1197.

4.

CHANCRE.	CHANCROID.
First lesion of a constitutional disease, viz., syphilis.	A local disease.
Due to syphilitic infection.	Due to contact with secretion from chancroid.
Generally a venereal infection.	Always a venereal infection.
May occur anywhere on the body.	Nearly always on genitals.
Period of incubation never so short as ten days.	Period of incubation always less than ten days (generally about three.)
Generally single.	Generally multiple.
Not autoinoculable.	Autoinoculable.
Secretion slight.	Secretion profuse and purulent.
Slightly or not at all painful.	Generally painful.
As a rule only occurs once in any patient.	May reoccur in same patient.
Buboes are painless and seldom suppurate.	Buboes are painful and usually suppurate.

5. See Rose and Carless' "Surgery" (1911), page 1059; or Da Costa's "Surgery" (1911), page 998.

6. See Rose and Carless' "Surgery" (1911), 1074 and 1077; or Da Costa's "Surgery" (1911), 1030, 1036 and 1115.

7. See Rose and Carless' "Surgery" (1911), page 118; or Da Costa's "Surgery" (1911), page 1219.

8. See Rose and Carless' "Surgery" (1911), page 131; or Da Costa's "Surgery" (1911), pages 301 and 303.

9. See Rose and Carless' "Surgery" (1911), page 1001; or Da Costa's "Surgery" (1911), page 960.

10. See Rose and Carless' "Surgery" (1911), page 278; or Da Costa's "Surgery" (1911), page 264.

11. ECTROPION. *Symptoms*: "Epiphora (from eversion of punctum) causing excoriations and eczema of the lower lid, which, in turn, through contraction, increase the deformity. The exposed conjunctiva becomes reddened and hypertrophied. In marked cases the cornea may suffer, as a result of imperfect closure of the lids."—(May's *Diseases of the Eye.*)

Operative treatment consists in: (1) Snellen's sutures; (2) reduction of the length of the border of the eyelid; (3) tarsorrhaphy; or (4) blepharoplasty.

12. See Rose and Carless' "Surgery" (1911), page 765; or Da Costa's "Surgery" (1911), page 800.

DIAGNOSIS.

1. See French's "Practice of Medicine" (1910), 569; or

Osler's "Practice of Medicine" (1909), 770, 770, and 783.

2. See French's "Practice of Medicine" (1910), page 142; or Osler's "Practice of Medicine" (1909), page 160.

3. See French's "Practice of Medicine" (1910), page 750; or Osler's "Practice of Medicine" (1909), page 468.

4. See French's "Practice of Medicine" (1910), page 845; or Osler's "Practice of Medicine" (1909), page 558.

5. See French's "Practice of Medicine" (1910), page 642; or Osler's "Practice of Medicine" (1909), page 851.

6. See French's "Practice of Medicine" (1910), page 225; or Osler's "Practice of Medicine" (1909), page 221.

7. See Rose and Carless' "Surgery" (1911), pages 66, 36, 59, and 83; or Da Costa's "Surgery" (1911), 140 and 145.

8. ENLARGEMENT OF THE SPLEEN.—"Excessive chronic enlargement is most frequently due to leucemia, splenic anemia, or chronic malaria; lesser degrees may be met with in cirrhosis of the liver, rickets, pernicious anemia, passive congestion, or actual portal obstruction. Acute enlargement is most often encountered in septicemia, malarial fever, typhoid and typhus, erysipelas, acute miliary tuberculosis, tuberculous peritonitis, cerebrospinal meningitis, smallpox, diphtheria, scarlet fever, relapsing fever, infarct, plague, and certain other tropical diseases."—(Greene's "*Medical Diagnosis.*")

An enlarged spleen is diagnosed by palpation. "The position of the patient should be right lateral if minor enlargements are to be noted, as in typhoid fever or other acute infections, and the right hand should make pressure posteriorly while the left makes palpation. Abdominal distention defeats palpation save in great enlargement and the normal spleen is not palpable. If greatly enlarged the dorsal position is to be preferred and the condition can hardly be overlooked, unless with a tense wall the careless or hurried examiner fails to get below the actual border or to distinguish between muscular resistance on the one side and the splenic mass on the other. In these cases the chief notch in the anterior border is sharply defined and quite distinctive. In all cases where doubt arises as to the nature of a large tumor in the splenic area it should be remembered that a splenic growth or tumor is superficial, that its dullness is marked and can be carried directly back to its normal area behind the ninth, tenth, and eleventh ribs, that it ordinarily moves directly with respiration, and that if the colon be inflated splenic tumor dullness is not impaired. On the contrary, large renal tumors extend more deeply, are relatively fixed or immovable, are likely to be reniform or nodular, and are crossed by an area of resonance if the colon be distended with air. As in the case of the liver, a downward displacement of the diaphragm may produce an apparent increase in the lower splenic area just as an emphysematous lung or a pneumothorax may cause an apparent diminution in its upper percussion area."—(Greene's *Medical Diagnosis.*)

9. In *typhoid:* Widal reaction may be obtained; red cells are moderately decreased, there is slight diminution of hemoglobin; no leucocytosis as a rule, and generally a hypoleucocytosis.

In *malarial fever.* The plasmodium malariæ will be found; red cells and hemoglobin are diminished.

In *trichinosis.* Large increase in the number of eosinophiles, and decrease in number of polynuclears; the trichinella embryos may be found.

10. See French's "Practice of Medicine" (1910), page 1028, or Osler's "Practice of Medicine" (1909), page 900.

11. For *bronchial asthma* see French's "Practice of Medicine" (1910), page 675; or Osler's "Practice of Medicine" (1909), page 610.

In *cardiac asthma* the dyspnea is not accompanied by dry sonorous râles and the other physical signs of bronchial asthma; but moist crepitations may be heard.

12. See French's "Practice of Medicine" (1910), page 880; or Osler's "Practice of Medicine" (1909), page 589.

PATHOLOGY AND BACTERIOLOGY.

1. See French's "Practice of Medicine" (1910), pages 706, 707, and 711; or Osler's "Practice of Medicine" (1909), pages 643, 645, and 649.

2. *In acute hyperplastic splenitis* there will be found, on microscopical examination, "a pulp distended with blood, an enormous number of leucocytes, and red cells, many of the latter fragmented. If bacteria are circulating in the blood the splenic interstices may be distended by the invaders. The pulp cells may be found in all stages of their life history, karyokinetic, active, cloudy, granular, and fragmenting; the displaced and softened fibrous network manifests the separation of fibers incident to edema and vascular distention. Commonly, the splenic pulp contains a large number of phagocytes in which may be found bacteria. Some of the phagocytic cells are leucocytes, others are derived from the large endothelial cells lining the pulp sinuses; many of the phagocytes contain erythrocytes. Areas of focal necrosis are practically always present, and in some of these fibrin may be demonstrated."—(Coplin's *Pathology.*)

3. See French's "Practice of Medicine" (1910), page 789; or Osler's "Practice of Medicine" (1909), page 498.

4. In carcinoma "metastasis, as a rule, follows the lymphatic channels, and thus primarily involves the lymphatic glands in the neighborhood of the growth. The process may be explained as follows: Some of the epithelial cells in their advancing proliferation penetrate the lymphatic channels and are carried in the lymph stream to the nearest lymphatic gland, where they again proliferate and form secondary nodules; from these a similar extension occurs, and eventually widespread metastasis results."—(Stengel's *Pathology.*) And see Da Costa's "Surgery" (1911), pages 384 and 385.

5. See French's "Practice of Medicine" (1910), page 235; or Osler's "Practice of Medicine" (1909), page 13.

6. See French's "Practice of Medicine" (1910), pages 426, 428, and 430; or Osler's "Practice of Medicine" (1909), pages 266, 267, and 275.

7. See French's "Practice of Medicine" (1910), pages 301 and 1203; or Osler's "Practice of Medicine" (1909, pages 285, 335, and 340.

8. *Pathogenic bacteria* are such as (under certain circumstances) may produce disease.

"As to the mechanism which bacteria make use of in order to produce disease, according to our present knowledge, they work chiefly through the poisonous substances formed by them and deposited in the bodies of the persons suffering from the disease. The theory that bacteria have an important influence through the destruction of substances taken by them from the body of the patient for food is no longer entitled to much weight; neither are we able in most cases to account for the phenomena of disease by any mechanical action on the part of the bodies of bacteria. That such action does occasionally take place may be seen in experimental anthrax in mice, where the blood capillaries of the liver and kidneys may be completely plugged with masses of anthrax bacilli. The diseases in which the circulating blood is swarming with bacteria are much commoner in the lower animals than in man."—(Williams' *Bacteriology.*)

Cultivation on artificial media does affect the virulence of pathogenic bacteria. Thus *pneumococci* which have been kept upon artificial media are less virulent than *pneumococci* freshly isolated from the bodies of man or animals.

9. *Gram's method of staining:* Stain a cover glass preparation for two or three minutes in anilin gentian-violet. Wash in water. Treat with Gram's solution (iodine, 1 gram; potassium iodide, 2 grams; water, 300 c.c.) for a minute and a half, when the preparation becomes nearly black. Decolorize with strong or absolute alcohol for at least five minutes, wash, dry, and mount. Sometimes a contrast stain of Bismarck brown or eosin is used.

The *diplococcus of pneumonia* is stained by Gram's method; and the *micrococcus catarrhalis* is not stained by Gram's method.

10. *Bacillus pestis* is non-motile, with rounded ends, is about 1½ mikrons in length and a little more than half a mikron in breadth; it stains readily with all the anilin dyes, but not by Gram's method; it has no spores, is not encapsulated, non-flagellated, non-chromogenic, aërobic and optionally anaërobic, and is the specific pathogenic organism for bubonic plague.

"When cultures are made from the blood of softened contents of the buboes the bacillus may be obtained in pure culture."

11. Three pathogenic anaërobic bacteria that may be conveyed from the soil: Bacillus of tetanus, bacillus of malignant edema, and bacillus of symptomatic anthrax (black leg).

12. *Disinfection* is the process of destroying or removing pathogenic microorganisms.

A method of determining the strength of a fluid disinfectant: "To a measured quantity of a virulent bouillon culture of the test organism is added a given amount of the germicide. After varying lengths of time inoculations are made from this mixture into culture media, preferably bouillon, and note is made of the presence or absence of growth under suitable conditions of temperature and the like. The shortest exposure to the weakest solution of the substance necessary to kill the test organism is taken as the germicidal value of that substance for the particular organism used."—(Williams' *Bacteriology.*)

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OBSERVATIONS ON SOME CLINICAL FEATURES OF SCARLATINA.*

By HENRY W. BERG, M.D.,

NEW YORK.

ATTENDING PHYSICIAN TO THE WILLARD PARKER HOSPITAL; ASSOCIATE PHYSICIAN, MOUNT SINAI HOSPITAL; ASSOCIATE IN PEDIATRICS, COLUMBIA UNIVERSITY.

THE customary classification of scarlatina into severe, moderately severe, and mild cases, with hemorrhagic cases as a separate group, is obviously open to many objections. It is based on the more or less clinically vague and pathologically unessential criterion of severity. It therefore lacks conviction. I have substituted for it a classification useful for the purpose of grouping various clinical types of the disease and one which is based upon essential clinical characteristics.

Scarlatina is a generally toxic disease at the same time that it is an infectious one. This is obvious from the omnipresent lymphadenitis, from the universal involvement of the blood, and all the organs and tissues of the body, and from the fact that its complications include inflammations of all of the body structures. Whatever the causative organism, bacterial or protozoon, it is surely one that disseminates a toxin throughout the body. The classification I have adopted therefore is one based upon the degree of toxicity, an essential phenomenon of all cases.

This classification is

Scarlatina simplex—mild, severe.

Severe toxic scarlatina—non-hemorrhagic, hemorrhagic.

Scarlatina with mixed infections, or septic scarlatina.

Surgical scarlatina, if looked upon as really a scarlatina, would belong to the group of severe toxic scarlatina. I consider it a septic manifestation, and therefore not a scarlatina at all but simply general sepsis with an erythematous rash.

The essential clinical distinctions between these different groups of cases is based upon the fact that in the simple scarlatinas the emunctories of the body are able to get rid of the toxic materials produced as fast as the pathogenetic forces manufacture them, while in toxic scarlatina the body tissues are more or less inundated by the excess of toxic accumulations which the protective and extruding forces of the body have been unable to neutralize and expel. In other words, in this latter class of cases the toxic products are in excess of the powers of the body to neutralize.

When the clinical picture of the case shows in addition to the purely toxic phenomena the symptoms of infections with the pus-producing organisms such as the streptococcus, staphylococcus, etc., resulting in inflammatory complications of various organs and tissues, either in the beginning or in the course of the disease, we have a clinical entity so different from the purely toxic picture of the disease as to make a separate grouping clinically useful and hence the classification of septic scarlatinas.

All that I claim for such a grouping of scarlatinal cases is that it is not arbitrary but relies upon essential clinical and pathogenetic differences and is therefore convincing and useful in the logical consideration of the disease.

The eruption of scarlatina as such has many points of interest. As is well known, it is a red, punctate, erythematous rash, in ordinary, more or less severe, cases. It is sometimes very difficult to differentiate this rash from that of the toxic scarlatiniform erythemas, such as some of the serum rashes. One factor has been of great aid to me in the differentiation of these skin lesions, namely that the toxic scarlatiniform erythemas *lack uniformity*. In other words, the eruption of scarlatina is scarlatiniform throughout, while the toxic erythemas have here and there urticarial and morbiliform patches. One patch of urticaria in an otherwise scarlatiniform eruption will throw doubt upon a suspected scarlatina, and in the absence of other distinguishing but secondary features of scarlatina the diagnosis of toxic erythema will be warranted.

In the desquamative stage of the eruption the diagnosis of scarlatinal desquamation is readily made by one who has seen this characteristic desquamation. The desquamation of this disease, however, may be confounded with that of dermatitis exfoliativa or the pseudo-desquamation of some types of eczema. Never with that of measles, however, which is of much finer and branny character than that of scarlatina.

The differentiation of scarlatinal desquamation from that of the various types of desquamative dermatitis is readily made by remembering that the skin that has been recently spontaneously freed from the squama of scarlatina is soft and velvety to the touch, pink in color, and perfect in texture. In desquamating dermatitis, the skin underlying the squama, when exposed, is found rough and hard and in some of the conditions covered with a moist exudation. It certainly has not in these latter conditions the characters of perfect, new, infantile skin.

A few words as to the anginas of scarlatina. These fall naturally into three classes, the recognition of which is clinically and therapeutically useful.

1. Toxic angina, due to the toxic cause of scarlatina *per se* and present to a greater or less extent in every case of scarlatina.

2. Septic angina, due to the complicating influence of the pus organism upon the basic toxic angina.

3. Diphtheritic angina, due to complicating influ-

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ence of the Klebs-Loeffler bacillus upon the first and second group.

The cervical lymphadenitis accompanying each of these varieties of angina corresponds in character to the pathogenesis of the angina. Toxic cervical lymphadenitis is a manifestation to a greater or less extent of every case of scarlatina. The most marked adenitis is apt to be present in the septic cases—although severe toxic scarlatina is frequently accompanied by very extensive cervical adenitis. Extreme and painful enlargement of the glands underneath the sternocleidomastoids gives rise to pain in the lateral and anteposterior motions of the head. To prevent this the patient involuntarily holds the head rigid, thus simulating cervical rigidity and pseudo-opisthotonos, which must be differentiated from the similar symptom present in a complicating meningitis. The enormous glandular enlargement in some of these cases, together with the accompanying cellulitis in the deeper planes of the neck, occasionally compresses the jugular and other veins of the neck, thus interfering with the venous return from the head and even brain, and giving rise to cyanosis and edema of the face and neck and doubtlessly causing passive cerebral hyperemia, with brain symptoms simulating those of a complicating meningitis.

The clinician receives much aid from accurate graphic curves of the temperature and the rates of the pulse and respiration in a case of scarlet fever. The pyrexia curve particularly tells much not only of the severity of the infection, but the approximate day of the disease during the eruptive stage, as well as the presence of a complicating condition. In a moderately severe case there is a sudden rise of temperature in the beginning with the onset of the throat symptoms and vomiting, to the high average of the temperature during the whole fastigium. The height of the fastigium is maintained in an uncomplicated case during five days until the eruption begins to fade; then resolution by lysis sets in. The stage of lytical resolution in an uncomplicated case may take from three to ten days before the temperature reaches and maintains the normal. The pulse rate during the whole of this febrile stage varies directly as the temperature, so that the curves almost fit into each other.

The greatest importance of an accurate graphic record of the temperature curve, however, lies in the fact of the reliability of these characteristic curves in uncomplicated cases; so that in a general way any extensive rise or fall from the level maintained during the fastigium, or a rise interrupting the progressive lytical resolution indicates an intercurrent or complicating condition and is not to be looked upon as an essential part of the scarlatinal pyrexia.

Thus the graphic curve attached to the history of a scarlet fever case of considerable pyrexia coming under hospital care on the fourth day, for instance, will show on the second day after admission the beginning of resolution by lysis. The day when lysis begins can safely be taken as the fifth or sixth day, and thus we have a clue to the duration of the disease before coming under observation. A sudden rise during the lytical stage indicates to the physician the existence of a complication, for which he searches and sooner or later finds, if he is persistent and competent. Frequently the variety of the complication can be recognized by the character of the unusual curve, together with the changes in the pulse and respiration rate. Increase in rapidity of pulse and respiration, for example, with a somewhat septic fever curve might point to a bronchopneumonia; a suspension of the lytical temperature curve, with greatly increased pulse rate and only moderate increase in respiration frequently indicates a cardiac complication; an interruption of the stage of lysis by an increased fever curve of septic character, with a lower pulse rate than the height of the fever calls for, frequently indicates a meningitis or a meningismus attending an otitis media or mastoid.

An acute glomerular nephritis, too, will be characterized by a temperature above the figure normal to the stage of the disease in which it sets in together with a lower pulse rate than is called for by the temperature of the case.

One of the most important complications of scarlatina is undoubtedly nephritis. This is not anywhere near as frequent a complication of scarlatina in hospital practice as one would be led to expect from the frequency with which one sees it in consultation cases in private practice. This is probably due to two causes: First, patients are kept strictly in bed in the hospital until desquamation is almost complete; and, second, patients are kept on a fluid, mostly milk, diet, until the patients have well passed the stage of acute symptoms. These are the most important factors in the preventive therapy of the complications of scarlatina, and particularly nephritis. Dr. Sexton tells me that in 1910 and 1911 we treated at the Willard Parker Hospital 4,186 cases of scarlatina, 17 per cent. of which showed albumin in the urine, with only 90 cases of real nephritis; needless to say albumin in the urine of an infectious disease case does not mean that there is necessarily nephritis. Nevertheless when nephritis does occur it is an extremely interesting complication both from a therapeutic and prognostic standpoint. Most of the cases of scarlatinal nephritis occur during the stage of desquamation, or rather after the eruptive stage is entirely completed and preceding the desquamative stage. Very rarely, indeed, is post-scarlatinal nephritis seen to begin in the post-desquamative stage. When it occurs thus late its beginning has usually been overlooked or it is a nephritis complicating one of the complications of the scarlet fever.

The most severe types of real nephritis in scarlatina are cases in which the urine is *rapidly diminished in amount* after the beginning of the appearance of albumin—blood cells appear and increase in quantity; the urine becomes smoky and sometimes even dark red and almost black; occasionally clots are seen in the bottom of the vessel. There are but few casts at this stage of the nephritis; the sp. gr. of the urine is very high; the percentage of urea much diminished; the amount of urine voided is very small, sometimes terminating in complete anuria, lasting many hours and even days and threatening imminent death from uremia. In these cases there is pyrexia due to the nephritis, there is also a myocarditis with rapidly developing hypertrophy of the left ventricle and pulse of high tension. There is as a rule some *dropsy*, which becomes more or less general, and there is in almost every case more or less dyspnea. Pathologically these are in their beginning cases of glomerular nephritis, which causes all the clinical phenomena above referred to, even the anuria and the resulting acute uremia and death. Many, however, that recover as well as many that die develop the lesions of acute parenchymatous nephritis.

In many of these cases of glomerulonephritis which have developed under my observation there has been an acute and rapid incidence of the symptoms of the nephritis; albuminuria, hematuria, diminution of urine to anuria, fever and edema have rapidly increased; in a few days the case has changed from a convalescent to an extremely sick patient suffering from a possibly fatal condition; the symptoms reach a critical stage during which death may occur; or the character of the urine begins to improve. The albumin begins to diminish rapidly, larger amounts of urine are passed, there is less blood in the urine. The cerebral symptoms subside. If there have been convulsions they no longer recur, if there has been high temperature it resolves by a rapid lysis, a lysis more rapid than that of the scarlatinal temperature curve.

Those who have seen much of this type of glomerulonephritis will recognize the clinical picture I have drawn of these cases. The important point in connection with these cases is that once the improvement begins, it is apt to continue to recovery or go on to the production of chronic interstitial nephritis without acute symptoms, and the prognosis is changed from extremely grave to an absolutely good one as regards life. The point I wish to emphasize is the almost critical resolution of these cases, a crisis almost as evident as that of a lobar pneumonia.

The limited time given in such a discussion as that of this evening precludes any attempt at systematic consideration of clinical scarlatina, not to speak of its complications. The subject would require volumes. I do not apologize, therefore, for limiting my efforts to a few clinical observations from the scarlatina wards of more or less general interest. There are hundreds of points of this character that might profitably engage our attention. I stop only because of the time limit.

923 Madison Avenue

CREOSOTE AND CALCIUM MEDICATION IN RESPIRATORY AFFECTIONS IN CHILDREN AND IN PULMONARY TUBERCULOSIS.

RUSSELL'S GENERALIZATIONS IN TUBERCULOSIS.

By IRA VAN GIESON, M.D.,

AND

H. L. LYNAH, M.D.,

NEW YORK

This paper consists of two parts. One part done conjointly relates to some observations on the use of an old remedy in a modified form in the respiratory affections in a number of children with measles. Another part by the senior author contains the results of the use of creosote in experimental tuberculosis with some elementary considerations on the subject of calcium medication and lime assimilation in tuberculosis, especially pulmonary tuberculosis. This latter consideration was prompted by a study of the investigations of John F. Russell and association with him in his clinics for the study and treatment of pulmonary tuberculosis.

Were it not for complications, and foremost among them disturbances of the respiratory tract, measles would be a comparatively mild and harmless disease. For in this most widely spread of all infectious diseases where susceptibility is all but universal, and natural immunity almost nil, the toxemia rarely causes death. The exceptions are the malignant and hemorrhagic types, which fortunately are rare. Here the disease is fatal for and by itself.

The formidable factor in measles is bronchitis and bronchopneumonia. Colitis and nephritis are indeed complicating factors, but far less serious than the bronchitis and patchy pneumonia. Some observers, and especially Henoch, go so far as to state that in every fatal case of measles patches of pneumonia can always be demonstrated. This is tantamount to saying that the thing which kills in measles is this respiratory complication.

Along with the bronchopneumonia, as an accompaniment, perhaps as a forerunner leading up to or extending into it, is the coryza, catarrh, or inflammation of the larynx, trachea, larger and smaller bronchi. It seems as if the coryza in measles were the starting ground of the pulmonary disaster. And it seems as though, speaking loosely perhaps, an inflammatory or catarrhal process creeps down directly from the coryzal territory through larynx and trachea and finally extends to the alveoli and lung.

If the coryza, then, is the point of departure for the respiratory complications, the frequency of the bronchopneumonia is not at all strange, for nearly every patient has the coryza as one of the characteristic signs. Naturally the pulmonary complications are invited by children who are not vigorous before the onset of measles. And it is to be expected more in children in asylums and hospitals than in those who are robust and well cared for.

The value of controlling and even anticipating this disaster in measles is obvious. We have had some little first hand experience with large numbers of children with measles in the Willard Park Hospital and are familiar with these respiratory complications, their onset, frequency, extension, and their havoc. To combat them is of paramount importance and our purpose is to relate some experiences in handling, and as we believe in some measure in controlling, these complications. For we think we have found out something of value to those who are concerned with the treatment of the respiratory affections of children and in adults as well.

Inflammation of the larynx in measles is heralded by hoarseness and croupy cough. Loss of voice may also occur and symptoms of obstruction may be so pronounced as to simulate laryngeal diphtheria. Severe laryngeal inflammation is a menacing complication and second only to pneumonia as a fatal issue. The bronchopneumonia, bronchiolitis, and accompanying bronchitis have their customary signs and symptoms. Among them are inspiratory rib depression, shallow breathing with high diaphragm, rapid weak pulse, cough, dyspnea, and cyanosis. Any untoward elevation of the temperature should lead to the suspicion of bronchopneumonia.

Now there is nothing new in the treatment of bronchitis and lung affections with creosote, nor in its application to children. But there is something new and valuable, we think, in the use of creosote freed from its toxic and irritating elements. Every one knows that the drawback of creosote is primarily its interference with digestion and its irritating effect upon the stomach, and that this too often counterbalances the good of this really valuable drug. Albuminuria and hemoglobinuria may also occur after large and continuous doses of creosote. These contraindications it seems may be due to a certain element in the composition of creosote which adds nothing to its value but on the contrary

is responsible for the irritating and toxic properties. Among pharmaceutical chemists this creosote problem has been one of long standing and various methods have been tried in its solution.

To accomplish the problem of a bland and yet efficient creosote it has been split up into various component parts. For instance, the guaiacol, cresol, and creosotal groups. It is questionable whether this has solved the problem, for these preparations are not wholly free from the toxic or irritating properties nor do they give the whole virtue or equivalent of the composite drug iself. The children could as well retain or tolerate these preparations, at least when administered so as to give the pretended equivalent of creosote, as in an emulsion of refined creosote with lime salts. And then there are also other preparations of this drug which solve the problem in a very simple way: the creosote is so diluted that its irritating effects are done away with—and also most of its remedial value.

The deleterious agents in creosote it appears are certain triatomic acid radicles. These radicles are first eliminated by careful fractional distillation before emulsifying and mixing with lime salts in the form of calcium hypophosphite. Thus there is no loss of the active principles of medical value in the creosote, but there has been eliminated its notorious drawback. And our opinion, now unchanged, in the perspective of three years in the treatment of these children, is that a bland creosote may be obtained, yet fully active and which can be taken abundantly and persistently with no harm or interference with stomach and kidney. "Pure" beechwood creosote may be pure and uniform as a product of the destructive distillation of the wood, but is far from pure as a medicinal agent.

The globules of the calcium creosote emulsion which looks very much like milk, are about one-third the diameter of red blood cells. And when the emulsion is mixed with human red blood cells there is no immediate hemolysis or laking. The lime creosote mixture is stable and the globules do not coalesce, nor is it likely that they unite in the stomach, which must be the case to some extent at any rate, when "pure" raw creosote is prescribed, shaken in milk or whiskey, or with eggs, and which, in part, is very likely responsible for the gastric irritation.

A summary of some fifty cases of measles treated with creosote and lime salts follows. A rather striking point in this is the tolerance of the drug by the children. Of course, as with any other drug, idiosyncrasy and individual sensitiveness may be met with here and there.

After these observations in the administration of creosote in the respiratory affections in children in measles, the treatment of creosote in tuberculosis was undertaken during the following year in experimentally tuberculous animals. This in turn during the succeeding time led up to the problem of the rationale of calcium medication combined with creosote. And this again intruded the very large, complex, and urgently important consideration—as it seems to us—of lime starvation as the essential cause of tuberculosis as presented in the work of Russell. So in being led into the study of a creosote calcium compound in the province of tuberculosis and thence in being brought to the endeavor of considering the problem of lime assimilation versus lime medication in tuberculosis, the investigation ran out of its original bounds.

Originally the problem of treating respiratory complications in children with creosote and calcium seemed attractive because the tolerance of the drug made the administration of large and continuous doses possible in accessible patients at the Board of Health Hospitals. In the extension of the investigation undertaken by one of us especially, the evidence of lime starvation as the main or essential cause of tuberculosis was verified clinically in the treatment of pulmonary tuberculosis by lime assimilation in Russell's clinics and experimentally in the cantrast of lime-starved and lime-fed dogs inoculated with tubercle bacilli.

We are limited in this consideration of Russell's generalization that lime starvation is an essential and determining cause of tuberculosis to the briefest generic statements and considerations. This may sound arbitrary without a full discussion of the evidence or verification in the treatment of tuberculosis. As a matter of fact, we have abundant evidence both inductive and deductive which may be given in detail later.

After nearly two years devoted to the testing of the validity not only by personal clinical verification but by seemingly unimpeachable laboratory experiments I (Van Gieson) respectfully and very earnestly commend this generalization of Russell to the attention of every thoughtful physician who is concerned with tuberculosis as a great problem of humanity or has the particular welfare of the consumptive at heart. Russell's generalization is that lime starvation is the essential cause of tuberculosis, and as a corallary, the remedy is restitution of lime poverty by lime assimilation. This is coincident with restitution and healing of the disease and a reversal of the steps of its process. This puts the control and treatment of tuberculosis within the grasp of a definite scientific principle.

In passing over this portion of the study relating to tuberculosis beyond the briefest summary we may consi ler the experimental test of creosote administered in tuberculous animals—rabbits and guinea pigs. The test was quite extensive and was carried over a considerable period of time. The results are not encouraging. The treated animals fared neither better nor worse than the untreated control animals inoculated with the same quantities of the same bovine and humna tubercle bacillus cultures under precisely the same conditions. Nor were there any appreciable changes in the character of the lesions in the two contrasted sets of animals. The tuberculous process and involvement went on quite heedless of the relatively enormous and continuous doses of creosote administered intravenously and intraperitoneally.

The reputation of creosote in pulmonary tuberculosis, it would appear, rests on its operation through secondary channels and by-ways; the control of cough and bronchitis, and apparently the hindering of the purulent character of the sputum and perhaps the palliation also of the secondary infections. To this may be added the favorable effect in antiseptic and contra-fermentative condition of the intestinal tract. This is indeed accomplishing a good deal. And in certain benign types of pulmonary tuberculosis—nearly fifty per cent. of the overt cases—which tend to recover or progress so slowly that the disease is not much of a burden, the administration of creosote, when tolerated, leaves little of which to complain. But the experimental test of creosote forces one to be skeptical as to whether the drug really strikes at the main root and issue of the disease. Indeed this is only stating with the gravity of rather elaborate laboratory backing—

somewhat the fashion of the day—what we were quite well aware of all the time. How can creosote administration correct lime starvation?

The animal experiments in the administration of refined creosote are quite interesting in the rather extraordinary confirmation of the solution of the problem of obtaining a tolerant form of the drug. The peritoneal cavity of the guinea pig, as is well known, is an exceedingly sensitive test for toxic or irritating agents. It is said that even a full injection of salt solution, if it fails to be perfectly isotonic, will produce redness and irritation. Hence it was rather surprising that pigs by the dozen could be given intraperitoneal injections of 5 c.c., the equivalent of three minims of creosote every other day, apparently indefinitely. At least I treated pigs in this manner for six and eight weeks, and with never any accident except in one or two cases of pregnancy in which, apparently, trauma of the needle was responsible for peritonitis. This is an enormous dose for these small animals weighing but three to four hundred grams and some of them were riddled with tuberculosis besides. The pigs excreted the creosote so actively that their cages were redolent with it.

I then gave intravenous injections, 5 c.c. of the undiluted creosote calcium emulsion in rabbits inoculated with tubercle bacilli, quite prepared to see the animals die. Now and then the rabbits lay down on their sides after the injection or sprawled out on the floor with rapid tumultuous heart action and flabby muscles. But in five minutes or so these animals would go back to their carrots as if nothing had disturbed them. Subsequently it appeared that this was brought about by giving the injection too rapidly. If the emulsion was warmed to 102°, and given slowly, one c.c. in two minutes, or thereabouts, the reaction was quite insignificant. One rabbit received some thirty of these injections, each equal to three minims of creosote, twice a week. Other rabbits received alternate venous and subcutaneous injections of 5 c.c., the latter never producing any ill effects.

This is also an enormous dose for these animals. The equivalent of it in an adult human being would at least be *a whole drachm* of *creosote*. These animals seemed reeking and saturated with the drug and freely excreted it in urine and feces. And yet on autopsy, none of these rabbits, even after protracted treatment, ever showed any lesions in general, or evidences of cirrhosis of liver or kidney in particular, ascribable to the creosote. One rabbit did show a very outspoken grade of cirrhosis of the liver, but as this was the only exception, it seemed quite proper to regard this as an example of cirrhosis found occasionally in rabbits naturally, perhaps from coccidiosis.

From these results I felt justified in considering the propriety of administering creosote in human beings not only internally but hypodermatically and intravenously as well. But it appears that animal experiments of this kind do not always afford certain prophesies or guarantees that like efforts can be produced under similar conditions in man. Hypodermatic injections were given twice a week in six cases of pulmonary tuberculosis. And while quick results and immediate improvement as a result of medication in tuberculosis are too often a delusion and an expression of enthusiasm on the part of both physician and patient, these patients, if only transiently, did show improvement in hacking cough, sleep, and general condition. The injections were, however, painful. At the fifth or sixth injection the whole set of patients developed superficial and benign abscesses, readily healing, but terminating the treatment.

This seemed strange. If the intraperitoneal injections caused no trouble in pigs, why should these small abscesses arise? It would seem that the emulsion in the peritoneum, spread over a large surface, was so rapidly distributed and absorbed, that there was no time to irritate or disturb the cells. The slow rate of absorption, however, subcutaneously and perhaps distention of the tissues kept the creosote globules in contact with the cells a longer time and brought about the suppuration. But, if this were the case, why did this not occur in the very first injection, instead of the fifth or sixth. Errors in technique can be eliminated, for the injections were given very carefully. Perhaps intramuscular injection would have been successful, but after this experience I did not dare try them. I have not entirely abandoned the question of subcutaneous injections after some further modification of this preparation.

Calculating the equivalent of the 5 c.c. injected in the rabbits on the basis of the comparative amounts of blood in the animal and man, a man weighing 130 to 150 pounds might take intravenously 140 to 160 c.c., some 60 to 90 minims of creosote. To be on the safe side and feel the way cautiously, 25 c.c. diluted with equal volume of .9 per cent. salt solution were given intravenously in a case of pulmonary consumption, in good condition, and apparently limited lesions at left lung apex, with no bad effects. In two other cases, however, the results of the injections were disconcerting.

These two cases, however, were very sick men; they had very extensive pulmonary involvement and dyspnea on the slightest exertion. Both cases exhibited after the injection of 25 c.c. at the rate of about two c.c. a minute, attacks of vomiting, rapid weak pulse, cold damp integument and some signs of collapse, which disappeared after administration of cardiac stimulants. It seems quite probable that the ill results in these two last cases were due to too great a concentration of the preparation and if, say 25 c.c. were diluted with 150 c.c. of physiological salt solution, given slowly and at the proper temperature there would be few, if any, disturbing results in cases of only moderate severity. Indeed, in conjunction with my friend, Dr. Carlin Philips, of Bellevue Hospital, I was prepared to give such diluted injections in a case of acute miliary tuberculosis (confirmed by autopsy) but the woman's veins were so deeply buried that it was out of the question.

These observations on the intravenous injections in man are not given with any idea of furnishing any results in the treatment of tuberculosis. These were merely trials to see if the injections could be given and tolerated. Whether, if they were given systematically and continuously in suitable cases the effect would have been beneficial, has not been determined. It might be worth trying.

We may now continue with the consideration of the calcium medication in experimental tuberculosis, since this creosote mixture contains a calcium salt as an integral part of its combination. Again the administration both intravenously and intraperitoneally every other day for weeks at a time in some twenty tuberculous guinea pigs and rabbits had no appreciable effect on the course of the tuberculosis nor in the character of the lesions. The calcium

medicated animals died just the same as their control and untreated companions. Nor did it appear that the treated animals were kept alive any longer than the controls.

Now let us contrast lime medication with lime assimilation in tuberculosis. The evidence of lime starvation in tuberculosis and its correction by lime assimilation is drawn from two sources.

The first source is clinical verification of lime starvation in human beings in their recovery from pulmonary tuberculosis ensured by lime assimilation. The second evidential ground is furnished by animal experiment in contrasting the factor of lime starvation artificially reproduced and reversed in their effects on the tubercular process. Let us take up the inductive evidence of experiment first. It is startling in its unequivocal precision and straightforwardness. In a word the experiment seems crucial.

Lime starved dogs, although given every other natural element of nutrition have their natural resistance and refractoriness to tuberculosis utterly swept away and die of the miliary type, some five or six weeks after the intravenous inoculation of two milligrams of bovine tubercle baccilli. But companion dogs given back their lime nutrition ten days after this inoculation doubled their weight and when killed fifty days later had arrested their miliary tubercles and were nearly barren of bacilli, whereas the continuously lime starved tuberculous dogs were literally teeming with them. Under the microscope the continuously lime-starved dog showed in the liver, for instance (which was involved by at least its own volume of tubercles) the ordinary mainly cheesy unarrested tubercle with its encircling zone of granulation tissue like cells. But in the companion dog, returned to his lime-containing food, although equally involved by the tubercles quantitatively, their quality and structure were altogether different and undergoing a different course of events—arrest, circumscription, and connective tissue retrogression. In this dog the tubercles were shrunken, their caseous masses had largely disappeared and they had spectacularly prominent walls of young fibroblasts and connective tissue.

Moreover, guinea pigs inoculated with the material of the arrested tuberculous dog showed an exceptional behavior. Bovine tubercle bacilli, although they may lose virulence in culture, are, provided their numbers are sufficient, uniformly fatal to the guinea pig when planted directly out of tissues. But these pigs are still alive, six months after the inoculation, and such of them as have been killed show a benign and healing type of tuberculosis. What happened here?

Not only did the dog with the return of lime assimilation dispose of myriads of bacilli, but it appears as if he managed to so modify the remainder that they were unable to work their customary havoc in the inoculated guinea pigs. The diminution of virulence of bacilli in their environment on artificial culture media is familiar, but a similar transformation in the living tissues as in this puppy is truly remarkable and a most significant commentary on and substantiation of competent calcium nutrition in tuberculosis. The nature of this transformation in the bacillus seems worthy of inquiry. Indeed after some years of study, so as to learn how to approach this inquiry, I hope to take part in its solution, for it involves the question of the ancestry and pedigree of the tubercle bacillus. Finally, scrutinizing the whole experiment from various angles of self-criticism it is difficult to escape the conviction that lime starvation and lime assimilation are the real issues behind the masks of vulnerability and resistance in tuberculosis.

The second domain of evidence in the verification of the calcium nutrition generalization from the clinical study and reversal of the primary phenomena of tuberculosis by its treatment and remedy in lime assimilation is unnecessary to review here. That is already on record in the study of Dr. Russell, a rare model, as I venture to think, of real scientific achievement and intellectual prowess in the larger domains of medicine. Even empiricism which through the centuries has built up a great and durable knowledge in medicine, especially in therapy, utterly failed to strike at the real issue of tuberculosis.

By the restitution of defective lime assimilation in the simple addition of hydrochloric acid to milk and egg, so that rennet activation may insure the nutritive intake of calcium in its casein or albumin combination Russell obtains 65 per cent. of arrest and healing of pulmonary tuberculosis. This refers to cases which have not as yet reached their procrustean beds. I have watched this treatment in his cases faithfully for nearly a year. In the course of the treatment an exudation makes its appearance with definite physical signs in one area or another of the lung, determined, it would seem, by the preponderance of the lesions. This exudate then retreats, undergoes resolution, and presumably walls off and encapsulates the lesions.

Moreover in private practice and independently I have again tested and applied this treatment, the corollary of the lime metabolism generalization. And I have watched this same thing happen. Under the systematic continued and persistent regime of calcium assimilation I have seen a number of my patients improve, undergo this exudation or partial consolidation in the lung, which then resolving would appear to contribute to the walling off and closing of the lesions. Hand in hand with this course of events the sputum clears up of tubercle bacilli which finally disappear and the patients are discharged with healed pulmonary tuberculosis. *In the face of this evidence, studied directly and conscientiously, I can no longer hesitate to believe that the great natural healing process in tuberculosis which rescues eight or nine-tenths of mankind, can be imitated and placed under human control under the guidance of a definite scientific principle.*

The beneficence and importance of this measure to the consumptive are too obvious, or at least they ought to be, to need elaborate commentaries.

Thus the contrast of calcium medication and lime assimilation in tuberculous animals is unequivocal and striking. In the one case we find no appreciable deterrent effects on the progress of the disease, while in the other disappearance of bacilli, arrest and retrogression of the lesions result. So it is also in the treatment and course of tuberculosis, especially pulmonary, in human beings. Empiricism has been on the verge of stumbling on the real cause of tuberculosis for a hundred years but it failed by being caught in the pitfall that lime medication could accomplish lime assimilation.

It is proper criticism to say that, having tried only one calcium salt—the hypophophite—it is precarious to make the general statement that all calcium salts are inefficient in supplying the want of lime nutrition. But there is another way of at least

getting at the probabilities of this generic inference, and this is by reasoning rather than undertaking the appalling amount of sheer laboratory work of testing the great array of all the calcium salts in their various combinations.

For in the first place all sorts of calcium medication from powdered bones to lime dust inhalations have already been tried in the rather blind and empirical attempts to find a remedy. In the second place, as we shall presently see, the notion of presenting the organism with crude lime to reduplicate the steps of the evolutionary formula of lime nutrition is rather naive.

What is the rationale of lime assimilation to which the analysis of this creosote calcium compound has finally led us? This is the essence of the whole generalization. It appears that evolution through all these thousands of years in the development of the mammalia has worked out the adaptation of lime nutrition in a particular fashion and with a nice adjustment. The foundation and starting point of this adjustment lies in the elaboration of our main and cardinal lime bearing food—milk and, after this, eggs.

In the mammalia it appears that to take integral part in cell function to give cells their capacity of repair, their full complement of nutrition, to contribute to what we call their vitality and vigor, lime must pass to the cells as a food supply. First of all the calcium must be in combination with casein, as in milk or some equivalent of casein, and then this combination must be acted upon in the stomach by rennet. In many of the mammals, the ungulates, for instance, the rennet is free and the formula is simplified. But in the highest of the mammalia, the carnivora, and men, another factor enters into the calcium-casein-rennet equation and this is the activation of the rennet by the secretion of hydrochloric acid or through the additional and compensatory activation by ingestion of acid food.

How insidious, then, may be the cultivation or habit of lime poverty? How well forty years ago the great clinicians insisted that the tuberculosis was ushered in by a "constitutional habit." For any interference with the sequence or combination of circumstances, as for instance insufficient hydrochloric acid or insufficient acid food to activate the rennet, disturbs the nutritive operation, upsets its delicacy of adjustment, and brings about one degree or another of lime starvation. It may be noteworthy to observe that the administration of calcium salts is a long way off from giving so much as a counterfeit of this formula, and the artificial and synthetic reduplication of this calcium-casein-rennet equation seems at present at least nowhere in sight.

The main and explicit types of lime starvation, of lime poverty, are scurvy, rickets and tuberculosis. How many other more subtly concealed maladies for which lime dearth is mainly or in part responsible remains to be seen under the acknowledgment and guidance of this generalization. In the case of tuberculosis it is more accurate to state that it is a form of lime starvation plus the tubercle bacillus.

Thus some eighty per cent. of humanity with its competent lime assimilation overcomes tubercle bacillus infection without as much trouble as cutting a wisdom tooth. Thus also evolution wipes out another fraction of humanity—unhappily their numbers are grievously large—unable to cope with the infection in their lime weakness. This process seems ruthless. In the end it is beneficent and imperative for the progress and fitness of the human race. Be sure of one thing: evolution will never bring any species down to the level of its unfit. It means extermination. So if man is to abide and persist, lime competency is one Shibboleth before which the unfit must go to the wall. Tuberculosis makes off with most of them.

The present selective process in the evolution of man is through the gauntlet of disease processes. Is it untimely to ask whether many of them are not self engendered, the inevitable consequence of our organization instead of the facile summing up and labeling of them with extrinsic causes?

Please do not misunderstand my position of calcium medication and lime nutrition. I do not exclude the possibility of some nutritive lime in-take in medication. On the contrary, I feel that there is something about the conjunction of this creosote and calcium combination not attained by either factor alone. It is probable that some of this lime medication does make its way, in a roundabout and indirect way to cellular nutritive anabolism. But in so doing it must obey the generalization, which can happen as follows: So important does this rennet seem for integrity of our organization, depending on lime assimilation, that compensatory rennet in small amounts and traces is found in the blood, and generally distributed throughout the body. Now, then, should the lime medication meet with some albumin in the body juices—some equivalent of casein and its congenors—and this in turn be acted upon by the free tissue rennet—the carrier as it were of lime for cellular intake—the lime assimilation formula could be followed and fulfilled.

What I do feel justified in saying, is that however valuable and commendable either creosote or calcium medication or both may be in the secondary phenomena of tuberculosis they do not and cannot hit the main track and trail of the disease process. And furthermore lime medication is only a poor Dromio and a feeble imitation of lime assimilation.

It is now in order to return to the first part of the paper—the observations in the treatment of the children.

We have the bedside notes of these entire fifty cases, but for brevity they are best given in tabular form. A few representative cases, however, may be given in summary. The cases have been divided into mild and severe types, referring not only to the character of the primary disease in general, but to the extent and degree of the respiratory tract symptoms in particular.

These children were as a rule, three years old or thereabouts and were given half-drachm or drachm doses (which is the equivalent of one or two minims of creosote) in milk, every two or three hours, beginning the first 24 or 48 hours appearance of cough or other respiratory tract symptoms. After this, the drug was administered according to need as indicated by the course of the symptoms. Were we now to undertake similar treatment in a new group of children, we should not wait for hints from the respiratory tract. We should be disposed to give the drug anyhow as a matter of routine. For it does no harm and may forestall these complications, or at least temper and mitigate their severity. We should also add dilute hydrochloric acid to the milk, the cardinal lime-bearing food, containing the creosote mixture activating the rennet to ensure lime assimilation restitution, offset by the fever and infection, and thereby apprehend the danger of tuberculous infection, or its outcropping, which is notorious after measles. The addition of dilute hydro-

Case	Name	Age Years	Admitted	Character of Disease	Complications	Marked Improvement	Discharged	General Remarks
1	Joseph P.	2	March 5, 1908	Mild	Severe cough. Coryza. Bronchitis	On third day	Four weeks later	Prolonged desquamation.
2	May Z.	3	April 25, 1908	Mild	None	After second day	Date omitted	Little or no cough until discharged.
3	Regina McC.	3	April 25, 1908	Mild	Severe cough. Card. sympt.	On 7th day	Date omitted	Cough ceased on 15th day.
4	Martin F.	2	June 12, 1908	Severe	Bronchopneumonia	On 4th day	Died June 21, 1908	Cough improved under treatment.
5	Annie F.	5	May 15, 1908	Severe	Severe croupy cough. Marked Laryngitis	On 8th day	June 21, 1908	On 14th day cough disappeared.
6	Sadie L.	4	May 25, 1908	Mild	Severe cough. Cardiac sympt.	On 7th day	July 4, 1908	On 10th day cough disappeared.
7	Sam R.	4	June 13, 1908	Mild	Double otitis media	On 7th day	July 11, 1908	
8	David F.	3½	May 28, 1908	Mild	Cardiac sympt. and bronchitis	On 4th day	July 7, 1908	On 8th day cough disappeared. Prolonged desquamation
9	Bennie B.	3	May 18, 1908	Severe	Marked bronchitis, double otitis media, slight dilatation and irregularity of heart	On 10th day	July 5, 1908	
10	Tillie S.	3	May 17, 1908	Mild	Moderate bronchitis and laryngitis, double otitis and prolonged vaginitis	On 7th day	July 11, 1908	
11	Ruth J.	3	May 20, 1908	Severe	Acute laryngitis, vaginitis of measles	On 6th day		Markedly croupy cough. May 25, May 28 patient very comfortable.
12	Jacob G.	7	May 15, 1908	Mild	Slight bronchitis and cough.	At once	July 12, 1908	Treatment discontinued on 3d day. Prolonged desquamation from scarlet fever.
13	Lillie D.	3	April 21, 1908	Severe	Marked bronchitis and laryngitis with croupy cough, bronchopneumonia, double otitis, vaginitis		June 14, 1908	Creosote with hypophosphite given in this case for 15 days in succession.
14	Sarah E.	4½	May 17, 1908	Severe	Cardiac sympt., vaginitis and suppurating glands following scarlet fever	On 7th day	July 12, 1908	Severe cough ceased on 3d day. Treatment discontinued.
15	Agnes DeC.	2	May 19, 1908	Mild		At once	June 14, 1908	Remedy lessened cough during lung involvement. Possibly hindering development of empyema.
16	Herbert H.	3	March 20, 1908	Very severe	Marked laryngitis with croup. Bronchopneumonia developed later	On 10th day	June 7, 1908	
17	Joseph K.	6	March 25, 1908	Severe	Pneumonia at the outset	April 8, 1908, 3 days later cough no longer troublesome	June 6, 1908	
18	George B.	4	March 10, 1908	Severe	Severe cough, coryza bronchitis and all cardinal symptoms. April 22, bronchopneumonia	In 48 hours	April 20, 1908	B. P., developed left lung March 22. Again C. H. q. 2 h. Slight colitis P. resolving March 3d. No vomiting on taking C. H., was kept up for 10 days.
19	Luke G.	4	Feby. 11, 1908	Mild	Koplik spots, sl. bronchitis and cough. Card. sympt.	Immediate	March 6, 1908	
20	Meta G.	7	June 22, 1908	Severe	Marked eruption w. coryza and bronchitis, marked laryngitis croupy cough	On 8th day	July 30, 1908	B. P. developed July 4. July 17 P. resolving. No ill effects from creosote with hypophosphites.
21	Isidor M.	3	March 8, 1908	Severe	Marked bronchitis and laryngitis. Croupy cough. Breathing with difficulty	On 4th day cough ceased	March 20, 1908	
22	Robert H.	9	May 17, 1908	Severe	Diffuse bronchitis, marked laryngitis	In 24 hours	June 23, 1908	Sibilant and sonorous rales.
23	May S.	5	July 5, 1908	Severe	Marked coryza, diffuse bronchitis and laryngitis	In 48 hours	July 25, 1908	July 7 child resting quietly.
24	Dorothy O.	9	June 11, 1908	Severe	Severe eruption, diffuse bronchitis and laryngitis. Cough severe	In 48 hours	July 16, 1908	In 72 hours cough disappeared entirely.
25	Sadie P.	4½	May 16, 1908	Mild	Slight bronchitis and laryngitis, eruption and well marked conjunctivitis	In 24 hours	June 22, 1908	Cough entirely disappeared in 24 hours.
26	Joseph G.	7	May 15, 1908	Mild	Slight bronchitis and Laryngitis	In 24 hours	July 12, 1908	Cough entirely disappeared in 24 hours.
27	William C.	1½	May 18, 1908	Severe	Bronchitis and laryngitis	In 36 hours	Died June 26	May 25, bronchopneumonia left lung, spread although cough was eased.
28	Lora L.	3	March 25, 1908	Severe	Bronchitis, laryngitis, coryza and conjunctivitis	In 48 hours	April 26, 1908	
29	Marion B.	3	Jan'ry 8, 1908	Severe	Bronchitis, coryza, conjunctivitis, laryngitis, croup	In 48 hours	May 25, 1908	Severe attack. Marked cardinal symptoms. March 18 operated on for mastoiditis. March 28, erysipelas of face.
30	Morris R.	12	Feb'ry 26, 1908	Mild		In 48 hours	Omitted date	
31	Jerry H.	8	April 10, 1908	Severe	Marked bronchitis, laryngitis, coryza and conjunctivitis	In 24 hours	May 8, 1908	Some difficulty in breathing. Face markedly swollen.
32	Ruth M.	3	May 13, 1908	Mild	Moderate bronchitis and laryngitis	Cough disappeared in 2 days	June 14, 1908	
33	Pauline S.	4	May 16, 1908	Severe	Marked bronchitis, laryngitis, coryza and conjunctivitis	In 48 hours Cough ceased on 7th day	Died June 9, 1908	May 28, Mastoiditis. June 2, sinus thrombosis, operated, metastatic abscesses knees and elbow joints.
34	Sadie S.	4	May 28, 1908	Severe	Severe cough, frequent prior to eruption, upon appearance of which it becomes worse	In 48 hours	July 4, 1908	
35	Julia C.	3	June 9, 1908	Severe	All symptoms aggravated Cough severe and troublesome	After 3 days almost entirely disappeared	July 16, 1908	
36	Sadie S.	3½	June 28, 1908	Severe	Bronchitis and frequent troublesome cough	In 48 hours	July 16, 1908	No colitis. No gastric disturbance.
37	Sam T.	2½	May 15, 1908	Severe	Severe bronchitis, very troublesome cough	In 24 hours Only slight cough after 48 hours	June 14, 1908	No gastric disturbance.
38	George H.	6	June 28, 1908	Mild	Slight catarrh and cough	Cough disappeared in 24 hours	July 4, 1908	

chloric acid does not interfere with the lime creosote emulsion. Among the twenty mild cases the following may serve as examples:

CASE I.—Joseph P. Age 2 years. Admitted March 3, 1908. Classical case of measles. Rather severe cough. Coryza. Bronchitis. Creosote and

Case	Name	Age	Admitted	Character of Disease	Condition	Marked Improvement	Discharged	General Remarks
39	Martin C.	1½	May 6, 1908	Severe	Well-marked [illegible] symptoms [illegible]	In 24 hours. Treatment continued. In 48 hours cough less troublesome and treatment continued 4 days longer.	Died May 29, 1908	May 15 bronchopneumonia set in with high temperature and severe coughing spells. C. H. 5m. 2 h. given, but in spite of that there was rapid involvement of the pleura with empyema. Patient developed sepsis and died May 29, 1908.
40	Alfreda O.	33	May 20, 1908	Mild.	Diffuse [illegible] laryngitis	In 48 hours. Cough disappeared 3 after days.	June 18, 1908	
41	Samuel A.	3	May 26, 1908	Severe	Severe laryngitis and catarrhal symptoms. Cough troublesome	In 48 hours. After 6 days cough entirely disappeared	June 20, 1908	
42	Walter C.	10	June 2, 1908	Mild.	Slight catarrhal symptoms and cough	Cough disappeared in 48 hours.	June 30, 1908	
43	Esther F.	2	June 4, 1908	Mild	Marked cough	In 4 days	July 16, 1908	Child comfortable from 4th day of admission. Restful nights. No laryngeal trouble, no vomiting.
44	Sam Z.	2	June 12, 1908	Severe	Severe croupy cough, bronchopneumonia, double otitis, colitis		July 16, 1908	Bronchopneumonia developed at end of first week.
45†	Isi B.	3	May 31, 1908	Severe	Severe cough and coryza	Died		July 10, developed bilateral bronchopneumonia with consolidation of entire left lung. Erysipelas developed. Case transferred to isolation ward. [illegible]
46	Paul R.	3½	June 23, 1908	Severe.	Marked bronchitis and croupy cough. Stenosis of the larynx. Hemorrhagic measles	After 5 days.	July 16, 1908	No disturbance of alimentary tract.
47	Barbara S.	4	May 15, 1908	Severe.	Severe cough, complicating otitis media	After 15 days cough disappeared.	Date omitted	
48	Dorothy O.	9	June 11, 1908	Severe	Severe cough. Bronchitis.	After 4 days 11 days later cough disappeared.	Date omitted	
49	Lauretta M.	4	June 20, 1908	Severe.	Severe cough and bronchitis	Cough ceased on 18th day.	Date omitted	June 24, bronchopneumonia left upper lobe. Dyspnea of pneumonia.
50	Abe Z.	2½	June 1, 1908	Mild.	Diffuse bronchitis and marked cough.		July 15, 1908	
51	Julius C.	3	June 6, 1908	Severe.	Marked bronchitis and cough with bronchopneumonia and colitis		July 16, 1908	
52	Michael B.	2	Jan'ry 1, 1908	Severe.	Diphtheria, intubation, pronounced symptoms of complicating bronchopneumonia		July 16, 1908	On extubation patient continued for short intervals with slight coughing spells. C. H. administered for 40 days. Gradual improvement and disappearance of cough.

Hypophosphites, drachm one every 2 hours. Cough improved after three days' treatment. Case discharged four weeks later after prolonged desquamation.

Case II.—Mary L. Age 3 years. Admitted April 25, 1908. All cardinal symptoms of measles. Cough improved after second day of treatment with the creosote and patient remained comfortable with little or no cough up to the time of discharge.

Case III.—Ruth McC. Age 3. Admitted May 13, 1908. All characteristic symptoms of measles. Cough rather severe and persistent. After seven days of the creosote administration cough improved, insignificant at the fifteenth day, and then ceased entirely.

Case XIX.—Lucie G. Age 4. Admitted Feb. 11, 1908. Koplik spots. All cardinal symptoms of measles. Cough. Bronchitis. Half drachm calcium creosote every two hours. Cough much improved in 48 hours, and held in check during the height of the disease. No complications. Discharged Mar. 6, 1908.

Case XLIII.—Esther F. Age 2. Admitted June 4, 1908. Measles. Marked cough on admission. Improvement in 4 days after creosote and hypophosphite administration; half teaspoonful every 2 hours. Child comfortable after that period. Bowels regular. Restful nights. No tendency toward any laryngeal trouble. No vomiting. Creosote administration kept up off and on for 25 days with no gastric disturbance. Discharged July 16, 1908.

Case XL.—Alfreda O. Age 33 years. Admitted May 20, 1908. Fairly severe attack of measles with diffuse laryngitis and bronchitis. Creosote lime emulsion one drachm every two hours. Improved cough in 48 hours. In three days' further treatment cough had disappeared. Discharged June 19, 1908.

Case V.—Annie F. Age 8 years. Admitted May 15, 1908. All cardinal symptoms. Severe cough, croupy at times. Marked laryngitis. C. H. (creosote hypophosphites) one drachm every two hours. Cough very troublesome for period of eight days, after which time there was marked improvement. By end of second week cough disappeared. No further complications. Discharged June 21, 1908.

Among the 32 severe cases, the following are illustrations:

Case IX.—Bennie B. Age 3. Admitted May 18, 1908. Creosote emulsion one drachm every two hours. Cough improved after first week, although bronchitis was marked on May 22. On May 25, general condition much improved. On May 28, small area of consolidation at right apex. Cough again became aggravated. Treatment continued with improvement and resolution. Double otitis media. Slight dilatation and irregularity of heart. No gastric disturbances incident to treatment. Discharged July 5, 1908.

Case XI.—Ruth J. Age 3 years. Admitted March 5, 1908. Severe cough. Markedly croupy. Acute laryngitis of measles. Improvement following creosote treatment in 24 hours. No further note of cough after this date, nor of gastric irritation. Vaginitis. Discharged June 30, 1908.

Case XII.—Lillie D. Age 3. Admitted April 21, 1908. Marked bronchitis, laryngitis and croupy cough. Creosote emulsion one drachm every two hours for seven days and then one drachm every four hours. Cough markedly improved, though there were paroxysms from time to time for ten days later. The creosote and hypophosphites was given for a period of fifteen days with no ill effects.

Case XIII.—George B. Age 4 years. Admitted March 19, 1908. Severe cough. Coryza and bronchitis. C. H., one drachm every two hours. Cough improved in 48 hours and no longer troublesome. March 23 developed bronchopneumonia left base. Cough troublesome at times. Again put on creosote emulsion and continued for 10 days. Condition improved. Slight colitis. No vomiting or gastric disturbances. *Pneumonia resolving on April* 12, and discharged April 20, 1908.

Case XX.—Meta G. Age 7 years. Admitted June 22, 1908. Severe case of measles. Coryza, bronchitis. Marked laryngitis and croupy cough. C. H., one drachm every two hours. Cough improved in eight days. Creosote kept up for 20 days. Cough disappeared, but again became troublesome and hacking, as bronchopneumonia developed on July 4. Creosote increased to two drachms every two hours. There was no ill effect, cough improved. July 17 bronchopneumonia resolving. Discharged July 10, 1908.

Case XXIV.—Dorothy O. Age 9 years. Admitted June 11, 1908. Measles. Severe eruption. Diffuse bronchitis and laryngitis. Child restless. Cough severe and very troublesome. The preparation one drachm every two hours worked promptly. In 48 hours the cough very slight and disappeared 24 hours later. No further complication. Discharged July 16.

Case LII.—Age 2 years. Admitted June 1, 1908. Diphtheria and measles. Intubated. Bronchopneumonia and severe paroxysms of coughing. On extubation patient still had slight coughing spells. Creosote was administered for 46 days in this case and it was encouraging to watch the improvement and the general gradual disappearance of the cough. Discharged July 16, 1908.

The textbooks are not at all unanimous about the administration of creosote in these affections of children. In Osler's system of medicine for instance, in the consideration of measles, no mention of creosote is made in the treatment of the respiratory affections. Expectorants, heroin, and codeine are recommended. Perhaps it has been assumed or experience with ordinary creosote has shown that gastric intolerance would interfere with its administration. Certainly from the abundant data this is not the case with this preparation in measles nor with similar affections in children and adults in general. And we are disposed to think from our own experience, that creosote is as valuable, if not more so, than these expectorants, codeine or other morphine derivatives, especially in children. The treatment should be continued in the severe cases for ten or fifteen days, for the cough is hard to check. For instance, in Cases VI, XLIII, and XLVIII the cough was controlled in four days or thereabouts, but the treatment was continued for several days longer.

Nothing extraordinary or new is claimed for the effects of creosote in these children. As for the mild cases it is a question whether they may not have been given undue prominence. For a very good form of treatment of this type is to leave the children reasonably in peace—except to watch for evils which may not occur—and they will get well. And yet it does no harm upon the slightest indication of the evil to give creosote as a prophylactic. The severe cases are quite another matter. A very conservative estimate is that ten per cent. of these have bronchopneumonia and ominous respiratory complications, and another conservative estimate is that five per cent. of these die of these complications. But two deaths occurred in our severe cases, one of them from an entirely outlying complication—otitis media—and the other of bronchopneumonia in spite of our medication. We may have intimated that the resolution of the bronchopneumonia occurred as a result of the medication. We do not know. Perhaps the lesions would have undergone resolution if left to themselves. But why leave to chance and hazard what we have good reason for thinking we can correct or mitigate by treatment?

REFERENCES.

Russell: The treatment of pulmonary tuberculosis based on the assumption that the dietetic cause of the disease is lime starvation—Preliminary report of results.—Medical Record, Nov. 27, 1909. Discussion of the hypothesis.—Medical Record, Dec. 18, 1909. The treatment of pulmonary tuberculosis based on the assumption that the dietetic cause of the disease is lime starvation. Second report of results.—Medical Record, July 1, 1911

328 West Ninety-sixth Street.
70 West Forty-sixth Street.

OXALURIA DOLOROSA.

A CONTRIBUTION TO GENITOURINARY SURGERY.

By B. G. R. WILLIAMS, M.D.,

PARIS, ILLINOIS.

Several years ago I had the privilege of being called into consultation in a case which presented the cardinal symptoms of a renal or ureteral calculus. A specimen of the urine was submitted to me for examination. Although no microscopical concretions were present, the amount of hemorrhage was tremendous. This urine was highly acid and contained large quantities of calcium oxalate crystals. Pus and microorganisms were absent. The surgeon quickly decided that a renal stone was present either in the kidney pelvis or in the ureter, and insisted upon an immediate operation. The diagnosis proved to be incorrect.

To-day few surgeons would arrive at such a conclusion without further positive evidence. Nor may this hesitancy be explained by any definite instructions in the surgical texts, but rather by former embarrassing personal experiences. Surely there is a great paucity of literature upon the subject of oxaluria in general, but especially with reference to its presence as a cause or accompaniment of abdominal distress. I fail to understand why medical and surgical writers have neglected to give adequate space to this important pathological phenomenon. Though barely touching the subject, it seems to be conceded by many authorities, among whom are notably Musser[1] and Edsall,[2] that certain symptoms arising from the persistent passage of calcium oxalate crystals by the urinary stream may be very similar to or practically identical with those of ureteral calculi. How then may these two conditions be differentiated? Certainly the latter demands surgical interference, while the former falls into the realms of internal medicine.

Source and fate of the oxalates: Turning to the

physiological chemistry of oxalic acid and the part it plays in animal metabolism, we immediately get into deep water. Many authorities seem to be perplexed and in many instances differ strikingly in opinion. However, certain points may be hastily noted: A large amount of the oxalic acid excreted by the kidneys comes directly from the food. Thus certain fruits and vegetables, as grapes, apples, oranges, and tomatoes, contribute to this "oxalic ingestion," so that, as Delepine[5] has shown, much more oxalic acid in excreted during the summer than during the winter. But certain investigators [4, 5] have concluded that all the oxalic acid of the urine might be accounted for by the ingestion of the oxalates or by the fermentation of other substances in the alimentary tract leading to their formation. Klemperer[6] takes exception to the statement, holding that this organic acid may occur in a urine in which the diet is free from the oxalates and that the crystals of its calcium salt may occur in the urine of starving dogs. Similar proofs that ingestion and fermentation cannot account for all the oxalic acid in the urine have been offered by Salkowski and Leube[7] and Robin.[8] These latter opinions are doubtless correct; but whether or not there is a true oxalic diathesis scarcely concerns this communication, except in so far as therapeutic indications might arise. The actual presence in the urinary passages of the calcium oxalate as a crystalline deposit, rather than those processes resulting in its formation, must be held to account for every symptom noted in that condition which we may well term "oxaluria dolorosa."

At any rate, oxalic acid is excreted by the kidney as calcium oxalate, which is ordinarily held in solution by the diacid-sodium phosphate, and no crystals are observed in such a urine when freshly voided unless the ingestion has been great indeed. But if the urine is highly acid much of the oxalate is precipitated, the form of the crystal depending to a great extent, though not entirely, upon the degree of the acidity, or, in other words, the rapidity of the precipitation processes. If the acidity is not extreme, we would expect to find the envelope, dumbbell and hourglass forms of the oxalate. But if the acidity becomes tremendous the crystals are, as a rule, less perfectly formed, appearing as minute acicular structures of variable lengths and shapes, often, apparently, as broken bits of longer needles or as long double pyramids with sharp ends (Rieder[9]). Here and there may be seen a perfect envelope crystal. Such an appearance is invariably present in oxaluria dolorosa. In some of these cases the urine may be neutral or even alkaline, those influences which neutralize the diacid-sodium phosphate evidently causing the precipitation of the sharp crystals.

Nature of the lesion: A persistent occurrence of these needlelike structures along with those changes in the urine which cause their precipitation, soon brings on trouble. Eventually hematuria and ureteral pain begin and our attention becomes directed to the condition. From what follows it would appear that the nature of the irritation or injury to the mucous membrane lining the ureter is essentially mechanical, though I doubt if this could be strictly proven. Delepine[3] states that the occurrence of these needles in the freshly voided urine is usually associated with symptoms of irritation in the urinary passages. When the condition is persistent the degree of this injury is considerable. So much so, in fact, that Swinburn[10] in an analysis of twenty-six cases concludes that the urethra itself may suffer injury. Just how these crystals produce the irritation little concerns us. In rare instances they may coalesce to form sharp microscopic concretions or even visible gravel, but that the crystals of themselves may cause hematuria and severe abdominal distress I have proven to my own satisfaction by a careful and systematic examination of all the urine passed by the patient, and by the fact that, in one case at least, operation demonstrated no further findings of value. Again, there are therapeutic proofs which I shall take up later. Personally, I believe the irritation to be of a mechanical nature and identical with that which might be produced by "pulverized glass." Surely some of the physical properties of the former are identical with many of those of the latter. Ignoring the sharp appearance of the edges and points of these crystals, another experiment gives us astonishing evidence. Thus a specimen of the urine is held in the direct rays of the sun and set into motion by twirling the test tube. Each crystal, notwithstanding its microscopic smallness, catches the light, flashing minutely as it appears and disappears.

It has been claimed that the oxalate crystals of certain plants have been known to cause irritations of the skin and even dermatitis. The mechanical nature of this injury remains unproven but plausible, and many interesting points may be gained by an investigation of the subject. To this I shall give some space. Oxalic acid in crystalline as well as in a soluble form plays an important role in plant metabolism, though I cannot take time to consider the actual processes involved. In solution as the binoxalate of potash, it is found in large quantities in the order Oxalidaceæ (Kerner[11]). It is interesting to note that the insoluble crystals of calcium oxalate may occur in the cells of many plants, especially in the monocotyledons. Where these are found as perfect octahedrons, or so-called "envelope" forms, there seems to be no question but that they are incapable of injuring the animal membranes. But in other plants, notably the poisonous Araceæ, a different condition presents itself. Here the "raphides," which may occasionally be seen in harmless plants, occur in large amounts, and there seems but little doubt that they may cause dermatitis at least in certain persons (idiosyncrasies). The raphus or needle is a long and imperfectly crystallized bit of calcium oxalate. There is a modern tendency to apply this term[12] to all crystals, but for technical purposes, when speaking of "raphides" or "rhaphides," we mean needles or needlelike structures. Certain poisonous plants contain these acicular crystals, either singly or in fascicles, and it is to these forms that suspicion has been directed. Campbell[13] says that the tissues of the Araceæ usually contain large numbers of these raphides, to which has been attributed the extremely acrid taste of many of them. Further, that the *Dieffenbachia seguine*, a species of this order, is extremely poisonous. The juice of this plant is of a milky appearance and contains countless thousands of these microscopic needles. In the West Indies, the home of the plant, it has been termed the "dumb cane," because when taken into the mouth it causes the loss of speech. This is not due to any paralysis but to a local condition, as Chambers describes, the tongue immediately swelling and being accompanied by excruciating pain. One should bear in mind that the toxic agent is not a soluble substance but that the tongue has been

pierced, so to speak, by thousands of insoluble needles and that the injury is mechanical in the strictest sense of the word. Speech is regained in about seven days. Also the genus Arum of the order Araceæ numbers many poisonous plants. Some of these, because of their peculiar prickling action, are used as external irritants, for example, the *Amorphophallus campanulatus*. Our North American Indians found that by cooking these plants many of them, which in their natural state were poisonous, became quite edible (Chambers[14]). Still another genus, Arisæma, includes many poisonous species. Returning to our subject, it will be seen that the fragments of acicular crystals and the minute irregular forms of oxaluria dolorosa approach in appearance very closely the raphides. And it will be apparent how easily elements which may cause a dermatitis could injure a mucous membrane. The exceedingly long raphus, even if formed in the pelvis of the kidney, could not pass intact through the tortuous and highly muscular ureter.

Calculus versus oxaluria dolorosa: It would seem that a differentiation of these two conditions on symptomatology alone might prove to be a difficult and unsafe procedure. A true renal calculus causing symptoms by virtue of its location often demands surgical treatment even though its size might permit of its ultimate passage by the ureter. But operative intervention, when only crystals or occasional microscopic concretions are causative of the pain and hemorrhage, is neither indicated nor permissible. In the first place, the presence of these crystalline deposits in a urine highly acid or alkaline should place the surgeon upon his guard, and a sample freshly voided should be examined to make sure that these observations are correct. True, a calculus may also be present. The red blood cells in oxaluria dolorosa are often well preserved. The patient voids his urine frequently. The hemorrhage often proceeds with great rapidity and is doubtless from a large surface. But in uncomplicated calculus there is usually but an oozing. In case tuberculosis complicates the calculus, the amount of hemorrhage may be increased. But such blood is very likely to be laky, and a careful microscopical study will show the presence of many "ghosts." Pus, a common complication of renal calculus, is rarely present in oxaluria dolorosa. I have observed it in one case. The irritation is a moving one, and germs do not easily obtain a footing such as is offered in the rough and unwashed caverns of the stationary stone. Upon the other hand, such white cells as may be present are characterized by the clearness of their nuclei. In addition to an attempt (this often expresses well the procedure) to palpate and identify a renal or ureteral calculus through an abdominal wall rigid with pain, I desire to lay special emphasis upon the diagnostic importance of the skiagraph. This statement may seem quite out of place here, but from what will follow I am inclined to repeat it again and again until there is no excuse for misunderstanding. Here surely the skiagraph should not fail us. When oxaluria is present and pronounced it follows that the stone, if present, must contain much of this substance. The oxalate of lime stones cause shadows quite as dense as bone or even the most impermeable metal and are certainly easily detected. In the hands of a competent x-ray diagnostician the negative findings are quite as reliable as the positive ones. In other words, I would say "no stone if there is no shadow." The exception, I dare say, is rarely met.

Oxaluria simplex versus oxaluria dolorosa: In this communication I am reserving the term "oxaluria" only for those cases in which calcium oxalate crystals are present in appreciable numbers in the freshly voided urine. This may prove to be a too narrow interpretation, but nevertheless absolutely necessary at present in order that confusion may be avoided. Even though symptoms are absent I have no doubt that any urine which when freshly voided contains these crystals is not a normal urine. And if such a condition becomes permanently established it will certainly cause trouble in the urinary passages. An occasional exception might be observed where large amounts of certain fruits and vegetables are being eaten or following acute gastrointestinal disturbances. But even here most of the oxalate is in solution and either escapes observation or is diagnosticated from uranalyses with standing samples. Indeed, true "oxalic diatheses," if such are really ever present, should be diagnosticated, not by the presence of the crystals, since these are precipitated by local conditions, but rather by quantitative titrations of the soluble salt. It follows, parenthetically, that such estimations are subject to serious limitations if the diet is not carefully analyzed. But where, for certain reasons known or not apparent, oxalates are present in large amounts and the acidity of the urine is high, we are likely to find crystals of calcium oxalate in the freshly voided sample. That this precipitation of crystals even within the upper urinary passages may be considerable without causing symptoms, must be recognized. But when the condition becomes established and persists for long periods of time, pain and hematuria eventually ensue. In simple oxaluria, pain and other symptoms are lacking. In this condition we are most likely to find the more perfectly formed crystals. The urine may be markedly acid, occasionally several hundred degrees. Such oxalurias are usually transient, and this fact alone may explain the absence of local symptoms, for it is quite probable that the perfectly formed octahedral crystals may cause some degree of irritation.

Clinical crystallography: In the freshly voided urine of the normal individual any oxalates which are present are usually in solution and are therefore invisible to the microscopist. The crystals which may be found in a "standing" urine when fermentation has begun are usually perfectly formed and consist of octahedral and dumbbell forms. In the freshly voided urine of oxaluria simplex or following oxalic acid poisoning the same varieties may be noted. In the freshly voided urine of oxaluria dolorosa the findings are somewhat different. Perfect crystals are usually present and catch the eye, giving the first clue as to the identity of the deposit. But a careful examination usually reveals the presence of many imperfectly crystallized, acicular, and irregular forms. Occasionally a long needle may be observed, but usually the crystals have either failed to form or have been crushed by the powerful muscular walls of the ureter. Double pyramids with long axes and acute angles may occasionally be noted. At times, though not usually, we see an attempt at coalescence or the formation of microscopic concretions.

The uranalysis: So far as practical purposes are concerned this has been considered thoroughly enough, but it may not be unwise to review and emphasize some of the principal points: (1) *Simple oxaluria*: Reaction normal or variable. Condition usually temporary. Not easily differentiated from a specimen of standing urine except by a study of the urinary reaction, since in either case the crystals

are usually well formed. No blood. Very few desquamated epithelial cells. Always examine a fresh specimen before attempting a diagnosis. (2) *Vicarious oxaluria*: Noted in diabetes mellitus where the fluctuations in the amount of oxalic acid appear to be inversely proportional to the amount of glucose. Crystals, if present, are usually perfectly formed. This condition cannot be diagnosticated without the aid of the chemical estimation of oxalic acid. (3) *Painful oxaluria*: Freshly voided specimen usually highly acid, though it may be neutral or even alkaline in certain cases, rarely shows a normal reaction. Crystals appear sharp when held in the light. Perfect crystals of envelope or dumbbell shapes may be noted and serve to identify the nature of the deposit. Further search, however, will bring out the fact that many of the crystals are imperfectly formed, exhibiting the properties described above. Often large quantities of desquamated cells, especially of the tailed and multinucleated epithelial elements. Pus sometimes, though not often, present. Such white cells as are present tend to be well preserved. Red cells often present in large numbers and are well preserved. No tubercle bacilli and rarely any other varieties of microorganisms are noted. Skiagraphs negative. (4) *Calculus*: Reaction variable, rarely highly acid. Freshly voided urine may or may not show crystalline oxalates. Amount of blood variable, but often only an oozing and urine appears smoky rather than a bright red. Pus and microorganisms often present. Tubercle bacilli not uncommon. If oxalate crystals are persistently present in the urine, skiagraph should be positive.

Treatment of oxaluria dolorosa: Uncomplicated oxaluria dolorosa usually responds promptly to simple but rational therapeutics, but persists and grows worse where empirical methods are attempted. While the treatment is not operative, a surgeon is usually consulted. Thus it might be well to point out the chief indications and methods of treatment. (1) *Dietetic*: Prohibit the use of all foods which may contain oxalic acid or be converted into this substance, especially oranges, apples, grapes, tomatoes, rhubarb, sorrel, carrots, cabbages, string beans, garlic, asparagus, celery, sugars, and starches. (2) *Antacid*: In those cases associated with a high urinary acidity. This promises good results only when carried out intelligently. It is commonly instituted by leaving a solution of potassium acetate at the bedside with instructions to take *ad lib.*; hence the poor results. Those beneficial changes noted upon reducing the excessive acidity often immediately disappear when the urine becomes neutral or alkaline. It must be recalled that a certain slight acidity is imperative for the solution of the calcium oxalate crystals. It becomes a difficult matter to maintain the urinary reaction at a point where a specimen from a twenty-four hours' sample shows an acidity of 30 to 50 degrees, but when once the diet is fixed and the dosage of the alkali is calculated, such is not impossible. Discountenance the taking of acids of any sort only when prescribed to bring up the urinary reaction. On the other hand, do not permit the taking of waters containing carbon dioxide. In case the physician has not the time or opportunity to keep tab on the degree of acidity and the case is a severe and chronic one, the patient may be induced to do this and become expert at the calculations. His path is much straighter than that even of the diabetic, and he soon learns that he must never deviate from it. I recall one case of this nature who had passed about three years of continual agony. During this time he had made a round of all the doctors and had taken practically every form of treatment, good and bad. A man in this condition becomes desperate and is willing to attempt any rational treatment, even though it may not appear quite as wonderful as those rapid benefits promised by irregulars. Decinormal sodium hydrate is employed in the titrations with phenolphthalein as an indicator, according to methods found in works on medical chemistry. (3) *Acid Salts*: Reasoning doubtless that oxalate salts are normally held in solution by diacid-sodium phosphate, Maguire[15] advises the administration of this substance in large quantities by the mouth. In a case of oxaluria, where the reaction is alkaline or neutral, this method might be successful. Its author cites a case which apparently proves his contention. However, the details of the uranalysis do not seem to be clearly recorded and are open to question. It is exceedingly interesting to note that Maguire holds the idea that only a stone could have given rise to the symptoms which he observed and would have us believe that he was able to effect its solution in the ureter. But he sounds the keynote to a more plausible explanation when he states that the *x*-ray picture was negative. (4) *Miscellaneous*: Regulation of bowels, symptomatic measures, etc.

BIBLIOGRAPHY.

1. Musser, "Medical Diagnosis," Philadelphia, 1896.
2. Edsall, Keen's "Surgery," Vol. IV, p. 179, Philadelphia, 1910.
3. Delepine, "Urinary Sediments," London, 1899.
4. Dunlop, *Journal of Pathology and Bacteriology*, page 389, 1896.
5. Baldwin, *Journal of Experimental Medicine*, page 27, 1900.
6. Klemperer, *Berliner klinische Wochenshrift*, December, 1901.
7. Salkowski and Leube, "Die Lehre vom Harn," Berlin, 1882.
8. Robin, "Leçons sur les humeurs normales et morbides," Paris, 1867.
9. Rieder, "Atlas der Harnsedimente," Munich, 1897.
10. Swinburn, *Journal of Urology*, New York, 1906.
11. Kerner von Marilau, "Pflanzenleben," Vol I, p. 452, Vienna, 1895.
12. Webster, "New International Dictionary," Springfield, Mass., 1910.
13. Campbell, "University Text of Botany," New York, 1909.
14. Chambers, "Encyclopedia," New York City, 1888.
15. Maguire, "Oxaluria," *Lancet*, November 6, 1909.

THE MORTALITY OF INDIFFERENCE.

By C. N. HASKELL, M. D.,

BRIDGEPORT, CONN.

INSTRUCTOR AND CHIEF OF CLINIC, DEPARTMENT OF NEUROLOGY, NEW YORK POSTGRADUATE MEDICAL SCHOOL AND HOSPITAL.

THERE is an extremely interesting and apparently obscure condition which presents so many phases of importance and general interest that I beg the liberty to call the attention of the profession to it and to report some cases that seem worthy of notice. Notwithstanding its obscurity, and the many perplexing difficulties attending its recognition, it can in no sense be regarded as an uncommon disease. It is so frequently and so persistently overlooked, and, remaining unrecognized for considerable periods of time, is attended with such high mortality, that one feels justified in commenting upon it in terms that cannot readily be misunderstood.

CASE I.—This case is one which appeared at the New York Post Graduate Medical College and Hos-

pital, and came to the Neurological Department in the service of Prof. Graeme M. Hammond, to be treated for neurasthenia. The patient is 24 years of age, single, a bookkeeper, and born in this country. Her father, who was alcoholic to some degree, died of pneumonia at 52. Her mother is alive and well. She has two brothers older and a sister younger than herself, and save for children's diseases they have always been well and strong. A younger brother died at the age of four from "brain fever." Further than this her family history is not of much interest. She had measles at 4, whooping cough at 8 and diphtheria at 10. Her growth and development have been normal and her life has been uneventful.

She complains that she is restless at night, awakes tired in the morning and continues so throughout the day. Her appetite is very poor and she is frequently nauseated. She is troubled with headaches almost daily, which are diffused and dull in character. She is very nervous and it is with difficulty that she controls her emotions. She is forgetful, irritable, and introspective. She has abnormal fears, ringing in the ears, numbness in her face, hands, and feet. All these symptoms combined with insomnia have made her feel that she may be going insane. Her pupils are dilated and she has a fine tremor of the hands. Her reflexes are all well within the normal limit. Otherwise her neurological findings are quite unimportant. This case, then, would seem, even on careful observation, to be one of neurasthenia, with a slight predominance of mental symptoms (psychasthenia). No profound mental abnormality can be demonstrated.

The patient was examined by a careful and painstaking member of our staff, and no neurological detail was overlooked. Furthermore, she had visited other clinics and she had a piece of paper on which were written the words "psychasthenia, neurasthenia, anxiety neurosis, and hysteria," representing the various diagnoses that have been made in her case. A private physician thought that she had malaria, and still another guessed gastritis. Should we, then, as neurologists, or general practitioners of medicine, be content with the diagnosis of psychastenia, or neurasthenia? Is there a probability that her symptoms may be due to gastritis or malaria?

The following cases were seen in private practice:

Case II.—A merchant, 56 years old, with family history of no importance, had a severe attack of grippe twenty years ago. Nine years ago there was discovered sugar in his urine, and since then he has been on a diabetic diet. For the past year he has been very nervous and has had no ambition. He has had a short, nagging cough for which his family physician has frequently prescribed, but no physical examination has ever seemed necessary. His symptoms have been ascribed to his diabetes plus a probable malarial infection. On consulting another physician recently it was determined that he was suffering from a nervous breakdown, and he was advised to play golf, take long walks, ride horseback, and take Turkish baths two or three times a week. Again a physical examination did not seem at all essential to arrive at a proper diagnosis and outline this strenuous form of treatment.

Case III.—A boy, 19. No feature of his family history or previous illnesses seems to have any bearing upon his present condition. Eight months ago he was taken suddenly ill with a chill. He was treated at home for several days for supposed malarial infection, the remedy being a teaspoonful of Warburg's tincture three times a day. Then a doctor saw him at his office and pronounced the case as one of walking typhoid. According to the patient's story his examination revealed the fact that his tongue was coated, his bowels moved daily, he felt feverish to the touch, and examination of his chest through two shirts and a vest was negative. The Widal test did not seem necessary or pertinent. After the fever had continued without abatement for six months a chiropractic doctor was consulted. He made no headway in breaking up the typhoid fever, although several dislocations of the spinal column were successfully reduced. The boy's lungs were normal except for the baneful influence of pressure on the nerves caused by the vertebral dislocations.

Further careful inquiry into Case I reveals the fact that this young lady has lost twenty pounds of flesh during the past six months; that her menses have become irregular, scanty, and painful, and that she has a "nervous" cough, which she has been told comes from her stomach. She perspires some at night. Physical examination revealed no neurological or mental pathology, as has been stated before. Her temperature at 4 P. M. was 100.3° F.; pulse 120, and respirations, 26. Abdominal viscera negative. A systolic murmur at the base of the heart on the left confirmed a hemoglobin index of 60 (Dare). A cavity of some size was found in the lower portion of the left upper lobe in front, while the lower left was full of moist subcrepitant râles. The right apex was infiltrated. The sputum contained tubercle bacilli.

Case II showed extensive involvement of both lungs except the right upper lobe. A cavity formation in the upper left had given rise to frequent bloody expectoration. Infiltration was complete in the lower and middle right. Sputum loaded with tubercle bacilli. Temperature at 5 P. M., 101° F.; pulse, 120, and respirations, 33. The urine, which was not excessive in amount, contained one-half per cent. of sugar and five per cent. of albumin, with a few hyaline casts. His blood pressure was 210 (Janeway). Certainly a poor candidate for golf and horseback riding. There was nothing else of importance in this case.

In Case III there was nothing of interest except the lung findings. The lower left lobe had broken down considerably, and the apex of the same side was infiltrated. The history and physical signs were suggestive of a tuberculous bronchopneumonia. The right lung was free from disease. Temperature at 2 P. M., 103° F.; pulse, 130, and respirations, 36.

Here, then, are three unfortunate individuals who, through the carelessness or ignorance of those in whom they have reposed their confidence, have, probably, lost the only chances they had to get well. The title of this article was intentionally made as ambiguous as it could be, for the double purpose of attracting attention and inciting interest in a condition which is, in my opinion, all important. The three cases which I have related above are fair examples of dozens which I have recorded, and I may say that hardly a day passes without observing a case of pulmonary tuberculosis which has previously escaped detection.

Still another case interesting from a different point of view is the following:

Case IV.—A factory foreman of 40 complained of headaches, loss of appetite, tired feeling, and insomnia. He had lost twenty-five pounds of flesh in

six weeks. Family and personal history were unimportant save for the fact that a brother five years younger had died of consumption two years previously. The patient spent considerable time with the brother, whose sputum was not properly cared for. Examination revealed a temperature of 99.4 F. at 3 P.M., pulse, 100, respirations, 20. The right apex presented semi-dry subcrepitant râles, both front and back, and a few below the clavicle internally. Whispered voice sounds were exaggerated in the left apex, the expiratory murmur was prolonged, and the lateral percussion note from the base of the neck to the acromion was contracted. Otherwise the physical findings were negative. He was frankly informed of his condition and instructed to take his temperature three times a day and return in a week for observation. He was also advised to go to a sanatorium if rest and other measures at home did not prove beneficial. His employer, in the goodness of his heart, sent him to his own physician, a good surgeon, who could detect no abnormal sounds in the man's chest. He did not return to me.

If pulmonary tuberculosis were an uncommon and really obscure disease, some excuse might be offered for such oversights. On the contrary, it stands second in the list of diseases that destroy life. Some one dies from it every three minutes, and statistics show that every third persons is or has been infected with it. Textbooks and medical journals are replete with articles giving the profession the necessary information regarding its diagnosis and treatment. Millions of dollars and a great deal of energy are spent each year in the nearly hopeless task of preventing its spread and in caring for those afflicted with it. The problem of its eradication lies in its early recognition in the individual by the physician, and consequently the responsibility rests largely with the medical profession. I venture to say that where one case of pulmonary tuberculosis is recognized in its incipiency, at least one hundred escape detection.

There is no disease so frequently overlooked as the one under consideration, a most unfortunate circumstance when it is considered that it is extremely insidious in its onset, and, when beyond timely recognition, fatal in its termination. We all know the real reasons for these serious errors in diagnosis. A busy practitioner in a neighboring city recently told me frankly that he did not know what he heard when he listened to a patient's chest. Within a few miles of a teaching center like New York, such a lack of technical knowledge is inexcusable, inasmuch as the lives of many depend upon his accomplishments as a diagnostician. There are many others of the same sort. More culpable still is the man who knows but will not take the time or trouble to make the necessary examinations. He assumes an attitude which carries with it the idea that he is all-wise and that such details as are involved in careful examinations are quite unnecessary.

Modern methods, however, are slowly but surely educating the public to see that there is nothing mysterious or occult in the physician's powers of discernment or his healing art. The lay mind is beginning to appreciate that there is no soothsaying or second-sight foolishness in the diagnosis of disease, and our clients are already beginning to demand that they shall be thoroughly examined. Ultimate failure awaits the man who is too busy or too indifferent to examine his patients.

Until quite recently the methods of teaching physical examinations in the colleges have been at fault, and, what is more important, teachers have taken too much for granted in the receptivity of their pupils, with the result that many graduates are absolutely incompetent to observe correctly certain conditions that should be made very clear to them.

There is certainly no scarcity of literature on the subject of tuberculosis, but it must be admitted that most of it is too technical and uninteresting to occupy the attention of the average practitioner of medicine. What is really needed to awaken more interest in the subject is the establishment of local and county society clinics with competitive work of some sort that will make it very desirable for each member of such societies to demonstrate his ability to recognize the second most fatal disease that we have to encounter.

More plain talk, or some plain talk on the part of those who think they know something about the subject would possibly awaken some latent interest that would otherwise lie dormant.

Fifteen years ago I wrote an article on "The Early Diagnosis of Pulmonary Tuberculosis," and another one about three years ago with the same title, and I am now constrained to make some remarks on the subject that will be more easily construed and less likely to be forgotten.* You need not be neurologists to diagnose nervous disease, gastrologists to detect gastritis, or expert phthisiologists to discover pulmonary tuberculosis; you only need to be thorough and systematic in your methods of examination, honest in forming your opinions and in expressing them, ready to acknowledge your ignorance, if need be, and earnest in your desire to learn the truth.

The constitutional symptoms of the disease in question are fairly well depicted in the history of Case I. Contagion is a very important factor and should be carefully investigated. Invariably insist that every person that you intend to examine, whether male or female, old or young, rich or poor, shall entirely remove the clothing to the waist. Inspect the chest for retraction of the apices, lagging of the affected side, restricted movement at the base or apex, and bulging of the intercostal spaces due to the presence of fluid in the pleural cavity. Percuss the chest for areas of dullness or flatness and note the percussion resonance above the clavicle between the base of the neck and the acromion. Palpation may reveal some degree of variation of vocal fremitus and pulmonary resonance. Inspection, palpation, and percussion are valuable corroborative methods to employ, but are not nearly so valuable as auscultation. The chest cannot be successfully auscultated without the use of a stethoscope or phonendoscope especially adapted to the various irregularities of its contour. Every portion of the chest from apex to base, in front and behind, should be auscultated inch by inch. Respirations, either forced or natural, augmented by a short quick cough, will usually reveal any abnormal sounds. Cough sounds are exaggerated breath sounds and are subject to the same variations and it should be remembered that coughing will often reveal certain râles which cannot be detected in any other way. The voice sounds are changed in character when slight consolidation has taken place and the whispered voice is appreciated more accurately than the spoken voice.

The adventitious sounds or râles are by far the

*The Early Diagnosis of Pulmonary Tuberculous Disease (Proceedings Connecticut Medical Society, 1897), *New York Medical Journal*, June 26, 1909.

most important consideration in the detection of early pulmonary tuberculosis. These are semi-dry or slightly moist and sticky, and vary from a finely crepitant râle to a sonorous sound. The more moist and coarse they are the farther the disease has progressed, so that if one were confined strictly to early or incipient cases, the râles must needs be of the finest variety. If you find any râles that are sharply localized, give them especial attention.

Make careful notes of your findings and if you are not confident of your ability to draw conclusions immediately, instruct your patients to return later and with the aid of your books give your cases careful consideration. Do not lose sight of the fact that somebody's life may depend upon your skill and honesty—more especially upon your honesty. Give the patient the benefit of any doubt about the diagnosis. If you are going to make a mistake, do it on the safe side for the patient and disregard yourself in the matter. It is much safer and better for the patient that you should tell him that he has consumption when he hasn't it, even though it frightens him badly and drives him to another doctor, than to tell him he is all right when he is developing a disease which will eventually prove fatal. If you realize that you are not competent to interpret correctly the sounds you hear, take the next train to the nearest teaching center and confide your shortcomings to a good instructor. Be honest with yourself and your teacher and refrain from saying that you understand this or that sign when you really do nothing of the sort. Continue your studies until you have learned enough to make of yourself not only a safe member of society, but a real help to your fellowmen. Stay until you can recognize the majority of cases of pulmonary tuberculosis that come under your observation before they are detected by the lay friends of the patients. If you are unwilling or unable to complete your education in the diagnosis of this most common disease, send your patients to some one who is more discerning, and thus give those who have so innocently and ignorantly entrusted their lives to your care the only chance they may have to live. The few dollars that you may lose by a frank acknowledgment of your ignorance is nothing as compared with a human life, and it is safe to say that your honesty will be rewarded.

A word about the treatment of these patients. They have all been put to bed in the open air to rest until their active symptoms shall have subsided. They will receive as much nourishing food as they can digest; their various bodily functions will receive proper attention, and they will be encouraged in every way to keep up the fight for their lives.

THE BASIC CAUSE OF FLATFOOT.

By JAMES R. MITCHELL, A.B., M.D.,

FORT WORTH, TEXAS.

LECTURER IN CHEMISTRY, FORT WORTH MEDICAL COLLEGE.

The higher the intellectual development of an animal, the more pronounced the differentiation between its upper and lower extremities. The zenith in this evolution is attained in man, whose arms and legs are highly specialized. Each arm tapers toward the hand, which is peculiarly adapted for nimble action. Each leg is anatomically developed for locomotion, without regard for tedious dexterity. The ingeniously contrived foot establishes man's truly stately posture and endows his carriage with strength and elasticity.

Unfortunately, however, statistics indicate that in civilization the foot is failing in its duty as a support. Flatfoot has been steadily on the increase until now it affects to some degree one-half the adult population. The United States Army rejects more men for flatfoot than for any other single cause. In fact, it constitutes forty per cent. of all causes. Of 123 army candidates recently examined and classified, 22 had normal feet, 23 had slight arch defect, 40 suffered foot strain, and 32 suffered acute foot strain. Our Government would cease building any type of bridge did 26 per cent. of such structures duplicate this complete collapse! Nature must soon relegate every one of us back to "all fours" if we cannot correct the causes of this downfall. Fifty years hence our progeny may have to creep and wriggle into their aeroplanes instead of entering them with triumphant, manly stride. Pride in the graceful instep of a high-arched foot denotes a patriotic pride in racial superiority. The high instep of the Arab signifies a complete adaptation to the erect posture, while the foot of the negro—"so flat that the arch makes a hole in the ground"—is a stigma of inferiority.

The premonitory signs of flatfoot yield important clues concerning the cause. The patient notices pain and stiffness in the calves of his legs, much worse in the morning on arising. Often the pain lasts but a half hour, and disappears entirely after a short morning walk. Such a pain is often misdiagnosed and mistreated as rheumatism, when in reality but a symptom of the broken arches. If the doctor examines the foot he is unable to flex it to more than a right angle to the long axis of the tibia. Both the pain and the resistance depend upon a rigid gastrocnemius—nature's attempt to put the foot to rest by muscle spasticity. An outline of the foot on greased paper confirms the diagnosis of a broken arch. An *x*-ray picture may show the bones to be slightly displaced.

A long search through the text-books has failed to provide me with a logical reason why flatfoot should be so prevalent. The authors seem to have guessed at the causes, instead of having reasoned from the facts. I will take up each assigned cause separately and point out its apparent fallacy.

Misshapen Shoes That Bind and Compress.—This cause must act but rarely. A fusilade of blisters, calluses, and corns would certainly assail the foot long before the bones were wrenched out of place. Children, who from babyhood have never worn shoes, are flatfooted. I have been forced to the conclusion that shoes of any kind, or of no kind, have very little concern with the condition.

Walking on Solid Pavement.—This cause must be purely contributory, otherwise all mountainous races would be severely afflicted; such is not the case.

Weakening of Tendons.—This suggestion implies that the tendons are loosened from their bony attachments. Later we will see that the true cause of flatfoot is the true cause of the weakened tendinous attachments. This is a concurrent effect, not a cause.

Inclination to Let the Feet Turn Inward.—This is another way of saying that a natural mode of walking induces flatfoot. To walk correctly, the foot must turn in. It is the economical method of obtaining the maximum power of the big toe.

Weight of Patient.—The originator of this cause evidently does not love a fat man. He probably never saw the vaudeville performer who, day after

day, held five people on his arms and shoulders. Seven hundred pounds did not damage his arches, although he had been doing such stunts for five years when I saw him.

"Slovenly Habits of Walking."—This excuse provides a refuge from brainwork. It is a slovenly, unsupported statement. It ignores the fact that the ranks of the flatfooted army are recruited from every walk of life. The dignified judge and the illustrious general may stand upon the same disorderly footing as the shiftless loafer and the idle vagrant.

The causes assigned may hasten the effect, but none is the basic cause of its production. They are accessory causes after the fact, or accelerating causes, if you prefer that name. A study of these accelerating causes leaves an unsatisfied feeling that much has been left unsaid. All the accredited explanations fall flatter than the foot they attempt to explain.

Dr. Taylor's widely accepted explanation of flatfoot assumes the basic cause to be a continuous contraction of the gastrocnemius muscle. He submits the diagram shown herewith.

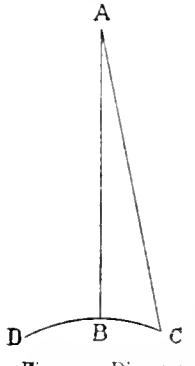

Fig. — Diagrammatic explanation of the production of flat foot. AB, represents the long bones of the leg; AC, represents the gastrocnemius muscle; DC, represents the long arch from the tuberosity of the calcaneus to the ball of the great toe.

It requires but little imagination to appreciate that, if the point D be fixed, a persistent shortening of AC must result in a flattening of DC. But this theory neglects the explanation of what in the first place induced the contraction of the gastrocnemius, whether the origin is nervous, spontaneous, or otherwise. It assigns little importance to the plantar fascia, stretching toughly from D to C, which must completely nullify the action of the gastrocnemius were that muscle the essential factor. Such a condition as this theory portrays has no other analogy in the body. Can you duplicate elsewhere the action of an active muscle,—not of an inactive muscle, nor of scar tissue, understand, but of an active muscle,—causing a similar deformity? I believe that the promulgator of this theory puts the cart before the horse. I believe that, in the universal relationship existing between the spasticity of the gastrocnemius muscle and flatfoot, the flatfoot always causes the rigidity of the muscle, just as in the relationship between the rigid rectus and the appendix, the fault always begins with the appendix. In no sense could a rigid rectus be blamed as the cause of appendicitis, but should always be considered as nature's instrument for putting the belly wall to rest. Similarly, nature in her desire to limit the motion of the weakening foot attempts restraint by stiffening the gastrocnemius muscle.

Let us now draw an analogy from the experience of the architect. Suppose the arch of a stone bridge has given way. Would not the architect seek out some defect inherent in the material of the bridge? He might regard time, misuse, and the strain of traffic as factors contributing to accelerate the weakening of the material, but he would conduct a careful examination to disclose some cracking of the cement, or rusting of girders, or crumbling of stone, or other structural weakness that prevented the bridge from sustaining its formerly safe load. Like the arch of a bridge, the arch of the foot would certainly collapse were the rigid composition of the bones in any way weakened. The strength of the arch is bred in the bone.

My purpose in submitting this analogy is to enable the reader at once to appreciate my contention that the basic cause of flatfoot is a slow absorption of calcium salts from the bones of the foot. I believe that the facts which I will present justify the conclusion that every flatfoot is another lump of evidence in proof that our nation is suffering a lime starvation. I could exhibit, as a concrete illustration of this theory, a bone so softened by the abstraction of its lime salts with hydrochloric acid that it has been readily tied into a knot. Bone is connective tissue infiltrated with lime salts. Bone that has lost its mineral can be no stronger than connective tissue.

Bone is essentially a dense structure containing relatively insoluble lime salts cemented with a mortar of collagen. When the lime salts are removed, the strength of the bone is lost. All lime-containing structures of the body are subject to abstraction of their minerals according to the whims and necessities of the blood. This loss of lime is evidenced from the brain and nerves in tetany; from the teeth in artificial lime starvation on experimental animals; from the bones in osteomalacia. In truth, the blood is protected first.

The blood is the oldest tissue of the body. With nature first come is first served. As Ringer pointed out more than a quarter of a century ago, the blood needs calcium in the proportion 1:10,000 to maintain the heart-beat. If the blood gets sufficient lime from the food to replace the amount lost daily in the urine and other excretions, the tissues remain intact. If the lime in the daily food supply is insufficient, the blood has no scruples about attacking the teeth, the nerves, or the bones to snatch the needed lime to tide over a stringency. The blood comes first. The heart-beat is more important than the rock-ribbed bone.

Flatfoot, like bowlegs, develops gradually; there is never any sudden collapse. The process resembles the action of water in wearing away a stone. Yet one may object to this theory of mineral absorption by inquiring why the foot should be involved, and not the knee nor the hand. To some extent heredity must determine the site, just as when a rat is fed upon a calcium-free diet its nerves and teeth are affected more severely than its bones. For the most part, however, simple physical laws govern the site of absorption. Gravity directs a relatively larger amount of blood with greater force to the foot than to any other part of the body. This would subject the foot to increased absorption of salts. Further, the muscles of the legs, with intermittent activity, impel a vigorous venous current, which in turn induces an active circulation through the bones of the foot. The more active the circulation of the blood, the more active its powers of absorption,—just as the quicker the rate of water dropping, the faster is the rock worn away. As all absorption varies directly as the motion, so all calcium absorption must vary directly as the motion. No wonder nature puts tension upon the gastrocnemius in an attempt to limit the motion of the foot! It is the same patent granted to the rectus abdominalis to limit the spread of peritonitis. Decrease of motion implies decrease of absorption, which in turn means an end put to the drain upon the mineral resources by the savage blood circulating in the Haversian canals. If the

mineral absorption is not controlled, the accelerating causes combine to render the collapse of the arch complete.

I look upon flatfoot as but one more symptom of our national lime starvation. The causes of this mineral famine are self-evident. The American diet is well supplied with protein, carbohydrate, and acid food-stuffs, but sadly deficient in the mineral. Our children all too often are nursed with condensed milk. As they develop we feed them on cereals, all naturally poor in minerals, including wheat artificially bleached which we call flour, and alleged rice so highly polished of its mineral content that it is fit only to be ground up as face powder. We provide the youthful generation with vegetables, many of which have been raised upon played-out alluvial soil; even such minerals as may have been present were dissolved out and thrown away with the water after cooking. The universal habit of hasty eating takes away fair opportunity for the digestive juices to dissociate and combine with the minerals presented for use.

We allow young men—and sad to relate young women, too—to drink alcohol at an age when their bodies still need milk. Those who grow up in cities drink flood water, stored in reservoirs away from all contaminating contact with Mother Earth, and for that very reason the water is denied the portion of mineral salts which Mother Earth would gladly give did opportunity present. What a cold satire that these loved ones are given a slab of marble—with its abundance of lime—only after they are dead!

If the basic cause of flatfoot be lime absorption, then its consideration teaches us that a cure in the late stage is impossible. But if flatfoot cannot be cured, we can devise simple means for its prevention. Such a method would require a diet rich in lime salts, as contained in milk, eggs, fruits and vegetables; the avoidance of decalcifying acid food, and the drinking of water known to contain the physiological minerals. The mineral balance of the blood determines our equilibrium when on our feet. Dietetic prevention must replace our rubber heels and makeshift arches. An arch reinforced with metallic calcium scorns the assistance of aluminum plates.

The seven bones of the arch are bonded into a close union for mutual help toward the material uplift of mankind. It is a union whose members receive the small wages coined from a few specks of calcium, a union whose downtrodden members seek no relief from duty unless goaded to mutiny by the "arch-fiend"—a demineralized diet. The concrete foundation for the maintenance of this inflexible spirit must be laid deep in each bone. The strength of the arch is bred in the bone.

The Dangers of Pertussis and Its Relation to Tuberculosis.—Saint-Philippe believes that whooping cough often lays the foundation for tuberculosis, chronic bronchitis, and emphysema. Abortive cases of pertussis or those without a whoop constitute one-sixth of all cases of the disease. The diagnosis should be made from the obstinate spasmodic cough with vomiting, the profuse expectoration, the discharge from the eyes and nose, and the congested face. Examination of the sputum reveals the bacillus of Bordet and Gangou, the causative microorganism, and the blood shows leucocytosis. Early diagnosis and proper treatment may enable one to prevent the serious complications, bronchopneumonia, and prolonged bronchitis. The disease is seldom directly fatal, but frequently children die from the sequelæ. The coexistence of measles and pertussis renders the latter much more than ordinarily fatal.—*Journal de Médicine de Paris.*

HOW MAY WE BETTER THE CONDITION OF THE GROWING CHILD?

By E. MATHER SILL, M.D.,

NEW YORK.

ATTENDING PHYSICIAN IN DISEASES OF CHILDREN AT THE GOOD SAMARITAN DISPENSARY; LECTURER IN DISEASES OF CHILDREN AT THE NEW YORK POLYCLINIC HOSPITAL AND MEDICAL SCHOOL.

EVERYONE who has had wide experience must admit that improper and unscientific feeding of children from birth to maturity is one of the most fruitful causes, both directly and indirectly, of disease, disability, incapacity for work, both mental and physical, with loss of energy, susceptibility to contract, and inability to withstand, disease.

The problem of nourishment which is so vital to the children of the poor, since the condition of our future population and thereby the welfare of the nation is dependent upon the way in which her children are nourished, should command the interest of all.

Only recently I have made a careful study of 210 malnourished children under ten years of age, to ascertain as nearly as possible the cause or causes of their physical condition, and to determine how that condition could be avoided, and what line of treatment was best to bring these children back to a normal state. My investigations showed that in the great majority of cases insufficient and improper food was largely responsible for their condition; there were other contributing causes as well, but this one appeared to be paramount. In making a study of the diet of these 210 ill-nourished children we found the following breakfasts were given: Tea or coffee, 105; cocoa or milk and bread, 30; milk or tea and egg, 10; coffee and oatmeal, 4; nothing, 1. It is well known that breakfast is the important meal for the growing child, and the record in these cases showed how totally inadequate this meal was, and in consequence many must have been so hungry in school that they could not concentrate their minds on study. These children could be given a nourishing meal at school for a trifling sum as is done in many of the schools with success in England, Scotland, and France.

Undernourished children contract disease much more easily than properly nourished children, and when contracted, it is much more severe and prolonged. Such children have so little reserve force to fall back upon that when they have to undergo a severe illness or operation they are much more apt to succumb.

Ill-nourished children are especially subject to catarrhal affections of the nose and throat and to bronchitis; they also are very susceptible to cold, and easily affected by it. Many are subject to rheumatism, articular and muscular, and rheumatic sore throat; also not a few have chorea and rheumatism of the heart.

All ill-nourished children are easily fatigued both mentally and physically, and have not the capacity for work that is seen in well-nourished children. Many of them have a tired, worn, old, inattentive look, complain of feeling tired, and cannot concentrate their attention for any length of time, and their gaze is constantly wandering.

They are pale and anemic, with thin, flabby muscles; their brains, as well as their bodies, are starved for want of nourishment, and fail to react to ordinary methods of teaching. Many of them are put down in the schools as dullards, or backward children. In these cases good nourishing food is all

that is needed and far more necessary for the stomach than books to feed the mind. It is an impossibility to concentrate the mind when hungry or to study on an empty stomach.

Is it not absurd to force these little half starved things to attend school as our compulsory school laws do force them to do? Is it fair to suppose that a hungry child, wasted and weakened, with the attendant conditions of lassitude, irritability, nervousness, and pallor, the result of prolonged underfeeding and bad housing, can study for five hours with scarcely any intermission?

In our investigations of these 210 families we found that the average number of rooms, and many of them inside rooms, per family was three, with an average air space of 3000 cubic feet. The average number in each family was six. This allows only 600 cubic feet of air space for each person, or one-half what is required for health.

It was found that 62 per cent. kept their windows closed at night as well as during the day. Fifty per cent. of the children ate candy, etc., between meals; 13 per cent. were in a grade at school with younger children; 80 per cent. were in bed at 9 o'clock or later, while they were all under ten years of age and should have been in bed by 7 or 8 o'clock at the latest.

Most of these children were bathed very infrequently. A large percentage had decayed teeth, and obstructed breathing through the nose as a result of large tonsils or adenoid growths.

Many of them had no desire for good nourishing food, because they had become so accustomed to the tea and bread, or coffee and bread, diet. When we find by a conservative estimate that there are a million and a half of these undernourished children in the United States is it not appalling?

Proper nutrition of the body is a subject that has always been of great importance, yet up to a comparatively recent date has received no scientific study. It is only when we begin to look at the composition of foods that we realize how complicated they are, and it is then that we learn that the chemical substances of which the body is made up are very much the same as the foods which go to nourish it.

We find the chemical elements in the foods used by man are the same as those found in the body, and these elements form a great variety of compounds, the most important of which are protein, fat, carbohydrates, mineral matter, and water. These compounds in the food are to nourish the body, supply it with heat and energy, to repair the tissues of the body, to form new bone, blood, muscle, nerve, tendon, cartilage, and other tissues and produce growth.

It has been found that 60 per cent. of the body weight of the average man is water; protein about 18 per cent.; mineral matter forms 5 or 6 per cent.; fat, 15 per cent., but the proportion varies greatly with food, exercise, age, and other conditions. Carbohydrates form less than one per cent. of the body weight.

Each of these several compounds in the food has its special office to perform in the economy and metabolism of the body; they either build tissue or yield energy. Protein, fat, or carbohydrates, any of them can be burned in the body to produce heat or energy. This, however, is a less usual and less important function for the protein, its principal function being to build new tissue, and for this purpose it is the most important ingredient in the food, since it is the most important part of nearly all the tissues of the body. Mineral matter is necessary but in smaller quantities. The fats and carbohydrates are required to form heat and muscular energy, this being their chief function. It has been found that about 0.9 per cent. of fat in the ordinary mixed diet comes from the animal foods, and about 0.9 per cent. of carbohydrates from the vegetable foods, while protein is obtained chiefly from meat, fish, and milk among animal foods and from cereals and legumes, such as peas, beans, and lentils, among vegetable foods.

Knowledge of the composition and requirements of the body and the composition of foods and the amount of different compounds in the body, the amount of percentage of the different compounds in each food, and the function of each of these compounds in the food when taken into the system enables us to construct intelligently and scientifically proper diets for various ages, occupations, and conditions. Careful chemical analyses of foods and clinical experience in the feeding of hundreds of children has shown that the following dietary schedule and articles of food are best adapted to the average growing child:

One-half hour for breakfast, 7 to 8 A. M.: Glass of milk, baked apple or orange. Cereals: Oatmeal, cracked wheat, farina, hominy, etc.: two to three tablespoonfuls of one of these cereals, with milk and cream. Eggs: one to three, according to the age of the child, either soft boiled, scrambled, poached, or in the shape of an omelet; or a lamb chop or small piece of steak, or fish for variety occasionally; one to three slices of bread, ⅜ of an inch thick, or a roll, with abundance of butter.

10 A. M.: An apple, a banana, a couple of graham crackers, or a small glass of milk.

One hour for dinner, 12:30 to 1:30 P.M.: Soup, bread, and butter. Meats: rare steak, rare roast beef, mutton or chicken (fish may be given once a week). From ⅛ to ¼ of a pound of meat or fish should be given, according to the age and capacity of the child. Baked or boiled potatoes, with butter and salt, or stewed with milk, and a green vegetable such as spinach, carrots, string beans, green peas, cauliflower, squash; a purée of dried soy beans or dried peas may be given two or three times a week at this meal, or baked beans may be given (one to two tablespoonfuls) and this will in a measure take the place of meat. A glass of milk. Hominy or rice may be given three or four times a week (two to three tablesponfuls). A simple dessert such as rice pudding, bread pudding, custard, blancmange, ice cream.

At 4 P. M.: An apple, peach, or pear may be given if the child is hungry. Half an hour may be given for supper from 6 to 7 P. M.: Bread and butter and a glass of milk, or bread and milk, milk with one of the cereals, bread and butter with jelly, fruit juice or syrup, a small piece of cold meat, or omelet, or scrambled eggs: plain cake, stewed prunes, or apple sauce.

Requirements of the growing child. For the proper development and growth of a child nature demands that certain fixed and unchangeable rules be followed, and when these rules are disobeyed development and growth are impaired and often, as a result, disease follows.

In order that a young animal may grow steadily and develop into a large and healthy specimen of its kind it must have plenty of good nourishing food with a high percentage of protein suitable to its age; but if it does not receive this food at regular

intervals it becomes stunted and, although later it may be healthy and fat, it never attains the size of one which has had plenty of the right kind of food from birth. So it is with the child if improperly nourished while young, it becomes stunted and dwarfed. Children are so active and use up so much food in the shape of energy in that way, besides the food they need to develop the body, that they require a highly nutritious diet, containing a high percentage of protein, and this is especially important where the child is malnourished. It is up to the twelfth year of age that we see most of the cases of malnutrition, and it is up to this age that the greatest demands are thrown upon the child, since this is the period of rapid development and changes in all the tissues of the body, and on this account it is a period of particular susceptibility to disease. A child up to this age requires long and regular hours of sleep, and under the age of twelve years every child should be in bed by 7 or 8 P.M. Children under 7 or 8 years, especially if undernourished, should have a nap of an hour or two during the middle of the day. The growing child to be well must not only be well nourished, but must be regularly fed, be properly clothed, and have plenty of fresh air. Since a large amount of fresh air is necessary to oxiginate the food that is required for growth, four or five hours out of doors every day are essential. When the weather is too bad for this an indoor airing may be given by opening all the windows in the play room, dressing the child in its outdoor wraps, and allowing it to play there. Sleeping rooms must be well ventilated at night by opening the windows from the top at least six inches. All the talk about night air obtained in this manner being injurious is a fallacy.

Children should have certain hours for play in the open air in parks or playgrounds, not in the dusty streets, the only place that so many seem to be able to play now, and certain hours for study. Long hours in ill-ventilated school rooms for young children do great harm by undermining the health of the child, which is far more important than anything it can be taught in school. Cleanliness is also an important factor in the well being and health of every child, and a tub bath should be given at least once a week in winter and oftener in summer. Children are entirely dependent for their care, feeding, clothing, sleep, care of teeth, bathing, play, etc., upon their family, therefore, by instructing the American people along these lines the child will be benefited and learn the principles of nourishment, health, and hygiene. Teach the parents the importance and value to the young child of well cooked, nourishing food given at regular intervals, of cleanliness, proper clothing, play in the open out of the streets, long hours of sleep in well ventilated rooms, care of the teeth, early medical attention when needed, medical supervision. Encourage the idea of taking children to the country, for trips and vacations, and allow them to get as close as possible to nature and run wild like little Indians. Let them see the many joys and attractions the country has to offer them. Let them learn from nature about the trees, the birds, the insects, and the animals. Let them go barefooted and play the healthful outdoor games.

Parents are responsible for their children while young. They can insure in a large measure their children's health, happiness, and success in after life by following out these crucial demands for health and growth of the child. We should give the little children a fair chance by teaching these principles and working to have them exercise what every child in the land has a right to demand. Then there will be no fear but that our children will grow hearty and strong like the little animals that they are and then the race will be improved and strengthened physically, mentally, and morally as time goes on.

104 West Seventy-sixth Street.

Dangers Due to the Use of Menthol.—R. Leroux states that menthol used in treatment of nasal conditions is not only injurious, and dangerous, but also sometimes fatal. He cites cases in which the use of a small amount of mentholated oil in the anterior nares for an acute coryza in infants has brought on the most alarming symptoms of dyspnea, ending in suffocation. The reflexes are excited by this drug before it is absorbed by the walls of the nasal cavities It causes inhibitory spasm which may end in death. This drug when used for acute troubles also causes much pain, acute conjunctivitis, pseudoerysipelas of the face, pharyngeal cough, reflex otalgia, and ringing in the ears. Labial and nasal erythema may result in chronic cases and thickening of the nasal mucosa causing obstruction. The author believes that this drug should be used with the greatest caution especially in children.—*La Presse Médicale.*

Renal Functions in the Course of Nephritis of Childhood.—P. Nobécourt and P. Merklen distinguish several types of nephritis according to the condition of the kidneys with regard to permeability to chlorides and nitrates. In cases where the chlorides are not eliminated there occur edema and anasarca; in those in which nitrogen is not eliminated there occur digestive symptoms. This is true both in acute and chronic nephritis in children. In the chloremic form there may occur pharyngolaryngeal edema, pulmonary edema, hydrothorax, digestive troubles, including vomiting and diarrhea, headache, eclampsia, coma, Cheyene-Stokes respiration, and visual troubles. In the azotemic or uremic form there is no edema but there are loss of appetite, vomiting, torpor, pruritus, etc. The authors distinguish a simple albuminous form; a chloremic form with scanty urine containing albumin and casts; an azotemic form, with modifications of arterial tension and cardiovascular symptoms; and a combined form with symptoms of both of the other varieties. In the simple form there is no development of uremic symptoms, nor is there a marked change in weight. In the chloremic form, the chlorides being treated, the urea is eliminated normally. As to prognosis, with normal permeability one need not fear accidents; with retention of chlorides alone there are only the phenomena due to edema; with the combined form there are the most intense symptoms indicating grave renal disease or diffuse lesions. The appearance of arterial hypertension and dilatation of the heart is of bad prognostic value. Simple albuminous nephritis may nevertheless cause anemia and cachexia if of long standing. If retention of chlorides continues the prognosis is bad. These cases are illustrated by the pale, cachectic children who succumb to intercurrent diseases. As to treatment, in simple albuminous forms the use of salt and albuminous substance is harmless. In these cases a mild diet, varied with vegetable soup, is of value. In the chloremic form one should give water only for a few days, with lactose. The addition of milk containing salts is not indicated. When the renal function improves a milk diet is given and later meat, eggs, and bread are administered. Lactose and theobromine should be used as diuretics. Milk is the food of choice in nephritis.—*Archives de Médecine des Enfants.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE IMMORTALITY OF THE CELLS AND TISSUES.

MANY biologists have for a long time held that potential immortality is one of the properties of protoplasm. The unicellular organism endowed with the capacity of indefinite subdivision, is able to perpetuate itself in its own offspring. Instead of senile decay, it undergoes, with each conjugation, a sort of rejuvenation, and if the conditions of its environment are favorable, its existence may be prolonged without limitation. In his "Essays on Heredity," August Weissmann refers to this inherent immortality of the cell. Even in the multicellular organism the power of immortality has not been sacrificed entirely, for this is still retained in the reproductive cells. Death is the result of natural selection. Endowed originally with an infinite capacity to subdivide, the cells of the body, exclusive of the reproductive cells that survive in the offspring, have acquired a finite existence. The former cells, and necessarily the aggregation that constitutes the individual body, have been doomed to death as the result of the struggle for existence between the individual cells as well as between the different animals. The cessation of life is an adaptation to the conditions imposed by the crowding of cells and animals, with the consequent reduction of the means of subsistence. But the cells and tissues of the body never forget their birthright. The capacity to an indefinitely continued existence which has been stilled by the complex needs of the organism may be again awakened. The riotous multiplication of the cells seen in cancer exemplifies this return to the primitive condition of an unchecked existence.

Recent laboratory investigations have provided a method of demonstrating the fact that the life of the tissues may be conserved even after these have been removed from the body. The work of Harrison, Carrel, and Burrows in the artificial cultivation of tissues is already well known. But Carrel has gone further. He has succeeded in developing a method (*Journal of Experimental Medicine*, May 1, 1912) by means of which the active life of a tissue outside of the body may apparently be prolonged indefinitely. By washing cultures of connective tissue in Ringer's solution and then placing them in a new medium, the growth was made more rapid, and, by repeated washings and passages, the occurrence of senility was prevented and the duration of life was greatly prolonged. Some cultures were in this manner kept alive for as long as sixty days. Carrel's technique is based upon the supposition that senility and death are the result of the accumulation of catabolic substances and exhaustion of the medium. In its latest development his method consisted of passing the tissue cultures alternately from plasma to serum at the temperature of the organism. Some of the cultures were living at the beginning of the third month of their life *in vitro*.

The morphological characters of the tissues grown outside of the organism have been carefully studied and have been found to vary according to the technique employed in the cultivation of these tissues. Of greater interest, however, were the dynamic characters acquired by the cultures. The rate of growth was influenced by the nature of the medium, its osmotic tension, the way in which the plasma was cut, the amount of old plasma left around the cells, the form of the culture, and the frequency of its passages. It seems that the older a culture was, the quicker it grew. Generally the cultures remained very small in spite of their constant growth, and frequently they diminished in size as the result of mechanical injury, concentration of the medium, and microbic infection.

The possibility of preserving the functional capacity of a tissue *in vitro* for a long time was demonstrated by Carrel in the case of fragments of heart taken from the fetus of the chick. Such fragments were found to pulsate rhythmically at the beginning of the third month of life outside of the organism. A piece of heart muscle that had been cultivated on January 17 and that had ceased pulsating one week later, was kept alive by a series of eleven washings and passages until February 28. After its twelfth passage the culture ceased growing. Then the tissue was dissected and the old plasma completely extirpated. A small central fragment of the culture removed, washed, and placed in a new medium, began on March 1 to pulsate at a rate that varied between 60 and 84 per minute. Three days later the pulsations stopped, but were again restored by another passage. In this manner, after successive passages, the functional power of the heart muscle was each time resuscitated. On March 19 the pulsations were irregular.

On the basis of these experiments Carrel concludes that "experiments made with these or with more perfect techniques and followed over long periods of time may lead to the solution of the problem of permanent life of tissues *in vitro*, and give important information on the characters acquired by tissues liberated from the control of the organism from which they were derived."

The power of resuscitating the mammalian heart after somatic death was demonstrated in the most spectacular manner over ten years ago by Kuliabko of St. Petersburg, who succeeded in restoring for a period of two hours the pulsations to a human heart that had been removed at autopsy two days before, and that had been kept in a refrigerator. This experiment was shortly afterwards repeated by

Hering and by numerous other physiologists. At the present day, under the wizardry of modern biological methods, these wonders are surpassed and at the same time there is opened up a world of infinite possibilities in the study of the vital functions of the cells when these are removed from their complex associations in the intact organism.

INTESTINAL AUTOINTOXICATION.

Headache, indigestion, indefinite pains, apathy, loss of appetite and weight, poor circulation, offensive breath, and muddy complexion form a syndrome for the relief of which the physician is very frequently consulted. On inquiry he finds it to be associated with chronic constipation and lays the blame on autointoxication. Arteriosclerosis may, according to Metchnikoff, be a remote sequel of this condition and the life of the individual may be appreciably shortened because of it. Its seriousness and frequency both demand for it a careful consideration.

A. Distaso (*Centralbl. f. Bakt. etc.*, Abt. I, Orig., Bd. 62, H. 6, p. 433), seeks the explanation in the bacterial flora of the large intestine. He divides the organisms of the colon into two large groups, the non-indologenes and the indologenes, and among the latter finds those which, acting upon the end products of protein digestion as found in the intestine, elaborate those toxins which, when absorbed, produce the above symptom-complex. A smear from the stool of a normal breast-fed infant will show an enormous preponderance of Gram-positive organisms the majority of which will prove to be *B. bifidus*. This organism produces substances which stimulate intestinal peristalsis and as a result the stools of such an infant are soft. If now the child be put upon cow's milk, a smear will be largely Gram-negative, the colon bacillus predominates, the stools become formed and harder, and constipation may appear.

Now it is true that in the normal human adult, the great majority of the organisms in the stool, notably the *B. coli*, belong to the indologenes group and therefore constitute an ever-present threat against the health of the individual. But nothing happens until stasis appears. Then the entire picture changes. The colon like the appendix appears to be one of the degenerating organs and therefore especially susceptible to pathological changes. Putrefaction increases, large quantities of toxins are produced and absorbed. The increase in the contents of the colon stretches its walls and induces muscular atrophy. Their weight drags the organ out of place and distorts it so that stagnation is favored and a vicious circle established. Gradually the character of the flora changes. A smear will show a predominance of Gram-positive bacteria many of which are cocci. The absolute number of organisms is decreased and there are many spores present.

The large intestine appears to serve the sole purpose of furnishing a place in which the residue from digestion is partially dried and stored until it accumulates in sufficient quantity to be removed. The old idea that the bacteria complete the protein digestion begun by the body ferments and that they are necessary for life has been very generally rejected. Indeed recently M. Cohendy (*Annales de l'Institut Pasteur*, T. xxvi., p. 106) has worked wtih chicks which he hatched from disinfected eggs and kept under aseptic conditions and found that they developed fully as well as control animals and appeared to be normal in every way. Arbuthnot Lane then devised exsection of the large intestine as a method of treatment for autointoxication and after sufficient animal experimentation applied it to man.

Distaso had the opportunity to follow some thirty-six of Lane's cases for three or more years and found that the patients remained in good health and gained in weight and activity. The stools of these individuals are very constantly soft or even fluid and a smear from one shows the organisms to be almost wholly Gram-positive consisting largely of *B. bifidus* and *B. acetogenes-β*, both members of the non-indologenes group. This evidence certainly stems to place the blame largely with the indologenes bacteria and to demonstrate the uselessness of the large intestine. Still the operation is not a simple one and Metchnikoff claims that quite analogous changes in the intestinal flora follow the exhibition of *B. lacticus*—a somewhat simpler procedure. It is to be hoped that Distaso will carry out his expressed intention to pursue his investigations along this line.

THERAPEUTIC ECK'S FISTULA.

Eck's fistula has been known since 1877 as an experimental resource for studying the physiology of the liver. The intervention was long a severe one, largely because of the collateral injuries inflicted on important neighboring organs. Recently improvements in technique have greatly reduced the operative mortality. Among these is the immunization of the animals against the autodigestion of tissues which results from injury to the pancreas. It is said that the operation was once performed on the human subject, under what circumstances we are not informed. The death of the patient which occurred on the following day may or may not have been attributable wholly to the intervention. Under any sort of physiological equilibrium an Eck's fistula in man is hardly conceivable. The operation consists merely in anastomosing the vena cava and portal vein after which the latter is ligated. It is otherwise, however, if the portal circulation is already hopelessly obstructed; for in such a case an attempt to convey the nutrient portal blood directly into the general circulation should lead to a prolongation of life, provided the liver has not been wholly isolated. That the operation has never come into use in cirrhosis of the liver must be set down straightway to the introduction of the Talma-Drummond operation in 1898, which gave the cirrhotic liver an increased supply of blood through omentopexy.

At a very recent session of the Berlin Medical Society (*Berliner klinische Wochenschrift*, March 25, 1912) Rosenstein spoke on the ideas of Franke expressed to the German Surgical Congress, of 1911, on the possibility of treating cirrhosis of the liver with the establishment of an Eck's fistula. The technique has been perfected on the cadaver and

on dogs, but thus far Franke has found no case suitable for the operation. In discussing this point Bier stated that during the past year he had begun the operation twice but was unable to complete it once because of severe hemorrhage and again because of extensive thickening of the peritoneum. He knew of no successful case thus far at the hands of any other operator. Therefore the patient whom he presented to the Society was the first to be operated on with complete success. This was a woman aged 60 with cirrhosis and ascites. The two veins had been anastomosed and the intervention had been well tolerated. About four months had since elapsed, and thus far evidences of improvement are still somewhat in abeyance. Bier had started out with the full intention of doing a Talma operation and changed it on the spur of the moment. The intervention appears to have been difficult and tedious, marred with interruptions, but the patient's life seems not to have been menaced. The operation has now been shown to be practicable and it will be for the future to say if it is worth while. The patient will doubtless be shown before medical societies, so that the question of improvement will be settled at first hand. Meanwhile it may be doubted whether pending the verdict, the intervention will be repeated.

RECENT VIEWS OF DIET FOR DIABETICS.

The present age is one of revolution in regard to the dietetics of diabetes. Authorities vie with each other in recommending special carbohydrate plans. There is an oatmeal diet, a potato diet, there are flour diets, vegetable diets, and at the present rate we should soon be having a sugar diet. It is becoming the custom to abuse meat and to forbid alcohol even in minimal amounts. To understand the completeness of this revolution it is sufficient to glance through the bills of fare devised by that pioneer in diabetic feeding, Bouchardat, whose work was the chief, if not the sole authority, a generation ago. The men who advocate the newer plans of feeding comprise some of our soundest clinicians, although it is almost needless to state that such men do not go to the extremes of the diet faddists.

At a recent meeting of the Medical Society of Leipzig (*Muenchener medizinische Wochenschrift*, March 5) Rolly spoke of the results of some experiments which appeared to show that flesh albumins increased glycosuria, while vegetable albumins, if anything, diminished it. The former he pronounced cell-irritants. Bornstein claimed that with each increase in sugar production the nervous system suffered. The diabetic was a neurasthenic and, like all others of his kind, could not tolerate alcohol even in small quantities. He claimed that this substance stupefied the body cells, or that metabolism was slower, evidently implying that the alcohol was not oxidized. The results of calorimetry and animal experiment he seemed inclined to discredit. Of some value is his suggestion based on Lampe's findings to test for lecithin albumin in diabetes.

The remarks in discussion by von Strümpell should be of interest. This eminent clinician deprecates the tendency to measure the patient's actual condition by the amount of sugar excreted. It is true that when this reaches a certain height we begin to see furuncles appear, and that we can determine a tolerance point to carbohydrate feeding. Nevertheless, he has known patients to eliminate two or three per cent. of sugar in the urine for ten years and yet be in relatively good health. We must indeed keep down the glycemia, but we must also keep up strength and efficiency. Hence he would give a diabetic all the benefit which can come to him through physicotherapy—air, light, water, electric baths, incandescent light baths, and massage. To treat by diet only is not to treat at all. We must treat the patient, not his glycosuria. Rolly summed up in a few axioms: Mild cases bear protein well, severe ones ill. Alcohol withdrawal is unnecessary. Mild cases of diabetes benefit by moderate exercise, severe cases do not.

THE SERUM TREATMENT OF PERNICIOUS VOMITING OF PREGNANCY.

That the severe vomiting frequently occurring in pregnant women is the result of a toxemia is a fact firmly established upon clinical and pathological observation. Although the nature of this toxemia is still veiled in obscurity, it is probable that the maternal organism reacts to the partly foreign cells of its fetal parasite by the formation of antibodies. Upon the presence of these substances depends the possibility of making a serum diagnosis of pregnancy recently reported and referred to in these columns. About one year ago Mayer and Linser reported a case in which a dermatosis of pregnancy was rapidly cured by means of hypodermic injections of blood serum obtained from a healthy pregnant woman. In July, 1911, Le Lorier applied this method with success in the treatment of pernicious vomiting of pregnancy, utilizing the blood serum of a healthy pregnant woman near term. G. Fieux and A. Dantin, reporting their results in the *Annales de Gynécologie et d'Obstetrique*, March, 1912, state that they have also demonstrated the efficiency of this method of treatment, employing, however, the blood serum of the second or third month of pregnancy. Their case was one of the most pronounced types of gestational vomiting, in which the systemic intoxication was revealed by the presence of acetone and albumin in the urine and also by the diminished excretion of urea. The patient had reached a state of extreme prostration and emaciation, when she received a hypodermic injection of three to four cubic centimeters of the blood serum. There was an almost immediate response; the vomiting diminished, the urine increased in volume, and the general condition of the patient improved. But in a short time the patient relapsed to her former condition. A second injection of twelve centimeters of the blood serum obtained from a woman in the third month of pregnancy was followed by a rapid and permanent disappearance of the vomiting and the other constitutional symptoms. Although definite conclusions cannot be drawn from the report of one case, nevertheless when this is considered in connection with that reported by Le Lorier, and with the case of dermatosis of pregnancy that responded in a similar manner to this method of treatment, one is inclined to perceive in serum therapy a new field of usefulness when applied to the toxemias of pregnancy. Possibly the eclampsia, the choreic, and the hemorrhagic tendencies of pregnancy may respond in a similar manner.

News of the Week.

Death Rate in New York.—For the twelfth successive week the death rate in New York City has been lower in 1912 than in 1911, the "record" year. For the week ending April 27 was 15.42, against 16.55 for the week ending April 29, 1911. This represents a decrease of 112 in the total number of deaths. In only three of the seventeen weeks of 1912 has the rate been higher than in the corresponding week of 1911. For the entire period the rate for the respective years is: 15.80 for 1912 and 17.13 for 1911. A recent number of the *Bulletin* of the Health Department points out that the death rate for 1911 in New York was just one-half what it was when the Metropolitan Board of Health was organized in 1866. In that year the rate per thousand was 30, while last year it was 13. The first health act relating to the city and State of New York was passed, the *Bulletin* says, in 1784, and was purely a quarantine act. Thirteen years later the first Board of Health, consisting of a health officer and seven health commissioners, was appointed by the State. In 1798 an outbreak of yellow fever which caused 2,080 deaths in a few weeks in a population of only 55,000 led to the enactment of a comprehensive health law, and the reporting of infectious diseases was required. In 1827 the Board of Health became a city instead of a state body, but the sanitary condition of the city remained deplorable from a modern viewpoint, until an investigation by an association of citizens led to the appointment of the Metropolitan Board of Health, which held its first meeting on March 3, 1866. In 1870 this was dissolved in turn, and a city Board of Health, consisting of four health commissioners, four police commissioners, the Health Officer of the Port, the Mayor, was formed. In 1873 the Board was again reconstituted, consisting of two health commissioners, the president of the police force and the officer of the port. On the formation of the greater city the Board of Health was again altered, consisting of the Commissioner of Health, the Commissioner of Police and the Health Officer of the Port, which is its present personnel.

Army Medical Corps.—Preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held on July 15 and September 3, 1912. The essential requirements for admission to the examination are that the applicant shall be a citizen of the United States, betwen 22 and 30 years, a graduate of a medical school, of good moral character and habits, and with at least one year of hospital training after graduation. Full information concerning the examinations can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C."

Expert Medical Testimony.—Believing that there should be some statutory regulation of expert medical testimony in court, the New Haven (Connecticut) County Bar Association has appointed a committee to confer with the members of the State Medical Association. The Medical Association also at their annual meeting went on record as favoring co-operation between the legal and medical fraternities for the purpose of securing such legislation.

Street Dangers.—During the month of April forty-two persons were killed and 183 injured in accidents due to vehicular traffic in the streets of New York City. Of those killed fourteen were children under sixteen years. Automobiles killed nineteen persons as compared with eleven for the same month of 1911; trolley cars ten as against eleven and wagons thirteen as against twenty-four.

Centenarian Dead.—Said to be 102 years of age and probably the oldest person in New Jersey, Mrs. Mary Thackara died recently, having suffered from her first illness only six months ago.

Montclair Sanatorium.—The Tuberculosis Preventive and Relief Association of Montclair, N. J., is again attempting to establish a tuberculosis sanatorium in the town, a project which in the past has been successfully opposed. The State Board of Health, which has the power of issuing the necessary permit, will shortly hold a public hearing in reference to the application.

British Tuberculosis Committee.—The committee of expert publicists appointed last February by the Chancellor of the Exchequer under the chairmanship of Mr. Waldorf Astor, has issued an interim report outlining a scheme for the prevention, detection, and cure of tuberculosis. The report urges the establishment of dispensaries for diagnosis, and of sanatoria, farm colonies, and open air schools for treatment, proposing that the funds provided by the Insurance Act be used in addition to the sum provided by the Finance Act of 1911. These combined funds will make a total of almost $12,000,000 available for the first year. The committee believes that about 300 dispensaries will be necessary throughout the United Kingdom, and that there should be sanatoria sufficient to provide one bed for every 5,000 of population.

Polyclinic Hospital.—On the 1st of May the Polyclinic Hospital of New York moved into its new building on West 50th Street. The hospital has a capacity of 300 beds. Three gasoline auto ambulances will be used to cover the district bounded by 42d Street, Central Park West, 92d Street, and the Hudson River, which has been assigned to the hospital.

Hospital Saturday and Sunday Association.—The largest amount collected in the history of the society, $95,000, was recently apportioned among forty-four non-municipal hospitals in New York. The distribution according to the rules of the association was based on the number of days of free treatment given to the poor regardless of race or creed for which the hospital had received no payment either from the patient or from the city.

To Enlarge the Columbus Hospital.—The Sisters of the Sacred Heart, who maintain the Columbus Hospital on the east side of New York, are planning to increase the hospital facilities by the addition of a wing to the present building, which after twenty years of use is now quite inadequate. The Pope has sent his approval of the work, which is largely carried on among the Italian residents in the city.

Concession to Antivaccinationists.—The Board of Education of Montclair, N. J., has agreed with some one hundred and fifty parents of school children who believe that vaccination is dangerous, that these children may attend school although not thus protected, the parents to withdraw any such child upon notice from the Board that there is special danger in the community from smallpox, "until such time as in the judgment of the Board the danger is entirely past." It may be questioned whether the judgment shown by the Board thus far is so good that it may in the future be relied upon.

Gifts to Charities.—By the will of Mr. Benjamin Guggenheim of New York, who lost his life in the sinking of the *Titanic* on April 15, Mt. Sinai Hospital receives $10,000, and St. John's Guild Floating Hospital, $5,000. By the will of the late Dr. Francis Bacon of New Haven, $100,000 is bequeathed to the New Haven County Antituberculosis Society, $10,000 to the Connecticut Children's Aid Society, and $5,000 to the New Haven General Hospital. The residue of the estate is left to Yale University, to be used as a scholarship fund for the aid of needy undergraduate students. The will of the late Dr. John H. Musser of Philadelphia provides for the endowment of a series of lectures at the College of Physicians in that city, to be known as the "Benjamin Musser Lectures on Clinical Medicine" in honor of his father, and under certain conditions also provides for the endowment of a fellowship in the John H. Musser department of research medicine in the University of Pennsylvania. In the opening clause of his will Dr. Musser desired that after an autopsy his brain should be given to the Anthropometric Society of the Wistar Institute of Philadelphia, of which he was a member. The will of the late Augustus W. Openhym of New York creates a fund of $275,000, of which upon the death of his wife one-third each is to go to Mt. Sinai Hospital and the German Hospital for the maintenance of free wards, while the remaining third is left to Columbia University for the establishment of the Openhym Fund for research work into the cause, prevention, and cure of cancer, or, if this work becomes unnecessary, for medical and surgical research into other diseases. The Harvard University Medical School has received a fund of $10,000 from Mrs. W. M. Underhill, the income of which is to be devoted to investigation into diseases and disturbances of function of the nervous system. By the will of the late Eliza Downey of Philadelphia, more than one-half of the testatrix's estate, amounting to $5,100, is bequeathed to the Methodist Hospital.

Dr. Joseph D. Bryant has removed to 48 West 59th Street.

Prof. Ludwig Pick, who is coming to this country to deliver the Cartwright Lectures of the Alumni Association of the College of Physicians and Surgeons in November, is prosector of the Friedrichshain Hospital and pathologist of Professor Landau's Clinic in Berlin. He has written many articles on gynecological subjects and has also made notable studies of cancer in the thyroid of salmon, of ochronosis, etc. He is one of the best known morphologists in Germany.

Dr. William S. Breakey, professor of dermatology and syphilology in the Department of Medicine and Surgery of the University of Michigan, has tendered his resignation to take effect at the end of the college year, when he will have completed forty-four years of continuous service.

Coroner Albert F. Schwannecke of the Borough of the Bronx, New York, died at his home on April 30 from the effects of injuries received while making an official investigation on the previous day. Coroner Schwannecke was fifty years of age, and was serving his second term as coroner.

Dr. A. J. Rongy has been appointed attending gynecologist to the Lebanon Hospital, New York.

Dr. Mark I. Knapp of this city read a paper before the Philadelphia Clinical Society on May 6, on "Diagnosis by Inspection," demonstrating his method in several cases.

Jefferson Medical College.—Dr. Orville Norwitz has resigned as professor of genitourinary disease after an incumbency of more than 20 years. He has been elected emeritus professor. Dr. James W. Holland, who recently resigned as dean and professor of medical chemistry and toxicology, has likewise been elected emeritus professor. Neither vacancy has yet been filled.

The Ninth International Red Cross Congress was opened in Washington Tuesday of this week. The session was held in Pan-American Hall, Senator Elihu Root presiding in the absence of President Taft, the titular head of the American Red Cross.

Alabama State Medical Association.—At the annual meeting of the society held in Birmingham the following officers were elected: *President,* Dr. H. T. Inge, Mobile; *Secretary,* Dr. J. N. Baker, Montgomery; *Treasurer,* Dr. H. G. Perry, Dothan. The next meeting will be held in Mobile.

Litchfield County (Mass.) Medical Society.—At the annual meeting held in Winsted on April 23, the following officers were elected: *President,* R. S. Goodwin, Thomaston; *Vice-President,* Dr. F. S. *Skiff,* Falls Village; *Secretary-Treasurer,* Dr. Robert Hazen, Thomaston.

Worcester North District (Mass.) Medical Society.—The following officers were elected at the annual meeting held on April 23 at Fitchburg: *President,* Dr. Edward J. Tully; *Vice-President,* Dr. Walter F. Sawyer; *Secretary,* Dr. Curtis H. Jennings; *Treasurer,* Dr. F. H. Thompson, Jr., all of Fitchburg.

New Haven County (Conn.) Medical Association.—At the annual meeting on April 25 the following officers were elected: *President,* Dr. Louis M. Gompertz, New Haven; *Vice-President,* Dr. Thomas M. Bull, Naugatuck; *Clerk,* Dr. Willis H. Hartshorn, New Haven.

Sixth District (N. C.) Medical Society.—The following officers were elected at the annual meeting held on April 25: *President,* Dr. F. R. Harris, Henderson; *Vice-President,* Dr. C. S. Mangum, Chapel Hill; *Secretary,* Dr. C. A. Woodward, Durham.

Eastern Illinois Homeopathic Medical Society.—At the annual election the following officers were chosen: *President,* Dr. W. H. Lycan, Charleston; *Vice-President,* Dr. C. J. Bresee, Mattoon; *Secretary,* Dr. M. H. Whitlock, Charleston; *Treasurer,* Dr. E. E. Richardson, Mattoon.

Berkshire District (Mass.) Medical Society.—At the annual meeting on April 25, held in Pittsfield, the following officers were elected: *President,* Dr. I. S. F. Dodd; *Vice-President,* Dr. John B. Thomes; *Secretary,* Dr. O. L. Bartlett; *Treasurer,* Dr. J. D. Howe.

Stearns-Benton Counties (Minn.) Medical Society.—At the annual meeting on April 19, held at St. Cloud, officers were elected as follows: *President,* Dr. J. H. Beaty, St. Cloud; *Vice-President,* Dr. C. F. Brigham, St. Cloud; *Secretary-Treasurer,* Dr. J. C. Boehm, St. Cloud.

Obituary Notes.—Dr. HERBERT COOPER ROGERS of Brooklyn, N. Y., a graduate of Bellevue Hospital Medical College in 1878, assistant surgeon to the Long Island College Hospital, and associate surgeon to the Bushwick Hospital, and a member of the American Medical Association, the New York State and Kings County Medical Societies, and the Associated Physicians of Long Island, died at his home of pneumonia on April 29, aged 55 years.

Dr. Milton T. Reeder died at Millersville, Pa., on April 24, at the age of 65 years. He was graduated from Bellevue Hospital Medical College in the class of 1880. He was active in Masonic circles, vice-president of the Millersville National Bank and secretary of the Lancaster County Medical Society.

Dr. Samuel F. Kessler of St. Joseph, Mo., a graduate of the Jefferson Medical College of Philadelphia in 1889, and a member of the Missouri State and Buchanan County Medical Societies, died at his home suddenly on April 10, aged 49 years.

Dr. Norman F. Terry of Springfield, Mo., a graduate of the Miami Medical College of Cincinnati, Ohio, in 1870, and a member of the American Medical Association and the Missouri State and Greene County Medical Societies, died at his home of paralysis suddenly on April 17, aged 59 years.

Dr. Alfred L. Saylor of Sherwood, Ore., a graduate of the Rush Medical College, Chicago, in 1880, and Surgeon-General of the Oregon State Militia for eight years, died at the Good Samaritan Hospital on April 8, aged 62 years.

Dr. Samuel J. McCurry of Anniston, Ala., a graduate of the Atlanta Medical College, Georgia, in 1880, and a member of the Alabama State and County Medical Societies, died at his home of Bright's disease on April 13, aged 52 years.

Dr. Herman Westphal of Butte, Mont., a graduate of the College of Physicians and Surgeons of Baltimore in 1898, died on April 15, aged 43 years.

Dr. Augustus Peck Clarke of Cambridge, Mass., a graduate of the Harvard University Medical School in 1862, a veteran of the Civil War, professor of gynecology and dean of the College of Physicians and Surgeons of Boston from 1894 to 1900, and a member of the American Medical Association, of which he was a vice-president in 1895, the Massachusetts State and Middlesex County Medical Societies, and the American Association of Obstetricians and Gynecologists, died at his home on April 22, aged 70 years.

Dr. James E. Smith of Mt. Carmel, Ill., a graduate of the Eclectic Medical School of Cincinnati in 1878, died at his home after a long illness on April 10, aged 74 years.

Dr. E. F. Floyd of Lone Oak, Texas, a graduate of the Hospital College of Medicine, Louisville, Ky., in 1883, and a member of the American Medical Association and the Texas State and Hunt County Medical Societies, died at his home of pneumonia on April 18, aged 53 years.

Dr. Martha Ripley of Minneapolis, Minn., a graduate of the Boston University School of Medicine in 1883, died at her home on April 18, aged 69 years.

Correspondence.

CHRISTIAN SCIENCE AND CHRISTIAN CHARITY.

To the Editor of the Medical Record:

Sir:—A recent description of the *Titanic* disaster (*New York Times*, April 20, 1912), by Mr. Lawrence Beesley, closes with an account of the effect of his Christian Science belief on his thought and conduct during that tragedy. As this is so typical of one phase of this cult it will serve to emphasize a point to which I have tried to call especial attention,* namely, the indifference to suffering and danger in others that frequently accompanies the much boasted quietude of mind and lack of apprehension that is cultivated by this sect.

As soon as the writer realized the danger, before going on deck he "read quietly and then went upstairs with a knowledge that fear was almost entirely eliminated and that opportunity to escape from the peril that threatened was a right we ought all to be able to claim." This peace of mind enabled him to "stand quietly on the deck" until he was able to "get a place in a boat" and thus escape from the sinking ship. During the awful interval after the collision the heroes—the real men who had not been pacified by Mrs. Eddy's soothing preachments—were struggling to get the women into the lifeboats and keep order. They saved others, but did not save themselves. After this last splendid service they went down with the ship. It seems like blasphemy to talk of eliminating fear with a consequent "opportunity to escape" in the presence of such sacrificial deeds

Many physicians have noted that this quietude of mind in the presence of great calamity is really a sort of callousness to suffering that this belief often begets. The peace that paralyzes efforts for others in desperate need is not a thing of which to boast. Here lies the great danger to the world of this cult. A poise and quietude that makes no effort to relieve real suffering or save others may be a good product of Eddyism, but it should drop the name "Christian." "By their fruits ye shall know them."

Henry Dwight Chapin, M.D.

*"Christian Science in Operation." Medical Record, December 23, 1911.

SUGGESTIONS REGARDING THE SOUTHWESTERN EPIDEMIC OF CEREBROSPINAL MENINGITIS.

To the Editor of the Medical Record:

Sir:—During March I was in Texas and had an opportunity to study the epidemic of cerebrospinal meningitis which, during the last few months, has seemingly gained such a foothold in the Southwest. The first point which impressed me was the fact that the epidemic was not nearly so well in hand as press reports and the statements of those who had come in an advisory capacity to assist in controlling it would seem to imply. I learned that there was a considerable increase in the number of patients in the Dallas City Hospital, the number at the time of my visit being 82, with 8 new admitted on one day and 2 to 4 on other days. There were between 60 and 70 cases in the hospital "when the epidemic was officially declared over." It seems that business was considered to a degree which was detrimental to the work of controlling what has proved to be a very serious proposition. Undoubtedly the advent of a representative of Dr. Flexner, with the skill to which distance seems to have lent enchantment, had a salutary effect, especially in welding opposing factions of physicians together, and there is no doubt that the use of the Flexner serum has, in a very encouraging degree, controlled the progress of the disease. However, from an outsider's viewpoint, it is plain that much has yet to be done to solve the riddle of the control of this disease.

From several quarters I learned that the use of the serum was of no avail, and doubtless, judging from the literature on this subject, its use was not pushed. Still I am sure that hundreds of cases, which otherwise would have died, were saved by the administration of the Flexner serum, and to an unbiased investigator it could not fail to impress

itself that in this remedy has been found an extremely valuable curative measure.

By far the most important matter which impressed itself upon my mind was the inadequate prophylactic measures that were generally in use at the time of the epidemic, or, more correctly, at the time when public sentiment regarding the seriousness of the epidemic was at its height, and the people, urged on by the newspapers and the medical profession, were taking more than ordinary pains to disinfect the nasopharynx. Of course, for economic reasons, quarantine was by no means as thorough as it should have been, and while the serum was used a number of times for prophylactic purposes, a few cases of anaphylaxis that occurred were so dangerous that there was apparently as great a fear of the injection as there was of the disease.

Experience with antimeningococcus serum has emphasized four points: It is not as harmless as diphtheria antitoxin; its administration is not nearly as simple a matter as the injection of other antitoxic sera; its prophylactic administration is not as well understood as its therapeutic use, and occasionally it causes anaphylaxis of an alarming character. To me it was strange that the prophylactic use of bacterial vaccines was not in general use. This, coupled with the fact that Dr. A. E. Thayer of Baylor Medical School, probably the most capable bacteriologist in the State, had made a successful vaccine and emphasized its value, and, too, that in this very State a spectacular circumstance closely related to this had taken place within a year—I refer to the encampment of more than 12,000 soldiers of the U. S. Army and their immunization by means of antityphoid inoculation. I was surprised that it had not occurred to physicians that what was possible with typhoid, cholera, scarlet fever, and other infectious diseases, was likely of equal possibility with the one in question. There seems no doubt in my mind that by omitting to use inoculations of killed cultures of *Diplococcus intracellularis* the profession has overlooked a possible means of stamping out the epidemic, and, in addition, is depriving the medical profession of information which would be of immense value, and which will not be as easily secured again.

Another point worthy of emphasis deserves mention here. Very little, if anything, has been learned regarding the diagnosis of incipient cases of cerebrospinal meningitis. In this connection I quote from page 24 of P. H. R. No. 69, "Epidemic Cerebrospinal Meningitis," by W. H. Frost, U. S. P. H. & M. H. S., published January 26, by the United States Government: "To undertake to make bacteriological examinations sufficient to discover all the carriers in a community of any considerable size is obviously impracticable; if it were possible it would consume so much time that the infection would have ample opportunity to spread in the meantime. . . . The most recent bacteriologic studies, as well as past experience, indicate that cerebrospinal meningitis, when once it has become epidemic, is not controllable by any known means of practical application." Doctor Thayer, who has spent much time in investigating this matter, interested me greatly by a casual reference to a personal experience with this method in the control of this infection. Both he and his assistant found pure cultures in their own nasal secretions, and it occurred to them that part of a malaise from which they were suffering was due to toxins produced by this particular germ, which was abundantly proved by their personal feelings twenty four to thirty-six hours after an injection of vaccine, and a very important point was brought out which cannot be emphasized too strongly—it was not possible to secure further cultures of the meningococcus from their nasal secretions, and the same characteristic "dry throat and nose" with disappearance of the meningococci has been observed after many protective injections.

It may be possible to initiate a test similar in character to the von Pirquet tuberculosis test or the Widal test for typhoid fever, or the Bordet-Gengou reaction. Of course, this is purely suggestive, and far more simple than the bacterial study of the nasopharyngeal flora, or containing far more possibilities for good than "simply waiting until you get it or don't." It is admittedly entirely possible that no test of this character can be worked up, but it would seem that here was an excellent opportunity to prove this negatively. When it is evidently possible to control the infection in the nose with an injection of killed meningococci, why is it not reasonable to make this a prophylactic measure of general usefulness, and should not its possible value be definitely proved or not? And if it is found that the use of meningococcus vaccine as a prophylactic kills the organism in carriers, will it not serve two very important ends—the immunization of the patient and the prevention of the spread of the disease?

In conclusion let me emphasize: (1) That more attention be paid to prophylaxis of this disease than had up to the time of my visit apparently been paid; (2) that the use of meningococcus vaccine in prophylactic work deserves an extensive and thorough trial; (3) that there is an opportunity to establish a reaction test in cerebrospinal meningitis.

HENRY R. HARROWER, M.D.

1301 CITY HALL SQUARE BUILDING, CHICAGO.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

KING EDWARD'S HOSPITAL FUND—ROYAL COMMISSION ON TUBERCULOSIS—NYSTAGMUS—INSURANCE ACT DIFFICULTIES AND OPPOSITION—OBITUARY.

LONDON, April 19, 1912.

YESTERDAY at the annual meeting of Governors of King Edward's Hospital Fund, Lord Rothschild, the honorary treasurer, reported that the present value of the investments was £1,604,004, showing a net increase of 1.4 per cent. The trust securities showed a diminution of their original value of 5.6 per cent., while the non-trust securities showed an increase of 5.4 per cent. The Speaker of the House of Commons occupied the chair and stated that the munificent donor of £50,000 to the London hospitals, the major part entrusted to the administration of this fund, who had wished for a time to remain anonymous, was Sir Ernest Cassell, who gave it in memory of his daughter. He also stated that the committee on the out-patient system had made considerable progress with the study of the voluminous evidence collected, and its report might be looked for at no very distant date.

The final report of the Royal Commission on Human and Animal Tuberculosis made rather an opportune appearance just before the opening of the seventh International Congress on Tuberculosis, which, as of course you know, is now sitting in Rome. It is stated here that 4,000 delegates are in

attendance there, but you will have direct information about it, and it does not concern a London correspondent. Our Royal Commission, however, may claim mention again. The present volume of its work is a solid contribution of about 350 pages, illustrated by sixteen colored plates, and records the comparative bacteriological and histological investigations made by Dr. Arthur Eastwood. He has worked with viruses obtained from cases of spontaneous disease in human beings, animals, and birds, as well as with specimens from experimentally infected animals. The investigation is of the greatest interest and will receive the careful consideration of all interested. It is not possible to describe at length the conclusions to be drawn from the report, but these examples may suffice to show those of Dr. Eastwood. He found tubercle bacilli of human origin and of animals were identical culturally, microscopically, and in their effects on the tissues of experimental animals. So, too, bacilli from any human tissues were identical with those in the bodies of cattle and swine. Some of human origin grew more luxuriously and did less histological damage in the organs of experimental animals than those commonly obtained from cattle and swine. The characteristics of a virus were remarkably stable in protracted experiments, and so support the view that changes in a particular virus do not rapidly or readily take place in the human body. But he found there were some viruses that held an intermediate position between those of human and animal origin, so that all strains could not be grouped in two stable classes. Nevertheless, all mammalian viruses differ only in degree, not in kind. But avian viruses, he found, differed from mammalian types in kind as well as in degree.

During our coal trouble it seemed opportune that miner's nystagmus should obtain renewed attention, and it came before the public in rather a direct manner. Sir A. B. Markham, M. P., himself a coal owner, wrote to the Home Secretary to direct his attention to the theory of Dr. Court that the disease is due to the insufficient light given by the safety lamps in use and that increased illumination is the preventive. This theory has been urged by Dr. Court for some twenty years as the result of investigations in different mines. He found that men working with naked lights suffered to an insignificant extent in comparison with those using safety lamps, the light from the latter being so much more defective. Defective light, he maintains, is the chief, if not the only, cause of the strain on the eyes which leads to nystagmus, which will disappear under efficient illumination. Surely it should not be difficult to supply this, and it seems surprising that some mine owner has not installed a complete system, for of late the question has assumed a pecuniary aspect, for compensation has been awarded to sufferers on the opinion of experts, who held that one attack predisposed to more, and so to permanent injury. If this opinion should prevail the compensation demanded from employers will be enormous. Dr. Court repudiates this view. He has forty years' experience in the coal mining industry and he advocates a full independent inquiry.

The opposing theory, still held by many, attributes the disease to the strain of the extrinsic eye muscles, particularly the elevators, on which much stress falls when the miner is at work in a position requiring him to look upward. The fatigue might thus be compared with that giving rise to writer's cramp. If this view were correct we ought to find nystagmus common in other mines, but it is practically only found in coal mines. In his reply to Sir A. Markham, the Home Secretary says Dr. Court's suggestions were brought to the notice of Dr. Haldane, who, with Dr. Llewellyn, has brought the subject before the Royal Society. The theory proposed by Dr. Llewellyn, who has made extensive inquiries among miners in coal and other mines, is that the disease depends on imperfect centripetal impulses, resulting in loss of the intricate connection between the governing centers of the associated movements of the eyes. He found hypermetropia or astigmatism in 93 per cent. of the cases he examined, suggesting that there might be some predisposition to the disease, as only a small percentage of miners are attacked by it. He admitted further that accident, shock, or general ill health might predispose to it. Moreover, he found Dr. Court's statements as to insufficient illumination confirmed by the fact that in naked lighted mines the disease is almost unknown. Dr. Haldane suggested to the Home Secretary that it would be a "good thing if Dr. Court and Dr. Llewellyn were to get into communication with each other. This might lead to a fuller discussion and a more complete exchange of views."

The Insurance Act is still exciting a good deal of discontent among the Friendly societies. On Monday a new organization calling itself the "Amend-the-Act League" opened an office in Westminster, and invited all parties and all classes to rally to its assistance. On Tuesday Mr. Worthington Evans, M.P., attended a meeting at the East End of about 4,000 persons on the lines the Amend-the-Act League intends to work. He was received with great enthusiasm. Another public meeting is to be held on the 23d, at which delegates from eighty-five constituencies in and around London have promised to be present and Mr. W. H. Forster is to preside. Other meetings are being arranged for the chief provincial towns. A penny "Amend-the-Act" stamp is being freely sold, as to which the officials says "it is better to lick a stamp once to get a right sort of insurance than to lick them always for an act that is deficient."

The Friendly Societies in Surrey have formed a United Council to watch over and promote the interests of men in their county who are affected by the act, and who are estimated to number from 50,000 to 60,000.

The Scottish Medical Insurance Council has been formed and meetings held in the Royal College of Surgeons of Edinburgh. They propose to consolidate medical opinion and maintain the interests of the profession in Scotland as affected by the act. It was determined that the insurance areas should be the units of the organization; that in each committees should be elected by the resident practitioners and should not enter into relations with insurance authorities without the sanction of the executive. A resolution of dissatisfaction was passed that the profession had not been properly consulted at any stage as to a measure introduced ostensibly in the interests of the public health. The meeting affirmed its adherence to the six points about which so much has been written, adding a seventh, viz., that "disciplinary powers be vested in some properly constituted medical body." The proposal was further approved that if these seven principles be not incorporated in the regulations of the commissioners, the executive should at once prepare a scheme for a medical service to be carried on by the profession in Scotland.

At the annual meeting of the Hospital Saturday Fund, Sir T. Vezey Strong, presiding, spoke of the difficulties they would have to face when the State insurance system was established. He held strongly by the voluntary principle which had always been supported by the English people and which was best for patients. Sir Saville Crossley was equally emphatic for the voluntary plan and against red tape government management and the increase of rates which would assuredly follow. Mr. Alvey urged that provision ought to be made for payment to hospitals for work done on behalf of insured persons, and it must be done in a way that should not interfere with the voluntary system.

Dr. William Ogle, lately superintendent of the Statistical Department of the General Register Office, has died at the age of 84. He was an Oxford graduate, A.M., M.D., became a member of the Royal College of Physicians in 1859, and was elected fellow in 1860. He was on the medical staff of St. George's Hospital for several years and a lecturer on physiology. He had been an examiner at Oxford, a medical officer of health in Hertfordshire, and held other important posts. He translated Kerner's "Flowers and Their Unbidden Guests," and was the author of numerous official reports issued by the Registrar General, besides contributions to medical societies, their transactions, and the *Journal* of the Statistical Society. He also edited some of Aristotle's works.

Sir Thomas Rennie, who spent many years in the Far East as medical officer to British consulates, maritime customs, and native hospitals, died on the 11th inst. at Aberdeen, where he was educated, graduating there M.B., C.M., 1872, and M.D., 1875.

Professor Edward Divers, F.R.S., who died last week at the age of 75, spent many years in Japan as Professor of Chemistry in the University of Tokyo and Principal of the Engineering College. Before accepting the invitation to Japan he was a lecturer at the Middlesex Hospital on Medical Jurisprudence. He was M.D. of Queens College, Galway.

Surgeon Colonel W. C. Robinson has died. He received his first commission in 1860 when he was L.R.C.P.I., and served in the Abyssinian expedition, 1867-8, for which he was awarded the medal. He retired in 1895.

OUR BERLIN LETTER.

(From our Regular Correspondent.)

SURGERY OF THE LUNGS—ACUTE AND CHRONIC PULMONARY SUPPURATIONS—SURGERY OF PULMONARY TUBERCULOSIS AND OF BRONCHIECTASIS—ARTIFICIAL PNEUMOTHORAX—INDICATIONS FOR PNEUMOTOMY—TRAUMATIC WOUNDS OF THE LUNG.

BERLIN, March 1, 1912.

THE present status of surgery of the lungs was the subject of a symposium recently held before the Medical Society of Berlin. The speakers were H. Fränkel and W. Körte. The former discussed the subject from the medical viewpoint, while the latter discussed the surgical aspects. Fränkel dealt with the theme under two headings, one including non-tuberculous pulmonary suppurations, and the other including only tuberculous processes. There are two factors that have contributed to the present high development of pulmonary surgery, namely, the improvement in the technique of pneumotomy, and the method of *x*-ray examination. By means of extensive resections the operative field can now be widely laid open,—thus affording not only greater perfection in operative work, but also a greater facility in diagnosis. Of the suppurative process in the lungs one may distinguish between the acute and chronic and the unilateral and bilateral forms. The acute suppurations are mainly of metapneumonic origin, and are caused by embolism or aspiration. These cases mostly resolve spontaneously. If this does not take place in three or four weeks operative interference is demanded. The danger consists in the development of septicemia and of inflammatory exudates that develop in the neighborhood of the gangrenous areas in the lung. Moreover, the latter may extend to the pleura or may cause metastatic abscesses in other parts of the body. In all instances of unilateral pulmonary gangrene operation should be performed as early as possible. The largest statistics relating to this condition have been published by Lenhartz. These deal with 120 cases which were operated upon with a cure in 73 per cent. There were 28 cases which came under the observation of Fränkel and which were operated upon by Körte. Of these 67 per cent. were cured; 21 of the cases were acute. That more cases came under the observation of Lenhartz in Hamburg than were observed in Berlin is probably due to the fact that the habits of alcoholism and tobacco-chewing indulged in by seafaring men predispose them to pulmonary suppurations. In the acute cases that are easily diagnosed, *x*-ray examination is of the greatest value. The examination, however, must be frequently repeated, for the cavities, according to their degree of fullness or emptiness, give quite different radiographic pictures. The *x*-ray examinations should be made in different positions, and under the briefest exposure, in order to eliminate the movements of respiration. Of greater difficulty is the diagnosis of chronic cases, for in these there are no longer circumscribed foci but infiltrates that give shadows involving the entire lung. According to Forlanini these cases should be treated by inducing an artificial pneumothorax. But the speaker did not believe that this method was adapted for all cases.

Among the bronchiectases there are to be distinguished acute and chronic, and circumscribed and diffuse forms. These cases are mostly the end-results of bronchopneumonia, and in warm and dry climates these cases are easily cured. If the cases are not cured, and tend to become diffuse, then the performance of artificial pneumothorax and resection of ribs must be considered as the proper operative measures. If there are pleural adhesions the latter procedure alone should be resorted to. Unfortunately the operative results already published are not favorable.

Artificial pneumothorax has been largely resorted to in the past few years in the treatment of pulmonary tuberculosis. If there are no adhesions the method is without danger. Since, however, adhesions are frequently present, and since the operation can be employed only when the disease exists on one side, the field of adaptability of this operation is a limited one. A manometer must always be employed, and to tear the adhesions with force is a serious surgical blunder. The method fulfills two requirements: the immobilization of the lung and the favoring of the development of connective tissue. In many cases improvement is also observed on the non-operated side. If artificial pneumothorax fails, then the resection of ribs is indicated.

This operation is particularly demanded in cases of recurrent hemorrhage and in all cases of tuberculosis with empyema.

In opening his address Korte referred to the great aids to pulmonary surgery which have resulted from the *x*-rays and the use of the differential pressure cabinet. Of course, before the introduction of these resources all the operations had been performed, but these are now far safer. Of the three methods, namely, the use of the negative pressure cabinet, according to Sauerbruch, the use of Brauer's positive pressure apparatus, or the employment of Kuhn's method of intratracheal intubation, the method of Brauer appears to be the one that has gained greatest recognition. With reference to diagnosis it has been Körte's experience that pulmonary abscess and pulmonary gangrene cannot be distinguished from each other. A diffuse gangrene such as sometimes follows an influenzal pneumonia is not suitable for operation. In his cases there were found at operation total adhesions in eight instances, and partial adhesions in 32 instances, both varieties constituting 50 per cent. of the cases. The presence of adhesions is no contraindication to pneumotomy. The operation may be carried out under local anesthesia, but in all cases a large thoracic opening should be provided. The use of morphine and scopolamine is superior to general anesthesia. The thermocautery is not superior to the knife, for the former is not capable of stopping the deeper hemorrhages. Within recent years the operation has been unsuccessfully employed in the treatment of bronchiectases. The ligation of a branch of the pulmonary artery may be considered in this connection. Direct healing by the process in the lung is not to be expected from this procedure. In a number of cases a favorable result has been obtained in consequence of the shrinkage of the lung resulting from the operation.

As to the dangers associated with surgery of the lungs, those connected with the movements of the lungs and of the mediastinal structures, and with reflex inhibition of respiration, the former may be avoided by the employment of differential pressure, while to prevent the latter there is at present no efficient means known.

The indications for operation in wounds of the lung are intrathoracic bleeding and traumatic pneumothorax. The speaker's losses in operations of this kind were comparatively small, considering the fact that the patients' lives were in jeopardy. Of the 30 cases operated upon for empyema there were 9 fatalities. In 140 cases the result of the operation was so favorable that the lung immediately resumed its respiratory function.

Progress of Medical Science.

Boston Medical and Surgical Journal.

April 25, 1912.

Care and Control of the Alcoholic. A. Lambert.
Conference on "Diseases Among School Children and the Remedy." Introductory Remarks. E. O. Otis.
Diseases of the Mouth, Throat and Chest. R. C. Cabot.
Malnutrition. By S. C. Badger.
Diseases of the Skin. C. M. Smith.
Orthopedic Defects and Rickets. J. E. Goldthwait.
Nervous and Mental Disorders in the Schools. A. W. Fairbanks.
Blood Transfusion for Hemorrhagic Disease of the Newborn: The Use of the External Jugular Vein in Infants. B. Vincent.

Care and Control of the Alcoholic.—A. Lambert states that one can best classify alcoholics into three classes: The first class consists of those suffering from industrial alcoholism, who begin taking the alcohol in moderate doses to enable them better to perform either muscular or mental work. This form soon leads to increasing doses and tends always to chronic alcoholism with its accompanying mental deterioration. The second class includes the convivial drinkers who drink to increase the joys of life, and while this invariably tends to attacks of drunkenness it does not so often tend to chronic alcoholism, but in any given individual it may turn into excessive steady drinking and then naturally to chronic alcoholism. The third class consists of those individuals who drink to blot out the recollection of sorrow or of trouble; of those who cannot face the harshness of their existence or of those who, congenitally weak mentally, cannot stand the strain of their environment, and who naturally turn to some narcotic for relief. The convivial drinkers, while they frequently show a greater amount of drunkenness than those of the other classes, yet show a less amount of chronic alcoholism. Briefly stated, the treatment found of value by the author in the treatment of alcoholism consists in the hourly dosage of a mixture of belladonna, hyoscyamus, and xanthoxylum. This mixture is given every hour, day and night, for about fifty hours. There is also given about every twelve hours a vigorous catharsis by means of compound cathartic pills and blue mass. At the end of the treatment, when it is evident that there are abundant bilious stools, castor oil is given to clean out thoroughly the intestinal tract, and the reconstruction treatment by means of tonics is begun. During this treatment it is essential that each patient be treated as a separate individual. How the mixture of belladonna, hyoscyamus, and xanthoxylum acts the author does not know. If any one of the ingredients is left out the reaction of the cessation of desire is not as clear-cut as when the three are mixed together. The dosage necessary is judged by the physiological action of the belladonna.

Nervous and Mental Disorders in the Schools.—A. W. Fairbanks states that the prevention of these disorders requires the following pedagogic reforms: (1) The abolition of all competitive work. (2) The absolute abolition of either moral or material rewards for excellence in school work or attendance. (3) The elimination of special examinations, the passing of which is held essential as a requisite for promotion. (4) The making of promotion solely dependent upon the capacity shown by the individual child in its ordinary routine daily work, such promotion to occur whenever the child indicates its capacity for such advancement. (5) The elimination, as far as possible, of a fixed standard, either of grade or of graduation, to which children are expected to conform at definite periodical intervals, or at definite and arbitrarily fixed ages. (6) The elimination of report cards sent to parents, weekly or monthly, or at any other time. (7) The abolition of condemnatory or adulatory certificates and the substitution therefor of personal contact with the parents and the home. (8) In certain cases the institution of special instruction by special teachers in very small classes. (9) The abolition of afternoon sessions for all grades below the fifth, or the entire devotion of the afternoon session to educative play without restraint. (10) The assignment of the easiest studies for the afternoon sessions for all grades from the fifth upward. (11) The reduction of the time during which the concentration of the attention of the pupils is required for any one subject. (12) The abolition of home lessons requiring mere abstract reasoning or routine memory.

Blood Transfusion for Hemorrhagic Disease of the Newborn.—B. Vincent reports a series of four cases of this condition in order to emphasize the striking result of blood transfusion in this disease and to describe a variation in the technique which shortens and simplifies the operation in infants. In the author's first three cases the donor's radial artery was connected by a glass tube with the infant's femoral vein, as this vessel seemed to be the

most accessible vein of sufficient size in a baby. The operations were carried out successfully, but it was found that certain difficulties in the operation were due to the awkward position of the femoral vein, its depth, and the numerous branches. This experience led the author to search for a more superficial large vein. The examination of many infants demonstrated that the external jugular vein is more easily located and larger than the other superficial veins in a baby. The author has used this vessel in the past four cases and has found that it is as large as the femoral vein in an infant, or larger, and has no troublesome branches. Its position just beneath the skin makes the exposure of the vein and the insertion of the glass tube a comparatively simple matter. If the tube is about 12 centimeters long it will extend beyond the infant's head and the donor's artery can be easily connected to the upper end. By this method the blood is transmitted almost directly into the infant's heart.

New York Medical Journal.

April 27, 1912.

Correction of Lateral Curvature of the Spine.—E. G. Abbott states that the two fundamental principles underlying the correction of such deformities are: (1) overcorrection, for if motion is not established in all directions to the extreme of normal motion the treatment is only palliative and not curative, and (2) fixation in the overcorrected position, until the parts are so thoroughly stretched and changed in their shape that the deformity will not return. That it has heretofore been impossible to correct the deformity of fixed lateral curvature is due to the fact that it has been impossible to apply these principles. It is then evident that to effect a cure the spine must be flexed and drawn to one side by force exerted in the direction opposite to that of the fixed curve; and that together with this the low shoulder and depressed ribs must be elevated and forced into a position posterior to that of the high shoulder and bulging ribs, *i.e.* the patient must be placed in a position which is exactly opposite to that of the original deformity, and this with the spine flexed. By this method not only is the spine overcorrected, but the integral parts of the deformity pass through the same arc which they traversed when the deformity developed. A frame made of gas pipe and a hammock are employed for the purpose of making the necessary corrections and of applying the plaster jacket. The technique is described in detail.

Abbott's Method of Correcting Fixed Lateral Curvature.—D. D. Ashley states that Abbott's method is concerned only with the so-called "structural" or fixed curve—the curve that the patient cannot voluntarily overcome. The postural, functional, and habitual curvatures are not considered in this treatment, these still being treated by exercises. It is not a cure for all conditions and forms of scoliosis. It is especially applicable in the acquired forms when not too rigid, severe, and complicated by structural changes of bony ankylosis, although several cases in which the *x*-ray revealed apparent ankylosis have yielded successfully to this treatment. The correction of a deformity of the body must mean the ability of the surgeon to make an overcorrection, as in bowlegs, knockknees, clubfeet, and wryneck. Abbott's conception is based upon the theory of a rotating forward of the concave side and that in correction the bodies must move to the concave side and backward, as the deformity was produced by flexion and side bending toward the convex side, the correction and overcorrection must take place in the same position of flexion and side bending to the other side. To attain this effect Abbott flexes the spine with pressure over the lower ribs, with side bending, the arm of the depressed side being brought high up and forward and the arm of the convex side being brought well down and backward. The frame and hammock hold the patient in this position of extreme flexion, while the plaster of Paris jacket is being applied. Usually four fenestræ are cut out, the largest behind to permit farther flexion and free rotation of the concave side backward, and two in front, commencing at base of breasts and extending from five to eight inches; these to adjust pressure pads. Another is generally made on the side of the convexity better to control any crushing or bending of the ribs, which is to be avoided.

Rotary Lateral Curvature.—C. Ogilvy describes the exercises devised by Klapp as an accessory in the treatment of this condition. These creeping and corrective exercises relax the muscles of the spine and improve the general condition of the patient, but do not result in holding any true correction of the bone deformity. To do this a spinal brace is essential in addition to these exercises. Speaking generally, results sought for are: (1) The correction of the standing postural deformity of shoulders forward and abdomen protuberant with an accentuated lumbar lordosis. (2) The correction of the lateral deviation of the spine, associated with the leaning of the body in the same direction. (3) The correction of the rotation of the vertebræ with the associated malposition of the ribs.

Present Status of Surgery for Cancer of the Breast.—By E. S. Judd. (See MEDICAL RECORD, February 3, 1912, page 249.)

Journal of the American Medical Association.

April 27, 1912.

Angioneurotic Edema.—H. I. Wiel presents the history of several cases of angioneurotic edema associated with gastrointestinal symptoms and complicating other disorders, tuberculosis, cholelithiasis, gonorrhea, etc., and most of them in persons of decidedly neurotic habit. As usual the condition tended to recur and was rather resistant to treatment, remedies effective in one case often failing in others, or in different attacks in the same individual. The applications that were found of greatest use externally were compresses, respectively, of aluminum acetate, argyrol (20 per cent.), boric acid, and calamine lotion

Most writers on the subject have regarded the angioneuroses as a disease, and this may be the case in some instances. In the cases he reports the author states that it seems clear that the angioneurotic edema was not the disease itself, but an accompaniment and complication of various other disorders, all characterized by some sort of gastrointestinal disturbance. In that light it might be considered, as it has been by some, the outcome of some intestinal toxemia. It is possible that by working along the lines of anaphylaxis one may approach something definite as regards this point. In the meantime the recognition of these cases is of considerable importance, especially when they approach the surgical domain.

Neuropathic Inheritance.—A. J. Rosanoff discusses the application of the Mendelian theory to neuropathic inheritance in the human subject. Expectation in accordance with the Mendelian theory is stated as follows: (1) Both parents being neuropathic, all children will be neuropathic. (2) One parent being normal, but with neuropathic taint from one grandparent, and the other parent being neuropathic, half the children will be normal, but capable of transmitting the neuropathic constitution to their progeny, and half will be neuropathic. (3) One parent being normal and of pure normal ancestry, and the other parent being neuropathic, all the children will be normal, but capable of transmitting the neuropathic constitution to their progeny. (4) Both parents being normal, but each with the neuropathic taint from one grandparent, one-fourth of the children will be normal and not capable of transmitting the neuropathic constitution to their progeny, one-half will be normal, but capable of transmitting the neuropathic constitution, and the remaining one-fourth will be neuropathic. (5) Both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one grandparent, all the children will be normal; half of them will not be capable and half will be capable of transmitting the neuropathic constitution to their progeny. (6) Both parents being normal and of pure normal ancestry, all the children will be normal and not capable of transmitting the neuropathic constitution to their progeny.

Periurethral Complications of Strictures.—M. Silverberg concludes that the periurethral complications of stricture are of an infectious nature. Inflammation may be acute, leading to a circumscribed abscess, or hyperacute, leading to a phlegmon rapidly involving the perineum, scrotum, and abdominal wall. In the latter event the presence of urine is of secondary significance. Inflammation may be chronic and is then characterized by a progressive development of new connective tissue, possessing little resistance to infection, and therefore frequently the seat of limited suppuration.

Myocardial Degeneration.—E. F. Ingals states that the most important symptoms of this condition are irritability of temper, melancholia, loss of memory, precordial pain, palpitation, dyspnea, diminished physical and mental endurance, pulse alterations and slight edema of the ankles. These are attended by more or less change in the physical signs, which however are not distinctive until late in the disease. Often the process goes on without symptoms until an attack of angina pectoris or fainting appears, but in most cases there are some antecedent symptoms within two or three years. There are no signs enabling one to distinguish definitely between the various forms of the disease.

Vaccine Treatment of Acne.—O. Smiley presents a tabulated report of 100 cases of acne vulgaris treated by autogenous vaccines. Accessory treatment was also given to modify the viscosity of the blood if necessary; general tonics and mild laxatives were also employed. Calcium lactate was used in preference to sodium citrate. Liberal quantities of soap and water were also employed. In 86 per cent. of the cases the organism was a *Staphylococcus albus;* in 10 per cent., *S. albus* and *aureus;* in 3 per cent., *S. aureus* alone, and in only one case were the *S. aureus* and *citreus* found together. The size of the initial dose ranged from 100,000,000 to 150,000,000, and was increased by one-eighth to one-fourth of the initial dose until improvement appeared, and was then held stationary or modified by the degree of the negative phase. The largest doses were given when the *aureus* existed either alone or with the *albus*.

The Lancet.

April 20, 1912.

Modern Views Upon the Significance of Skin Eruptions. H. G. Adamson.
Mosquitoes and River Vessels. A. Balfour.
On Radium Emanation in Mineral Waters. T. P. Lowe.
Vaccine Therapy in Rheumatoid Arthritis. T. J. Horder.
The Recurrence of Adenoids. T. Guthrie.
Volvulus of the Spermatic Cord. A. A. McConnell.
The Treatment of the Early Stages of Senile Cataract. H. Smith.
Treatment by Means of Mechanical Therapeutics at the Edgar Allen Institute, Sheffield. R. Abercrombie.

Skin Eruptions.—H. G. Adamson discusses the significance of the patterns and distributions of skin eruptions. These distributions may be determined by local physical agents, as in the case of the trade eczemas upon the hands and fingers. As regards eruptions of microbic origin it is noted that their site may often depend upon the facility with which infection takes place in certain positions, as in the case of lupus vulgaris upon the cheek. The lymphatic circulation is never responsible for the wide distribution of eruptions. In sporotrichosis the nodules appear along the course of the inflamed lymphatics. The vascular distribution of microorganisms is exemplified in the eruptions of secondary syphilis, the rose rash of typhoid fever, and in some infective erythemas and purpuras. The influence of the nervous system upon the distribution of skin eruptions is seen in herpes zoster, in alopecia following section of a nerve, in hyperidrosis limited to an area corresponding to that of a particular nerve distribution. Raynaud's disease and some allied minor affections are of vasomotor nerve origin.

Radium Emanation in Mineral Waters.—T. P. Lowe, quoting from Sir Willliam Ramsay's recent report on the radioactivity of the waters of Bath, states that radium is a very unstable element, continually changing into another body, also elementary. During this change it parts with helium, each atom of radium furnishing one atom of helium. Having shot out its particle of helium, the atom radium is no longer radium, but a gas to which Ramsay has given the name of niton, but which was first known by the cumbrous name of radium emanation. The potency of radium depends upon its niton. Neon is also supposed to be one of the products of radium, but possibly further investigations may show it to be one of the results of the disintegration of some other radium-like element which has not yet been discovered. The radioactivity of all mineral waters exists only at the source, and such waters rapidly lose this quality. Nevertheless, it is possible by artificial means to render them permanently radioactive. W. H. B. Atkins and F. C. Harrison state that radium produces the following therapeutic results: (1) Greatly increased diuresis and excretion of uric acid; (2) largely increased carbonic acid exhalation, from 20 to 60 per cent.; (3) lowered blood pressure, especially in arteriosclerosis; (4) decreased blood viscosity; (5) great improvement of gastric and duodenal digestion; (6) marked solvent action on gouty deposits; (7) the dislocation of uric acid and its salts into carbon dioxide and ammonia; (8) inhibition of inflammation and relief of pains in rheumatism; (9) increase of sexual vitality; (10) considerable influence over sympathetic nerve affections; and (11) marked results in diabetes, albuminuria, and glycosuria. All of these results the author has been able to confirm from personal

observation in Bath, and he would add the rapid disappearance of indican from the urine.

Vaccines in Rheumatoid Arthritis.—F. J. Horder states that it is illogical to conceive of the use of vaccines as covering the whole treatment of this complex disease. Individual cases show great variations and require different treatment even in principle. The proper examination of the case entails two separate investigations: (1) a critical analysis of the symptoms and signs, as referable to changes in joints, muscles, nerve tissues, blood, and general nutrition; and (2) an examination which has for its special object the discovery of one or more foci of infection. In this second part of the examination careful attention is paid to the mouth, the fauces, the nose, nasopharynx, and nasal accessory sinuses, the respiratory tract, the small and large intestine, the urinary tract and the uterus. If any infective focus is found efficient drainage is necessary. One may then proceed cautiously to raise by specific means the level of the patient's immunity against the residual infection going on at the site of the original invasion or against secondary foci in the body which cannot be dealt with directly. The means available are: (1) immune sera, by which it may be possible to supply temporarily a degree of passive immunity; and (2) vaccines, by which it is hoped to stimulate the patient to a more permanently useful degree of active immunity. If the case is acute or subacute and the evidences of intoxication are a noticeable feature of the case, the preliminary use of immune serum is indicated. In the more chronic cases, which are much more common, resort may be had forthwith to autogenous vaccines. In actual practice the microorganism most often incriminated as the infective element in the disease is a type of streptococcus, not *Streptococcus pyogenes*, but *Streptococcus salivarius* or *Streptococcus fecalis—i.e.* streptococci of relatively low virulence, not tending to suppuration and traceable, as the names are intended to suggest, to the mouth or intestine. Other microorganisms are much less common; the gonococcus, pneumococcus, and *Bacillus coli* almost exhaust the series, as at present established by reliable observations. Perhaps *Staphylococcus aureus vel albus*, *Bacillus influenzæ*, and certain diphtheroids may be included in the list. The initial dose of vaccine should always be small.

The Recurrence of Adenoids.—T. Guthrie states that the most important factor in the recurrence is the age of the child. In children under four years of age there is decided risk of recurrence; between the ages of four and seven the chances of recurrence are slight, and after the age of seven they are practically nil, always provided that the operation has been complete. Apart from the influence of age, it is certain that recurrence is much favored by an attack, within a short time of the operation, of one of the specific fevers, especially measles or whooping-cough. Again, according to C. Parker, in children who are the subjects of congenital syphilis recurrence seems to be the rule rather than the exception unless the general condition is carefully treated. Lastly, recurrence is probably favored by the presence of untreated anterior nasal obstruction, especially hypertrophic inferior turbinals, and is therefore apt to be met with in patients with high arched palates and narrow nasal cavities in whom removal of the adenoid does not lead to the establishment of free nasal respiration. All of these conditions have the feature in common that they tend to excite or maintain a state of chronic postnasal catarrh, which should, therefore, wherever it is present, receive appropriate treatment if the risk of recurrence is to be reduced to a minimum. In conclusion, it is remarked that a true recurrence of adenoid vegetations is a somewhat rare event even in the case of young children, and the fear of it affords no valid argument against operation.

British Medical Journal.

April 20, 1912.

Tuberculization and Detuberculization.—R. W. Philip states that tuberculosis is a vicious by-product of an incomplete and ill-informed civilization. The hope for the solution of the tuberculosis problem, bristling as it does with difficulties of many sorts, lies in the application of an organized plan sufficiently wide to cover all the ground. Such a plan is outlined by the author as follows: In the foreground it appears clear that for every considerable community there must exist a center which shall concern itself in the widest possible way with the facts of tuberculosis as it exists in the area. Here every aspect of tuberculization will be dealt with and every line of detuberculization will be conceived and realized. Toward the center inquiries from all sides regarding tuberculosis should be directed. To the center patients in all stages of tuberculosis should be invited and likewise persons who may be anxious lest they be tuberculous. This great collecting center constitutes the seat of diagnosis and classification of the varying types of disease. The collecting center comes in turn to be a "clearing house." Each case will receive appropriate guidance and direction, whether at the center itself or at one of several residential institutions with which it should stand in organic relationship. For example, patients for whom there still remains hope of recovery will be passed to the sanatorium with its great possibilities of treatment and education. Another group, in whom tuberculosis has already played havoc, so that hope of recovery has disappeared, will be transferred to the hospital for advanced cases. Others, who may have already been treated successfully in a hospital or sanatorium and to whom return to ordinary work might mean physical relapse and corresponding economic waste, will be drafted to the farm colony for prolonged supervision under favorable conditions and simultaneous education on lines of therapeutic and economic value. The tuberculous school child will be transfererd to a special tuberculosis school in close relationship with the center itself or with the sanatorium or farm colony, so that during the process of recovery from tuberculosis mental development may not be unnecessarily interrupted. When the time comes for patients to be discharged from these several institutions they should be referred once more to the center for such medical superintendence and after-care as will ensure that the recovery, in whole or in part, which has been achieved shall be maintained.

Osteitis Deformans.—T. W. Parry reports a case of this condition occurring in a woman aged 63 years. The duration of the disease was four and one-half years. It began following shortly after an operation for appendicitis. The first manifestations were a bowing of the legs and a marked shortening of the stature. One day while the patient was stooping the left femur suddenly fractured. There was now no doubt of the diagnosis; the femora were much enlarged and bowed forward and outward, and the tibiæ were also bowed in the same direction, but not nearly so proportionately enlarged. When the patient lay on her back with her heels together the knees were widely separated and there was an arch under the

center of the right femur under which one could pass one's hand. The cranial bones were not enlarged as one would have expected, but the lower maxilla was thickened and protuberant at the chin. Death took place five weeks afterward, apparently from a failing heart.

Unsuitable Neck Clothing.—W. G. Walford states that any pressure on the neck acts most insidiously; the neck is cone-shaped and a collar or band that may be perfectly loose at the middle of the neck, say over the cricoid, may be tight enough to exert some pressure when it drops into its working position, more especially in a slope-shouldered person. Again, a collar may seem roomy, but may, when a person is reading, get pressed by the chin onto important organs. Next, the habitual wearing of neck clothing not sufficiently large arrests the full development of the neck, with its numerous organs for communication between brain and body. This is of great importance during the period of growth. Also in advancing life when the neck muscles are wasting and losing their tone, the vessels and nerves beneath become more exposed and sensitive to pressure. Many cases of vertigo, which may or may not be associated with vomiting, yield immediately to the remedy of loosening or enlarging the collar. The undersized neck is particularly noticeable in phthisis; the author believes that the cause of this undersized neck is the use of tight neckwear by fast growing young people. The lymphatics are easily obstructed by neck pressure. In heart cases it is particularly important that the neck clothing should be loose.

Tincture of Digitalis.—A. Goodall concludes from his investigations that nearly 50 per cent. of samples of digitalis made by manufacturing chemists of repute showed a departure from the average standard of potency. The limits of this variation were from 275 per cent. over strength to 40 per cent. under strength. In other words, the effect of a dose of 10 minims might be that of 37½ minims or of 6 minims. Tincture of digitalis probably retains its full activity for one year, but after that period deterioration of its potency to an important extent is likely to take place.

Muenchener medizinische Wochenschrift.

April 16, 1912.

Error in Sex.—Ringel reports the case of a supposed boy with hypospadias and bilateral cryptorchism, who was otherwise well developed. The hypospadias would be classed as penoscrotal. The testicles were in the inguinal canal. Although patient was but six years old there was considerable hair on the mons veneris. The raphe of the scrotum was plainly visible. Operation was undertaken to cure the hypospadias and then displace the testicles down into the scrotum. The first check was found in inability to isolate and mobilize the urethra, so that operation was abandoned. Two subsequent attempts also failed. It was then decided to operate only upon the testicles. When the latter were exposed, however, they were found to be prolapsed ovaries. Rectal exploration also showed the presence of a uterus. The plan of operation was now radically altered. The "scrotum" was split and search made for a rudimentary vagina, but it was decided to go no further for the time being. Two weeks later an exploratory laparotomy showed that the entire internal genitals were normally feminine. An attempt was now made to open up a vaginal passage from above downwards. A cul-de-sac with the blind end below was found and opened up externally, and a strip of gauze left in, and the labia majora subjected to a plastic reconstruction. Labia minora were absent. At a later period the hypertrophic pseudopenis was extirpated. The vagina had undergone some obstructive cicatrization and was again restored. The patient thereupon assumed a female name and attire.

Nature of Scleroderma.—Kolle after exhaustive studies on a patient with this affection arrived at the following conclusions concerning the genesis of the latter in the particular case involved. Either a traumatism or a toxinemia is capable of injuring the sympathetic, especially in a predisposed subject. A sympathetic neurosis is set up, which is expressed largely in terms of trophic alterations in the bloodvessels of the skin. The same sympathetic neurosis also makes its presence felt in the lymphatic glands, and the changes set up are felt in the integument as edema, pigmentation, etc. The suspended function of the lymph nodes may perhaps be neutralized by giving extracts from these bodies, which are evidently intended to disintoxicate certain substances which pass through them. From this viewpoint the mesenteric lymph nodes have great significance. The author gave his patient mesenteric gland substance and the general improvement in the patient's physical state is set down not to any curative efficacy but to neutralization of some of the effects of the malady.

The Apparent Immunity of Certain Subjects to Methyl Alcohol.—Foerster as a result of studying some of the immune subjects in a petty episode of wood alcohol poisoning arrived at the conclusion that those who do hard labor and perspire freely are much less likely to suffer than those under the opposite conditions. Thus at a Hungarian wedding those who danced the most appeared to be least poisoned.

Deutsche medizinische Wochenschrift.

April 18, 1912.

Pathology and Treatment of Cardiac Asthma.—Rosin speaks of the nocturnal onset, the mechanical oppression which serves as a sort of aura to the paroxysm, the high degree of orthopnea, the fact that the case seldom comes to physical examination on account of the labored breathing and restlessness. The exact mechanism of the attacks is not known. The condition is symptomatic of many affections—arteriosclerosis, especially of the coronary arteries, embolism in the same and in the pulmonary vessels, myocarditis, aneurysm, nicotinism. It is likely to be confounded with spastic bronchial asthma and in extreme degrees of the latter diagnosis may be all but impossible at first. The history of the attacks and the exclusion of certain causal factors in cardiac asthma, with the presence or absence of emphysema will make for a proper differential diagnosis. Renal asthma may require differentiation although both forms may occur under identical circumstances. The two conditions, however, are radically distinct for uremic asthma is due to circulating toxins while cardiac asthma is the result largely of mechanical conditions. There should be no confusion with nervous asthma. The best remedies for the attacks appear to be camphor and caffeine, given by intramuscular injection. If the emergency is sufficiently acute some digitalis derivative should be injected intravenously. Morphine injection is often used as a synergist. An icebag should be placed over the heart as a physical stimulant and venesection will at the same time relieve the strain on the organ. The patient should be propped upright and inhale oxygen.

Studies of a Case of Myxedema in a Child.—Loewy and Sommerfeld have made a long series of investigations on a seven year old child which weighed less than nineteen pounds, and was no larger than the average yearling child. Four studies of metabolism were carried out, and the results are to be published in a separate paper. The results were not those demanded by theory and the records of others but the patient had already had thyroid therapy, although seemingly with negative outcome. The authors have as yet reached no definite conclusions and the chief result of their work appears to be that doubt is thrown on some of the current teachings concerning the affection.

Insurance Medicine.

Medical Aspects of Life Insurance.—In a second lecture on this subject, given on March 1, 1912, in London Sir Richard Douglas Powell deals with the three capacities in which the physician comes into practical contact with life insurance work: as the family adviser of the proposer for life assurance, as a referee for expert examination of the proposer, and as medical adviser to the assurance company. As for the ethical propriety of the medical attendant giving intimate information respecting the present health and past disease and habits of the patient, Powell thinks the course is plain. If he refuses to give a report his refusal would prejudice the case of his client with the insurance company. If he decides to furnish the report he is bound to do so fully and to answer all questions with perfect frankness. Any important fact with regard to the proposer's health intentionally withheld would, if discovered at a later period, seriously imperil the validity of the contract for insurance.

With respect to the mode of examination of an applicant for life assurance, it is pointed out that in medicine generally one comes to regard the defects of people from a relief and repair point of view and look to the prognosis as regards the immediate future. In life insurance work the immediate future is out of account; one has to regard the ultimate end and the sum total of the viability of the individual and to estimate it from a pecuniary point of view. When doing this, however, one must not allow oneself to be obsessed by such demands upon one's perspicacity. They must not lead one to "wear a worried look" nor to assume an unduly Sherlock Holmes-like attitude of preternatural sagacity when a poor and often very nervous applicant for insurance has to be examined. There is nothing more to be done than leisurely and courteously to go into the case on the customary clinical lines to make the applicant easy by a straightforward, matter-of-fact manner, and to take special pains with nervous people to wait upon minor points until they become calm. One should never be or appear to be in a hurry. Referring to the influence of heredity with relation to life insurance, the author describes the constitution of a man as his build, the integrity or otherwise of the tissues of which each part of his body is made up, and the wholesomeness or otherwise of the juices with which they are bathed; the sum of his vital force, his cell-quickening power, which must bear the call of judicious expenditure for a long or but a brief period of time.

Hereditary influence has an important bearing upon the detail of this construction. The first point is that good long-lived family history, especially with longevity in the parents and grandparents, and a general good record of viability of the immediate relatives, is of favorable augury for the insurer and will often serve to countervail some defects in his personal medical history. And the converse holds good. Racial viability and disposition to disease require passing notice. Jews are more liable to diabetes and perhaps less to tuberculosis and alcoholism than some other races. Of European countries, if we may trust the parity of relative statistics, England and Wales hold a middle place in the viability of their population between Norway, where it is higher, and France, where it is lower.

Discussing diseases of the nervous system the author thinks that, with regard to melancholia, Sir George Savage's dictum is fundamentally true, that "every melancholic is a potential suicide," and although a confirmed melancholic would not be considered for life insurance, it is well in cases in which there is a marked neurotic history pointing to instability of the nervous system or actual insanity in the family that the applicant's personal history be closely scrutinized for any evidence of nervous depression or breakdown and that he be considered as to his social relations, business conditions, and personal habits. It is sometimes of importance to insure the life of a person who is confined in an asylum with delusional insanity. Chronic cases of this form of insanity may be accepted for insurance when there is every probability of their remaining under certificates in a well administered asylum. However, contrary to a somewhat popular belief, the average viability of the insane is low; their resistance to degenerative and infective diseases is much impaired; they readily succumb to tuberculosis, Bright's disease, and terminal infections. Sir William Gower's suggestion is, perhaps, as practical and near the mark as possible, viz., in the most favorable cases on grounds of insanity alone, to reckon for the duration of life as two-thirds of the average for the age by the addition of a number of years equal to half the normal expectation. The question of tuberculosis is considered at length and tuberculosis in connection with gland enlargements in particular. In opposition to the expressed opinion of a large number of careful observers the experience of Powell leads him strongly to the view that an abnormally large proportion of persons who have had surgical tuberculosis, whether in lymphatic glands, bones, or skin, become later the subjects of pulmonary tuberculosis. It is, therefore, impossible to regard any person who has or has had glandular tubercle or tuberculosis in the closed forms, be it joint disease, spinal caries or other bone disease, fistula or pleurisy, as presenting other than a blemished life.—*The Practitioner*, March, 1912.

Insurance Against Tuberculosis.—The Finnish insurance company "Fennia" proposes to introduce tuberculosis insurance for a small extra premium. The company expects to build a small sanatorium and proposes to treat applicants insured with it in this sanatorium in case of development of pulmonary disease. The sanatorium is to be enlarged, if necessary, and if room be still lacking, the company binds itself to procure equivalent treatment in private sanatoria. It expects also to help patients who prefer to have treatment carried out at their homes.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, March 1, 1912.

Motherhood Insurance.—A government bill introduced in Sweden toward the end of 1911 proposes to establish compulsory insurance of all working women, to give them indemnity for time lost in case of pregnancy and childbirth. The insured women are to be supported for a certain time before and after delivery and also during the nursing period. All working women between the ages of 15 and 51 are included. The premium is to be paid partly by the women themselves, partly by the employers. If the sum collected is not sufficient, state help is provided for.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, March 1, 1912.

Insurance on the "Titanic" Victims.—According to the *Insurance Press*, the insurance paid on the lives lost in the *Titanic* amounted to $1,881,111, of which nearly half a million was accident insurance.

Book Reviews.

Proceedings of the American Society for Psychical Research. Section "B" of the American Institute for Scientific Research. Vol. V. Part 1. April, 1911. Contents: A Case of Hysteria. By Drs. W. H. Hamilton and J. S. Smyth (Pseudonyms); and James H. Hyslop, Editor and Secretary of the Society. Price $6 (paper).

This large book is entirely devoted to the study and analysis of a group of phenomena exhibited by a young girl of phthisical type, with hysterical stigmata, while in the so-called trance state. Associated with Prof. Hyslop in this study are a surgeon and an oculist, both "doubting Thomases," respecting any manifestation of a supernormal agency. The foster mother of the hysteric, a spiritualist, was also present at the seances. Some of the incidents in the subject's experience are the orthodox physical phenomena, such as raps, rope tying, levitation, and tambourine flinging; while others are more unique, such as "trance whistling," simultaneous singing, the starting and stopping of a phonograph, etc. Eusapia Palladino is outdone by the exhibition of automatic speech, automatic writing, and clairvoyant visions, by "Miss Burton," whose psychic powers were first made known by raps on the headboard of her bed as she slept, when she was but a child. All evidences of conscious fraud on the part of the medium are eliminated in the study. "She could not whistle and she could not sing, in her normal state." In the "trance state" she could do both expertly. "Hysteria or subconscious phenomena of some sort," Prof. Hyslop remarks, "seem to lie at the basis of all mediumistic phenomena, whether of the genuine or non-genuine type. This fact indicates that we should expect to find simulation of the inexplicable in all of it, and that we have no right to employ the standards of normal psychology in estimating the nature of the facts which we are expected to explain. In determining the question of fraud, which means conscious effort to deceive, we should always recognize the duty of prior investigation of hysterical conditions." The various situations and actions of Miss Burton, described by the investigators, are interpreted by them as "hysterical simulation with occasional vistas of the supernormal." The sex findings by a Freud psychoanalysis are not to be found in the book, although the patient, or medium, was examined by a neurologist. The book is of especial interest to the psychologist; but it is also of interest to the general reader, and to the physician on account of the recognition of hysteria as furnishing a partial explanation, at least, of the phenomena exhibited. A drawing and eleven flash-light photographs, taken during experiments, accompany the text. The experiments were apparently conducted with care and attention to detail.

Second Review of Some of the Recent Advances in Tropical Medicine. Being a Supplement to The Fourth Report of the Wellcome Tropical Research Laboratories at the Gordon Memorial College, Khartoum. By Andrew Balfour, M.D., B.Sc., F.R.C.P. Edin., D. H. P. Camb., Director, and Captain R. G. Archibald, M.B., R.A.M.C., Attached E.A., Pathologist and Bacteriologist, in Collaboration with Captain M. B. Fry, M.R.C.S., L.R.C.P., R.A.M.C., Attached E.A., Protozoologist and Assistant Bacteriologist, and Captain W. R. O'Farrell, L.R.C.P. and S.I., R.A.M.C. Price $3.75. Published for Department of Education, Soudan Government, Khartoum, by Baillière, Tindall & Cox, London, Depot for United States, Toga Publishing Co., New York City, 1911.

The work that is being done by the Wellcome Research Laboratories in the Soudan is of immense importance to the development not only of this particular country but of all tropical regions, and its publications constitute a most valuable addition to the literature of tropical medicine, and, indeed, of all branches of science relating to man and nature in the hot lands. The present volume is a review of progress in tropical medicine between the date of the publication of the First Review, issued as a supplement to the Third Report in 1908, to June, 1911. The subjects covered are the following: Air, Ankylostomiasis, Anthrax, Bacteriology, Beriberi, Beverages, Blackwater Fever, Chickenpox, Chigger, Cholera, Climate, Clothing, Dengue, Diarrhea, Disinfection, Dropsy, Dust, Dysentery, Elephantiasis, Enteric Fever, Feces, Fevers, Filariasis, Filters, Flies, Food, Food Poisoning, Goundou, Guinea Worm, Hematozoa, Heat Stroke, Hydatid, Hydrophobia, Influenza, Insects, Leishmaniasis, Leprosy, Liver Abscess, Malaria, Malta Fever, Measles, Milk, Mosquitos, Mycetoma, Myiasis, Ophthalmia, Oriental Sore, Parasites, Paratyphoid Fever, Pellagra, Phlebotomus Fever, Piroplasmosis, Plague, Pneumonia, Preservatives, Protozoa, Refuse Disposal, Schistosomiasis, Scorpion Sting, Scurvy, Sewage, Skin Diseases, Sleeping Sickness, Smallpox, Snake Bite, Spirochætosis, Sprue, Staining, Syphilis, Technique, Tetanus, Ticks, Tropical Medicine, Trypanosomiasis, Tsetse Flies, Tuberculosis, Typhus Fever, Vaccination, Vermin, Verruga, Veterinary Diseases, Water, Whooping-Cough, Yaws, Yellow Fever.

All the advances in these subjects are noted, with copious bibliographical references, so that one without access to the literature may inform himself of all that is new in the domain of tropical medicine; while the student of any subject, with access to a library, will find in this work an invaluable index-guide to the original sources. The white man's burden, on the medical side, is wonderfully lightened by this painstaking research of Dr. Balfour and his accomplished aids.

K Vchéniu o Jelúdochno-kishéchnem Samootravlenyi (The Doctrine regarding Gastroenterie Autointoxication). By B. Korenchevsky. Moscow, 1909.

Korenchevsky's dissertation has "gastrointestinal autointoxication" for a subject, and consists of a critical review of the literature and the report of numerous experiments on the toxicity of the gastrointestinal contents of animals. It forms a formidable volume of some 400 pages, and because of its résumé of literature will save a great deal of time to any Russian reader interested in the subject of autointoxication. The author's experimental data seem to support Metchnikoff's statement that the putrefactive bateria of the gastrointestinal tract form a source of autointoxication in man as well as in animals.

Old Time Makers of Medicine. The story of the Students and Teachers of the Sciences Related to Medicine During the Middle Ages. By James J. Walsh, K.C.St.G., M.D., Ph.D., LL.D., Litt.D., Sc.D. Dean and Professor of Nervous Diseases and of the History of Medicine at the Fordham University School of Medicine; Professor of Physiological Psychology at the Cathedral College, New York. Price $2.00. New York: Fordham University Press, 1911.

For reasons which it is difficult to understand and which perhaps have to do with the fact that research in any field is always easiest along lines already partly investigated by previous workers a curious custom is observed by most writers on medical history. It appears to have become an accepted convention to devote chapter on chapter to the early Greek physicians and then to proceed without delay to a discussion of the great medical personages of the last few centuries. The gap of a thousand odd years or so between the decadence of the Roman Empire and the Renaissance is quite generally dismissed as being a period of scientific sterility that contributed nothing to progress, and therefore unworthy of detailed description. It is Dr. Walsh's purpose to show how little this attitude is justified, and the present delightful volume is intended to arouse interest in this particular epoch of medical history which in fact is second to none in significance. Anesthesia, antisepsis, prosthetic dentistry, careful study of the pulse and respiration, efficient sanitary regulations, the use of the ligature, all were foreshadowed or even in actual use during the mediæval centuries, and some important advances, such as in the medical education of women were made to a point which has not again been reached until the most recent times. Dr. Walsh's well-known art as a medical historian was never applied to better purpose or in more agreeable fashion than in this volume on what to most readers will be quite unfamiliar lore. Some of the chapter headings taken at random will give a little idea of the interest of the book: Great Physicians in Early Christian Times; Great Jewish Physicians; The Medical School at Salerno; Mediæval Women Physicians; Great Surgeons of the Mediæval Universities; Mediæval Dentistry; Cusanus and the First Suggestion of Laboratory Methods in Medicine; Basil Valentine, Last of the Alchemists, First of the Chemists, etc. The description of the great university at Salerno, in its day the leading seat of learning in the world, is excellent, though the author hardly emphasizes sufficiently the dramatic quality of its eclipse which was so complete that at present not even the site of its buildings can be pointed out, and even in the magnificent collection of manuscripts of the nearby monastery at Cava, the repository of all the local records, the present writer on the occasion of a recent visit was unable to find a single document bearing directly on the affairs of the university. Enough has been said to indicate the importance of Dr. Walsh's book, but properly to appreciate its value the volume itself must be studied.

PRACTICAL ELECTROTHERAPEUTICS AND X-RAY THERAPY. With chapters on phototherapy, x-ray in eye surgery, x-ray in dentistry, and medicolegal aspect of the x-ray. By J. M. MARTIN, M.D., Professor of Electrotherapeutics and x-ray methods in the Medical Department of Baylor University, in the Medical Department of Southwestern University, and in the State Dental College, Dallas, Texas; Member of the Texas State Medical Association, American Medical Association, American Roentgen X-ray Society, etc. Containing 219 illustrations. Price $4.00. St. Louis: C. V. Mosby Company, 1912.

So far as the practical value of the work is concerned Dr. Martin's volume is a distinct success. It gives in simple and clear language an explanation of the various procedures in the diagnosis and treatment of disease by x-rays, and the apparatus suitable for each class of work. On the other hand, the theoretical parts of the book are curiously obscure and involved. We have seldom, for instance, read a more unintelligible explanation of the "electron theory" than is contained in Dr. Martin's "introduction." It is a pity that the good impression created by the rest of the book should be marred by this fault, and we hope that in future editions Dr. Martin either leaves theory out altogether or has it presented more satisfactorily. The book is well printed, abundantly and usefully illustrated, and forms a good guide in the practice of electro- and x-ray diagnosis and therapy.

ARTHRITIS. A Study of the Inflammatory Diseases of Joints. By PETER DANIEL, F.R.C.S. Senior Surgeon Metropolitan Hospital; Surgeon to the Gordon Hospital; Assistant Surgeon, late Pathologist, Charing Cross Hospital. Edited by JAMES CANTLIE, M.A., M.B., C.M. Aberd., F.R.C.S. Eng., Surgeon Seamen's Hospital Society; Lecturer on Surgery, London School of Tropical Medicine. Price $4.00. New York: William Wood and Company, 1911.

THIS is the third volume of the Medicochirurgical Series and is devoted to the study of the inflammatory affections of the joints. Dr. Daniel has avoided making the book a mere résumé of literature, indeed gives hardly any references, but has endeavored to make it an expression of his personal views on the important subject it considers. His views, too, are frequently unorthodox enough to surprise the reader, but he brings a wealth of experience to their support; the book therefore is very stimulating, however unsatisfactory it may be for an undergraduate student.

The subject matter includes such headings as synovitis, sprains, gout, Still's disease, hemophilic joints, tuberculosis of the various joints, etc., etc. The pathological appearances are illustrated by numerous *x*-ray photographs and line drawings, most of which are very clear and useful. A few, however, are altogether too diagrammatic, as, for example, a picture of a "miliary tubercle" on p. 240, which looks more like a projection drawing of a golf ball with a "black dot" center than anything in pathological anatomy. Dr. Daniel's statements are frequently too dogmatic, but dogmatism and independent views seem to be the very *raison d'être* of the book and cannot therefore be quarreled with too strenuously. Treatment is fully described, various orthopedic procedures being very well presented.

The volume is a very handy one, and should prove valuable to the practical worker in joint diseases. The reviewer is inclined to question the propriety of putting only the editor's name on the cover of the book, the real author's name being found on the title page inside the book. This practice is certainly misleading to one who is looking over a library shelf in search of the author's work.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume I, No. 1. Octavo of 133 pages, illustrated. Published bi-monthly. Price per year, paper, $8.00; cloth, $12.00. Philadelphia and London: W. B. Saunders Company, 1912.

IN response to the demand for strictly clinical teaching, Dr. J. B. Murphy, of Chicago, has consented to the publication of a series of his "clinical talks" at the Mercy Hospital in Chicago, which are intended for physicians and not medical students. These clinics are stated to be reported verbatim, exactly as they are given, and are therefore claimed to retain all the lecturer's individuality. It is proposed to issue this work in six bi-monthly installments. The plan includes the history of each case, followed by comments on the technique of the operator, the diagnosis, and the methods of arriving at the same and all the points involved in the living pathology in the particular type of case. The present number includes clinical accounts of cases of carcinoma of the breast, lipoma of the shoulder, varicocele, nerve anastomosis, salvarsan injections, cystadenoma of the breast, pelvic tumor, fracture of the patella, blood clot in the bladder, Charcot's disease, epithelioma of the nose, duodenal ulcer, hydrops, hemangioma of the leg, and fistula *in ano*. Although more or less of an innovation in this country, these clinics of well-known physicians have been largely published abroad, particularly in Germany, and although the manner of presentation is naturally lost in a published article, there are many readers to whom the books will undoubtedly appeal.

INFECTIONS OF THE HAND. A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand, and Forearm. By ALLEN B. KANAVEL, M.D., Assistant Professor of Surgery, Northwestern University Medical School; Attending Surgeon, Wesley and Post-Graduate Hospitals, Chicago. Illustrated with 133 engravings. Philadelphia and New York: Lea & Febiger, 1912.

IN taking up this extended work of over 400 pages one is tempted to inquire the reason for such an elaborate monograph on a subject which in the ordinary text-books of surgery is usually dismissed in a single chapter. The author claims and with justice that such an important organ ought to be thoroughly understood as regards the class of injuries to which it is most frequently subjected and he presents a series of experimental and anatomical investigations upon which his surgical deductions are based. The author divides manual infections into a number of classes, depending on the nature of the infection and the result which it produces. The acute forms may be classified under simple localized processes and graver infections, including tenosynovitis and fascial space abscesses, acute lymphangitis, and their complications and sequellæ. Kanavel's scheme of treatment is based on the differential diagnosis, even where the graver types are present, for, although all three varieties may develop in a single case, yet only one type will usually be found. If they are combined the symptoms and signs of each are present and each will demand a separate and distinctive form of treatment, for, in opening a synovial sheath infection, we do not by any means drain the fascial spaces or vice versa. Again, unless a clear understanding is had of fascial space infection, and ordinarily we do not determine whether or not it is present in an acute tenosynovitis, we might so make our incision in the synovial sheath that the fascial spaces would become infected unnecessarily, and in a patient who depends upon his hands for his livelihood such an error becomes criminal carelessness. Again, while the lymphangitis may become a tenosynovitis or a fascial space infection, in a great majority of cases it remains a clinical and pathological entity and the mistake frequently made of assuming this relationship and treating it accordingly has been responsible for grave errors and consequences. The author claims that the differentiation of these types can usually be made and depends on a clear understanding of the basic principles of inflammation produced by the various bacteria, coupled with a knowledge of the anatomical relations peculiar to the hand, and a study of the course any given infection will normally pursue. This in brief is the basis upon which the book is written and the author presents the results of a large number of personal experiments to demonstrate his views. A great deal of this matter is new, but it confirms the claims of other investigators. The illustrations, whether original or borrowed, are carefully chosen and aid greatly in the proper understanding of the text. The book is a very interesting one and gives evidence of thorough and painstaking study, such as is not often met with in American surgical text-books. It will bear careful examination, and the author is to be complimented on the clear and satisfactory manner in which he has presented the subject.

LEITFADEN DER ELEKTRODIAGNOSTIK UND ELEKTROTHERAPIE FÜR PRAKTIKER UND STUDIERENDE. Von Dr. TOBY COHN, Nervenarzt in Berlin. Vierte, vollständig umgearbeitete und vermehrte Auflage. Price 6.60 marks. Berlin: Verlag von S. Karger, 1912.

Dr. TOBY COHN is well known to many American physicians as a teacher of electrodiagnosis and electrotherapy especially in their applications to nervous diseases. His handbook on the subject has enjoyed much popularity, the continuance of which is well deserved by it in its new edition. It is singularly simply and clearly written and is well illustrated; especially praiseworthy in the latter respect are several charts covered with transparencies giving the anatomy of the various motor points of the muscles. The new edition of the book has been made complete by the inclusion of a chapter on d'Arsonval and Tesla currents, on sinusoidal current, etc. It is heartily recommended to readers in search of a guide in the German language of electricity as applied to medicine.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held April 4, 1912.

THE VICE-PRESIDENT, DR. GLENTWORTH R. BUTLER, IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Neurology and Psychiatry, and the subject for the evening was "Psychanalysis."

The Fundamentals of the Freudian Psychology.—Dr. WILLIAM A. WHITE, Superintendent of the Government Hospital for the Insane, Washington, D. C., said that in the great storm of criticism which had been aroused by the Freudian hypothesis it had seemed that there had been very little tendency to endeavor to separate the fundamental from the incidental, and that much of the criticism which had been addressed against the incidental had by implication been supposed to apply to the fundamental. It seemed to him fallacious to look upon the principles of so-called Freudianism as if they had their origin and growth and development in Freud himself. To his mind the most valuable asset of the Freudian psychology to the present-day problems of the mind was the mechanistic and rationalistic viewpoint which they gave to these problems. The psychoses and the neuroses no one longer considered to be something mysterious that came from the nowhere and settled down like an incubus on the patient. It was universally recognized that these varieties of disorders grew out of the material of which the patient's mind was composed, and that for their understanding and for the application of remedial agents the particular psychosis or neurosis must be fathomed. Freud had given them a method of psychanalysis by which they were able to delve into the intricacies of the patient's mental tangles and come to a reasonable knowledge of how their disorder had been built up. The great fundamental thing that Freud had done was to give them a rationalistic viewpoint for the psychoses and neuroses and a method which enabled them to better understand their patients. Freud had described certain processes of repression and of sublimation, and such mechanisms as those of condensation and decomposition, over-determination, and displacement. They were the mechanisms of every-day life. It was the sexual material of the Freudian psychology which had brought down all the volume of acrimonious denunciation. Freud's explanation of the development of the sex instinct was the best piece of literature on that subject extant. It was a wonderful analysis and interpretation of the facts of sexual life. The Freudians believed in the very great importance of the sexual as a factor in the psychoses and neuroses and they explained this great importance by the equal importance which the sexual played in the mental life of every individual. They believed that there was no other one factor in mental life that was so dominating, no other one factor that had associated with it such tremendous emotional values, that it predominated even over the instinct of self-preservation. It was because, therefore, of the tremendous importance of the sex factor in life that it was found at the basis of the neuroses and psychoses. Dr. White called attention to this analogy. If they were not sexual beings, if reproduction were not the fundamental goal of the individual life, and if something else were that goal, if something else played as important a part in the life of the individual as the Freudians believed that the sexual now played, then would not the processes of mechanisms of the Freudian psychology still be true, and would not the only differences in the picture of the psychoses and neuroses be differences in content? He thought this distinction between process and content was of the very greatest importance in attempting to evaluate the contributions Freud had made to modern psychology. The main discussion arose about the relation of the sexual in its various ramifications and it behooved the scientific man to bring out his material which he desired to contribute in a judicial attitude of mind and with a full realization of the fact that the truth could not be evil.

Sex Issues from the Freudian Standpoint.—Dr. JAMES J. PUTNAM of Harvard University said that sex issues of one or another sort lay at the very heart of the emotional life; this was a fact that every child knew. One need not, and could not, go so far as to maintain that the complex mental state that one called love, which Dante averred to be, when normally developed, at the root of all that was good and, when abnormally developed, of all that was bad, was wholly describable in sex terms. But one could with confidence maintain that it was impossible to give form and color to the philosophical conception of the office of love; that was, one could not show how and why this sentiment was at the root of happiness and misery, of courage, cunning, crime, war and conquest, poetry and romance, of the home and the community, of civilization itself, without using sex terms on a large scale. The question at stake was not as to whether the consideration of sex issues was important as a preparation for a study of the psychoneuroses, but solely as to how these issues could most profitably be studied, whether the particular way in which Professor Freud and his colleagues had approached this problem was a good way. A rigidly scientific attitude was an absolutely essential prerequisite for anything like a fair discussion of sex problems. One must be able to look squarely and without loathing at the facts, or one must say farewell to honest judgment. The details of that portion of one's life which had to do directly or indirectly with the function of reproduction were usually guarded, either as something too sacred or too unpleasant to be talked about. Persons whose interests were most at stake, namely, the neuropathic patients, must inevitably pass through a period of self-humiliation if they consented to lift the veil from their own memories or to study the psychological mysteries of their own childhood. The arrogant attitude of social prejudice should not be tolerated by scientific men. Either everything that related to the function of reproducion was wrong, and the reproductive act was in itself disgraceful, and the sexual relation of marriage a sensual self-indulgence to be tolerated only as an unavoidable necessity, or else, on the other hand, everything that related to this great function was worthy of the broadest, the frankest, and the closest study. Self-reproduction was indeed a law of life. Childhood was a fatherhood with reference to manhood, and the large minded, energetic, breathing man should not fail to recognize, in the day of his full development, that his qualities owed their origin, in part, to the working out of the sex instinct which, to be conceived truly, should be conceived broadly. It was obvious that in discussing human nature in this way they had to deal with many traits that seemed wholly, or mainly, without relation to the sex function. The men and women who were nervous were usually, at the time of their obvious breakdown, leading complex and highly respectable social lives. Why then classify their traits as sexual? The point was this: In infancy and early childhood there was, during a period before clear thought began and verbal language was habitually used, a time when, in a scientific sense, every child was an egoist and a sensualist, occupying himself in dealing with a body of sensations, some of which he found strangely pleasurable and longed to reproduce. It was fair to say that the unfavorable judgments of the majority of Freud's critics had been based on the unpleasant impression made by descriptions of the sexual experiences of men's childhood, which seemed unnecessarily lurid and to be exploited in unnecessary number. The best definition of the psychoneurotic of almost every type was that he was virtually a child, that was, he was an individual playing a child's game with the weapons of a man. Freud had never asserted that abnormalities of sex were the sole basis, the final, underlying cause, of the psychoneuroses. Freud's chosen problem was solely to consider in what aspect or department of the life of experience, beginning with birth, the actions of the real underlying causes, whatever those might be, found themselves most strongly expressed, most strongly accentuated, best illustrated and brought most effectively into coordination with the rest of the drama of experimental life. Why was it that the sex life and sex instincts, the philosophical, the biological, the social, the historical, the medical, seemed to be of such enormous significance? It was perhaps because self-reproduction was the great law of life. This law was of such vast significance that it at once included and went beyond the principle of desire, or of pleasure and pain, as the basis of conduct. Desire undoubtedly underlay not only envy and jealousy, but also fear and depression.

Hysterical Dreamy States, Their Psychological Mechanism.—Dr. A. A. BRILL read this paper. He said that the hysterical dreamy states that he was about to discuss were not the protracted crepuscular episodes followed by partial or complete amnesia which were described by Ganser and others and which were often taken as psychic equivalents of motor epilepsy, but they represented those peculiar conditions so often observed in psychoneurotics which were first described by Lowenfeld and later by Abraham. They showed the following fairly well defined stages: First, there was a stage of fantastic exaltation the content of which dealt with the individual's hopes

and aspirations. This was followed by a stage of dream-like withdrawal from reality. This second stage was followed by a very rapid third stage which was distinguished by a suspension of consciousness, an absent-mindedness, during which there were no thoughts, so to speak, and the whole episode was followed by depression followed by anxiety with its concomitant manifestations. Almost all the cases observed by the writer showed these three stages, but he wished to add that the first stage was usually preceded by a period of craving. He cited the case of a patient at the Vanderbilt Clinic who was a weaver by trade and who complained that for months he was hardly able to attend to his work, which required concentration of attention, as a great deal of counting had to be done. His "foolish thoughts," as he called them, absorbed his mind to such an extent that he forgot his work and stopped weaving until aroused. As an example he gave the experience of the previous day, when he unconsciously began to think what he would do if he had two thousand dollars. He would start a shop and earn a lot of money by oppressing his employees. With this money he would open a big factory and employ a lot of greenhorns whom he would force to work long hours for little pay. He further enlarged his business and had hundreds of people working for him; he became greater and greater. Suddenly he found himself crying because he had lost all his money in Wall Street. Again he married a very nice girl who loved him but was afraid of him. He was very tyrannical and brutal. She cried and told him not to kill her, but he paid no attention to her and became more and more excited. He scarcely knew what he did, when suddenly he woke up wringing his hands and crying because she was dead. All of this patient's day dreams were of this same nature; they dealt with wealth and murder. Recalling Freud's saying that the contented individual did not indulge in fantasies, he assumed that these dreamy states represented some of the patient's wishes. It could not be said that this dream was really a realization of his wishes, as the money thus rapidly gained was as rapidly lost, leaving the patient unhappier than he was. It might also be asked why these dreamy states came in attacks and why they were accompanied by complete oblivion to external impressions, and why the patient perceived them as unreal and strange. When they came to the second dream they could no longer think of any wish realization, for the patient was single and was very much in love with his fiancée, whom he wished to marry. From a study of dreams they learned that every dream contained the hidden fulfilment of a repressed wish which usually referred to the two great impulses, hunger and love. Freud had shown that certain episodic manifestations of hysteria were simply substitutive gratifications for abandoned masturbation, and Abraham maintained that the same was true for the hysterical dreamy state. While he had not been able to make a complete analysis of this patient, still the facts that he had obtained were sufficient to confirm the assumption that his dreamy states were substitution for his masturbation. He had been given to sexual indulgence and excessive masturbation until he fell in love, when he determined to abandon these practices. The sadistic day dreams came on after a few weeks of hard struggle. The writer thought they were justified in saying that there was a direct relationship between the suppressed sexual activities and his fantastic day dreams, and he drew an analogy between the three stages of the dreams and the act of masturbation. The author also cited another case in which he thought it was evident that the day dreams were a substitute for abandoned masturbation. He said that in the study of the psychosexual constitution of the individual we found that it was made up of many component parts and partial impulses which ran through a definite evolution. These impulses were active in infancy, but normally they were gradually repressed, leaving only slight traces of their former existence. He had thoroughly discussed this question in "Freud's Theory of Compulsion Neurosis" (*American Medicine*, December, 1911), and wished here to refer only to exhibitionism and cruelty. It was well known that children, unlike adults, liked to show themselves naked; they liked to exhibit. Shame was a matter of training. Cruelty in their sense of the term was common to childhood. That exhibitionism and cruelty were closely related to sex was scarcely necessary to mention. Freud had shown that when these impulses were repressed they formed certain reactions like modesty and sympathy, but as no impulse was entirely suspended one could always find some trace of it in the individual's character. If for some reason these impulses could not be suppressed, or when later in life there was a failure of repression, the individual remained a sexual exhibitionist or a sadist, or he suffered from a neurosis in which these impulses came to the surface in some negative form. The author concluded that this type of day dream was simply a substitution for abandoned masturbation, and an unrequited libido seeking an outlet invested those thoughts which were in some way connected with the individual's hopes and strivings. These dreams looked quite innocent at first sight, but on closer investigation it became very evident that they represented the repressed wishes of the person's psychosexual life, and thus constituted a concealed form of masturbation.

The Application of Psychanalysis to Insanity.—Dr. C. MACFIE CAMPBELL of Bloomingdale Hospital read this paper. He said that the application of psychanalysis to insanity meant the study of the disordered conduct of each patient not only in relation to his clearly conscious ideas and purposeful acts of volition, but in the light of the subtle underlying forces which were apt to influence mood and thought and activity without the individual being clearly conscious of the process. This method had thrown a flood of light on individual symptoms, and had made intelligible episodes and processes which previously meant little or nothing and which had only a certain descriptive interest. Delusions and hallucinations could no longer be considered as merely a ghostly ballet flitting across the stage of the disordered mind without any relation to the moving forces of the individual's personality. In the psychanalytic study of a case of insanity they endeavored to work out the complex determination of the individual forces, to estimate the natural immunity of the individual, *i. e.* his constitutional traits and reactions. They studied the factors which increased or diminished the resistance of the individual, *i.e.*, the influence of environment and of education in its widest sense, including all cultural influences, and finally they endeavored to understand the circumstances in relation to which the psychosis developed at the special time. The aim was to study the psychosis as the definite resultant of forces which could be appreciated, if not definitely measured, and thus to see in the mental disorder a further example of pathological biological principles. The writer related the history of several cases to illustrate these general principles. In conclusion he stated that no psychanalytic doctrines could be presented in tabloid form, that they could only hope to reach common ground in the course of long and frank discussion on the basis of a rich case material with detailed observation. He had not attempted to show that any mental disorders were fully disposed of, even after psychanalytic study. In the complex reaction of organism to environment there were many levels at which the phenomena could be studied; human conduct had to be considered as a sort of hierarchy of functions and even the most ethereal life was a plant the roots of which were deeply sunk in the material world. While in parasyphilitic dementia and some other conditions, the process could be sufficiently worked out for practical purposes at the elementary level of toxins and tissue reaction; in many disorders such categories were quite inadequate and they had to take into consideration the higher categories involved in the term conduct. Psychanalysis was no key to the psychosis, but it was a ferment whose influence could not be overestimated. It met with much opposition for much the same reason that Carlyle opposed the doctrine of evolution, namely, because he felt that it stripped life of its value. Men had learned to reconcile the doctrine of evolution with those conceptions which gave value to life, and the psychanalytic studies had reached down deeply to the roots of human life, but the practical gardener need not lose his appreciation of the beautiful. They could get over this attitude and in all sincerity and humility be willing to accept whatever facts their observation brought before them.

What Is Psychanalysis?—Dr. E. W. SCRIPTURE presented this paper. He first related an experiment that Dr. Jung made in which he fixed the guilt in the case of a young man suspected of stealing money by subjecting him to the following test: A set of words was prepared, including a number referring to the suspicious circumstances. These were mixed with about twice the number of indifferent words, the total being one hundred. The young man was instructed that when a word was called out he was to respond as quickly as possible with the first thing he thought of. The time was measured with a stop watch. After first going through the list once the words were again called off and the patient was to repeat the same word as before; if he could not recollect he was to give the first thought that came to him. The average time of response was two seconds. They noticed that the word "give" brought forth the word "steal."

This was unusual and suspicious; moreover, the time was lengthened. After some indifferent results the word "burglar" brought forth the word "thief," natural in an ordinary time, but there was evidently much disturbance aroused by the thought so that the patient could not associate at all with the common word "cook." Later the word "thief" brought forth the word "burglar" after the immensely long time of 4.6 seconds. The disturbance was so great that the patient forgot what he associated. The result of the one hundred associations was so convincing that Dr. Jung at once accused the patient of being a thief and finally the patient broke into tears and confessed. Experience had shown that whenever a word touched upon some topic in regard to which the patient was sensitive the records showed one or more or all of five different characteristics, namely: The time of response was lengthened; the first response was forgotten in the memory test; the association was likely to be superficial or trivial; there might be no association at all; or the disturbance was likely to last over the next one or more experiments. In the preceding case the disturbing events were known to and realized by the person himself, but the method was just as readily applied to cases where the person did not realize his condition. A more remarkable characteristic of the association test was that the disturbance might occur when the test word touched upon topics that had troubled the individual seriously in the past, but that had been so suppressed as to have been forgotten. The results thus enabled one to draw definite conclusions as to what they were and to get at the actual cause of the hysterical condition. Dr. Scripture also related experiments which had led to the conclusion that an idea which had not entered into the subject's full consciousness could be associated to an idea in consciousness, and could serve to reproduce it on a future occasion. He also showed that the intermediate idea in many cases did not remain completely unconscious, but appeared in a following association. In infancy they acted according to their impulses, but they were trained to suppress them more and more. During sleep, regulations and suppressions were relaxed to some degree and the suppressed impulses had a better opportunity to present themselves as dreams. Dreams were representations of suppressed impulses. The dreams of children and many dreams of adults were frankly sexual, but their suppression was usually so vigorous that one's natural desires were not permitted to express themselves even in dreams; there was, however, a way out. If the suppressed desires could so disguise themselves that they did not shock us, they could often succeed in presenting themselves to us. This was the origin of symbolism in dreams. The habit of symbolism being once established in dreams it was applied constantly, and often quite unnecessarily. The impulses which sought to express themselves through this symbol were always of two kinds, namely, wishes or fears. Dreams represented the working out of unfinished problems. Psychanalysis was a group of methods used for analyzing the human mind, particularly those portions of it which were not directly conscious. It was quite analogous to the work of dissecting and to the microscopic study of the body. It was careful, cautious, and exact, and was a worthy complement to the scientifically accurate anatomical and physiological neurology of the present day.

Dr. M. Allen Starr said that the conception of the process was the fundamental point. He had occasion some years ago to be thrown in contact with Freud in his laboratory. He warned against the physicians of America accepting entirely a theory which probably depended for its existence largely on the environment of the man who had originated it. Vienna was not a moral city and the people he was thrown with were frivolous and obscene. They were concerned largely with conditions which pertained to sexual affairs, yet Freud was living in a congenial atmosphere. One should always look at the environment of the individual and his character and before considering Freud's hypothesis as being a true hypothesis in connection with psychanalysis one should question whether Freud had not misrepresented conditions, and turned into a frivolous vein the really new science of psychanalysis by which neurologists were enabled to study mental processes as exactly and mathematically as they had previously been able to study the human body by the use of the microscope and the scalpel. There were many other influences which gave rise to complex psychoses besides the sex instinct. Personally Dr. Starr had no regard for Freud or for his theory. He did not believe that so much credit should be given him for what he had done. While he was in Vienna the sexual life and conditions pertaining to it were of prominent interest. In America, on the other hand, there were many other things which gave rise to complications, motives and facts; there was more interest here in financial and social affairs than in sexual affairs. "An ounce of Muldoon was worth a ton of Freud."

Dr. August Hoch believed that what Freud brought out would stand the test of time. Freud showed the importance of a consideration of the emotions and their mechanisms and he brought out the great importance of education and what belonged to it. Psychologists had found many things of value in psychanalysis, yet there were many things that could not be, or had not been explained. The physiological side of the question, about which they knew very little, should be taken up. Psychology had been greatly benefited by psychanalysis and this was a subject that should be taken up seriously.

Dr. Smith Ely Jelliffe asked what Freud had given us—merely an hypothesis, something to dig with, a tool to help us to find out something? There was a psychodeterminism. In going on with our subject there were two things to be borne in mind—race-preservation and self-protection, and these were the two instincts which made up the stuff that built practically everything men did.

Dr. James J. Walsh said that the subject under discussion should be looked at from an historical standpoint and he referred to what had occurred in the past—hypnotism, mesmerism, electricity with the Leyden jar for the cure particularly of headaches, etc. Was psychanalysis to be placed in the same category as these?

Dr. William A. White said that psychanalysis should not be taken up by asking patients about sex matters, for this was not the leading thing; it was an explanation and not an interpretation by the patients. As to whether psychanalysis would really help the insane, he could not answer this question because he did not know what was meant by the insane.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held March 28, 1912.

Dr. F. A. Dorman in the Chair.

Ovarian Dermoid Lying in the Right False Pelvis with Intrauterine Pregnancy.—Dr. A. Ernest Gallant reported this case. The patient, a nullipara, 37 years of age, had been referred to him on December 4, 1911. Her last menstruation had occurred on September 4. She gave a history of "trouble on the right side" eleven years ago and of peritonitis seven years ago. Examination revealed a large kidney-shaped mass in the right iliac fossa. It had been palpable for the past two weeks and the patient thought it varied in size. Owing to the fact that the right kidney was prolapsed and palpable above the other mass it was thought that the tumor must be either a misplaced pyosalpinx or an ovarian cystoma. In order to cause as little disturbance as possible to the fetus an early operation was advised. At operation a cystic mass was found bound down by very tough bands extending in every direction and difficult to displace. During the operation the cyst ruptured and about three ounces of a fatty substance escaped. The sac was filled with hair and sebaceous matter. The tumor measured three by three inches and was kidney shaped. The patient made a good recovery and the pregnancy went to term without incident.

Dermoid Ovarian Cyst.—Dr. A. Ernest Gallant reported this case. The patient was a nullipara, 23 years of age, who had suffered for over a year with right-sided pelvic pain. Examination showed the cervix anteflexed and the fundus twisted to the left and fixed by a tumor the size of an orange which filled the right cul-de-sac. The cervix was dilated and a rubber drain sutured into it. The peritoneal cavity was entered through the left rectus sheath and the omentum was found adherent to the parietal peritoneum. The bladder, uterus, and whole pelvis was held by bands many of which had to be cut or forcibly torn in order to free the prolapsed adherent left ovary. The right ovary and tube were elevated, the latter ruptured and considerable cheesy matter escaped. These were removed and the broad ligament was sutured *en masse*. The appendix was also taken away. After a stormy convalescence the patient recovered.

Ruptured Ectopic Pregnancy with Mushroom Blood-clot Attached to the Fundus Uteri by a Small Pedicle.—Dr. A. Ernest Gallant reported this case which he had seen for the first time on February 7, 1912. The patient was 31 years of age and had been married 12 years. She had borne one child and menstruation had been normal until January when it was less than usual. She had had some vaginal discharge for three months when on February

3 she was seized with cramps, air hunger, and collapse, falling to the floor and remaining unconscious for some time. The cramps continued until February 7 with diminishing evidences of shock. Examination showed the abdomen distended and tense; it contained fluid with a central tympanitic area. A firm nodular mass was felt midway between the umbilicus and the pubes and extending across the hypogastrium. This mass was about the consistency of fibroids. The right side of the pelvis was filled by a boggy mass and the uterus could not be defined. The large tumor was freely movable and ballottement was easily solicited on the left side. A diagnosis of ruptured ectopic or rupture of the stomach with fibroid uterus was made. On opening the abdomen on the following day about three pints of bloody fluid escaped. There were no clots and no adhesions in any part of the abdomen except at the left extremity of the tumor where the omentum was adherent to a very slender pedicle four inches long. The large mass was firmly attached to the fundus uteri by a very strong tough base about three quarters of an inch in diameter and in freeing it a small portion of the uterine tissue was cut away. This area was very vascular and was closed by continuous catgut sutures. There was a mass of tissue in the left cul-de-sac not unlike exudate which with the ovary was lifted out. The right tube was tortuous and contained a small amount of clear fluid; the left tube seemed normal. The patient made a good recovery and returned to her home twelve days after the operation. The specimen presented was made up of numerous blood sacs some of which had ruptured during removal and the bulk of the mass of blood fibrin had clotted in a most extraordinary way. The base showed the small portion of the uterine tissue cut away and a sort of cavity in which the fundus was imbedded before removal. On the left extremity was a sac which resembled a fetal shell, though no sign of a fetus was discovered.

Dr. F. A. Dorman said he had seen a number of ovarian dermoids which complicated pregnancy and, on several occasions, operation was not necessitated because of a loosening up on the pedicle which permitted the child to be born without interference. In one particular case he was positive that he had to deal with a double ovarian dermoid; he felt confident of this because of the characteristic conditions noted, i. e., the ridges of cartilaginous tissue. He could recall three cases at least where he was convinced by both observation and touch that he was dealing with a double ovarian dermoid. He dreaded the effect of the rupture of contents of the dermoids because they were so prone to produce a peritonitis. He was convinced that this material would lend itself to the favoring of the growth of germs and greatly enhance suppuration in the peritoneal cavity.

Dr. S. W. Bandler said that it was generally considered that the contents of a dermoid cyst were very infectious and that it was rather a disagreeable complication to have the contents of such a cyst poured into the peritoneal cavity. It was hard to understand how the contents could contain bacteria, but it seemed probable that the cheesy matter produced additional annoyance by chemical irritation and it was a foreign substance difficult of absorption. Dr. Bandler reported the case of a girl 10 years of age upon whom he had recently operated where the abdominal tumor was the largest he had ever seen in a young person. The cyst extended on the right side almost to the liver and on the left side almost to the umbilicus. It proved to be a multilocular cystadenoma. Many of the sacs were opened before the tumor could be removed. After a number of sacs were removed, deep in the center of the tumor was found a sac containing cheesy matter, hair, and bones. Had a careful examination not been made the dermoid character of the tumor would have escaped notice.

Case of Toxemia of Pregnancy, with Acute Yellow Atrophy of the Liver.—Dr. H. G. Stearns reported this case in which the predominating characteristics were vomiting and icterus and postmortem focal degenerative areas in the liver. The patient was 24 years of age and had had one previous pregnancy five years ago, about which nothing definite could be learned. Her last menstruation had occurred in October, 1911, and vomiting associated with pain in the epigastrium began about December 10. When first seen on January 10, 1912, she was slightly emaciated and distinctly jaundiced. The temperature was normal, respirations 28 and pulse 136, small, but perfectly regular. She was placed on nutrient enemata and the necessary amount of fluid furnished by a Murphy drip. At the end of a week the pulse had improved in quality and dropped to 120. Feeding by the mouth was started carefully with peptonized milk and albumen water. The quantity given by the mouth was from seven to fourteen ounces in twenty-four hours. On January 20 the urine suddenly fell to ten ounces in twenty-four hours; there were no albumin and no casts. This was brought back to thirty ounces promptly by increasing the fluids per rectum. Vomiting now became uncontrollable and, although the pulse was ranging about 100, it was decided after consultation to produce an abortion. It was believed that the strength of the patient was sufficient for the usual methods without subjecting the patient to an anesthetic and a rapid emptying of the uterus. The usual means failed, however, to elicit the faintest sign of uterine contraction, and early on the morning of February 2 she died rather unexpectedly. The interest centered particularly about the pathological condition in the liver. Microscopical examination showed an advanced stage of focal degenerative areas which were strictly limited to the central lobules in the immediate vicinity of the central vein. There was no increase of connective tissue outside the areas of necrosis. The capillaries were moderately distended and there was quite an advanced disintegration of the endothelial lining. Many of the endothelial cells were free in the capillary spaces, some being actively phagocytic, containing bodies of disintegrated cells, some red, some white, and some granular detritus. The areas of focal necrosis were of irregular size, some microscopical ones taking up only part of the field under the oil immersion lens; others were so large that they took up half or three-quarters of a lobule. In these necrotic areas the continuity of the liver cells in their normal relations was entirely lost and replaced by a granular detritus composed of dead vacuolated liver cells, the majority of which contained sharp golden brown spicula. Many liver cells were devoid of nuclei and showed advanced stages of acute degeneration. The cells in the peripheral parts of these focal areas of necrosis showed advanced swelling, with eccentric nuclear arrangement. Many of these cells contained a brownish-black pigment not unlike bile. The liver tissue in the peripheral parts of the lobules seemed to be fairly normal. The central vein in many of the areas of focal necrosis seemed to be entirely obliterated, not only by a granular swelling, but by advancing pressure in the surrounding necrotic zones. The sections from this liver showed but one phase of the acute degenerations of the liver which had been described as occurring in the various toxemias of pregnancy, in deaths at different times during the stages of the disease. It therefore belonged to and was a very representative type of an acute atrophic degeneration of the liver not unlike those that had been described as acute yellow atrophy of the liver from various causes, both exogenous and endogenous.

A Case of Toxemia of Early Pregnancy, with Unusual Hemorrhagic Manifestations.—Dr. Harry Mayham Keator reported this case. The patient was 27 years of age and gave a family history that was negative so far as tuberculosis, cancer, hemophilia, or anemic tendencies were concerned. As a child she had been poorly nourished and not very strong. At the age of thirteen she was healthy and had no illness during school life. Just before her first menstruation she had had nose-bleed. She was married at the age of 27 and two months later had a prolonged period accompanied by dizziness and shortness of breath. The following month the period was accompanied by much pain. A month later she skipped a period and began to suffer from nausea and vomiting. The writer had first seen her about two and one-half months after this lost period. At this time her vomiting had become very severe and responded to no form of treatment or suggestion. She was anemic and jaundiced and had occasional nose-bleeds and blood-tinged sputum. Her heart was active with a weak, hemic murmur. Her lungs were normal but both liver and spleen were palpable. Vaginal examination showed a soft cervix and a uterus enlarged to the size of a three months' pregnancy. The uterus seemed to be easily lifted and the patient was placed in the knee-chest position for a few minutes daily in the hope that the change in the position of the uterus might influence the vomiting. Rectal feeding was begun but during the succeeding five days the patient became much worse. There was no cessation of the vomiting and the nose bled frequently. The urine showed a trace of albumin and occasional hyaline casts and red blood cells. She had no temperature or vaginal discharge. Purpuric spots began to appear on her arms and legs and as her condition continued to grow worse they emptied the uterus of a three months' fetus which was apparently not viable. The following day the patient felt better but the bleeding from the nose, bloody sputum, and bloody urine persisted. On the second day an attempt to remove the vaginal packing started hemorrhage and the uterus was immediately repacked. A second attempt to remove the vaginal packing was attended with the same tendency to hemorrhage.

calcium lactate in thirty grain doses, ergot, strychnine, and whiskey were tried with no effect. The nose-bleed continued and the patient became delirious. After a specimen of her blood stood ten minutes in a test tube it showed no tendency to clot. Transfusion seemed to offer the only hope of introducing the substance into her blood that would cause clotting. Her husband, a college athlete, was the donor. The blood flowed for a half hour probably flowing twenty minutes in all during which time several interesting phenomena occurred. The donor's pulse which was 72 at the start went up to 82. The patient's pulse remained at 140. Her face and lips became flushed at first and her pulse stronger. The condition of the patient then suggested that no blood was flowing but it could be felt and removal of the canula demonstrated that the blood was flowing. The pulse became weaker and the patient looked badly. After the vein was tied off the patient went into semicoma and collapse, became pulseless and blue, and had a chill. She responded to strychnine hypodermically and whiskey per rectum. An hour later she complained of uterine pain, peristalsis became marked, and the bowels moved freely. The bladder resumed its tone and the general condition improved. There was no more nose-bleed and no more bloody sputum and the following day the vaginal packing was removed without causing bleeding. The patient's convalescence was gradual. She was kept under considerable stimulation. The chief point of interest in this case was the appearance of moderate jaundice and the tendency toward hemorrhage with the very long clotting time of the blood. With the introduction of the non-hemolytic human blood by transfusion the necessary quality was regained. Dr. Keator said that any prognosis for future pregnancies would be appreciated.

Dr. F. A. Dorman said that Dr. Stearns' case was rather a peculiar one because there was but little atrophy of the liver and the course of the disease was so chronic. He was led to hope that something might be accomplished by treatment but it was a false hope. This was a case, in his opinion, of typical acute yellow atrophy. No petechial spots appeared. Before death the patient was conscious. He thought that the report of Dr. Keator's case was of exceeding interest.

Dr. Asa B. Davis said the reading of the paper brought to his mind two interesting cases. The first patient came to the Lying-in Hospital in the fifth month of her pregnancy. She had had persistent vomiting and was very much emaciated and had a sallow greenish complexion. She was put on treatment, rest in bed, rectal feeding, hot baths, nitroglycerine, saline enemata, etc. She improved and left the hospital at the end of two weeks, after having been instructed to report in person at intervals and to let them know at once if she were not doing well. After nearly a month had passed she applied for readmission. Her condition at this time was much worse than when she was first admitted. The vomiting of large quantities of dark fluid was persistent. Treatment was begun as before to which she did not respond but vomited bright red blood and labor was induced three days after admission. Hematemesis was in check for a time but then became more frequent and in larger quantities than before. Having in mind Dr. J. E. Welch's work with human blood serum, 30 c.c. was given this patient subcutaneously immediately after a large hemorrhage from the stomach. There were no further signs of hemorrhage after the first injection although two others were given about ten hours apart. A premature child was stillborn. The patient left the hospital ten days later in good condition. The second case was seen in the early months of pregnancy and they were led to think she would get well, but she suddenly grew worse and emptying the uterus was necessitated. This did not stop the vomiting and she grew worse and worse until she was moribund. Serum was then given and a gradual improvement followed. There was no hemorrhage whatever in this case. Her husband and a number of friends donated about eight quarts of blood the serum of which was used during a period of about one week. Recovery followed in this case which had seemed absolutely hopeless.

Dr. Samuel W. Bandler reported a case that had been under his observation about four years ago. It was a well-marked case of pernicious vomiting. The patient seemed to be doing well under treatment but developed a decided jaundice and he immediately performed a vaginal cesarean section and emptied the uterus. The patient made a good recovery. In cases of nausea and pernicious vomiting of pregnancy the introduction of saline to the amount of one quart or more daily per rectum, in small amounts repeated several times a day, was the ideal form of treatment. It was remarkable how patients would improve and not lose much in weight if they were absorbing a quart or two of saline daily, even if the amount of nourishment taken was very small. Dr. Bandler thought it was rather a grave responsibility to decide when the gravid uterus should be emptied; many cases that were not doing well would eventually, with the exercise of patience, be able to take nourishment and go on to full term with very little annoyance. It was rather a hazardous thing to allow pregnancy to continue once jaundice developed in connection with pernicious vomiting. In regard to Dr. Keator's paper, he said that a great injustice had been done to the female sex by attributing so many conditions to nervousness, neurasthenia, hysteria, or to reflexes sent out from the genital tract, when, as a matter of fact, a large proportion of these cases were suffering from nothing but hyperthyroidism. Too little attention had been paid to minor degrees of hyperthyroidism. They were apt to leave out of consideration the large number of patients who suffered from gastric and nervous symptoms, with varying degrees of tachycardia and tremor, in whom there was no exophthalmia, and in many of whom there was slight if any enlargement of the thyroid gland. Dr. Bandler took the view that the secretion of the ovaries bore a decided and antagonistic relationship to the secretion of the thyroid; an over-secretion of the ovaries might over-stimulate the thyroid. On the other hand, if the ovaries failed to secrete normally and the thyroid worked well there was the relative hyperthyroidism. The relationship between the ovaries and the thyroid had been observed at puberty, during menstruation, during pregnancy, and certainly at, and after the climacterium. He asked Dr. Beebe to mention his explanation of the swelling of the thyroid during menstruation and during pregnancy, and to state why thyroid diseases were so much more prevalent among women than among men.

Dr. S. P. Beebe said there was one point of interest about the thyroid gland and that was that there was a limit to its functional capacity. During pregnancy there was but a small increase in the size of the thyroid gland and sometimes it failed to return to its normal size after pregnancy. During pregnancy there was an increased demand for oxygen and increased functional activity of other organs; this called for an increase of thyroid function. They all knew that it was possible to produce experimentally in animals at birth thyroid glands in a pathological condition. It was difficult to explain these results. A considerable percentage of the cases of Grave's disease dated their development to some definite pregnancy when the thyroid gland increased in size. At the termination of the pregnancy these symptoms became very marked and acute development followed. In cases of Grave's disease if pregnancy occurred the patients were better during the pregnancy than before; the thyroid secretion was increased and they seemed to improve. On the other hand, the process might go so far that the patient with fairly well-marked symptoms of Grave's disease showed toxic phases which demanded the administration of thyroid during pregnancy. Patients who were myxodematous were not likely to go through pregnancy; they were liable to suffer from the toxemias of pregnancy. Furthermore, the children were not likely to be strong and healthy. He cited the case of a woman who had symptoms of deficient thyroid secretion when not pregnant who became pregnant and her child died shortly after birth. There was a persistence of the thyroglossal duct. The child died as the result of infection. Two years later this patient again became pregnant and gave birth to an apparently healthy child who later developed symptoms of cretinism. She was under treatment but the symptoms continued in spite of the efforts to combat the condition. When she became pregnant for the third time she took small quantities of thyroid extract and iodine and her third child was born apparently healthy in all respects.

Dr. Bandler discussed the relation of the toxemias of pregnancy to the thyroid gland and stated that in these toxemias almost immediate relief was obtained by the administration of thyroid and he reported one instance where a girl of nineteen was brought to the hospital in convulsions at term. Her uterus was emptied but the convulsions continued. She was given thyroid gland hypodermically and immediately, within one hour, her blood pressure was lowered, her temperature reduced from 105 to 102 F., and no more convulsions occurred until two hours later. Thyroid was given again and she made a satisfactory recovery.

Dr. Beebe said he had had four other cases which behaved in the same way. The human thyroid should be administered hypodermically. There was no question but that better results were obtained by giving the thyroid from one of the same species. It was better to give a preparation not made by grinding the gland, he said, because this contained substances which were not wanted and some that were positively harmful.

SECTION ON PEDIATRICS.

Stated Meeting, Held April 11, 1912.

DR. WILLIAM SHANNON IN THE CHAIR.

A Brief Statement Concerning the Agents Causing Measles and Scarlet Fever.—Dr. WILLIAM H. PARK said that in measles the microscopic examination of the blood, tissues, and fluids of the body had revealed no microorganism which could be considered of etiological importance. Franz Mayr, in 1848, and others at about the same time, inoculated healthy children as in vaccination with a drop of blood taken by puncturing the skin of a child during the outbreak of the rash and found that measles followed. In vaccinated children who had recovered from measles no infection took place. There was no local reaction. He also produced the disease by taking nasal mucus from a case of measles and placing it upon the nasal mucous membrane of two healthy children, one showed catarrhal symptoms on the eighth and the other on the ninth day, and both showed a typical exanthema on the thirteenth day. The skin desquamation was certainly much less infectious than the blood or the secretions of the nose and throat. Numerous investigators had tried to infect monkeys with measles, but had met with only occasional success, until the recent work of Anderson and Goldberger, which was afterward confirmed by Hoktoen. They found the virus much less infectious for monkeys than for man. The blood carried the virus for a period from at least as early as the development of the rash to at least forty-eight hours afterwards. The same was true for the secretion of the nasopharynx. After that period it was not infectious for monkeys. This was in conformity with the belief of many that measles was not communicable after the temperature had fallen to normal. The virus was filterable through a Berkefeld filter, resisted desiccation for twenty-four hours, and was destroyed by heat when exposed to 55° C. for fifteen minutes. Immunity was acquired by monkeys that had passed through the disease. The complicating bronchitis, bronchopneumonia, and coryza were caused by the bacteria engrafted on the earlier slight inflammation due to the virus of measles. In regard to the infectious agent in scarlet fever the virus was as yet undetermined. It was capable of transmitting the disease in apes and possibly in the lower monkeys. Landsteiner and Levaditi had recently produced in a young orang-outang characteristic scarlet fever by the combined inoculation of the tonsils and subcutaneous tissues. They had failed to produce scarlatina in a large number of trials in lower monkeys. This was similar to their own negative experience, when a year ago they injected subcutaneously six monkeys with ten cubic centimeters of blood, each receiving blood from a different case of scarlet fever. Bernhardt and Cantacuzene thought they had succeeded in producing the disease in the lower monkeys; the former believed that he produced the disease with heart's blood, crushed tissue of lymph gland, blood, and throat exudate. In studying the virus most stress had been laid on a streptococcus or diplococcus. Mallory had suggested a protozoan. The streptococcus was probably the only organism that should be seriously considered. It was undoubtedly present in the throat in great numbers in every case of scarlet fever. It was also present to some extent in the blood of all severe cases and in that of many of the less severe type. Milk from infected cows abounded in streptococci and had caused a disease hard to differentiate from scarlet fever. Several Russian investigators believed that they had produced immunity by streptococcus vaccines. On the other hand, there was the fact that the condition of the mucous membranes in scarlet fever was extremely favorable for the development of the streptococcus. In their experience they had found that the streptococci found in scarlet fever had no distinctive characteristics separating them from those found in other infections. Koler had been unable to find streptococcus antibodies in more than 11 per cent. of scarlatinal convalescents. Landsteiner and Levaditi were able to reinfect with streptococci the tonsils in apes immune to scarlet fever. This would be difficult to understand if the streptococcus caused the disease. Most of the recent investigators who had approached the problem from the experimental side believed that the streptococcus was a secondary invader and that the scarlet fever virus, like that of measles and typhoid fever, was an unknown agent. Mallory's bodies had too little evidence in their favor to be considered as a causative agent. The inclusions which Dr. Nicoll would demonstrate were probably of interest from the diagnostic standpoint rather than the etiological.

Inclusion Bodies in the Blood of Scarlet Fever as a Means of Differential Diagnosis.—Dr. MATTHIAS NICOLL, Jr., and Dr. ANNA M. WILLIAMS presented this communication, which Dr. Nicoll read. He said that Professor Dohle of the Institute of Pathology of Kieff had reported that in thirty cases of scarlet fever blood examined by him he had found almost without exception certain inclusion bodies in the polynuclear leucocytes. These bodies had not previously been described. By various methods of staining they could be differentiated from the nuclear substance, even when they lay near it. They could not be found after the sixth day of the disease. A large number of control cases were examined and inclusion bodies were found in but three. One of these was a case of pneumonia and the author thought the specimen might have been mislabeled, and the others were cases of carcinoma in one of which the bodies were not typical, and in the other the bodies could not be distinguished from those of scarlet fever. Dr. Martin Kretchmar of the University of Strassburg reported that he had been able to confirm Dr. Dohle's work. With the purpose of testing these findings the writers of this paper had begun work. They had studied blood smears from 51 cases of scarlet fever, together with 25 control cases, with the result that 45 cases of scarlet fever showed inclusion bodies such as Dohle described, and six failed to do so. Of the negative cases one had been ill for eight days or more, two for ten days or more, one for twelve days, one for fourteen days, and one for thirty days. The great majority of positive cases had been sick for less than a week, and most of them for less than four days. In making the examinations two or three smears were taken from each case; one was stained with Manson's stain and another with Giemsa's stain over night. The inclusions were found chiefly in the polynuclear leucocytes and varied in size and shape from small coccus forms to large irregular masses one-fifth the size of a red blood corpuscle. Bacillary forms were also seen. With Manson's stain the nuclei took on a deep blue color, the cytoplasm a very faint blue, and the inclusions a tint between the two. With the Giesma stain, the inclusions took on a clear delicate blue identical with that of plastin. The nuclei colored magenta. With Manson's stain the inclusions stood out more clearly. In a fresh case of scarlet fever the bodies were found in nearly every polynuclear leucocyte. They had been unable as yet to determine how long the bodies persisted. Generally they were found during the first week at least. Of the control cases only three showed inclusions. These were a pneumonia case in a luetic patient, a case of erysipelas in an infant, and a complicated measles case in which the diagnosis was doubtful as to whether there was a complicating scarlatina or not. In order to eliminate the personal element from the investigation, the nature of the cases from which the blood was taken was not disclosed to the examiner until the findings had been jotted down. With the exceptions noted, not the slightest difficulty was experienced in picking out the cases of scarlet fever. At the present time, they thought they were justified in concluding that a blood examination in the first week of the disease would serve to differentiate scarlet fever from measles, German measles, and probably from toxic eruptions. They were not ready as yet to express any opinion as to the nature of these bodies.

Some Features of Scarlet Fever and Its Complications.—Dr. HENRY W. BERG read this paper. (See page 881.)

The Treatment of Scarlet Fever—Prophylactic, Dietetic, Medicinal, and Serum Therapy.—Dr. LOUIS FISCHER read this paper. He urged the necessity of individualizing in each and every case. He said that the principal aim of treatment should be the prevention of complications, if this was possible. Rest in bed for five or six weeks was imperative whether the case was mild or not. This supported the heart and in a large measure prevented cardiac complications and nephritis. He thought that allowing the child out of bed during the first week or ten days was responsible for many fatal complications, especially of the lungs and ears. Elimination of toxins was of the greatest importance. The toxins of scarlet fever did not favor peristalsis and therefore it was advisable to administer daily a teaspoonful of cascara elixir alone or assisted by a soap-water enema. As the toxins of scarlet fever disturbed the secretion of the kidneys, it was advisable at the very beginning of treatment to give several times daily ten to fifteen grain doses of citrate or bitartrate of potassium in addition to a little lemonade to stimulate diuresis. In septic cases active catharsis should be maintained and calomel or podophyllin should be given each day. High colonic flushings with

one drachm of inspissated oxgall added to one pint of tepid water would produce thorough intestinal cleansing. As the toxins inhibited the internal secretions, the administration of adrenalin as well as of thyroid was beneficial. In the treatment of the fever one should seek the cause; but antipyretics should not be given as they depressed the heart, masked the symptoms, and disturbed the clinical picture. If pyrexia caused delirium, hot mustard baths would allay irritability, and, if convulsions appeared, lumbar puncture should be employed to remove the intracranial pressure. The temperature should be reduced by a laxative such as citrate of magnesia, which, in addition, was a good diuretic and quenched thirst. In case of hyperpyrexia due to severe infection, rapid reduction of temperature was effected by washing the colon with one quart of tepid saline solution. The use of five per cent. formalin spray in the nasopharynx would destroy bacteria in that locality which were liable to persist and might cause reinfection. This treatment should be continued several times daily throughout the disease. The instillation of a few drops of five per cent. solution of formalin into the nostrils twice a day was useful as a prophylactic in the disease. They had found at the Willard Parker Hospital that the administration of 1,000 units of diphtheria antitoxin to every patient coming into the hospital with scarlet fever had reduced the complication of diphtheria by at least 25 per cent. If diphtheria developed an additional 5,000 units of antitoxin were given, and this was repeated if necessary. If, in a severe case of scarlet fever, the odor of necrosis was present, 5,000 units of antitoxin were given whether the Klebs-Loeffler bacilli were present or not. As loose necrotic patches and postnasal discharges were a source of danger to the Eustachian tube, it was important to wash the nasopharynx with normal saline solution morning and evening or oftener. Following such washing Dobell's solution or 20 per cent. argyrol solution would disinfect the nasal passages and in some cases prevent aural complications.

Daily examination of the middle ear should be made as otitis could thus be detected early and treated before it had extended to the mastoid cells. Excepting in rare instances, the writer was not in accord with the too prevalent idea of operating on the mastoid for ordinary mastoid tenderness. A free incision into the drum was usually sufficient to relieve the pressure of acute otitis media. The external application of a hot water bottle or a hot poultice would frequently aid in absorbing mastoiditis. The ice coil and ice bag had given no satisfaction in the writer's experience. When cervical adenitis existed careful inspection of the nasopharynx and middle ear should be made and, if these could be excluded from complication, a warm flaxseed poultice and the daily inunction of compound iodine ointment rubbed into the tissue had proved effective. This treatment applied only to hard, nonsuppurative glands. Catarrhal discharges due to the streptococcus and gonococcus demanded strict hygienic measures. In cases of multiple furunculosis due to the staphylococcus almost specific results followed the injection of an autogenous vaccine containing from 50 to 100 million bacteria. As they understood neither the etiology nor the bacteriology of the disease there was no specific serum in use today. Although Moser's antistreptococcic serum showed specific results within from twenty-four to forty-eight hours, this had not been the case with the antistreptococcic serum or with the streptolytic serum in this country. In erysipelas complicating scarlet fever the local treatment with Burrow's solution or the use of 20 per cent. aqueous ichthyol solution was good in some cases. He had also had excellent results from the application of pure alcohol, the saturated gauze being covered with oiled silk. The supersaturated solution of magnesium sulphate had been used successfully at the Willard Parker Hospital. When pertussis complicated scarlet fever large doses of codeine should be given, one-eighth to one-quarter of a grain every three hours for a child from one to two years of age. If codeine failed, sodium bromide combined with chloral hydrate might be tried. No complication of scarlet fever was more dreaded than measles because of the danger of bronchopneumonia, croup, otitis, and empyema. Exposure to cold draughts in bronchopneumonia ended fatally. Warmth and moderate temperature were well borne. Daily supervision of the urine would be a guide to the early diagnosis of acute renal congestion. Suppression of the urine demanded the application of dry cups twice daily followed by a bath at 104° F. for about two minutes, after which the patient should be wrapped in a warm bath towel covered by warm blankets. A cup of warm tea or hot lemonade would stimulate both diuresis and diaphoresis. This active treatment should be repeated every twelve hours until acute suppression subsided. Agurin, diuretin, and theocine, two to five grains for a child from three to five years of age, three times daily, might be given. The salt-free diet, so plausible in theory, had not proven useful in practice. Broncho- or lobarpneumonia complicating scarlet fever were best treated by placing the patient in a large room with plenty of fresh air, but avoiding draughts. These patients did badly when put outdoors, and roof treatment was dangerous. If empyema complicated scarlet fever paracentesis should be resorted to to relieve the purulent exudate, but the shock of operation should be avoided if possible. The heart should be carefully watched during the entire course of the disease. Myocardial insufficiency could be avoided by judicious feeding and continuous stimulation. Strychnine should be given early in the disease before the heart showed signs of weakness. Caffein sodium benzoate one-half grain was an excellent diffusible stimulant. Digitalis was dangerous. Digitoxin, also known as digalen, in five to ten drop doses, three or four times daily, would support a weak heart. The indiscriminate use of whisky as a routine measure should be condemned, as large doses irritated the kidneys. Better results could be obtained by using an injection of 10 or 20 drops of 1-1000 adrenalin solution, repeated every hour until the proper effect was noted. The temperature would be found of no help in estimating a cardiac complication. When symptoms of collapse were noted the injection of 5 to 10 drops of camphorated oil (20 per cent.) would prove beneficial and should be repeated until the effect on the heart was noted. As to diet, the fat and casein content of the food should be reduced to less than the normal patient required. The writer gave milk diluted with an equal quantity of water, sweetened whey, or fat-free milk fermented with the Bulgarian bacillus. In cases in which milk was not well borne vegetable protein in the form of split pea soup could be given, likewise fruit juices could be given with advantage. After convalescence was well established whole milk and carbohydrates in the form of steamed farina, tapioca, cornstarch puddings made with milk and sugar, but no eggs, could be given. Meat was too stimulating and should be entirely excluded from the dietary of the scarlet fever patient.

Dr. JOHN A. KOLMER, Professor of Pathology, Philadelphia Polyclinic, said that he could not add to what had been said regarding inclusion bodies except to state that all recognized the importance of such findings if they would hold good in differentiating true scarlet fever from the scarlatiniform serum rashes. These were the rashes that had given them a great deal of trouble in Philadelphia during the last year. There should be some way by which they could make a diagnosis from a clinical standpoint. His personal views in regard to the relation of the streptococcus to scarlet fever corresponded with those expressed by Dr. Park, that the streptococci were secondary invaders. There was one fact that should be recognized, and that was that the streptococcus virus produced in the blood some condition which very much favored the growth of the streptococci in the blood and organs of scarlet fever patients. The question of streptococcic immunization in the prevention of scarlet fever was worthy of special mention. If it was true that such an immunization would prevent scarlet fever then it might be contended that streptococci were the cause of the disease. Reading the literature sent out by the Russian investigators one was impressed with the value of the method, but from an experimental standpoint it was not of value. The vaccine was given three times, at intervals of one week. Experimentally a vaccine prepared and administered as they advised did not materially raise the streptococcic opsonic index of the blood. The speaker had immunized about 350 persons in Philadelphia one year ago by the Russian method; 14 of these developed rashes suggestive of scarlet fever. He thought the Russian reports should be viewed with healthy skepticism. In treating scarlet fever they had tried the use of the antistreptococcus serum. A horse was immunized with streptococci taken from scarlet fever patients. They did not know how the serum acted, but it was probably not bacteriolytic. It was most important to standardize the serum. Some cases were certainly benefited by the antistreptococcic serum while there were others that were not; neither was it possible to say which cases would and which would not be helped by the serum. If one had the serum on hand it should be given, especially to the septic cases of scarlet fever. The presence of the streptococci could not be determined in the blood by blood culture. Dripping saline into the rectum was a very valuable treatment for the severe septic cases of scarlet fever. This was also true in the treatment of

diphtheria, but, of course, it should be combined with the use of antitoxin. Dr. Kolmer said he had been interested in the rhinitis which developed in scarlet fever patients; when one sent a patient home with a running nose there was danger of a return case. They had treated 200 cases of septic rhinitis by means of bacterins; this was not designed to combat the scarlet fever virus, but was aimed against the superadded infection. There were many cases showing the presence in the nasal secretions of staphylococci, and in these cases stock bacterins would give very satisfactory results.

Dr. Henry Dwight Chapin said he wished to speak on two points: first, one feature in the diagnosis, and, second, a complication often overlooked in scarlet fever. It was not always easy to differentiate between a tonsillitis of scarlet fever and an ordinary tonsillitis. However, in real scarlet fever there were certain points that aided in making this differentiation. First, the condition of the tongue, which in the first day of the disease would be found covered with a white fur and the papillæ could be seen coming through; on the second and third day it would clear up on the tip and edges and then there would be found the typical beef tongue. Secondly, there was the punctate form of eruption which was marked over the soft palate, and this they did not get even in the most severe cases of tonsillitis. In regard to the overlooked complication, this was myocarditis, which was more common than was supposed, probably because it was not more often recognized. Even in a mild form of the disease the pulse would run up after two or three weeks, and instead of being 70 or 80 it would be 90, 100, or 120, and it would remain there. When this occurred the heart should be carefully watched and one should think of myocardial involvement. One should examine the heart very carefully and keep a record of the pulse.

Dr. Arthur Richard Braunlich did not believe there was anything very characteristic about the desquamation of scarlet fever; he had seen patients with measles desquamate as did those with scarlet fever. The majority of the cases of scarlet fever did not have a typical temperature curve; the slightest enlargement of a gland was sufficient to change the temperature curve. Very often the tongue was the most typical thing met with in scarlet fever; the typical strawberry tongue which appeared on the fourth or fifty day was present in a large percentage of the cases. In about 23 per cent. of the cases the diagnosis depended upon the punctate eruption, the temperature, and the pulse rate. As to treatment, plenty of water should be given to get the diuretic effect; if enough was given to a child twelve or fifteen years of age he could be made to pass 150 ounces of urine a day. He believed that giving plenty of water in the beginning of the disease would prevent many of the complications.

Dr. Lewis A. Sexton believed that one of the most convincing points in the differential diagnosis of scarlet fever was the vasomotor paralysis caused by pressure. This paralysis lasted for two or three seconds, when the skin again assumed its original scarlet color, to again blanch after a lapse of from five to eight seconds, after which it remained blanched for several seconds and, in some cases, where the erythema was intense it could be noted for several minutes. This condition was never found in the serum therapy rashes or scarlatiniform erythemas other than scarlet fever. A common and painful complication of scarlet fever was arthritis. In the Willard Parker Hospital this occurred in 7 per cent. of the cases. In two cases of suppurative shoulders the gonococcus was found in each. In the other cases of the series of 147 cases of arthritis the streptococcus was found. He had noticed that in the early stages of the disease the pulse rate was out of proportion with the temperature, and that a rapid pulse was among the first manifestations of the disease. The rapid pulse often persisted for several days after the temperature had reached normal. He thought that if each patient could have more individual attention with the nose and throat kept clean and swabbed out two or three times daily, with a 25 per cent. argyrol solution complications would be reduced to a marked degree. He believed the danger of infecting the ear by giving nasal irrigations had been overestimated. In the diphtheria service, where 1,558 cases were treated in 1910 and 327 cases had nasal irrigations, not a single mastoid developed. This might be due to the fact that the facilities for this form of treatment were the very best and the treatments were carried out by experts. With regard to mastoids, he believed that with free incision of the tympanum as soon as any bulging appeared and the application of the ice coil, many of these mastoids that would otherwise have gone to operation could be aborted. After the irrigations of the ear they employed equal parts of a 1-5000 solution of bichloride and 50 per cent. alcohol, putting ten drops warmed into each ear. The results from the treatment of gonococcus infection with vaccines, although there had been temporary improvement in several cases, had been ephemeral. They had had comparatively few cases of nephritis following scarlet fever. In 1910 they treated 2,302 cases and had only 55 cases of marked nephritis; but 17 per cent. of these cases showed albuminuria. In 1911 they treated 1,984 cases and had 34 cases of marked nephritis with 18 per cent. showing albuminuria. They accounted for the small number of cases of nephritis by the strict régime in diet, this being limited to milk or fluids for the first eighteen to twenty-one days, during which time the patients were kept in bed. In the treatment of nephritis they relied on eliminatives, hot packs, and hot baths. Maximum doses of nitroglycerin were given one-half hour before each pack as a vasomotor dilator to increase the diaphoresis.

Dr. Philip D. Kerrison said that he had been asked to limit his remarks to the indications for mastoid operation in cases complicating infectious diseases. In the majority of cases the operation was undertaken not so much because of the urgency of the immediate symptoms as for the purpose of preventing certain dangers, viz., those inherent in a rapidly spreading suppurative mastoiditis which might endanger the patient's life, and the truly remarkable rapidity with which the drum membrane in these cases might be destroyed. As to the indications for operating there were many conditions which made this the best course, namely, presence or absence of adenoids, the constitutional condition of the patient, the environment; so that it did not seem wise to lay down dogmatic rules for surgical intervention. This much was known, however: the so-called mastoid antrum was as large in a child as in an adult, while the mastoid cortex was comparatively very thin. Any severe suppuration of the mastoid was likely, therefore, to be followed early by mastoid edema or subperiosteal abscess. Either of these conditions usually indicated the presence of pus within the mastoid cells. Postauricular redness or swelling in these cases might be regarded as positive indications for opening the mastoid. Again, where there was a red and infiltrated drum membrane through which a copious discharge persistently flowed they were obliged to operate on the mastoid for the purpose of preventing destruction of the ear. The list of indications might be extended beginning with mastoid tenderness, sensitiveness to pressure, etc. The subject was one in which dogmatism should be avoided.

Dr. Thomas Allison Smith said he had been asked to discuss empyema following scarlet fever. During the past two years something like 6,300 cases of scarlet fever had been admitted to the Willard Parker Hospital, and among these there developed 17 cases of empyema, less than three per thousand cases. At no time during the past two years did the statistics give this complication as occurring in as many as 1 per cent. Empyema was a late complication of scarlet fever. It usually appeared in the fifth, sixth, or seventh week, and it might complicate a pneumonia or occur independently. The records showed that these cases of empyema were apt to be a part of a general septicemia. The mortality was high, not so much through the empyema *per se* as because this complication occurred in very young and very sick children. In adults and in older children satisfactory drainage of the empyema could be best accomplished by the excision of a section of one or more of the ribs. In the very young and very sick children, among whom the condition was met with in the Willard Parker Hospital, this procedure was not advisable. It seemed to him that an operation without the employment of an anesthetic was far more preferable than one which entailed great shock. Drainage was satisfactory in these children without removing sections from one or more ribs.

Dr. Joseph E. Winters said it was impossible to discuss intelligently the treatment of scarlet fever without bringing it down to the treatment of the individual case. One of the greatest authorities said that epidemics differed as much as a flea bite and the plague. One of the things for consideration in grave cases was the temperature; in the virulent cases there was high temperature, rapid pulse, delirium, vomiting, and diarrhea, and when all were present they were uncontrollable. Sometimes the high temperature was best treated by warm sponging; when this failed one should not hesitate to use cold packs. Dr. Winters reported the case of a nurse who had a temperature of 106° to 107° F. and the cold pack was used with almost magical effect. In another case the same treatment had no effect. In another case where there was wild delirium he had given one-third of a grain of morphine and one-eighth of a grain of strychnine hypodermically. This patient had a bad pulse. Within twenty-four hours the

delirium had passed away and the patient made a good recovery. Sometimes large doses of alcohol were valuable, but these should never be given except late in the disease. In the treatment of adenitis, if seen at the very inception, ice should be applied, but should not be continued for more than twenty-four hours; if after that time the adenitis continued to increase hot flaxseed poultices should be employed. If the tongue was kept clean from the very beginning of the disease one would almost never see a case of adenitis. If a child was kept in bed with proper attention to the skin, proper diet, and proper location of the bed nephritis would not develop. The best treatment for nephritis was purgation and diaphoresis, but digitalis should not be employed. Digitalis increased the distention of the afferent vessels and aggravated the pathological condition. He preferred aconite, as in other congestions.

Books Received.

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TEXTBOOK OF OPHTHALMOLOGY. By Dr. PAUL ROEMER. Translated by Dr. MATTHIAS LANCKTON FOSTER. 275 pages; with 186 illustrations in the text and 13 colored plates. Vol. I; cloth; price $2.50. Rebman Company, New York, Publishers.

DIE DIAGNOSTISCHE UND PROGNOSTISCHE BEDEUTUNG DER HARNSEDIMENTE. Vol. II, No. 4. By Dr. C. POSNER. 48 pages; paper; price 1.40 M. Carl Marhold, Halle, Publisher.

FORTY-FIRST ANNUAL REPORT OF THE MANAGERS OF THE MIDDLETOWN STATE HOMEOPATHIC HOSPITAL, MIDDLETOWN, N. Y., TO THE STATE COMMISSION IN LUNACY FOR THE YEAR ENDING SEPTEMBER 30, 1911. 78 pages; paper.

FOOD FOR THE INVALID AND THE CONVALESCENT. By WINIFRED STUART GIBBS. 81 pages; cloth; price 75c. net. The Macmillan Company, New York, Publishers.

PRACTICUM DER PHYSIOLOGISCHEN UND PATHOLOGISCHEN CHEMIE NEBST EINER ANLEITUNG ZUR ANORGANISCHEN ANALYSE FÜR MEDICINER. By Dr. E. SALKOWSKI. 335 pages; cloth; price 8 M. August Hirschwald, Berlin, Publisher.

DIE ZUCKERKRANKHEIT UND IHRE BEHANDLUNG. By Prof. Dr. CARL VON NOORDEN. 438 pages; paper; price 10 M. August Hirschwald, Berlin, Publisher.

A SURGICAL TREATMENT OF LOCOMOTOR ATAXIA. By L. N. DENSLOW, M.D. 118 pages; cloth; price 3/6 net. Bailliere, Tindall & Cox, London, Publishers.

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DISEASES OF THE GENITO-URINARY ORGANS AND THE KIDNEY. Third Revised Edition. By ROBERT H. GREENE, M.D. 630 pages; with 330 illustrations; cloth; price $6.50 net. W. B. Saunders Company, Philadelphia and London Publishers.

MODERN URINOLOGY. By CLIFFORD MITCHELL, A.B., M.D. 636 pages; illustrated; cloth; price $3.00 net. Boericke & Tafel, Philadelphia, Publishers.

STATISTICA SANITARIA DELL'ARMATA. 1907-1908. 284 pages; paper. Officina Poligrafica Italiani, Rome, Publishers.

A MANUAL OF SURGICAL TREATMENT. By Sir W. WATSON CHEYNE, Bart., C.B., D.Sc., LL.D., F.R.C.S., F.R.S., and F. F. BURGHARD, M.S., F.R.C.S. 552 pages; illustrated; cloth. Lea & Febiger, Philadelphia and New York, Publishers.

Medical Items.

Syphilitic Neuritis.—P. J. Menard states that syphilitic polyneuritis involves both the sensory and motor nerves and is characterized by a combination of motor, sensory, and trophic symptoms. It is more frequent in men than in women, is rare in children, and generally occurs between the twentieth and thirtieth years of life. It occurs generally in syphilis of a benign character, and may begin suddenly by a paralysis of the limbs, of the eye muscles, or of the face. The symptoms may also come on rather slowly, being preceded by peculiar sensations of formication, burning, tickling, and pain. In rare cases these are accompanied by fever, delirium, and weakness. Strabismus and diplopia are common symptoms. The paralysis is flaccid, the reflexes are diminished or absent, and the reaction of degeneration is present. The symptoms last for some time and disappear very slowly.—*Gazette des Hôpitaux.*

The Vaginal Cesarean Section: Technique, Results and Indications.—C. Jeannin ranks the vaginal cesarean section of Dührssen with the classical abdominal cesarean section, but with different indications. The vaginal operation cannot be made use of when the pelvis is contracted or obstructed by a tumor. It is valuable in cases of failure of the cervical tissues to dilate. It may be used in the interest of the mother in eclampsia, in the separation of the normally implanted placenta, in a rigid cervix, in cardiac troubles, and in amniotic infection. In the interest of the child it may be resorted to in prolapse of the cord, and when the mother is dead or dying. In general, it is indicated whenever rapid delivery is necessary and the cervix cannot be dilated rapidly. It is contraindicated in atresia of the vagina, very large fetus, abdominal implantation of the placenta, and previous infection. It is easy of performance and safe when the necessary rules are obeyed. It consists of opening the anterior and posterior cul-de-sacs and separating the peritoneum from the uterus up to the junction of the cervix and the fundus; the anterior and posterior lips are incised largely enough to allow of the delivery of the child by forceps or version. —*Le Progrès Médical.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended May 3, 1912:

CHOLERA

Places	Date	Cases	Deaths
India: Bassein	Mar. 3-9	4	4
Calcutta	Mar. 3-16	16	11
Madras	Mar. 17-30	7	7
Rangoon	Feb. 1-29	24	16
YELLOW FEVER			
Brazil: Manaos	Mar. 24-30		5
Pernambuco	Feb. 16-29		2
Pernambuco	Mar. 1-15		2
PLAGUE			
Arabia: Aden	Mar. 5-25	2	1
Brazil: Para	Apr. 1-6	2	2
Pernambuco	Feb. 16-29		1
Egypt: Alexandria	Mar. 22	1	
Provinces—Assiout	Mar. 16-Apr. 4	5	2
Behera	Apr. 16	1	
Beni Souef	Mar. 15	6	
Garbieh	Mar. 4-17	3	2
Kena	Mar. 8-Apr. 4	43	34
Minieh	Mar. 16-Apr. 4	9	1
India: Bombay	Mar. 17-23	87	82
Calcutta	Mar. 3-16		196
Karachi	Mar. 17-30	147	131
Rangoon	Feb. 1-29	86	84
Java: Pasoeroean Residency	Mar. 10-16	6	5
West Indies: Trinidad: Port of Spain	Apr. 26	1	
SMALLPOX			
Arabia: Aden	Mar. 19-25	1	1
Austria-Hungary: Galicia	Mar. 25-30	14	
Vienna	Mar. 25-30	1	
Brazil: Para	Apr. 1-6	1	
Pernambuco	Feb. 16-Mar. 15		97
Rio de Janeiro	Feb. 25-Mar. 2	10	
Canada: Dawson	Apr. 1-6	1	
Hamilton	Apr. 14-20	3	
Quebec	Apr. 14-20	6	
Winnipeg	Apr. 7-13	1	
Egypt: Cairo	Mar. 12-25	5	
France: Marseille	Mar. 1-31		1
Paris	Apr. 1-6	3	
Germany	Apr. 1-7	12	
Hamburg	Apr. 1-6	2	
Great Britain: Liverpool	Apr. 7-17	1	1
India: Madras	Mar. 17-30	25	11
Rangoon	Feb. 1-29	117	28
Italy: Naples	Apr. 7-13	3	
Palermo	Apr. 1-6	15	5
Turin	Apr. 1-7	2	
Java: Batavia	Mar. 1-16	3	
Mexico: Guadalajara	Apr. 7-13	2	2
Mexico	Feb. 18-Mar. 2	32	12
Portugal: Lisbon	Apr. 1-13	3	
Russia: Moscow	Mar. 17-23	4	3
Spain: Madrid	Mar. 1-31		13
Seville	Mar. 1-31		2
Valencia	Apr. 7-13	18	
Teneriffe: Santa Cruz	Apr. 1-6		1

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Original Articles.

NOTES ON THE NEUROLOGY OF VOLUNTARY MOVEMENT.

BY GEORGE VAN NESS DEARBORN, M.D., Ph.D.

CAMBRIDGE, MASS.

(From the Laboratory of Physiology of the Tufts College Medical and Dental Schools, Boston, Massachusetts.)

SYNOPSIS.

ONE of the most obvious needs in the physiology of the present time, after its years of greatly productive accumulation, is integration, synthesis, correlation. In no bodily system is this need more conspicuous than in the universal neural fabric, and if we can get to understand voluntary action we have then already learned all the rest, for it is the acme of human activity from every point of view.

I.

Lacking the two-phased power of imitation and of inhibition, plants can hardly be said to make voluntary movements. Nevertheless, in as much as plants are partly individuated, both structurally and functionally, something inheres in their vital reactions that is indistinguishable logically if not biologically from voluntary activity—most obviously if one confuse organism and environment and think of their basal unification. However interesting, the voluntary powers of plants, if we grant them at all, come not within the scope of this present argument.

On safer, or at least less polemic, grounds, we can pass to those organisms classed as animal, and we find at once in that form morphologically the simplest, Ameba, all the criteria of volition reduced to its simplest terms. If, from another point of view, we observe here, too, the essence of externally determined reflex action, this apparent opposition only makes more striking the philosophic truth (all peace to the shades of the departed Transcendentalists!) that all voluntary action is reflex and all reflexion in a total viewing voluntary, just as truly as "Aristotle Platonizes."

More immediate to our present purpose, the fact is that behavior as the sum total of an animal's manifestations of irritability is a matter continually of *wholes* and not of partial reactions. It is an ordered unification determined by deep-lying biological purpose and not by local stimuli. In the normal animal this were certainly demonstrable were demonstration expedient. Physiology has (nearly) passed the evolutionary period in which what really are complex resultants of numberless varied forces are taken for simple events. We physiologists (none too rapidly, to be sure) are giving up that sometime eagerness for detailed description that studied the isolated nerve-muscle preparation and the isolated frog's heart. We are outgrowing (slowly enough!) that kind of physiological histology, so to say, because it really is not worth while to mislead the student too often wrongly, teaching him that what is only a part of a whole is something in and for itself.

From the technical side we have the most complete sanction for thus viewing the behavior as something different from the organism of animals. The most elaborate study of elementary behavior ever made, perhaps, that of Jennings, forced its author to conclude against the local (tactic) theory of protozoan and animalcular behavior. In his own words, "The responses to stimuli are usually reactions of the organisms as wholes, brought about by some physiological change produced by the stimulus; they cannot, on account of the way in which they take place, be interpreted as due to the direct effect of stimuli on the motor organs acting more or less independently. The organism reacts as a unit, not as the sum of a number of independently reacting organisms." ("Behavior of the Lower Organisms," page 107.) Mediating the stimulus and the actual behavior reaction, be it what it may, Jennings describes "physiological states" even in animalcules: "(1) The stimulus changes the physiological state of the organism as a whole; (2) this change in physiological state induces a certain type of reaction." In the protozoan this physiological state is simple and conspicuously chemical, while in man it involves such complexes as memory and the emotions (Jennings). It is the object of this essay to specify somewhat in detail in relation to nervous pathways some of the complexes involved in the corresponding behavior of man—voluntary movement.

But one can turn readily to the animalcule itself and see all the inherent nature of voluntariness revealed in a minute's seeing. The paramecium (ciliated protozoan of any of many forms) goes about his biological business in the cubic centimeter of water and vegetal débris upon the microscope slide just as our lawyer and physician friends,

our traveling salesmen, and our scavengers go about theirs in the city streets. Busy with initiation, actuation, and inhibition, each of these, infusor as much as doctor, exemplifies anew at once the complexity and the universality of voluntary movement in adult animal organisms. This is a proposition that is outside the need of demonstration, an axiom that stays unrefuted because the only quasi-refutation so far suggested is clearly a matter of viewpoint, of interpretation, and never at all a matter of reality. On the essential facts of the matter biologists and zoologists substantially agree, or might, did they make the opportunity to try.

Now Paramecium of course lacks all vestige of nervous cell and fiber. This animal's structure and behavior is suggested here solely to remind the reader that voluntary movement is primary and not secondary; second, inherent in the body-protoplasm and not in nerve especially; third, universal in the action of animal bodies.

This last proposition, it is clear, needs explanation, and this we may offer thus: Evading the problem (because also one purely of opinion) as illustrated in Ameba, the first traces of nervous system in the animal "series," show clearly enough that all parts of the animal employ for their coordination all parts of the nervous system. In the medusoids and in the starfish, for example, there is nothing that can be classed as brain—unless indeed, it all be so classed. It is only when we come to such animals as Talitrus (the sand-hopper), Strongylus, and the familiar earthworm (Lumbricus) that we see a gathering mass of nerve tissue that by analogy with higher animals we may call a definite brain. The behavior of such animals is neither less voluntary nor more than that of the medusa or the starfish, and if these have cerebrums while those have none, biologically speaking, it is accidental, dependent on the needs of complexer sensory functions in the forward moving part of the organism. In other words (and this is the point), the animal's voluntariness inheres in its body and its behavior, and not in its "brain." Of this we may be logically sure enough on the principle of uninterrupted structural and functional continuity between animals that have "brains" and those that have none. With an assurance that seems to admit no doubt we may (may we not?) extend the argument from continuity and analogy as far "upward" as we please in the animal "scale." Finally, as the logical and structural limit, we reach ourselves, and find corroboration of our belief in a certainty of voluntary freedom that no sane man today (save as his point of view be changed!) denies. Then anthropomorphically reversing this trite argument we arrive where we began, at the voluntariness of Ameba and Paramecium. Physiologically at least the argument seems sound, and it surely is irrefutable save as one's point of view (which is unessential) be different or opposed. As introductory to a discussion of voluntary neurology the conclusion of this argument may read: *Structure and introspection both go to demonstrate that voluntary action is as complex and as universal in organisms as the organism itself and its behavior.* Reflex action, as such, may be of local determination, but voluntary movement is inherently more or less universal in its determination, and represents thus the animal's essential will as free. This seems to be a reasonable conclusion derivable from even a cursory glance at the facts and theories of the animals in which little differentiation has gone on.

A further necessary introductory remark bases itself on an homologous comparison of the physiological aspects of voluntary function with the "mental" phases of the individual's activities. Here we come upon something very general and obvious and hard to understand, namely, the continual and persistent ignoring by physiologists of that foundation fact of psychology that we may designate as fusion ("association" or integration), whose importance for neurology, despite its Herbatian exaggeration for psychology, has never been adequately acted upon.

In describing the mental process as a whole, for example, it is, of course, customary to describe it from three points of view, respectively feeling, willing, and knowing. The very first thing to be said in describing feeling, willing, and knowing, is that they are not separate parts of "mind"; you cannot say that any one portion of the stream of consciousness is knowing, or feeling, or willing. They exist only as aspects or ways of seeing, and tend merely to support each a different view of consciousness for purposes of description—analysis artificial for descriptive purposes.

Our discussion here is of the willing aspect of consciousness, the volition-phase of the mental process, and this we will consider, as briefly as is meet, from a physiological point of view. For most practical purposes we can use the word action as a synonym of willing. The idea of will, except in one particular (namely, free choice), means a little more than that of crude action, however, and more nearly the idea of doing, and it is this idea that is especially fitting for the purposes of physiology. The will is only a name, then, for the action of a body and mind under the control of a personality.

There is, then, no period of consciousness that is entirely willing, but mind is always partly feeling and partly knowing as well. In other words, the process is always made up of these three aspects and it is an artificial interpretation of the mind if we abstract any one of them, even for the purposes of description. This statement has been emphasized by repetition because it is the stigmatum, open and conspicuous almost as the day, by which most discussions of the neurology of voluntary movement prove their incompetency. In lieu of a real and complete knowledge of the brain and its myriad paths, guiding the world by their intricate connections, why do not physiologists and neurologists see that descriptive psychology on the simplest introspective basis gives the neurologist a framework and a plan the most certain of all things short of Des Cartes's famed "cogito ergo sum," and a scheme vastly more substantial and sure than the physiology of the neurons and their relationships promises to be in many busy years to come? In fine, we know for a fact certainly and without cavil, that by the well-nigh universal process of neural fusion, will is never just pure will, and no voluntary movement, therefore, actuated by any set of neuronal actions so ridiculously simple as the older physiologists would lead us to believe. In short, in the phrase of the day, the Rolandic cortex and its efferent channels have been badly "overworked."

The physiological basis of the human will lies in the neuromuscular mechanism: the muscles, epithelium, receptors, and nervous circuits in the nervous system. Thus and herein we have the main physiological basis of the will, namely, in the actions, mental and bodily, going on in the organism. Long ago, by Foster in England, the muscles were

called the "master tissues" of the body because it is by means of them alone that the individual can *do* things. Imagine, if you could, isolated nerve cells in the cortex of the brain grinding out ideas; we could well see that those ideas would be of no use to man unless they led to some sort of action, and we can have action resulting only through the intricate neuromuscular mechanism of the body. In this respect this apparatus, as the physiological basis of the will, forms the foundation, too, for everything in life worth having to the individual.

We certainly cannot know too much about so surpassingly important a mechanism. It represents the inherent humanity or personality of the individual man or woman as does nothing whatever else. A prominent reason why we do not already know really much about it is that we have underestimated its complexity and so thought it known, when in reality few realized even how formidable its problem is. Another corollary of the contented condition of mind of many physiologists is that most of them have attacked the bull wrong end first, the *terminus ad quem* rather than the *terminus a quo*—contrary to ordinary procedure in most affairs in which the simple is usually studied before the most complex. In short, and more explicitly, in the work on the theory of voluntary movement infantile behavior has been, unfortunately for the theory, almost wholly ignored, and that without apparent reason.

If neurologists have, as has been suggested, adequate sanction in the wholly certain events of consciousness for conjecture as to the concomitant "neurograms," surely they can use to the advantage of adult neurology the accumulating observations of child study, of motosensory development while relationships are still relatively simple—for is not the child, and neurologically in particular, father to the man? It seems *à priori* likely that analysis of human behavior during the first year of extrauterine life might supply us with data that would make easier of unravelment the knot of adult voluntary control; *à posteriori* the presumption seems to be corroborated. At any rate, if nothing else develops from child study in the direction of understanding voluntary movement, one thing, and that an important thing, plainly evinces itself, namely, that current doctrine of deliberate control is too complacently self-satisfied and so fails in a large measure to appreciate at once the difficulty and the extent of its obligations to the advancement of knowledge. How infinitely far away from the simple quasi-neurology of most published treatises of to-day is the intricacy of human motives! And yet how essential is it to consider inherent in every voluntary movement as its heart and core and every essence by definition of the will itself, an "imminent idea," an essential *motive*. In proportion as a movement lacks motive is it reflex and mechanical; and in proportion as it results from motive are current notions of voluntary movement absurdly inadequate. However short and shuffling, a single step towards the goal is better than much leaping in the air.

II.

At birth the outfit of the human animal is an impulsive one, because built principally out of protoplasm which has inherent in it the impulse to activity. This impulse determines action of some kind. In the second place, the efficient organism of the child at birth is inherently "reflex," the neuromuscular part of it being made up of a series of circuits and "reflexes" that includes, in the third place, a whole series of purely reflex inhibitions. The young infant has a well-defined set of these reflex inhibitions, as may immediately be seen from the phenomena of reflex attention manifested by adapted inhibitions to sensory stimuli of adequate kind. In the fourth place, the young infant at birth has a well-determined set of reflex innate desires dominated by dull pleasure and pain. In these four ways, at least, we can characterize the psychomotor outfit of the infant when he "comes into the world." We will find instances illustrating all these characteristics in the books on child study, and a moment's experimentation demonstrates them readily on the latest dear comer into our household. Such an impulsive and inhibitory reflex mechanism dominated by dull pleasure and pain contains, but latent and potential, the material out of which develops the motivated freedom which constitutes *humanity* free to do or not to do, and therein the only truly moral thing on earth, as Immanuel Kant has long since proclaimed.

About the actual stages of development of the different parts of the brain and cord in the child at birth (we are concerned in this essay only secondarily with the autonomic system) there is still much unfortunate ignorance, so difficult is the practical problem of neurohistology. Already then, however, the cerebellum is more or less complete in general, we may suppose, because it is an afferent and efferent mechanical center carrying on mechanical coordinations. Again, the reflex apparatus of the cord, etc., is at birth fairly well finished. The mechanism of reflex inhibitions is more or less completed (we know but little as to its location unless it be in the cortex) and, sometimes, it seems as if reflex recognitions were more or less possible very early in the first year. In this suspected recognition we have a strongly psychical element, and a highly developed and complex thing—reflex recognition of the nursing bottle for instance, of its mother's face, and of other things very important to the child, such especially as the power of recognizing the difference between a smile and a frown. It would be difficult to suggest the brain paths for such functions as reflex inhibition and recognition that did not involve widely separated portions of the cortex of the hemispheres, if not of the internal nuclei. However doubtful the neurology, the facts of occurrence at an early date allow, none the less, of no doubt at all. What seems especially needed is definite knowledge as to the relations of the cortex, the thalamus, and the medullary bulb at and soon after birth. When we have that we shall truly understand, it seems likely, such basally important human functions as recognition and inhibition—and not before.

A child three or four months old of course cannot make even the most simple voluntary movement. Show such an infant a big red rubber ball, and however much he wishes it, he cannot stretch out his hand to get it. He can and does, however, make general arm and leg movements, and this fact shows that there is ready communication of indefinite motor excitement through the central nervous system. It is not until the sixth or seventh month of life at least that the child begins to show capability of stretching out his hand deliberately towards an object. He cannot do it before, obviously because his "motor" neurons, the "centers," have not developed or have not interconnected, or both. The known physiological facts are corroborated by observations on infant behavior that lead us to believe

that the neuronal lack in question is largely the connection, extensive and complex, between the rind of the hemispheres and the reflex vegetative mechanism of the sympathetic, the cord and bulb, and cerebellum.

The first step in the process of the personal evolution of voluntary movement, then, is probably an actual development in the extent and in the complexification especially of the cerebral neurons; the underlying development of voluntary movement is an anatomical one: an integration of the personal neurons above with the already elaborate system of vegetative, racial, neurons below. For the purpose of making things short and technical we may call this basal process "chemotactic neuronal integration." Now, in fact, we do not know much about chemotaxis, the movement of certain cells towards or from other cells under chemical attraction. The subject has been discussed chiefly in regard to the movement of plants and of protozoa. It is, at any rate, a growth or movement of protoplasm brought about by forces we call chemical. One finds an elaborate discussion of the subject in the writings of Max Verworn, for example. Ramón y Cajal, conceded to be one of the experts of the world upon this subject, and his opinions important because he has studied things in the light of the latest methods (including osmosis, etc.), supposes that the interknitting of the neurons occurs under some form of chemical reaction. The whole tendency of physiological causation being in this same direction, and no other theory even as satisfactory, we may tentatively accept the hypothesis as the cause or method of the early correlation of the neurons underlying the evolution of the individual as a free agent. As we have already seen, the cerebellum at birth, as the mechanical means of coordination, is much more complete than the cortex of the larger brain, so that we have to think of the growth at the basis of motor development as taking place more in the large brain than in the cerebellum during the early months of extranterine development, as well as later, and indeed throughout the life of the individual. The whole tendency at present, as Hemmeter has recently pointed out, is to unify themotaxis in the nervous system with harmonic and perhaps with kolionic action at the "synapses."

Much growth at the basis of deliberate motor development takes place also, there can be little doubt, in the large internal nuclei of the hemispheres. The gross association paths, between the large grey regions in the brain probably are more or less complete at about seven years of age, but the finer neuronal development takes place in the brain undoubtedly even up to sixty years of life, or further yet. In so far as the mere weight of the brain is concerned (white matter mostly) we must recall that it is almost attained by nine or eight years of age, but the much more important development for the individual goes on long after that period. This later development is probably not represented in weight, but rather in the ever new connections of the neurons already constructed in the brain, and in the finer development and integration of those neurons. Especially do we have excellent reasons to suppose that circuits grow and integrate in the spinal cord and gradually push further and further upward and later become connected with the cortex of the brain; henceforth the process throughout is one perhaps largely of elaboration of the cortex of the brain and of the nuclei. The impulsive and reflexive circuits grow and radiate upward more and more, so that finally, by the seventh or the eighth month, it becomes possible for the infant to direct personally *new* and deliberate movements, the motives and the relations of things having now gradually clarified themselves in the unrolling dawn of the mind, considered as a means to life efficiency through memory and intricate association of the old and the new.

Another factor in the process of the development of voluntary movements in the young infant is that of a gradual conscious clarification of the "motor ideas." Here come in again the impulse to activity as well as reflex action. In fact, from the earliest stages of intrauterine life, say at four or five months, every time the infant moves at all there are sensory impulses or, to speak more accurately, afferent impulses, sent to its brain, and the brain, as we know, is the chief organ of consciousness. Gradually, in the course of weeks and of months of kicking about and of general reflex activity, these sensory impulses which are continually being sent to the brain become clearer and plainer to "the organ of consciousness," if not to the actual focussed consciousness These sensory and afferent impulses certainly become gradually clearer to his brain. It is, therefore, from a perfectly correct psychological and physiological point of view that we affirm that the sensations produced by the movement of the young infant (movements incessantly and reflexly made) gradually become connected with and associated in the conscious motor centers of the brain itself. Probably the sensations that are most conspicuous in this are those of the joints; they are all kinesthetic sensations, however, touch being only an aspect of the kinesthetic sense. These kinesthetic impressions, sensations, influences, or call them what one will, are the "motor ideas" emphasized by the late lamented James. They seem to constitute, one for each common and definite movement reflexly made, the chief psychomotor basis for the conscious development of the motives that underlie voluntary behavior considered as the sum of the deliberate movements of an individual.

This clarification of motor ideas, then, is an important factor in the development of voluntary movement. The only reason why a child of eight or nine months can deliberately extend its hand to grasp an attractive object held out to him is that he has already made a thousand more or less similar movements, the motor sensations of which have become clearer and ever better connected in the conscious motor centers of the brain; he has been, as it were, *studying these movements out* for weeks and months, and finally, we must be sure, in a conscious way.

The impulsive activity of the young infant is practice, as, later on in its life, play is practice, for the still later conduct of his bodily affairs. All the impulsive activities produce sensations, almost percepts, which fuse together in the brain, and the brain is built in such a way that the child can combine all these sensory, afferent impulses coming from its impulsive activities into concepts of movement, motor ideas. On the basis of these, after months of trial he learns to make new voluntary movements. These new deliberate actions, weak and tentative and simple, usually start with the lips, because they are the most sensitive organs of expression; next the arms come under control, and gradually the forearm and the hands. While the very essence of this new power of making a novel voluntary movement is psychologically the gradual

clarification of the motor ideas, according to first principles, these are as much physiological as psycological, for the essense of this power lies as much in the integration of the motor neurons functionally as it does in the consciousness of the kinesthetic sensations which becomes plainer and plainer and more explicit as the development proceeds.

An important aspect of this gradual clarification of motor, kinesthetic, ideas in early voluntary development is the practice and gradual deliberateness of the reflex inhibitions already mentioned above. These are properly considered to be practice restraints for the development of attention as the direction of conscious animal activity.*

Ribot long since pointed out that attention is inherently inhibitory. The only reason that we are able to direct our consciousness to any one object is of course that we can inhibit all the other things around us from disturbing that one line of attention. In the reflex inhibitions which we see so well defined and so complete at birth, we might think of the infant as having all sorts of neural practice for the development of reflex and voluntary inhibitions and thus for the coming of voluntary attention. Conspicuous sounds will stop the general movements of the infant and, in short, many sorts of evidence are at hand indicating that the reflex inhibitions are very complete in the young child. Doubtless these indeed are acting much more often in the baby than we are aware of even in our most careful observation of them. Inhibition is a repression, a negation, a restraint, and for that very reason actual definite inhibitions are not easy to detect among the activities of the young infant.

A third factor in the development of deliberate movement as a faculty in the infant, for lack of a better term we may term the desire in each case to make the particular movement. This factor, always present in the young child and much more conspicuously than in the adult, is obviously a feeling, and an inherent part of the neural complex of the infant's behavior. It is a part of the innate interest and desire to have and to do things. This desire, usually explicit enough, is especially so in so far as interest is concerned, for the things that the young child likes, it will try to get and thus desire serves as an inseparable part of the apparatus by which the infant induces himself, often with much effort at first, to make a voluntary movement. On the other hand, we often find in adults the condition known as abulia, a lack or defect of will-power of a certain kind, and of course melancholia, where there is no desire for anything and where the afflicted person seldom makes a voluntary movement that can be avoided. The incapacity of the child too young as yet to make movements deliberately obviously partakes in both of these conditions, although probably from a different cause, and more like the former than the latter. The practical point here for clinical neurology consists in the certainty that an act of will is anatomically involved with brain-paths and brain-neurons that represent the purely affective aspects of mind, for desire is neither volition nor ideation, but an elemental emotion necessary to normality of life.

A fourth factor to consider in the process of the development of voluntary movement is a practical, working knowledge of spatiality, of that which we call "space." The practical development of the concept of space in the infant's mind helps to develop its powers of voluntary movement. A child, for instance, would not reach out for the moon if it consciously realized that the moon were hundreds of thousands of miles away from its grasp. The child does things which the rational being fully informed would not attempt to do. This complex acquired sense of space is apparently one of the essential factors which help to develop the power of making voluntary movements, just as this phase of our elemental understanding of things depends for its existence in the mind on the tridimensional voluntary movements of the body. Some of the details of this interdependence will be developed later on in discussing the determinants of the adult's deliberate movements. Here it is enough to suggest how interrelated they are and that in the child probably the consciousness of space, either to actuate or to inhibit, is attentive consciousness not yet buried by habituation in the mass of oft-repeated commonplaces, controlling but unfelt, as it is found in the adult.

The last factor of the development of voluntary movement that we need here specify is that which we may designate, but too elaborately, as self-confidence, always more or less important. At first in the infant this awareness is apparently an actual definition of a clear and a concise knowledge of the power to make one particular movement.

The books detailing observations of child development* give instances that show beyond doubt that, except in movements properly classed as semi-voluntary or hereditary, this kind of cue is often necessary for the first performance of a new voluntary movement. With all the mechanism constructed and put together needful for a certain movement, still the movement may remain unperformed for lack of knowledge, certain and definite, that that particular movement is performable. It is held to be true that knowledge of the power to do certain things, however the knowledge be acquired (whether by the suggestions of some other person or by the individual's own observation or by the chance of its own movements) serves as an important factor in the inexperienced volition. This is in the direction of the development of self-confidence. We all know that if we encourage a child and tell him that he can do certain things that he is usually capable of doing those things and often of doing them well. The reason why one-half the people in the world are not great, one sometimes thinks, is because they have no reasons to suppose that they can do great things. This awareness of power to do a certain thing or to make a mere movement, in the case of the young child, is the basis of its self-confidence and persistence in its later life. Of course children vary greatly in this respect, as in others. Some children go thirteen or fourteen months or more without walking because no one has ever shown them that they can walk. A certain child may have been really learning for a long time, in that its walking apparatus was continually developing, and when the walking-awareness, so to say, came really into the mind as a definite and concrete suggestion of competency, walking was at once an accomplished process, learned without practice. This is not a really good example because walking is only a semi-voluntary movement.

It remains only to be suggested that this element determining voluntary action may be actuating or

*For a discussion of attention in this general direction see a monograph by the present writer published by the American Physical Education Association, 1911.

*See, for example, the present author's "Moto-Sensory Development," 1910, page 141.

it may be inhibitory, but that always it is a purely ideational or cognitive process involving extensive cortical areas.

Such are some of the psychoneurological conditions that attract most conspicuously the attention of the physiologist observing infantile behavior. Without a doubt, these and other determinants are lively conscious experiences (the redundancy here is for emphasis) in the active states of the young baby. There is no one not too old or too amnesic to hark far enough back, groping in the dim dawn of his memory, but what will recall that even at that late day of three or four years of age voluntary efforts were still matters of serious conscious import, although already the most frequently repeated movements had become by habituation easy and their underlying conditions, sometimes painfully conscious before, subconscious and dim to almost any extent. This is the process that goes on inevitably year by year and it marks at all stages of personal evolution the basal opposition between the reflex and the voluntary, between the mechanical and the free, between the vegetative (or racial) and the personal or human. Thus, for example, the consciousness of spatial depth in the early months impressed in the motives to voluntary action, in the naive adult is never thought of as a conditioning element of our personal willing at all (as is discussed more fully below).

It is the perhaps leading thesis of this research that voluntary movement is much more than the mechanical contraction of a functional group of cross-striated muscles originated by some twentieth-century homunculus at some definite spot in the cerebral cortex—how much more and in fact what more the foregoing relates. Deliberate or voluntary movements are the very essence of individuation, of personality. To define the parts of the nervous system that contribute to the innervation of these movements, however trite or simple, is of necessity to understand first the multivarious factors of human motives, and, second, the neural concomitant of each of these. Whoever observes any behavior that contains (as what does not?) movements expressive of human life, will see that the determining elements of motor adjustment are as numberless as the shades of thought and feeling, mediate and immediate, in the human personality. That some of these factors are what we are obliged to call "subconscious" invalidates no whit their determining influence over voluntary actions, and to fail to include in any discussion of the concerned nerve parts these various influences and their "centers" is to fail entirely to appreciate the problem's unparalleled complexity.

III.

Let us pass now to the adult conditions of voluntary movement and their neural tracts. It is likely that we may better classify the suggested elements found by their physiology (neurology) than psychologically, and it is the bodily basis of voluntary movement that we especially seek in this essay. We just now have left the conditions as they seem to be at the end of the first year after birth; let us take the factors up again more as we may suppose them to be in an average clever individual at the most efficient, that is, the middle, age. Many thousand things have happened in the voluntary motor mechanism of the average man in these forty years, but for our present purpose two of the classes of events are of particular importance. These are, on the one hand, a gradual systematization of the cortex of the hemispheres and, on the other, by the universal law of habit the anesthesis into subconsciousness of many elements of deliberate action which during infancy were probably highly conscious. We are only now beginning to realize how elaborate is the plan of the nervous system in its control over the mechanical units of action: unification, integration, functional classification and subordination carried out with an elaborateness not approached elsewhere in the world and indeed far beyond our present detailed understanding. Having said this, the present writer may seem (but is not!) inconsistent if he supposes the possibility at least that with all this seeming complexity it may turn out the simplest of arrangements after all, this being of course a hint that all our present notions about the action of the neurons may be wholly wrong! As for the relative anesthesis in adult life of nerve-processes which in infancy are of necessity in full attentive consciousness, this is neither more nor less than the process universally going on in all animals; and yet it will account apparently for much of the obvious delay in the detailing of the neurology of voluntary motion. Recent writers, as we shall see, for years have been discussing the epiphenomenal accompaniments ("imagery") of voluntary movement, whereas the true determinants representing the really controlling nervous impulses in each case are years and years before "buried" in the "subconscious," because not longer useful in focussed consciousness, being habitual and no longer new.

Let us discuss the proposed neurology of adult deliberate action under three more or less arbitrary heads which we may designate, respectively, nervous circuits, spatiality, and the grey fabric of the hemispheres.

The *nervous circuits* which underlie voluntary movement are really of course the functional framework, so to say, of all neuro-muscular-glandular activity. The idea is the modern successor of the reflex arc, the succession being made necessary by our increased knowledge of the nature and uses of kinesthesia. Here again our classification is arbitrary to some extent, but none the less useful, perhaps, for descriptive purposes, and withal tentative.

The simplest "circuit" that we have to consider is that which we may call intramuscular. The knee jerk, for example, is far too quick to be a spinal reflex, so that we have to suppose it a direct reaction from the thick subpatellar tendon of the muscle-mass concerned, a direct stimulation of the elastic muscle-fibers. It is obviously only for the sake of logical completeness that we start with this, for a literal circuit here is hard to define, and moreover useless for our present purpose.

The next type of circuit is similar to the vegetative circuits of the sympathetic system, such for example as are concerned in the movements of the intestines, by the plexuses of Meissner and of Auerbach. A third type is of a partly reflex and partly sympathetic nature, and represents those reactions that are primarily reflex and yet in part under the control of the sympathetic system. A good example of such a circuit would be found in an attack of painful cramp from distention of the gut. This would constitute for the purposes of our discussion an example of a circuit intermediate between one purely vegetative (under the entire control of the sympathetic system) and an out-and-out reflex. A fourth kind is the typical reflex, termed "epicritic." Other circuits go up to the bulb and may be termed

medullary circuits, and comprise those that have to do with respiration and heart-action and many of the other vital functions which are apparently controlled by the medulla. The next variety of circuit we may term the nuclear circuit, such as those that go up into the big neuronal masses in the interior of the brain and whose activities in part at least are of the type of emotional reactions.

Lastly, the most complex type is that properly known as the cortical circuit, and this especially is accompanied by consciousness and, more important still, is under voluntary and initiative control. It is an important circumstance that each one of the circuits mentioned includes more or less of the apparatus of all of those below it. Thus you have a series ever enlarging upward. Anything that might happen in the lowest circuit would more or less affect the higher, and anything coming from the highest would have all the other circuits more or less under voluntary control, unless prejudicial to efficiency. The highest and longest and most complex circuit, the top one only, then, properly speaking is *voluntary* in nature.

These circuits of nervous influence, as various as their unique routes through the central nervous system, are not represented, of course, by separate neurons. Again, some of them are of actuating and some inhibitory nerve impulses, some produce action while others inhibit it, in some cases not only stopping the contraction of the muscles but actually and actively relaxing them. Sherrington especially reports an experiment upon the reflexes in dogs in which active relaxation of the muscles occurred. We need to know more of this! Inhibitions in the adult have long since reduced themselves largely to the reflex type. Moreover, the inhibitory impulses by their nature are negative and have been lost sight of, so that oftentimes we do not realize that they are present at all in the adult individual. For example, the very essence of the action of alcohol upon the finer cortical centers in the brain is an inhibition (depression?) and yet, as we all too well know, the moderately intoxicated person shows signs of anything rather than that of inhibition or negation. It needs emphasis here that in general the part played by inhibition in voluntary movement, as also in attention* is preeminent. Inhibition, however, is too little known still to allow of its discussion at this time in this complex connection. The work of Nikolaïdes and Dontas (confirmed by Wooley and Fröhlich) demonstrating actual inhibitory fibers in the muscle nerves, is a recent important step along this path.

There is a classification of the nervous circuits we have mentioned other than that of actuating and inhibitory, and it is one that is of more immediate use in the theory of voluntary action, namely, their division into circuits on the one hand between the skeletal muscles and the cord and into those, on the other hand, between the grey cord and the grey fabric of the hemisphere above.

As to these former nervous impulses: Few facts more helpful to our knowledge of personal control have appeared in late years than that the muscles of the body, anatomically but not physiologically individual, are mainly coördinated in the posterior grey horns, these being subordinated in some certain directions (equilibrium, resistance-purchase, etc.) to supervision from the cerebellum. As a corollary of this, important very to our present intent, it is clear that the separate muscles have no direct representation at all in the cerebrum proper.

The truly personal control, then, of the cross-striated musculature comes through influences of the second variety just suggested namely, those between the spinal horns and the grey fabric of the hemispheres, cortical and nuclear. This control, moreover, is certainly "symbolic"; that is, a properly adapted single influence probably controls a whole movement, although in the spinal grey this may involve the coördination of very many muscles in a functional group. Moreover, this control as it comes into these muscle group centers of the cord, is a *resultant* of numerous complex factors which it is the business of the hemispheres to produce by the stress and the strain, by the thrust and the pull of the individual psychophysical conditions at the moment or constitutionally, or both. It is the resultant, apparently, that controls the grey cord's group action.

One of the most essential of the factors in the neurility of voluntary control we now all recognize as kinesthesia. We do not, of course, need to enlarge upon its nature here, for Goldscheider, von Frey, James, Bastian, and many others have made its organs and its preeminently important functions in the conduct of life common knowledge manifest to all, details, however, being added continually. These kinesthetic impressions or impulses come from the moving parts into the grey matter of the hemispheres. Take the elbow or the wrist joint, the fingers, or the shoulder joint, and consider all the scores of muscles, tendons, and bones involved, as well as the skin over these moving parts, and include also the sense of touch, and we can see what an enormous complex of kinesthetic sensations and impressions must crowd continually into the central nervous system from every part of the ever-moving body.

The familiar work of Mott and Sherrington on the afferent spinal roots in dogs was quite conclusive as to the status of these movement "sensations" or influences. It will be recalled that the efferent nerves in these experiments were left complete, the outgoing motor neurons, but the dogs none the less were quite incapable of making any efficient voluntary movements, properly speaking; Munk then took up this work of Mott and Sherrington and demonstrated that the dogs after a time could make voluntary movements, but that they had to learn to do so by the vicarious use of their eyes, these organs taking up symbolically the functions usually ascribed to kinesthesia. Experiments upon certain paralytics who lack the power to make a voluntary movement show this same fact of vicarious symbolism to be true. It is sufficient to say, in short, that the kinesthetic impulses from the moving parts of the body start, or at least direct and control the voluntary movements of the individual considered as mechanical events. Unconscious kinesthetic influences appear to direct the gross movements with the help of vision, while the conscious muscle-joint impressions control the fine adjustments by an inhibitory mechanism until they, too, have become subconscious by habituation. (Uncompleted research by the writer.) Whether we believe with Bastian or with his opponent Ferrier as to the topographical nature of the great cortex, we cannot fail to see that the circuits between the muscles and grey cord and brain and back again are at once *the framework and the substance* of the neural process in voluntary movement, the former half of the circuit

*See the monograph above cited, published by the American Physical Education Association.

in each case being kinesthesia, be the details what they may.

Our next problem concerns the coordination of these circuits of nerve influence and their control as agents of initiative and truly personal voluntary movement. This we discuss briefly in the first place under the second suggested head, *spatiality*.

The origin of the idea of space in the mind of the individual, like "space" itself, has as yet not been studied out in any detail, so that we have none too good an idea of what is neurally concerned in this matter. For a part of the origin of our idea of space we certainly have to go back in our imagination to early infancy, as indeed we have already suggested. The eyes alone probably do not give the infant a sense of depth when it is born, a fact hard, indeed, for the adult to realize, because space, time, and causality form the three basal categories of the whole adult understanding, from an empirical viewpoint. As is well recognized, there are two opposed theories in regard to the development of the idea of space in the individual. The first of these, known as the nativistic theory, supposes that the space idea is born in the child, and the second, the genetic theory, believes that the idea is developed only when (voluntary?) movements begin, and that the retinæ of the infant at first give him a knowledge of space in only two dimensions; on this supposition, all objects appear only as particolored areas, without depth.

Now, a skilful enough artist might readily succeed in painting upon a canvas curtain so exactly and so perfectly that even adults would confuse his production with tridimensional space itself; this to be sure, would be a difficult thing to do, but from at least a theoretical standpoint it would be perfectly possible. Suppose, for example, an artist were to paint a piece of canvas the height of a room and that he succeeded in such perfection of color and form that anyone would confuse the picture with the room itself; from this picture we would perhaps be able to realize what impression the newborn child has of space: no idea of depth is present, but all objects appear to him as if variously colored areas spread out in the two dimensions at right angles to his line of sight.

We must stop to recall a little how such a bidimensional notion gradually develops into a true idea of depth. The first factor of this spatial process, basal for the neurology of voluntary movement, is the kinesthetic sensations of vision. The six extrinsic muscles of each eyeball all work at once by actively relaxing or by contracting. These muscles have the most sensitive of all kinesthetic sensations, more sensitive than any other in the body unless it be in the skin, the proportion of nerve supply to an eye muscle being four or five times that of the gluteus maximus, for example; thus their kinesthetic control is very sensitive. We do not have clear vision, of course, unless the lines of sight of both eyes come exactly upon the foveæ centrales; as a result, in almost every movement of life, at almost every moment, movements of the extrinsic muscles of the eyes themselves, together with the movements of the head and of the neck, must contrive to keep the line of sight of each eye exactly upon the fovea of each retina. If one were standing still and a moving object was perceived partly back of him he would turn his eyeballs in order to see; failing by this means, he might turn his head around, and he might even have to turn his whole body in order to see more clearly. These movements of the head and of the neck, or even of the whole body besides, together with the movements of the extrinsic eye muscles, are purely reflex adjusting movements adapted continually to clear vision. The stronger the stimulation in the biological scale of values the more necessary is it to turn the head around and the farther down the body are the muscles innervated in the process of adjustment. All this, of course, is familiar physiology, but without a doubt the kinesthetic impressions arising in all such adjusting movements as these concerned with vision are a prominent factor in the development of our idea of space during the first two years of life.

In addition to the gross movement of the eyes there are the well-known fine adjusting movements. The spokes of the wheel of an automobile going at the rate of about twelve miles an hour furnish a fine opportunity for observation of these inconspicuous adjustments of the eyes, for in the frequent momentary apparent stopping of the wheels we can see when the minute jerks of the eyeball occur. These are wholly unconscious under ordinary conditions, but they serve importantly to finish out the gross adaptive movements of the eyes. They doubtless are a factor in the spatial kinesthesia, although wholly unconscious to the adult.

In an homologous way we might consider the kinesthetic sensations from the ears, similar to but less important than the kinesthetic sensations of vision. We turn our ears toward a sound, and thus hearing also helps somewhat to give us an idea of space. The movements of the human pinna are ordinarily so slight that we disregard them, and in any process of adjustment we use the muscles of the neck and the trunk chiefly in order to turn our organism "toward the sound."

This kinesthesia complex obviously is a factor, however small, in our idea of space in which to move.

Another element of this space evolution is possibly represented in the retinæ themselves. It is difficult, if not impossible, however, to understand how these visual impressions alone could give us a sense of depth. Location by means of the retina itself (a form of local sign) is very inexact and, upon the whole, retinal sensations are of little account considered as separate from the kinesthetic sensations of vision (which they never are) in the theory of voluntary movement. It seems that we use the retinal sensations proper in the guidance of a motion only when the line of sight comes upon the fovea centralis, and then it is the usual kinesthetic sensations that guide the voluntary movement. In moving the hand we certainly use the eyes chiefly to determine where we shall begin and where stop the movement. The eye locates the start of an average voluntary movement in the light, but the retinal sensations are too inexact for fine adjustments of the eyes or of the limbs. None the less, we mention them as a probable factor in space conception.

The semicircular canals also have a part in this process of elaboration of our space conception, a very important part, probably, in particular in its relation to the innervations of voluntary movements. Here more anatomically and definitely than elsewhere are the three dimensions of space represented. In connection with the cerebellum (the great center of mechanical coordination of all afferent influences, at least) we have probably to consider the canals, therefore, as the space receptors

proper, with meaning, however, only in reference to and in neural coordination with general muscular activity.

A fourth factor in the spatial mechanism of our minds is comprised in the kinesthetic sensations combined from bodily movements always in space. Such movements as kicking and impulsive reaching out for objects and many other reflex movements send into the young infant's brain a great multitude of kinesthetic impressions, and these effects from movements made in the three directions gradually combine themselves with those from the movements of the eyes and from the canals to furnish a real idea of depth. Thus gradually the concept of space or of perspective is developed, but it must be noted that it is developed wholly from actual muscular movement, whether it be the eyes, the canals, or the joints (usually all together) that are concerned. The movements of the adult, made in the three planes and represented by different sets of sensations, are carried out continuously on this notion of depth, and the adult neuromuscular mechanism appears to work always upon this basis only.

The *eyes gradually become "symbolic"* for all these sets of spatial kinesthetic impressions more and more as the youth grows up. They act in the capacity of supervisors of the movements of the individual certainly, but only in order to set going, so to say, these groups or complexes of kinesthetic impressions flooding into the brain's grey matter. Just as a word or a mere emotional sound, even, can represent an immense amount of meaning, so the eyes as supervisors over these motor impressions are symbolic of a large number of neurograms in the brain, control the complexes of kinesthetic impressions, and so help produce voluntary movements. This dominance of vision normally over kinesthesia is seen in the subconsciousness of the latter sensations when the eyes are open, although the resident movement sensations (largely in the joints) are conspicuous enough in the blind or when the eyes are shut. The purely symbolic character of vision, on the other hand, its relative unimportance in motor control, is evidenced by the great efficiency of many persons when vision is not at all concerned.

If these facts are difficult to understand we must recall that the whole method of the nervous system is that one nerve center shall be in control of other nerve centers in the body. Despite this ordinary apparent (symbolic) dominance of vision over kinesthetic control we may be sure that neurally—that is, *really*—the visual control is of minor importance save in the locating (starting) and stopping of the movement in many cases. It is easy to see, on the other hand, how this close relationship between vision and kinesthesia could reinforce the contributions of the latter to our understanding of spatiality.

The last factor in space conception we need discuss (and that mostly for the sake of completeness) is the local sign element of kinesthesia and of touch (kinesthesia). As everyone knows (and no one understands) each spot of the skin and to a less extent of the muscles, joints, and viscera, also, has some means of suggesting its location in space relative to others. Whatever be its precise neurology, whether the uniqueness of each sensation be central or peripheral, we know no better than did Lotze, who featured this aspect of sensation. Of course, the natural presumption would be that the relativity of the local signs is due to some kind of central comparison, or contrast. Be this as it may, there is little doubt that we include this comparison, in consciousness, as a factor in the elaboration of space conception by the individual. In the actual guidance of voluntary movements the local signs probably take a larger share than has been accorded them—namely, in certain movements where guidance is by the method of trial and error. (This is a question worthy of research by those who would lay the foundations of a true theory of motor efficiency.)

In the blind the foundation space consciousness is certainly much more definite and distinct than in normal individuals, as is also their resident kinesthesia (called by them touch). The relative inaccuracy of voluntary movement in the blind is not hard to understand when we consider the paucity at once inevitable and great, of their eupraxic centers, products largely of experience that they cannot have had.

Such, perhaps, are the chief elements neuromuscularly considered of the conceptualization and practice of spatiality in man. Perhaps we may be allowed to quote from a recent article (by the present writer) on apraxia:

Into the further details of the neurograms of these various factors of original space conception we need not even attempt to go, nor is it necessary to do so in order to be assured that their afferent impulses come from every portion of the body and directly or "symbolically" involve every portion of the brain. One need only consider how widespread is the visual "tract" through the hemisphere "fore and aft"; how expanded and how involved are the auditory centers if we include the essential vestibular functions; how spread out and interknit are the taste "centers," those of smell, of touch (shown by Van Biervliet recently to be a phase of kinesthesia), and of orientation, equilibrium, and local signs. Such in the sketchiest of outline only is something of the brain neurology, it may be, of the afferent intelligence that fuses into the fast-growing infant mind as a basal working knowledge of the space in which alone he can move and so have his being.

The cerebellum and all its connections comprise the neurology of much of this spatiality. To leave the cerebellum out of any discussion of the neurology of voluntary movement is to dehamletize, so to say, the text, for without this all-related center voluntary movement has no principle of action, no rule of conduct. It needs only a drunken man reeling home, or other afferent ataxia, to demonstrate the proposition. We can almost, then, speak of the cerebellum as the space center at the physiological foundation of all voluntary movement.

In proportion as the individual intimately knows this space as represented to him thus by the nervous system is he capable and skilful and efficient, master of himself and of his plastic environment. In short, in the neural (and muscular) mechanism that develops originally a personality's notion of space we appear to have the chief foundation of the neuromuscular mechanism of voluntary movement in its most obvious details and framework both at once.

We have now (inadequately) considered the first two of the three heads under which we proposed to discuss the nerve-basis of voluntary movement in the human adult: the first of these was the nervous circuits and the second spatiality. The third heading now is *the grey fabric of the hemispheres*. This

includes all the neurons that have their cells in the hemispheres; of these brain areas obviously the greater part is the cortex, but the optic thalamus and the ill-understood structures at or near the base of the brain must also be included in this grey matter.

The efferent or "motor" nerve-impulses (see Sherrington) are of course also a great factor in voluntary movements. We will find in all discussions of these from the psychological side (the subject furnishes an important topic for all psychologists) that many emphasize "imagery," the sensations concerned in voluntary movements, which constitute what James called motor ideas of these movements. The work of Kirkpatrick, Woodworth, Bair, Rowe, et al., discusses this matter at length, but for the most part they keep outside those determinants of voluntary movement which we properly can call motives or motor ideas. To some extent at least they have discussed what we may term the epiphenomena of deliberate action. A concrete illustration of this appears as a by-product in a recent research that was carried on by the author along a similar line. Each subject was asked what was going on in his mind during the time he was making a certain hand-movement from one point to another. Some of the subjects said they had visual images, others that they had (resident) sensations in their joints and muscles, while others heard things, or "felt the movement," or heard the click of the recording-pen; others did not specify, but said that their attention was directed towards the effort necessary to do the experiment as required and that their consciousness was directed "to the effort itself." All of these various things (of which any subject could have had any number), whether remote or immediate to the muscles, etc., seem of very little account in the actual guidance of the real movement. The latter was the same in the case of every subject and was made under the same conditions, and each subject invariably reported something different, and in some cases all the sensations reported were different. We may reasonably conclude therefore that these various side-experiences could not have guided the movement itself, for in all the subjects this was essentially identical. Thus, it is to be observed that the accompanying "imagery" is not an important factor in the guidance of a voluntary movement. In the first place the laws of habit, and, in the second place, those of attention in part determine what is in the focus of the mind when we voluntarily make a movement. Most persons are visualizers; others are motiles, or audiles. So far as the movement itself is concerned then, especially if it be rhythmic, it is more or less by "chance" what particular things we shall experience while making it. On the other hand, the essential guidance of voluntary movements, in regard to both efferent and to afferent impulses, comes probably in part out of the mass of associations fusing in the cortex of the brain and in the thalamus and brain-stem (Head and Holmes). Many of these influences, it must be again remembered, in the adult, have in the course of years gradually sunk into the subconsciousness. What these cortical resultants of fusions are as opposed to those producing "imagery" that we have called epiphenomena, we must now hasten to explain, and as briefly as we can.

The grey fabric of the hemispheres is essentially an enormously complicated reticulum almost infinitely bound together in function, coordinated in many intricate ways whose complexity we can not clearly imagine—nor begin to. We know that the complexity must exist and we presume that its chief function is to receive sensory kinesthetic impulses and so to arrange them that they result in body-movement of one kind or another, under conscious inhibitory and other control. The cortex of the brain, only about one millimeter thick, owing to the sulci and fissures that dip down into the hemispheres, has an area of very considerable extent, and the neurons of the internal nuclei add to it materially. The ultimate search of neurologists of course is the detailed modus operandi of this reticulum, but these details yet are probably years and years ahead of us. Certain general and absolutely safe guides show us the trend, the direction of the advance, in fine lay for us unmistakably a course in which we can be quite secure. These guides are more certain than neurohistology and the physiology and the anatomy of the brain; we know of them and of their trustworthiness each of us from personal experience which can be verified by any man at any waking moment. Already we have seen what the kinetic basis and what the framework, so to say, of the voluntary "neurograms" probably are; our present task is to point out certain probable factors of the grey fabric's *resultant* which in every case, by its action on the cerebellum and the cord, determine the details of a voluntary movement.

The first of these cortical determinants we may set forth briefly under the name *ideas of usefulness*. Like the other elements of the neural motives of voluntary movement, these ideas may be to any degree subconscious, but that they are continually effective in the brain, how can we doubt?

The early elaboration of human behavior into very numerous psychomotor complexes on a basis of economy and habit devolves especially, we may reasonably presume, on two important portions of the brain (connected intimately, however, with all the rest)—the frontal lobes (*via* the central) and the cerebellum. If we know anything at all of the frontal cortex it is that one at least of its duties is this elaboration of motor ideas, how to use objects, for example, how to rotate the arm or roll a shot between the fingers, turn a doorknob, place the hands on the head, touch the end of the nose with the index finger, athetose, so to say, the fingers; how, in short, to do the uncounted thousands of voluntary things of which "education" worthy of the name before the eighth or ninth year largely consists.

Nerve centers have in early years elaborated many such psychomotor complexes, have interrelated them, and have put them in bewildering intimacy with all the other centers in the brain and below it. Broca's convolution furnishes what is probably by far the most complex example of an enpraxic center, and its function is just the elaboration, interrelation, and extrarelation of a certain set of objects, namely, words. These spoken, written, printed, graven, depicted, sculptured, or materialized by the sign manual, constitute the physical basis, so to say, of the one uniquely human process of language information and language expression. Need one try to imagine the details of Max Mueller's speech center in terms of neuroxones, dendrites, nerve cells, or of ions and osmosis and reversing colloids? Yet this must be done some time by some one or else all our fashionable attempts at localization must be given up.

In a way quite homologous to this, every common object other than words and *every useful voluntary movement* must have representation in the frontal cortex, we may, we must, assume. If, then, a man does not know how to use a sextant or an eidograph or a planimeter or a pencil or a pair of shears, it is so only because his frontal cortex has never acquired or, from disease, has lost that particular psychomotor complex. No more can be taken out than has been put in. As has been often well pointed out, the newborn child is almost wholly apraxic, although even then something in his mechanism of efficiency represents the use of his mother's breast just as it represents and provides the means of finding it in space. The cleverest adult obviously is he who has in his frontal cortex the greatest number and the greatest perfection of detail and relationship of these motor ideas (neurograms) of movements of utility. Voluntary movements of the other of the two suggested classes, those not involving the use of particular material objects, employ a center commensurate in elaboration and universality of use with the "object" that they do employ, namely, space. This determinant of deliberate bodily motion we have already discussed.

Another element in the usefulness of the grey fabric of the hemispheres let us designate as *the memory images of movements*, the "motor ideas" proper of the lamented James. These, as it were, stand between the functions of the cerebellum (as mechanical coördinator of incoming impressions) and those complexes just suggested as having site in the frontal (and parietal) cortex. They are most closely dependent on the kinesthetic influences coming from the moving parts, yet intimately concerned with all other regions of the central nervous system up and down. This grey region perhaps may be set down as the Rolandic area in all its extent, lateral and mesial, anterior and posterior. Even then, be it observed, only a small fraction of the total mechanism required to explain voluntary movement can be ascribed to the Rolandic areas. A memory image, the motor idea, of a movement is very much too narrow a condition or relation, far too simple and incompetent to serve as the determinant of any portion, however small, of the free and always new behavior of a human personality. As we have tried to explain, just in proportion as it is not free and new, just in proportion as it is habitual, reflex, and familiar, have the motor centers lower down the central nervous system taken it up and controlled the movement. In the first year or two of life obviously these Rolandic neurons are of preeminent importance, but with the increasing complexity of the individual's behavior parallel to his evolving personality, this region of the grey fabric, we may suppose, becomes relatively more and more subordinate, although remaining always, it is likely, the chief storehouse of motor vestigia on which voluntary action must continually draw for patterns and plans of behavior, however simple. Here is worthy function enough for the venerated anterior and posterior central convolutions of the cortex cerebri, without need of supposing it capable of coordinations far beyond its capabilities or connections!

A third factor of voluntary action seated especially in the grey fabric of the hemispheres, we may term *awareness of ability* or self-confidence in the power to make any particular movement. Of course the ordinary universal voluntary movements of our life have been made some of them several times, some of them hundreds of times, but some of them, too, millions of times, so that for very many such movements the awareness of ability is long since trite and by habituation, as usual, become subconscious. It certainly still retains, however, at least partially determining action in the making of these and other deliberate movements.

In the adult the matter of self-confidence is based on the early infantile process seen in the development of voluntary movement. In the young infant there is continually an addition to the movement already made; the child puts its arms out and is aware meanwhile that it can do that, then puts its arms out a little further, and so on, and thus keeps adding to what it knows already that it can do in the way of making voluntary movements. We can often see, if we watch an infant, that in the case of certain complicated movements, such as twisting the doorknob, for example, if the child is shown that he can do the thing and is made to believe so by any means, he will usually be able to perform it at once, provided, of course, the actual neuromuscular mechanism of that action be then developed and ready for use.

In the infant especially, but also in the adult, this knowledge of the power to do a thing is often developed by imitation. The child sees some one do something and the observation becomes a suggestion to him that he, too, can do it. He then does it because his mechanism is so built that he can and, in fact, almost must under the impulse to activity, as has been discussed already. This knowledge of the power to make a certain movement in the case of the adult appears more broadly and yet only partly as self-confidence. A person's supposition that he cannot do a certain thing prevents his doing that thing or at least his doing it well. The writer recently had an experience in this direction on taking lessons in blacksmithing. It was quite impossible to believe that a student entirely unfamiliar with all such work could do the things that the skilled master executed with the utmost facility and skill. The minute, however, that an average person tries and thus sees how much he can really do, starts in to make a tool, for example, out of a piece of steel, his effort becomes conscious and voluntary and self-stimulating, knowledge of his power to do a thing comes in play and his motor ideas with often surprising ease gradually work themselves out in action much as desired. This mere matter of trying to do a thing is useful, neurally speaking, largely because the motor ideas in the brain actualize only in that way. The great dynamic importance of this aspect of self-confidence we cannot here stay to consider. Its relations of course are of unexcelled importance in human efficiency, for millions of men and women are virtually slaves who might well be masters did they know how potentially efficient is the average mechanism of human voluntary movement.

The cerebral site of this factor in deliberate action it is impossible at present to describe, or even to suggest. It is evidently an extensive one, partaking, as it does, in the two preceding determinants of voluntary movement. That it is something by itself apart, in some, at least functional, neural way, the neurology of abulia strongly suggests for in this condition it especially is in defect. Perhaps here we enter the new field of the relation of the hormones to cerebral motor activity, especially to feelings of pleasant self-confidence, it may be.

Herewith is connected probably many important matters pertaining to neurasthenia and its "burden" of worry and malaise, and to euphoria and the sthenia of happiness.

Another determinant of voluntary action coming out of the fabric of the hemispheres we may characterize as *the interests and the emotional tones* which underlie such action.

The term interests we should here use in a broad sense and include therefore those that are vegetative and under sympathetic control (food, sex, etc.); those we speak of as individual dispositions; and finally those narrower interests, more purely cortical perhaps, that directly relate the person to his voluntary activity—a man's trade-interests for example, or his habits of sport, shooting, riding, or tramping. Were it possible or necessary to attempt here to work out the neurology of an individual's interests so understood, we should see how large a part of the nervous system is involved in it. We should see especially that these nerve-conditions, these neural habits, these interests in short, *actually determine the mechanical nature (speed, accuracy, extent, force) of the separate voluntary movements*, and therefore underlie and help determine them.

In a quite homologous way, psychomotor conditions that are strictly of an affective sort certainly help determine every voluntary movement as it is made. In the first place every conscious, that is for the most part, voluntary, movement has in its psychomotor nature at least a slight tone of pleasantness, or, if the fatigue-rest balance be negative, a slight tone of unpleasantness. The feeling-tone of pleasantness or of unpleasantness which accompanies the voluntary movement is a part of these associations in the cortex of the brain out of which comes the essential guidance ("resultant") for the action. The psychology of skill (see Book's work on typewriting, *e.g.*) emphasizes that unless a person enjoys his work he does not do it well, and the converse tends to be equally true. On the other hand, a motor mechanism that is in perfect vigor with an anabolic balance in store gives out from the brain-centers an emotional tone of joy, whether slight or intense, for intense it may, though rarely, be. This mass of associations in the brain-cortex is always ready to take conscious control at the slightest need, for the individual only has to "make up his mind to do a thing" and the mass of grey associations is physiologically keen to make the movement required and to direct and control it.

But besides the tone of pleasantness (or of unpleasantness) underlying all bodily action, all that is voluntary at least, more directly still do emotional tones of many shades help determine the deliberate movements. The absolutely cold mechanical movement of the cross-striated musculature is theoretically possible, but in practice it hardly exists, or if it does, the movement *pro tanto* is mechanical and impersonal, which is only another name (is it not?) for reflex. Man, lazily unaware of his own best interests, works only when impelled to do so by *desire*, and desire certainly is an underlying affective tone.

The brain parts of these interests and emotional tones determining (in part) voluntary movements are as yet by no means sure, of course. But if we study dispositions, moods, and temperaments, we shall see that their neurology is hardly narrower than the grey matter of the whole nervous system. On the other hand, the center of the emotions is certainly in part the optic thalamus and most likely involves, too, the corpora striata—these, of course, overseeing the coordination of the whole musculature for this purpose by way of the kinesthetic cortex of the hemispheres and of the cerebellum.

The recent important exposition by Head of London of the thalamus as the great sensation center adds still greater interest to that portion of the hemisphere. On the other hand, no one can foresee the extent to which the hormones, especially epinephrin, will invade the physiology of emotion.

The fifth (and last) element of the grey fabric of the brain concerned in determining voluntary movements we need only mention here as *inhibition*. Obviously inhibition is at the basis of voluntary movement in a way, as it is also at the basis of attention, but how we cannot describe in this article. Many neurologists, of course, say that the great cortex is inherently an inhibitory organ, restraining and thus regulating and controlling all bodily activity of a voluntary kind, just as the gates in an irrigation dam may be said to control the growth of the vegetation under the dam's jurisdiction. There is certainly a very widespread belief among neurologists that the whole cortex is concerned in inhibition, while most of the recent discussions emphasize the above suggested relation of inhibition to voluntary action, the dam of water corresponding to the impulse to activity as represented in the hind brain, the cord, and the autonomic system of impersonal motor tendencies.

Such are some, perhaps the chief, of the motives concerned in every voluntary movement which must be no longer ignored in discussion of the neurology.

It is interesting to observe that from the subjective side of voluntary movement the intention is often the most conspicuous part of the action, sometimes, indeed, the whole of it. One frequently has a strong awareness of what one intends to do (to say, for example), but sometimes does not actually know whether the intention was materialized, expressed, or not. Sometimes, in other words, the motor idea is so strong that it quite drowns out the memory of the performance if there were one. These facts and others similar strongly imply how fully the consciousness of voluntary movement is confined to the grey fusion process: the resultant being once made up (by the resolution of the personal will forces in the brain) the actual movement-neurograms, or influences, are performed more or less mechanically and subconsciously by the motor apparatus lower down the spinal axis, and the movement may occur or it may not without essential difference in the awareness of the individual.

A subtitle of this essay might be "A Tentative Neurological Analysis of the Motives of Human Bodily Action."

IV.

The foregoing obviously is essentially an elaboration and an analysis of the conditions of voluntary action with as much of the neurology of the same as is warranted in the present early stage of cerebral physiology.

The main thesis of this essay may be succinctly stated in three sentences, thus: *As a necessary preliminary to the exact neurology of the will, every deliberate movement, however simple, must be accorded a personal motive, often intricate, whose factors, in part merely neural, must be sought for. Each of these factors, psychological or physiological, implicit in a voluntary movement, has as its concomitant a functional set of nervous impulses.*

Because of the variety and complexity of the factors determining it, every deliberate movement must be considered the resultant of influences coming from practically every part of the brain or even of the entire grey fabric of the nervous system.

To understand a problem is assuredly a necessary antecedent to its solution, yet the problem of the neurology of voluntary movement has regularly been simplified out of all resemblance to the reality, with a consequent failure in the advancement of this practically important phase of neurophysiology.

VACCINATION OF THE TUBERCULOUS;

A STUDY OF THE DUAL EXISTENCE OF CONTAGIOUS DISEASES.

By JAMES J. WALSH, M.D.,

SCRANTON, PA.

LATE RESIDENT PHYSICIAN AND BACTERIOLOGIST, WHITE HAVEN SANATORIUM.

THE infrequent concurrence of tuberculosis with other contagious diseases has for many years been an observation which, especially to those doing tuberculosis work, admits of little dispute. Of course, in this regard tuberculosis is not different from the other contagious diseases which, while in active progress, do not seem to tolerate the presence of any other contagious disease. As early as 1885 Dr. Lawrence F. Flick, in his masterful monograph, "The Contagiousness of Phthisis," writes: "I have been unable to find a single authenticated case in which any other contagious disease was concomitant with consumption." At that time Dr. Welch, of the Philadelphia Municipal Hospital, wrote Dr. Flick, saying: "Although I have seen upward of 5,000 cases of smallpox, I do not recollect that I ever came across one in which there was also well-marked phthisis. Possibly some of these patients may have been suffering from phthisis in its incipient stage; on this point, however, I cannot speak positively, since I have no recorded observations in that direction." Dr. Flick writes further: "An astonishing fact in connection with this matter is that during the reign of the severe epidemics of typhoid fever and smallpox, in 1864-65 and 1871-72, deaths from consumption decreased, to become augmented as soon as the epidemics ceased. This might argue that some consumptives died of typhoid fever and smallpox during those years, were it not that the mortality from consumption throughout the whole city for those same years was much above the average."

Investigations beginning with Luigi Sacco of Milan and continuing down through Zöhrer, L. Pfeiffer, and others lead us to believe that the simultaneous progression of variola and vaccinia is exceptional and not the rule, even where the time of infection and period of incubation of each disease would favor their simultaneous progression. Immunity as conferred by vaccinia is not complete until after the sixth day; so that, given the condition that the infection with smallpox was at such a time before vaccination as to entail a neck and neck race between the first manifestations of these diseases, the coincident variola and vaccinia would be antagonistic to each other and the infection which took hold of the individual first would dominate the subsequent chain of symptoms.

The incubation period of erysipelas is from one to two days as compared with vaccinia, three days. When erysipelas is inoculated at the time of vaccination and develops vaccinia does not occur and immunity is not produced. There is well-founded evidence that vaccination in syphilities is distinguished in no way from that in non-syphilitics, but, as with tuberculosis, we know of no data which compare the percentage of "takes" in syphilities with those in non-syphilitics.

The frequency of the pneumococcus as an organism of secondary infection in phthisis, and the comparative infrequency of croupous pneumonia in existence with tuberculosis, would seem to support the observation of insusceptibility of the tuberculous to other infectious diseases.

Personally, in taking histories I have always looked with suspicion on the declaration of patients that they have suffered such infectious diseases as typhoid fever, acute rheumatism, pneumonia, etc., during the time which examination shows to have been after the onset of active tuberculosis. The acute infection is not infrequently found to have been nothing else than an acute exacerbation of tuberculosis.

Varicella vesicles and vaccination pustules are found together, but von Jürgensen says that "experiment shows that in simultaneous inoculation with varicella and vaccine the latter develops, while the former shows no results."

The writer's knowledge of statistics on the relation of vaccination and smallpox to tuberculosis is extremely limited. The work which is here set forth was suggested by the statement, which coincided with Dr. Flick's observations, that tuberculous individuals were comparatively insusceptible to both variola and vaccinia. Any literature on the subject must be extremely limited and the author unfortunately has not been in a position to obtain whatever does exist. Some 25 years ago a study of the results of vaccination in a limited number of tuberculosis patients was undertaken by Dr. W. M. Angney, of the Consumptive's Home in Philadelphia. The report of this investigation was that two cases took mildly, but in neither case was the vaccination typical.

From the results we have obtained in vaccinating patients at White Haven Sanatorium I am drawing no conclusions, at least until I have the statistics of others; all that is set forth here is what appeared to us as the most significant points in observations of over 100 and close study of eighty-six cases. While successive attempts were not practiced in the presence of negative reactions, I feel confident, after close observations of the work of the vaccinators and the subsequent character of the lesions, that faulty technique could rarely be suspected as the cause of a "no take." If we erred in our conclusions as to whether a vaccination was positive or negative, it was in favor of it being the former. Those cases which were questionably positive, we admit, frequently lacked the Jennerian plateau, and we may have been, like most practitioners, only too willing to consider them as at least vaccinoid forms of revaccination.

Our study comprises vaccination of patients in all stages of active pulmonary tuberculosis, with and without its common complications, and also cases with diseases arrested. In classifying the cases I have retained the "One, Two, Three" degree of involvement, which at White Haven may be loosely interpreted to mean slightly advanced, advanced, and far advanced lesions respectively. No patient was inoculated who had been vaccinated successfully within the last seven years. We endeavored to count nothing as being a positive vac-

cination which did not show the typical local manifestations, viz., vesicle, pustule, and areola. In those who reacted positively nothing out of the ordinary course of vaccinia was noted. While the patients were all adults, who are supposed to react more acutely to vaccination than children, only three patients could be considered to have been characteristically sick after the insertion of the lymph. Some of the patients were studied for unfavorable symptoms arising in the pulmonary lesion; none could be detected.

In studying the degrees of reaction to the lymph we charted them as (*a*) negative entirely, (*b*) positive local manifestations of vaccination, and (*c*) positive local, with constitutional symptoms.

It was difficult, of course, to determine in some instances whether the constitutional symptoms were due to vaccination or were simply such as are apt to occur at any time in the course of tuberculosis. Especially difficult was it to say that a rise in temperature already febrile was due to the positive vaccination which showed on the arm. In most cases the temperature after vaccination was studied with that charted for three weeks previous to inoculation.

In the 86 patients studied, 25 were number 1; 43, number 2; and 3, number 3 cases; 15 had diseases arrested. As we progressed with our study we were not as anxious to associate our results with the degree of involvement as with the active duration of the disease and the present degree of activity. Therefore, taking into consideration all symptoms of tuberculosis, we have divided the patients into four different classes: (*a*) those showing diseases arrested; (*b*) those showing slight activity; (*c*) moderate activity; and (*d*) pronounced activity of the pulmonary lesions.

Of the 86 cases, 57 or 66.28 per cent. did not take vaccination, while 29 or 33.72 per cent. were charted as responding positively. Twenty of the 29 cases that took vaccination were expectorating tubercle bacilli at the time of inoculation. Seven of all the cases had never been vaccinated. In two of this lot attempts at vaccination had never been practiced; these two were vaccinated successfully by us. On the remaining five vaccination had been tried unsuccessfully 11 times; three of these were vaccinated successfully by us.

Classifying the patients on the degree of activity of the pulmonary lesion we had 15 with disease arrested; 44 with slight activity; 15 with moderate activity, and 12 with pronounced activity. Of the 15 with the disease arrested, 14 or 93.3 per cent. responded negatively to vaccination; 1 or 6.6 per cent. positively. With slight activity, 27 or 61.3 per cent. were negative; 17 or 38.7 per cent. positive. With moderate activity, 10 or 66.6 per cent. were negative 5 or 33.4 per cent. positive. With pronounced activity, 6 or 50 per cent. were negative; and 6 or 50 per cent positive.

Summing this up, the highest percentage of "takes" (50) was in those with pronounced activity, but an equal percentage in this class showed "no take." The highest percentage of "no take" (93.3) was in those with the disease arrested.

A study of the 12 patients showing pronounced activity of the pulmonary tuberculosis, taking into consideration their history and the manner in which they have ever responded to treatment, leads one to believe that at least nine of them were of that class which seems to possess little power to establish resistance and immunity to tuberculosis.

Of the 29 patients who took vaccination, close observation showed that 17 manifested local symptoms of vaccinia only, while 12 had constitutional symptoms in addition to the typical arm lesion. The 3 patients, two women and a man, who suffered the worst reactions were, of course, in the constitutional class, but not one of them was in bed over three days. These three patients were ones in which the pulmonary condition manifested only slight activity and two had only slight apical involvement.

The lowest percentage of positive results was in those with disease arrested or, in other words, those who probably possessed the highest resistance and the most quiescent lesions. Most of this class were nurses.

The highest percentage of positive results seemed to be in those who on account of the slight degree of their tuberculosis were required to develop little resistance, and in that class which, with a moderate or great amount of tuberculosis, was manifesting a minimum of resistance.

It may be, as H. R. M. Landis suggests, that the person well built up and manifesting good resistance to any disease is also naturally less predisposed to all other infections and in this case resists the infection of vaccinia. Whatever this and all the foregoing statements are worth, 18 of the patients, mostly nurses, gave the following history of vaccination since the onset of their tuberculosis. All attempts to vaccinate them before have proved futile. Of the 18 who reacted negatively before, 17 were negative now; 1 was positive, and this in a man showing good resistance with a moderate degree of involvement and on 8 hours' exercise. A further analysis of the history of the 17 cases which have failed to respond positively to vaccination since the onset of tuberculosis shows that 15 were vaccinated once, two twice (6 trials in one of these), one four times, and one five times.

Nothing definite could be gleaned from the leucocyte count which was made on 11 patients at about the eleventh day of vaccination. Of the 11 leucocyte counts, three showed an average of 5,000; three showed an average of 9,000; four, an average of 10,500 and in one the count was 14,800.

Personally, I cannot consider that our series of cases argues much for or against the supposition that the tuberculous are not predisposed to other contagious diseases. Careful analysis leads me to believe that the statistics favor the statement, although this may not be apparent without study. Superficially they seem to show that if there is any value to the statement that the tuberculous are not predisposed to variola or vaccinia it is necessary for such individuals to manifest a certain degree of resistance to tuberculosis, that is, the higher the degree of resistance to the tuberculous lesions, the less likely is the individual to take vaccination successfully.

407 Wyoming Avenue.

The Viscosity of Blood in Disease.—A. Plessi and D. Vandini state that the viscosity of the blood depends on several factors; among these are the morphology of its cells, the plasma, the quantity of hemoglobin, the amount of globulin in the serum, etc. The authors experimented with patients affected with various diseases and with normal individuals as well. They found that hirudin is the best agent for lessening viscosity. In anemias the viscosity of the whole blood is decreased. In pulmonary inflammation the viscosity is less than normal. In intestinal infections and in abdominal carcinoma it is diminished. In pulmonary tuberculosis it is increased in the early stages, and when cachexia has developed is normal.—*Rivista Critica di Clinica Medica*

THE PASSING OF BISMUTH PASTE

By WALLACE BLANCHARD, M.D.

CHICAGO, ILL.

ORTHOPEDIC SURGEON TO THE HOME FOR DESTITUTE CRIPPLED CHILDREN AND TO THE UNIVERSITY HOSPITAL, CHICAGO.

HAVING treated 100 cases of sinuses from tuberculous bone disease very successfully with bismuth paste, and having treated 152 cases even more successfully with a non-toxic substitue, I feel in a position to offer a vigorous protest against the further use of bismuth paste.

In the MEDICAL RECORD of January 20, 1912, Leonard W. Ely of Denver, Col., adds another to the ever-increasing number of deaths resulting from the use of bismuth paste. The case reported was of Pott's disease with a pronounced kyphosis and a freely discharging lumbar sinus. After a few injections of the bismuth paste the sinus closed, but the patient soon developed a black tongue, ulcers of the mouth, bloody stools and sleeplessness, death shortly following. Deaths with the same train of symptoms have been reported from nearly every section where bismuth paste has been extensively used. A dozen cases of severe poisoning and two deaths have occurred in Chicago.

I was the first to report any considerable number of cases treated with bismuth paste (Journal of the American Orthopedic Association, August, 1908). The treatment showed wonderful results. Old sinuses from tuberculous joint disease were cured in from two to six weeks, but after seeing several cases of severe poisoning and hearing of a number of deaths, I began experimenting with a view to the elimination of the bismuth. The conclusion was soon reached that Beck's theories of the bismuth being a cure because it became radiumized in the body and that it also served as a sort of trellis on which healthy granulations could grow, were altogether fanciful. There is no doubt that the curative action of the paste is purely mechanical. A danger in the use of bismuth paste that so far has attracted but little attention is the likelihood of the heavy bismuth settling down in pus sacs and sinuses and becoming permanently residual. I have several cases both cured and uncured in which the *x*-ray shows accumulated masses of bismuth that have every indication of remaining permanently. In one case, a boy of twelve years, the *x*-ray shows a mass of bismuth nearly as large as my hand that has been residual for nearly three years and will probably remain so as long as he lives.

The ideal paste for flooding tuberculous sinuses and filling pus cavities must be non-toxic and absorbable. It must sufficiently solidify at body temperature to crowd out the pus, compress the unhealthy granulations, and exclude the air. The following formula for a sinus-flooding paste meets every requirement and is entirely innocuous. Formula No. 1: White wax, 1 part; vaseline, 8 parts; mix while boiling.

Iodine may be added in badly infected cases. Iodine scales can be reduced to a powder by the addition of 20 per cent. of potassium iodide. One, two, or more grains may be put in a small cup. The usual glass syringe should be filled with the hot paste. Half the contents of the syringe must now be injected into the cup and the nozzle of the syringe used to mix the idodine powder into the hot paste. When this mixture is drawn into the syringe the fresh iodine is rather unevenly distributed in the hot paste and it is ready for use. Immediately after injecting the sinus a thick pad of gauze saturated with alcohol should be bound over the opening. The evaporation of the alcohol cools and hardens the paste and prevents its escape. In some cases it is well as a preliminary step to get a skiagram showing all the sinus ramifications and pus pockets. For this purpose I am injecting sinuses with the following mixture. Formula No. 2: Ferri subcarbonate, 1 part; white vaseline, 2 parts; mix and boil.

The iron makes as good a skiagram for diagnostic purposes as the bismuth, without its dangers.

The results in over 150 cases of old turberculous sinuses flooded with the wax vaseline-iodine paste showed about 35 per cent. cured by from one to eight treatments. Thirty per cent. more were cured in a year and about 35 per cent. remained unimproved. This last 35 per cent. had retained sequestra or were amyloid and hopeless. The ultimate results of cases cured show just about the same with the wax-vaseline-iodine paste as with bismuth paste. But in the uncured and the relapsing cases the advantages of the wax-vaseline-iodine treatment were very great. There were no deaths. There were no cases of poisoning with a painful train of symptoms. There were no cases in which the sinuses and pus sacs were clogged by the heavy bismuth settling down and becoming permanently residual.

In occasional favorable cases the abscess stage of tuberculous hip or other joint disease may be cut short by opening the cold abscess with a small puncture, draining it by mild manual pressure and filling it to its full capacity with a thick paste so as to completely exclude the air and keep the sac sterile till it becomes obliterated. For this purpose the following is an excellent paste. Formula No. 3: White wax, 3 parts; soft paraffin, 2 parts; white vaseline, 24 parts; mix while boiling. This abortive treatment can succeed only when the abscess shows upon the surface, the area of tuberculous destruction is small and the quantity of pus is limited.

Experience has taught several "don'ts" in the use of any flooding paste for the cure of tuberculous sinuses. Do not inject a sinus case in which the *x*-ray shows a sequestrum. The sinus in this instance is a natural drainage tube. It may be healed, but if so the patient will develop a rise of temperature and pains until the pus finds a new exit. By this process the patient is made very much worse. First remove the sequestrum surgically and then the sinus may be cured to advantage by paste flooding. Do not inject a primary newly opened sinus. The walls are not definitely formed and the injected paste will wander unrestrained, making new sinuses and pockets, causing rise in temperature and disastrous results. Do not obstruct necessary drainage. Wait for several months until the sinus track is well formed and the discharge has thinned down to a semi-transparent and only slightly purulent condition. I have seen two cases of fatal meningitis follow after the interception of necessary drainage by the inopportune use of bismuth paste. It is in the old long-suffering bedridden cases in which the bone disease has run its course and the old chronic sinuses persist that paste flooding gives truly wonderful results.

Fully 70 per cent. of the old neglected or unfortunately treated cases of Pott's disease and tuberculous hip disease with from two to a dozen sinuses and a constant semiserous, slightly pus-colored discharge were cured in from a week to three months.

One should not be in a hurry to use the flooding paste and should remember that the curing of a sinus does not mean the curing of the tuberculous bone disease. If the formation of pus continues the abortive treatment will be a failure and must not be repeated. The bismuth paste treatment has proved a wonderful boon to a class of cases that were practically incurable up to the date of Beck's discovery. The elimination of the bismuth improves the treatment by removing the grave danger of clogging the pus sacs and sinuses with residual bismuth and the constant danger of poisoning with, perhaps, fatal results.

702 Vendôme Building, 15 East Washington Street.

I. PNEUMONIA SIMULATING LOCALIZED PERITONITIS.

II. TYPHOID FEVER OBSERVED DURING THE INCUBATION PERIOD.

By H. E. L. ZIEGEL, B. S., M. D.,

NEW YORK,

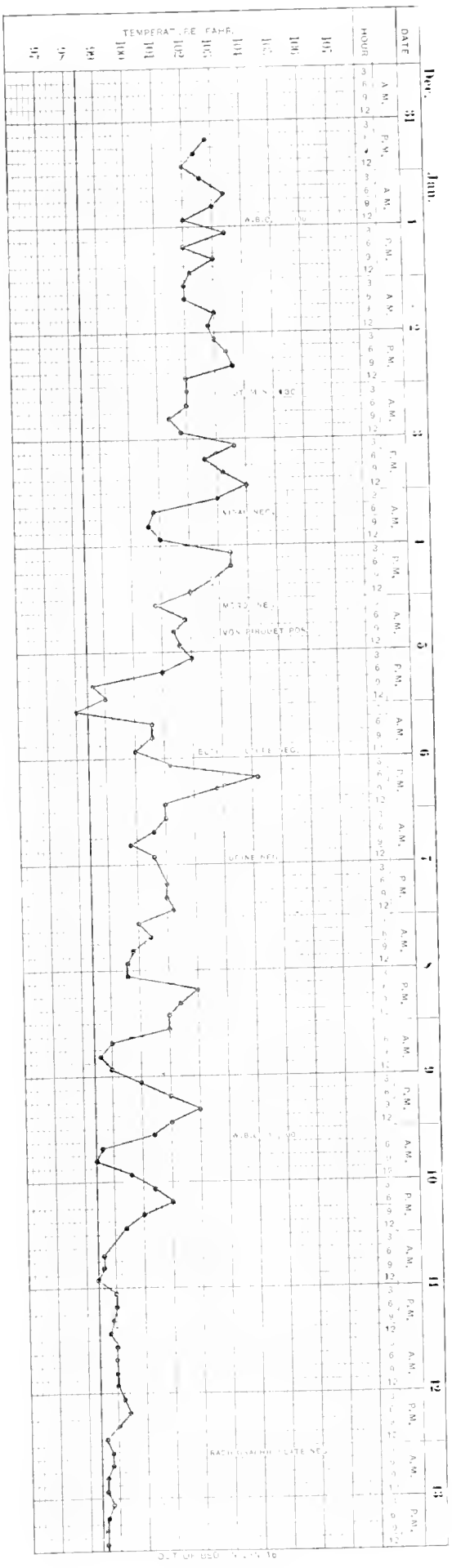
ADJUNCT ATTENDING PHYSICIAN TO THE BETH ISRAEL HOSPITAL.

I.

Partly because of the proximity and intimate nervous relations of the diaphragmatic pleura and peritoneum, inflammations of the viscera contiguous to the diaphragm are sometimes difficult of recognition and differentiation. Thus pneumonia with abdominal signs is apt to be mistaken for abdominal surgical conditions.

The case to be described is that of a male 22 years of age who six days before admission to the surgical service of Dr. A. E. Isaacs at Beth Israel Hospital had been taken ill with malaise, chilliness and general pains. On admission the patient complained chiefly of sharp sticking pain in the right hypochondrium, which pain had appeared the day before admission and had steadily increased in severity; the rectal temperature was 103°, the respirations were 34; at the base of the right lung posteriorly breathing was diminished and fine râles were heard; the gall-bladder region was rigid and tender. At this time there was no cough; there was no vomiting, no jaundice. During three days' observation in the surgical ward the temperature ranged between 102° and 103°, the pulse averaged 100 in frequency, there was moderate dyspnea, and the pain, tenderness and rigidity in the right hypochondrium continued. A radiographic plate of the chest showed no abnormality in the position of the diaphragm. Cough and mucopurulent expectoration now developed as new symptoms.

In the meantime the surgeons had concluded that the case was not without medical aspects and when asked to see the patient I found: Temperature of 104°, respirations from 30 to 38, moderate dyspnea and slight cyanosis, cough and mucopurulent expectoration; over the right lung posteriorly dulness began at the level of the scapular spine extending downwards to merge into flatness at the angle of the scapula, the flatness extending to the base; over the dull area the respiratory murmur was not changed in quality but was diminished in intensity with occasional moist râles, and over the flat area breathing and fremitus were absent, voice was diminished. In the right hypochondrium rigidity was marked and tenderness exquisite. No Head zone



Two cases reported to the Section on Medicine, N. Y. Academy of Medicine, March 19, 1912.

was present. A deep inspiration caused abdominal pain and cough.

The history and signs were interpreted as those of a deep-seated consolidation in the right lung involving the diaphragmatic pleura. The patient was transferred to the medical side. For the next five days the pain, fever, cough and prostration with the above-mentioned physical signs continued, except that the tenderness and rigidity in the gall bladder region disappeared in three days. The temperature, as shown by the chart, ranged between 102° and 104°; the leucocyte counts averaged 18,000; the urine was negative. Recovery was without incident, though the temperature did not become and remain normal till the eighteenth day of the illness.

This case belongs to that group of atypical pneumonitides which we have been in the habit of calling "influenza pneumonias." For the reason that pneumonia with abdominal signs is far from rare, it is well to remind ourselves of its existence so that in instances like the one reported surgical intervention may be avoided.

II.

Because fortuitous circumstances afforded an opportunity of observing the patient during the incubation period, this case of typhoid fever is reported. A young lady 25 years of age was being observed for and was recovering from chlorotic anemia; the hemoglobin had in the course of two months increased from 58 per cent. to 75 per cent.; the red blood cells always numbered more than 4,500,000; and the white blood cells from 9,000 to 11,000. When the patient complained of inconstant frontal headache, vertigo, tinnitus aurium, orbital pain, and of feeling very tired, she was sent to an ophthalmologist who reported that there was no refractive error sufficient to account for the symptoms or to require correction. Headache and fatigue had been present previously and failure to find any other cause for the additional symptoms resulted in their being attributed for the time being to the anemia. At this time there was neither anorexia, abdominal pain, constipation, diarrhea, nor sleeplessness. Noteworthy is the fact that though there was no epistaxis, yet menstruation—previously absolutely regular, four-weekly, and of three days' duration—now came on while the above-mentioned premonitory symptoms were being complained of, the period being four days ahead of time, very profuse, and of six days' duration.

On the day before the invasion with a chill, herpes appeared on the chin, and there were chilly sensations and a rectal temperature of 99.6°. On the following evening the temperature rose to 101° after a severe chill; the patient was put to bed and this was called the first day of the disease. On the second day the morning temperature was 100.8°, the evening temperature 102.8°; the white blood cells now numbered 4,800—this leucopenia being regarded as significant for the reason that on several previous occasions when a complete blood count was made the leucocytes always numbered more than 9,000. Uranalysis on the second day showed a negative diazo reaction, but the Russo test was positive. The diagnosis of typhoid fever, now tentatively made, was confirmed two days later by a positive Widal reaction.

The illness ran a moderately severe course with no complications except an acute degeneration of the kidneys due to toxemia and a hypostasis of the right lung, both of which cleared up at the time of defervescence. The temperature curve, as shown by the chart, is of classical text-book type, showing the step-like rises during the first week; during the second week it was continuously high; during the third week there were successively greater morning remissions with successively lesser afternoon rises.

The following are the main points of interest in this case:

1. Menstruation, which had previously occurred every 28 days, came on during the incubation period four days earlier than usual, and was profuse and prolonged.

2. A leucocyte count of 4,800 on the day following the invasion was significant for the reason that in the course of the patient's previous observation for chlorotic anemia the leucocytes had on two occasions numbered more than 9,000.

3. The positive Russo test obtained on the second day of the disease confirms the view that occasionally this reaction is of practical value as an aid to early diagnosis in typhoid fever.

8 West Eighty-sixth Street

A CONTRIBUTION TO THE TREATMENT OF TUBERCULOSIS.

By C. G. AMENDE, M.D.

NEW YORK.

Because of advancing years and recent deaths of old friends the writer desires to publish some observations upon the above subject earlier than perhaps they should be. The small number of the special cases for this report prevents the establishment of any general principle. But they are believed to merit some attention.

The idea underlying these observations, begun over twenty years ago, was that by internal antisepsis similar results might follow as by external. When this principle was extended to all infections cases actually superior results were obtained, especially in diphtheria, typhoid fever, puerperal fever, etc. The principal chemicals employed were quinine, iodoform, and creosote. Aided by a local application one death only from diphtheria occurred in about nineteen years, many of my cases, though, being out of town. That the earlier theory of a direct destruction of the special germs was incorrect, and that the actual process was by antibodies, toxins, etc., is immaterial as to result.

In tuberculosis the combination finally settled upon was for adults a pill three times a day containing one grain of quinine and one-fifth grain of iodoform, aided in severer cases by five-drop doses in capsule of creosote. When the pills are gelatin coated, being tasteless, they are taken without a murmur for any length of time. As they thus could be obtained in large quantities only they had to be dispensed directly, which, however, had the advantage that the patients were kept under control. Children, of course, receive a small dose in proportion.

One severe case treated with these drugs became a lamentable failure. After some treatment here, for which the boy came over from New Jersey, he was sent to friends in the Platte River valley, but getting weaker and weaker he returned home and died soon after.

Of the three other severe cases, which should go far to establish the remedial value of this treatment, the first one is Mr. A. D., who had, at the age of thirty-five years, and at that time (June, 1900) not under my care, a severe pulmonary hemorrhage

which necessitated abstinence from work for six weeks. In September the same year he had another hemorrhage which laid him up for three weeks, and in January, 1901, he had another very severe hemorrhage which left him in a critical condition. In response to an inquiry by relatives living in my house I ventured that the best thing for him to do would be to go to a dry climate. After the third hemorrhage he now came to me and was placed upon the quinine pills and creosote. I advised his going to southwestern Texas and he went on a farm near San Angelo. The letter advising his safe arrival there lifted a stone from me because of much opposition from relatives. He stayed there, at an altitude of near 1,800 feet—an altitude of 4,000 or 5,000 feet as at Denver would surely have brought on another, and then fatal, hemorrhage—till May, 1902. After the lapse of eight months he reported that with the best will he could send me no more sputa, because expectoration had ceased completely. Hereupon the creosote was withdrawn, but the pills were continued after his return home for six months longer. He then first settled near the shore of Peconic Bay because of the salt water air there, and some years ago he followed the factory wherein he worked up into Sullivan County. He has repeatedly said that since that time in Texas he had not expectorated any more.

The condition of the atmosphere as regards tuberculous patients may be divided into three principal groups, the dry air west and southwest, ocean air, and inland air. The latter two can be designated as moist airs. The air blowing in from the ocean contains, according to the strength of winds, more or less salt; the inland air can be called salt-free air. That inhalation of air containing these minutely divided particles of salt benefits sick lungs more than salt-free air is obvious. Nearby inland air may be separated into higher-up and lower. Contrary to general opinion, the air of higher regions, over 1,200 feet above sea level, contains more moisture, has more fog and clouds than regions below that. It is proven by the difficulties pianomakers experience with finer work which must be dry. They have more trouble up in Sullivan County than in Riverhead, L. I.

Another to me interesting case is that of Mrs. H., then of Jersey City. In contrast to Mr. A. D. she had a well developed chest, but was tuberculous and in the family way. With removal of some obstructions in the respiratory passages she was placed upon the pills, but these only. They then went to Massachusetts with earnest admonitions against further pregnancies, useless of course. When they returned again in February, 1906, the child, born in 1899, had gone through two operations for tuberculous ostitis of the left radius, with a resection about four inches long, but which had again begun to suppurate. Administration of the above mentioned pill in proper proportion had but little effect. But after three *x*-ray treatments the wound closed and remained well till their departure west in April, 1908. On leaving the mother took along a quite large supply of the pills because "they always did her so much good."

The third case, Mrs. M. R., age 53, is confirmatory of the preceding, although yet under treatment. Since a pleuropneumonia, about 19 years ago, she has suffered almost continuously from pulmonary, laryngeal, and for quite some time asthmatic troubles. She was placed, after a pulmonary hemorrhage in 1910, upon the pills and creosote. She went to live on the heights of Yonkers where she became very seriously ill, leading the family physician there to wonder how she could live with such a lung. Returned to New York and improving, it became important to find for her a place with suitable atmospheric conditions and not too far away. From personal experience and, too, observations I decided that she try the eastern part of Sheepshead Bay, L. I. The Bay, swept and cleansed by rather strong tides is there protected by a narrow strip of land from the sharpness of the air currents close to the outer shore, but ocean winds blowing in from east, south, and west produce there a quite salutary condition for lung diseases. When settled, prejudiced friends upbraided her against the well considered situation, whereupon she made two round trips from the bay, then a week in upper Brooklyn, and another on the Heights of Yonkers with the result that she found the bay to agree best with her. Tinged sputa occurred off and on especially after a longer interruption of this medication by arsenical treatment. With beginning of the winter she went to Lakewood, where she continued to improve so, she asserted at a recent visit, that she had not expectorated for two months, walked daily 5 miles, and had gained in weight. Actually her face is like a picture of health. This, then, signifies an essential check in the progress of the disease.

Concerning the osteomyelitis case, further suggestions were derived from the following. Last November a lady, Miss B., came to the office with suppuration from the posterior ethmoidal cells, thick yellow pus descending from behind the middle turbinated bone. Finding it to consist of staphylococci, administration of a stock vaccine produced in a few weeks disappearance of the pus, which has not reappeared up to the time of this writing. Instead an abscess developed three weeks later on the under side of the orbital arch near the nose, and at about the level of the ethmoidal fissure, suggesting a connection with the former abscess. Probing proved unsuccessful principally because of the presence there of an osteoma which made the eyeball protrude. This second abscess proved most recalcitrant to the treatment, so that necrosis of some of the bones there must have set in. Finally it too subsided, and at present no pus has appeared since a week.

Where, now, in spite of the protection by the outer hard layer of bone undoubted tuberculous invasion of the canals disappeared, under *x*-ray treatment added to the medicinal; and where in the previous case staphylococcal necrosis was arrested through its bacterin, at least so far, might not extension of these processes to other tuberculous foci in the osseous system facilitate, and perhaps much simplify their treatment as well.

319 West Forty-fifth Street.

A NEW CRUTCH FOR EXPOSING THE PERINEUM.

By CHARLES AUBREY BUCKLIN, M.A., M.D.,

NEW YORK.

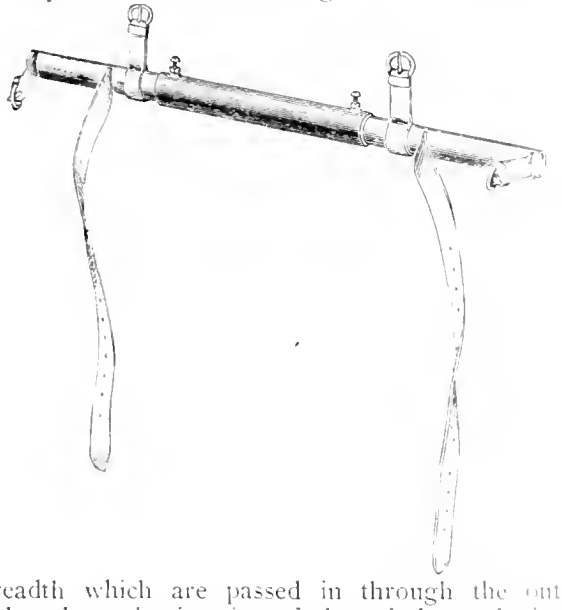
This crutch is effective in placing patients in position for operations on the rectum, anus, uterus, vagina, bladder, and urethra.

The metallic crutch shown in the illustration weighs two pounds and can be made lighter if desired. It can be carried in a bag ten inches long, and is capable of extending the distance between the knees from thirteen to twenty-one inches when required. This instrument is made of ready-made

materials, thus minimizing the cost of construction. It consists of a middle and two end pieces of light brass tubing each ten inches in length. The outside diameter of each end piece is one and one-half inches.

The form of these end pieces admits of dispensing with pads, it being recognized that less injury is done to tissues by pressure from round smooth metal surfaces than any other form of bearing. These metallic surfaces can be maintained in aseptic condition more perfectly than any cushioned surfaces.

At one-fourth of an inch from the outer extremity of each end piece is a transverse strap hole one and one-sixteenth inches in length and one-eighth of an inch in breadth. Spaced three inches from the internal edges of the external strap holes on the end pieces there are the adjacent edges of inner strap holes of the same size. The strap holes are in alignment, as shown, and receive straps twenty-seven inches in length and one inch in



breadth which are passed in through the outer holes along the interior of the tubular end pieces and out through the inner holes. The buckles of the straps are covered with leather and are left hanging from the outer strap holes. The strap ends thus hang outside of the knees entirely clear of the space occupied by the operator in his manipulations.

The end pieces being circularly adjustable, the operator can place the straps in any desired position; it is recommended that they be placed about the legs just below the knees. The buckles for receiving the ends of the neck traction strap are covered with leather and are spaced about 3 inches from the tubing, being attached to short straps which encircle the end pieces of tubing, and which, when the instrument is in use, rest against the two shoulders formed by the ends of the middle piece of tubing.

The neck traction strap is 56 inches in length and 1 inch in breadth. With this breadth of neck strap a pad is unnecessary. The short buckle-carrying straps are adjustable so that the line of traction of the neck strap is self-adjusting to the proper position. (See the illustration.) The middle piece of tubing has an internal diameter of 1¼ inches and accommodates the inner extremities of the end pieces of tubing. Within 1 inch from each end of the middle piece of tubing is an internally screw-threaded socket to receive a set-screw which is locked by a lock-nut. These six parts are ready-made pieces of brass. It is recommended to place these adjustable set-screws with their axes parallel with the line of traction of the neck strap in which position they are entirely away from annoying contacts. The set-screws have notched heads and are easily adjusted by the application of a small silver coin which serves as a screw-driver. Should it be desired to warm the crutch, the middle piece is removed and placed in boiling water for 3 minutes, which will warm the entire crutch sufficiently to remove the chilly sensations occasioned by unprotected skin coming in touch with cold metal.

With a portable crutch an operator is prepared to perform any perineal operation at a private house without any assistance to take charge of the patient's limbs, and in a more satisfactory manner than is possible with the use of a bandage.

23 Mansion House Road, Glasgow, Scotland.

Clinical Value of the von Pirquet Reaction in Children.—E. Merioz and B. Khalatoff tested 337 children in the Children's Hospital, Geneva, by means of the von Pirquet reaction. They got 175 positive results, that is 51.9 per cent. of the total. Of 189 clinically tuberculous children 143 reacted positively; of 78 non-tuberculous children clinically, there were 29 positive reactions. The authors believe that the conjunctival reaction is not safe in children and that the cuti-reaction is both safe and valuable as an aid to diagnosis. In an infant a positive reaction is rare, and gives information of great value. The nearer the child is to the adult age the greater likelihood is there of a positive reaction. In pneumonia with tuberculosis and in tuberculous meningitis the reaction may be negative just before death. In all negative cases a second test should be made.—*Revue Médicale de la Suisse Romande.*

Non-Tuberculous Hemoptysis.—Gabel and Gigoux have observed many cases of small repeated hemorrhages which are not necessarily caused by pulmonary tuberculosis. These hemorrhages do not consist of pure blood, but consist rather of blood-streaked mucus which appears after some slight effort such as clearing the throat. In these cases not only should the lungs be carefully examined but also the pharynx, larynx, trachea, and base of the tongue. In most instances the bleeding is found to come from small varices at the base of the tongue. Galvanocauterization of these spots will effect a cure. The varices are especially apt to be found between the ages of 40 and 50 years in women, in whom there are also found varicose veins of the leg or hemorrhoids. Small hemorrhages also result from congestion or inflammation of the pharynx, larynx, or trachea, occurring in Bright's disease, cirrhosis of the liver, and non-tuberculous pulmonary disease.—*Lyon Médical.*

Treatment of Backward Children by Associated Glandular Extracts.—R. Dupuy believes that he has reached valuable results in securing the development of backward children by the use of a combination of the extracts of thyroid, suprarenals, hypophysis, and genital organs, in cases in which thyroid medication alone was disappointing. This treatment causes an increase in height and weight, sensorial and psychic development; an increase in arterial tension, urinary elimination, and metabolism, and a disappearance of morbid phenomena such as enuresis and ocular troubles. This condition results from the presence of syphilis, tuberculosis, alcoholism, or malaria in the antecedents, the acute and chronic infections of pregnancy, premature delivery, overwork and privations of the mother, bad feeding and infantile maladies.—*Journal de Médecine de Paris.*

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New York, May 18, 1912.

PROGRESSIVE LENTICULAR DEGENERATION.

PRACTICALLY a new nervous disease of which only six cases had been reported under various names previous to his own observations, is described by S. A. Kinnier Wilson in the *Lancet*, April 27, 1912. The first case was reported in 1888 by Gowers under the name of "tetanoid chorea, associated with cirrhosis of the liver." The author has had the opportunity of studying four cases of this disease, in three of which he made a post-mortem examination. Progressive lenticular degeneration is defined as a "disease which occurs apparently only in young people, which is often familial, but not congenital or hereditary; it is essentially and chiefly a disease of the extra-pyramidal motor system, and is characterized by involuntary movements, usually of the nature of tremor, dysarthria, or anarthria, dysphagia, muscular weakness, spasticity or hypertonicity, and contractions, with progressive emaciation; with these may be associated emotionalism and certain symptoms of a mental nature. It is progressive, and, after a lapse of a longer or shorter period, fatal. Pathologically it is characterized predominantly by bilateral degeneration of the lenticular nucleus, and in addition cirrhosis of the liver is constantly found, the latter morbid condition not giving rise to symptoms during the lifetime of the patient."

The most remarkable feature of this disease is the occurrence of advanced cirrhosis of the liver, in the causation of which alcohol and syphilis can be definitely excluded. The cerebral lesion is "a bilateral symmetrical softening of the lenticular nucleus, involving more particularly the putamen; the globus pallidus is implicated to a less extent. Sometimes the external capsule is partly included in the area of disease, whereas the caudate nucleus is scarcely touched directly, and the optic thalamus escapes. Most important of all, in a pure case, the internal capsule is absolutely intact." The bilateral involuntary movement of the extremities in this condition is of the nature of rhythmical tremor which increases with volitional movement. The pronounced spasticity of the muscles is partly expressed in the spastic smile and the contracture of the limbs, and also accounts for the dysphagia and dysarthria. There is little or no true paresis or paralysis. As regards the mental symptoms it is noted that there is a certain narrowing of the mental horizon, but within its limits the powers of perception and recognition are unimpaired. Increase of emotional reaction is not infrequently observed. This combination of symptoms forms what the author designates "the syndrome of the corpus striatum."

Wilson believes that progressive lenticular degeneration is the first definitely established morbid entity whose most striking characteristic is a specific association between disease of one of the viscera and disease of a particular part of the gray matter of the central nervous system. It seems that the disease is not due to a congenital or abiotrophic defect, and the presumption is strong that it is acquired. There is evidence that the disease is of toxic origin, and it is possible that the toxin is elaborated in the liver. Of peculiar significance is the fact that the toxin has a specific action on the lenticular nucleus.

THE SIGNIFICANCE OF THE PULSE RATE IN CARDIAC AFFECTIONS.

VIEWS as to the significance of the pulse rate in the diagnosis and prognosis of heart affections have undergone considerable change during the past few years. The teachings of Mackenzie, Einthoven, Lewis, and others of the so-called new school are mainly responsible for many new conceptions regarding the action and diseases of the heart and, of course, their studies have included investigations into the significance of the pulse rate. Recently, Sir T. Clifford Allbutt created somewhat of a stir in medical circles in Great Britain, by an address he delivered before the Chelsea Clinical Society (*British Medical Journal*, March 16). The Cambridge professor's address was deemed, at any rate by members of the new school, to be quite unduly pessimistic, and especially did he express himself as sceptical with regard to the significance of the pulse rate. In fact, he concluded that even marked changes in the rate and rhythm of the pulse have no constant significance in relation to myocardial damage. Einthoven also, who recently demonstrated the electrocardiogram before the Royal Society of Medicine (*Medical Press and Circular*, April 3, 1912), expressed the opinion that the work of the heart cannot be judged by the pulse.

On the other hand, Thomas Lewis (*British Medical Journal*, March 23) objects strongly to the statement of Allbutt that in the pulse we have no guide to myocardial damage and contends that irregularity of pulse is in itself evidence that the cardiac muscle has suffered functional change. He further states that heart block, extrasystole, auricular fibrillation, pulsus alternans, and so on can be identified with certainty and their pathological significance will soon be fully known, if the analysis is made in all cases of irregularity. No doubt in this connection, reference was made to the analysis of venous pulse curves rendered possible by the results of the studies of Mackenzie. Mackenzie himself speaking at the meeting of the Royal Society said that he regarded the pulsus alternans as a condition which is not rare but always of very grave significance.

Mackenzie and Lewis then, at any rate, seem to believe in the significance of pulsus alternans. Indeed Lewis goes further and appears to hold the

view that the pulse rate when properly analyzed is a fairly reliable criterion from which a diagnosis and prognosis of heart affection can be drawn. Mackenzie insists that a rational prognosis of heart disease must be based on a close idea of the manner in which any given symptom is produced. The physician must intelligently recognize the significance of a symptom ere he passes an opinion. The new school may claim more for its methods than as yet experience has justified. But it must be borne in mind that these methods are founded on discoveries which are now accepted generally. Even if all their claims may not be allowed it cannot be denied that they have pointed the way to newer conceptions and to a more rational treatment of heart affections. On the whole, Mackenzie and his followers are more likely to be correct when they give significance to the rate of the pulse in the diagnosis and prognosis of heart affections than those who minimize such significance.

SEX PEDAGOGY IN THE HIGH SCHOOL.

Questions relating to sex are very freely discussed at the present time, and it is well that they should be. The voluntary infertility of the women of the well-to-do and educated classes in this and other countries which is said to prevail is arousing much alarm. Also the spread of sexual immorality among the young is giving rise to grave misgivings. It is pointed out that in the history of defunct civilizations as of Rome and Greece, among the most significant signs of decadence were the restriction of the birth rate of the rich and cultured population and the omnipresent immorality.

By many the argument is made that so far as lack of morality among the members of the rising generation is concerned, if it does exist so widely as is confidently stated, it is largely due to existing modes of education. Dr. A. S. Warthin, treating of sex pedagogy in the high school, in Johnstown's High School Education, recently published by Charles Scribner's Sons, takes this view of the situation, at least as regards the Anglo-Saxon race. He asserts that the great failure of parents to teach the problems of the sexual life to their children has been all the more paradoxical in a generation which has so vaunted the value of knowledge and education along all other lines of thought. From this one path modern society, particularly the Anglo-Saxon, has continually turned away in foolish fear and prudery, hesitating to call things by their proper names and avoiding the main issue at all hazards. Modern medicine has, however, been the first to herald the new era, that of plain speech and frank education in sex matters. It has drawn attention to the diseases which must necessarily go hand in hand with sexual promiscuity, and to the menace of gonorrhea and its obvious relationship to pelvic diseases in women, chronic invalidism, sterility, and so on. The profound influence exerted by syphilis on public health generally has become so patent that even the laity are now fairly well acquainted with the ravages wreaked directly and indirectly by this dread malady.

According to Warthin the time is now ripe when the primary and secondary schools must include in their curriculum earnest and definite methods of teaching the ethics and hygiene of sex. Emphasis is laid on the point that the schools must imitate and carry out such teaching because something must be done and parents have acknowledged their weakness and inability to take upon themselves the role of teachers. The writer advocates that education in sexual ethics and hygiene be begun in high schools, for the reason that his experience has shown him that after this period of scholastic life it is too late. The harm has been done already. As for the nature and amount of such teaching Warthin is of the opinion that sex instruction should be constructive as well as negative and preventive. Not only must the moral and physical evils of vice be shown, but the ideal side and the higher significance of the sex relationship must be given with equal emphasis. A scheme of teaching is drawn up by the author which deals with the whole matter exhaustively on the lines indicated above.

There is no doubt that steps should be taken to remedy the existing state of affairs relating to sexual questions in this country. The evil is deep rooted, and doubtless the only effective manner of grappling with the problem is to point out plainly to the young the error and the folly of sexual vice and to prove to them that transgressions of this kind will inevitably lead to physical and moral shipwreck.

Intrauterine Respiration.

The relations between the fetus and amniotic fluid have always been the source of speculation, and the claim that the fluid collection in question has only a mechanical function has been received with more or less scepticism. The orifices of the nose and mouth are constantly bathed in it, and to a certain extent must admit it. This is not only evidence *a priori* but traces may be found in both the lungs and stomach under certain circumstances. The fetus is known to make inspiratory movements *in utero*, whether these be truly respiratory or merely uncoordinated anabolous acts; further, during the violent death of a fetus at term with unruptured membranes, the death agony should cause the inspiration of amniotic fluid. The presence of the latter in the lungs of the newly born has been commonly accepted as indicating the possibility of feticide. Haberda, in an analysis of over 200 cases of alleged infanticide, found amniotic fluid in the lungs in 25 per cent. It is doubtful, however, if this fluid means anything at all. Ahlfeld believes that the presence of the fluid as low down as the tracheal bifurcation has no significance whatever. Leaving this point out of consideration, the question arises, Is the entrance of amniotic fluid into the nose and mouth physiological or nonphysiological? It has often been alleged that the fetus derives some of its nutriment from this secretion. But how does it enter the upper air and food passages in bulk? At a meeting last December of the Niederrheinische Gesellschaft für Natur und Heilkunde, in Bonn (*Deutsche medizinische Wochenschrift*, April 4), Ungar read a paper on intrauterine respiratory movements. He stated that the old claim concerning the existence of physiological periodic respiratory movements of the fetus, defended for many years by Ahlfeld, had not been proved beyond doubt with the kymographion by Reifferscheid. If, as is alleged, the glottis closes during these coordinated movements, the fluid is

doubtless swallowed. The speaker added this inspiratory movement with closed glottis might disarrange the circulation of mother and fetus, causing in theory a disturbance of the placental circulation. Reifferscheid believes that the friction resistance of the amniotic fluid in the narrow fetal passages is too great to permit of much aspiration of the latter, which explains why as a rule it is not found below the bifurcation. The inference seems warranted that while intrauterine respiration actually occurs, we know little or nothing as to its significance.

Paranephritis and Perinephritis.

Medical literature appears to contain an increasing number of cases of abscess and free suppuration about the kidney. A number of cases are upon record in which small metastatic abscesses of the kidney, seated close beneath its capsule, have constituted the sole metastasis from ordinary furuncles, irrespective of their site and number. These abscesses may break through the fibrous capsule of the kidney and cause suppuration in the fatty capsule, which is followed by symptoms out of all apparent proportion to the infected area. In view of this singular sequence we are forced to believe that the common boil may infect the kidney, and that alone, more frequently than is commonly believed; but that in any case perforation of the capsule rarely occurs. Unless operation is performed very soon after the perforation, these cases are said to end fatally. On the other hand, suppurative paranephritis due to extension of a local infection in some other viscus is an equally important affection. As shown by a case very recently reported by Zondek before the Berlin Medical Society (*Deutsche medizinische Wochenschrift*, November 23), it may be difficult, supposing that the ordinary conditions of renal abscess can be excluded, to differentiate between such a paranephritis and a perinephritis due to perforation of a metastatic abscess, or direct infection by the hematogenous route. To complicate matters the *x*-ray showed the presence of a stone in the kidney. This, however, was deemed to be non-participating in the process. The urine was for all practical purposes normal and sterile, which seemed to exclude a process in the kidney itself. There was some history pointing to an affection of the stomach or pancreas. Operation showed that kidney and capsule were intact, and that the paranephritic tissue was the seat of suppuration traceable to the tail of the pancreas. The patient made a hard recovery. The calculi had to be left in the pelvis, which could not have been incised without grave danger of infection. The nature of the pancreatic infection could only be surmised.

News of the Week.

Cholera in Spain.—Three suspected cases of cholera have been reported in Barcelona, Spain, and energetic measures are being taken to prevent an epidemic. An intense heat wave has aggravated the situation.

Canal Zone Report.—The Department of Sanitation of the Isthmian Canal Commission reports that during the month of February, 1912, the total number of deaths from all causes among employees was 40, of which 29 were due to disease and 17 to violence, giving an annual average per thousand of 6.00 and 3.01 respectively. Among employees during the month the deaths from the principal diseases were as follows: Nephritis, acute and chronic, 5; dysentery, 1; hemoglobinuric fever, 1; lobar pneumonia, 5; malarial fever, 1; tuberculosis, 4; typhoid fever, 1. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

Associated Out-Patient Clinics.—In response to a call issued at the suggestion of a representative of one of the dispensaries of New York City, a meeting was held in the Academy of Medicine on February 29 last, for the purpose of discussing general problems connected with dispensary work. As a result of the meeting a committee of five was appointed to consider the formation of a cooperative dispensary association having for its object the coordination and improvement of the work of existing dispensaries and out-patient departments in the Borough of Manhattan. This Committee on Temporary Organization, consisting of Mr. George L. Rives, chairman, representing the New York Hospital; Mr. Henry S. Van Duzer, Presbyterian Hospital; Rev. R. S. W. Wood, St. Bartholomew's Clinic; Dr. George L. Peabody, Northern Dispensary; Dr. S. S. Goldwater, Mt. Sinai Hospital, now invites the dispensaries and out-patient departments of the hospitals in this borough to join in an association to be known as the "Associated Out-Patient Clinics of the City of New York," and having the following general aims and purposes: (1) The coordination of the work of existing dispensaries and out-patient clinics. (2) The elimination of unworthy applicants for treatment. (3) The promotion of proper standards of treatment. (4) The promotion of economy and efficiency in dispensary management. Each member of the association will be represented at the general meetings by one delegate entitled to vote. The plans for the association already formulated include a long series of investigations into present conditions which will be of service in accomplishing its ends.

Quarantine Matters.—The Health Officer of the Port of New York announces the appointment of Dr. James F. Donnelly as boarding officer at the Quarantine Station, and the advancement of Dr. John M. Hall to the position of second deputy health officer, recently made vacant by the resignation of Dr. E. S. Rimer.

Health Officer of Boston.—A vacancy will soon exist in the position of chairman of the Board of Health of Boston, and the Mayor announces that he will consider applications from physicians, sanitary engineers, or other persons who are experienced in this field, irrespective of their present residence, provided only they are American citizens. The salary of the position is now $4,500 per year but the Mayor has recommended an increase to $5,000, and is willing to recommend more. The appointment is made by the Mayor, subject to confirmation by the Civil Service Commission and the new appointee will serve out two years of an unexpired term. The full term is three years. Applications should be addressed to Hon. John F. Fitzgerald, Mayor, Boston, Mass.

Another Centenarian.—Mrs. Winifred Farrell of East Orange, N. J., died on May 9 at the age of 104 years, never having known a day of sickness until she had passed her 102d birthday, and up to a few months ago retaining her eyesight and hearing unimpaired.

Fire in Laboratory.—A fire in the basement of the Carnegie Laboratory near Bellevue Hospital,

New York, recently caused some excitement in the neighborhood but was extinguished without much damage and without creating any disturbance among the hospital patients.

Graduates in Pharmacy.—At the eighty second commencement of the College of Pharmacy, Columbia University, New York, eighty-four graduates in pharmacy received their degrees, and eight other students received certificates of proficiency as food and drug analysts. The exercises were conducted by Vice-President Charles F. Chandler, and the address to the graduates was delivered by Rabbi Stephen Wise.

Insane Aliens.—The New York State Hospital Commission in a recent announcement places the annual cost to the State of the care of foreign born insane patients at $3,448,700. The State is now caring for 31,452 insane patients, of whom 42 per cent., or 13,163, are foreign born. In addition to these there are in the State hospitals for the criminal insane 1,230 patients, of whom 44 per cent., or 540, are of foreign birth. Since 1903 the number of foreign born patients in all the State hospitals has increased by 2,098, or 18 per cent. Nearly one-fifth of these patients were admitted to the hospitals before they had been in this country long enough to become citizens; they came principally from Austria-Hungary, Russia, and Italy.

University of Nebraska Medical Laboratory Building.—The Supreme Court of the State of Nebraska has recently handed down a decision confirming the act of the Legislature appropriating $100,000 for a laboratory building for the College of Medicine of the University of Nebraska, to be located in Omaha. This will permit of the removal of the first two years of the medical course from Lincoln to Nebraska, a plan which is in harmony with the report on the condition of medical education in Nebraska issued by the Carnegie Foundation, and which will establish the College of Medicine of the University of Nebraska in line with those of the Universities of Michigan, Iowa, and Minnesota.

Conference on Industrial Diseases.—The second National Conference on Industrial Disease will be held at the Hotel Marlborough, Atlantic City, on June 3 to 5, 1912, in joint session with the American Medical Association. The preliminary program which has just been issued includes series of papers and discussion on the investigation of industrial diseases, on health problems in modern industry, on State promotion of industrial hygiene, on industrial diseases, and on the preparation of an immediate legislative program for the promotion of industrial hygiene. A special feature will be an exhibit of photographs and charts illustrating the industrial processes dangerous to health as well as the effects of those work hazards known as diseases of occupation.

Health of New York.—For the week ending May 4, 1912, the death rate in New York City was 15.55, the total number of deaths being 1,542, a considerable decrease as compared with the corresponding week in 1911, when the rate was 16.76 and the total 1,661. Comparing the details of the two periods, it may be noted that the number of deaths from lobar pneumonia fell from 121 in 1911 to 112 in 1912, those from bronchopneumonia from 140 to 131, from pulmonary tuberculosis from 215 to 188, diarrheal diseases from 61 to 51, diarrheal diseases, under five years of age, from 60 to 45, and scarlet fever from 27 to 20. Deaths from diseases of the kidneys, on the contrary, increased from 89 to 128, from heart disease from 199 to 201, and from measles from 19 to 25.

Clinic at Randall's Island.—The Scientific Committee of the Medical Board of the New York City Children's Hospitals and Schools, Randall's Island, has arranged a public clinic at the island on May 20 at 2.30 P. M., which the members of the medical profession are cordially invited to attend. The program includes the presentation of a number of interesting medical and surgical cases as well as the results of statistical and other studies by the members of the attending staff.

Typhoid Epidemic.—The New York State Department of Health is investigating an epidemic of typhoid fever at Corning, N. Y. Over sixty cases had been reported up to May 7, and it is feared that an impure water supply may be the cause.

Charity Ball.—The Barlow Sanatorium of Los Angeles, Cal., an institution for the treatment of tuberculosis among the worthy poor of Los Angeles County, benefited by over $47,000 as a result of a charity ball benefit given recently. The institution will now be able to open ten additional beds which have been closed for two years, and thus increase the capacity of the sanatorium to forty.

Examination for Dental Interne. The United States Civil Service Commission announces an examination on June 5, 1912, to secure eligibles for the position of dental interne (male) in the Government Hospital for the Insane at Washington, D. C., at a salary of $600 per year and maintenance. Applicants for admission to the examination must be graduates of at least eighteen months' standing of a regularly incorporated dental college, and must be twenty years of age or over and unmarried. Further details may be obtained from the United States Civil Service Commission, Washington, D. C.

Animal Hospital.—The New York Women's League for Animals has purchased the property on the southwest corner of Lafayette and Bond Streets, New York, and will erect thereon a building to be used as a permanent hospital for animals.

Sanitary Aid for Chile.—The Government of the United States through the State Department has signified to the Chilean Government that it will be glad to aid the latter in any way in putting down the yellow fever epidemic at Tecopilla. The suggestion had been made that some of the sanitary experts employed in the Canal Zone might be allowed to advise in the matter of sanitation in Chile, but this may not be possible, as the Panama experts are army officers and can not be sent to a foreign country except by special act of Congress. The matter of sanitation in all the South American countries, however, becomes of greater importance to the United States as the Canal approaches completion.

Health Week in England.—The week beginning April 28 was celebrated in England as "health week," that is, a week marked by organized public advocacy of the simple rules of health. The program began with sermons in many churches on the importance of cleanliness, and during the week lectures were given in forty towns throughout the country. It is proposed to repeat the experiment next year.

New Typhoid Serum.—Professor Metchnikoff announces the discovery as a result of his investigations with Dr. Broughton Alcock of a new vaccine against typhoid fever which is prepared with

living instead of as formerly with dead cultures of the bacilli. The bacilli are impregnated with the serum of animals immune against typhoid fever. The serum has proved very successful in protecting both human beings and chimpanzees. The first injection consists of about 500 million typhoid bacilli, and the second, which is given eight or ten days later, is two or three times as large.

Gifts to Charities.—By the will of the late Henry Iden of Pelham Manor, New York, a bequest of $10,000 is left to the New York Society for the Relief of Ruptured and Crippled. St. Christopher's Hospital of Brooklyn receives a bequest of $5,000 under the will of the late Henry C. Hulbert of that city. By the will of the late John Torrance Bannock of New York, who died recently at Cannes, France, the sum of $50,000 each is left to the Post-Graduate Hospital of New York and the Montreal General Hospital.

Col. William C. Gorgas, chief sanitary officer of the Isthmian Canal Commission, reached New York recently on his annual leave. He will deliver lectures in several places on the sanitary work and conditions in the Canal Zone.

Dr. David Linn Edsall, professor of hygiene and preventive medicine in Washington University, St. Louis, has been elected Jackson professor of medicine in the Harvard University Medical School, Boston, and chief of one of the two medical clinics at the Massachusetts General Hospital.

Dr. William F. Verdi of New Haven, Conn., has been reappointed surgeon-in-chief to St. Raphael's Hospital, in that city, a position which he formerly held but resigned two years ago.

American Medico-Psychological Association.—The annual meeting of this association will be held at the Marlborough-Blenheim Hotel, Atlantic City, on May 28-31, under the presidency of Dr. Hubert Work of Pueblo, Col. The secretary is Dr. Charles G. Wagner of Binghamton, N. Y.

Central Illinois District Medical Society.—At the annual meeting held in Pana on April 30, the following officers were elected: *President*, Dr. C. E. Munson, Springfield; *Vice-Presidents*, Dr. A. F. Turner, Taylorville, and Dr. L. C. Littlejohn, Oconee; *Treasurer*, Dr. J. N. Nelms, Taylorville; *Secretary*, Dr. Walter Burgess, Pana.

Houston County (Texas) Medical Society.—The following officers were elected at the annual meeting held in Crockett on April 30: *President*, Dr. R. W. Skipper, Lovelady; *Vice-President*, Dr. J. S. Wooters, Crockett; *Secretary*, Dr. W. W. Latham, Porter Springs.

Wyandot County (Ohio) Medical Society.—At the annual meeting officers were elected as follows: *President*, Dr. I. N. Bowman; *Vice-President*, Dr. G. O. Maskey; *Secretary-Treasurer*, Dr. Frederick Kenan, all of Upper Sandusky.

Ninth District (N. C.) Medical Society.—At the organizing meeting held in Salisbury on May 2 and 3, the following officers were elected: *President*, Dr. Isaac M. Taylor, Morgantown; *Vice-President*, Dr. C. M. Van Poole, Craven; *Secretary-Treasurer*, Dr. C. B. McNairy, Lenoir.

Kansas State Medical Society.—At the annual meeting held in Hutchinson recently, officers for the ensuing year were elected as follows: *President*, Dr. George M. Gray, Kansas City; *Vice-Presidents*, Dr. Clemens Klippel and Dr. Horace G. Welsh, Hutchinson, and Dr. G. A. Blaisdell, Garnett; *Treasurer*, Dr. L. H. Munn, Topeka.

Louisiana State Medical Association.—The following officers were elected at the annual meeting which, in spite of reports to the contrary, was held as arranged on April 24 and 25: *President*, Dr. B. A. Ledbetter; Vice-Presidents, Dr. E. G. Chandler, Shreveport; Dr. George F. Bel, New Orleans, and Dr. J. Adams, Monroe; *Secretary*, Dr. J. D. Martin, New Orleans; *Treasurer*, Dr. Maurice Gelpi, New Orleans.

Obituary Notes.—Dr. William S. Cheesman of Auburn, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1879, a member of the American Medical Association, the New York State and Cayuga County Medical Societies, and the Auburn Medical Society, and attending surgeon to the Auburn City Hospital, died at his home after a long illness on May 7, aged 59 years.

Dr. Dwight B. Neal of Little Rock, Ark., a graduate of the Hahnemann Medical College and Hospital of Chicago in 1887, died at his home suddenly on April 17, aged 55 years.

Dr. Jacob F. Hudson of Canton, Ohio, a graduate of the Western Reserve University Medical College, Cleveland, in 1882, and a member of the American Medical Association and the Ohio State and Stark County Medical Societies, died at his home after a long illness on April 24, aged 50 years.

Dr. Lindsey T. Lowder of Bloomington, Ind., a graduate of the Medical College of Indiana, Indianapolis, in 1874, and a member of the American Medical Association and the Indiana State and Monroe County Medical Societies, died at his home on April 21, aged 66 years.

Dr. Robert Tracey of Belleville, Ontario, Canada, a graduate of the Faculty of Medicine of Queen's University and Royal College of Physicians and Surgeons, Kingston, in 1862, one of the founders of the Belleville Hospital, and for many years Medical Health Officer of the city, died at his home after a long illness on April 20, aged 70 years.

Dr. Tomes Thams of McVille, N. Dak., a graduate of the University of Christiania, Norway, in 1873, died at his home on April 23.

Dr. John S. Kennelley of Longmont, Col., a graduate of the College of Physicians and Surgeons of Keokuk, Ia., in 1880, died at his home on April 23, after a long illness, aged 59 years.

Dr. Daniel McLaren Miller of Oconomowoc, Wis., a graduate of the College of Physicians and Surgeons, New York, in 1856, surgeon of the Twenty-eighth Wisconsin Regiment during the Civil War, and a member of the Wisconsin State and Waukesha County Medical Societies, died at his home on April 25, aged 76 years.

Dr. John W. Logan died at Marion, Pa., on May 4 at the age of 75 years. He was graduated from the Medical College of the State of South Carolina in the class of 1859.

Dr. Jacob M. Lipschutz of New York, a graduate of the College of Physicians and Surgeons, New York, in 1905, assistant laryngologist to the German Poliklinik, radiographer to Lebanon Hospital, and visiting physician to the Sanatorium for Hebrew Children at Rockaway Park, and a member of the Eastern Medical Association and the Medical Society of the Borough of the Bronx, died suddenly at his home on May 8, aged 28 years.

Dr. William Bennett Pierson, formerly of Brooklyn, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1852, died suddenly at his summer home in Huntington, L. I., on May 10, aged 86 years.

Correspondence.

PROFESSOR AGRAMONTE AND THE ETIOLOGY OF YELLOW FEVER.

To the Editor of the Medical Record:

Sir:—In the Medical Record for March 30, 1912, Professor Agramonte has attacked me and my recent paper on the etiology of yellow fever ("Yellow Fever Bureau Bulletin," November, 1911) in terms which ought not to enter in a scientific discussion, and which I therefore prefer to leave unanswered. With regard to the question, whether I have discussed in a fair manner or otherwise the work of the U. S. Army Commission, I would simply ask readers to compare the statements in my paper with those of Agramonte. Leaving aside non-essential discussions, two points remain to be considered.

Agramonte is offended because I have said that the experiments of Reed, Carroll, and Agramonte are not absolutely conclusive, not having been carried out in a non-infected country, as were the corresponding experiments in malaria and pappataci fever. In this opinion I do not stand alone, as Agramonte well might know. The question cannot be resolved by an appeal to authorities, nor can it be modified by the objections which can be raised against a repetition of the experiments. Agramonte says that the danger of such experiments should restrain experimentation within certain limits, a quite unnecessary remark as directed against me, since I already said just the same in my paper which Agramonte criticises. But if moral objections prevent conclusive proof from being obtained, relative proofs do not become as a consequence conclusive.

The remark that the prophylactic results "stare the least observing in the face" is of a similar nature, namely entirely superfluous and misleading as giving the impression that I had not emphasized this important fact in my paper. The truth, however, is that I mentioned the results obtained by antimosquito measures as constituting the most important corroboration which the theory has received.

Next, as to the bodies which I have described as blood parasites in yellow fever cases and therefore presumably the pathogenic germ in this disease. The question of their existence cannot be resolved by Agramonte nor by anybody else on the strength of *a priori* reasoning as to the period during which the parasites ought to be present in the blood, or the like. It is simply a question of observation, and here we arrive to the only real point in Agramonte's criticism. He did not feel convinced by examining the specimens which I showed him: this opinion I must respect, though still preserving the hope that he may change his opinion on some future occasion. I must, however, at the same time claim respect for my statements also. Agramonte may differ in his opinion as to the significance of the bodies demonstrated, but he has seen these bodies and he has no right whatever to throw doubt on my statements about the numbers of cases in which similar bodies have been observed.

When mentioning the demonstration in Havana, it does not seem fair to convey the idea that the impression which Agramonte, according to his paper, received was that of all gentlemen present. Agramonte might have added that at least one distinguished colleague, who had been present during the whole time of the demonstration and had seen all the specimens demonstrated and not four only, as Agramonte declares that he saw, gave as his opinion that the bodies presented were decidedly parasite-looking, but with regard to their importance suggested the possibility that one might have to do with innocent parasites living in the blood of the inhabitants of Yucatán. I may possibly be wrong in my interpretation of my observations, but as to the existence of the bodies there can be no doubt, and during my present investigations in Yucatán I have found them again and again.

Harald Seidlin, M.D.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

DISCUSSION ON ALCOHOL IN THERAPEUTICS—RHEUMATOID ARTHRITIS — NURSING EXHIBITION — AMEND-THE-ACT LEAGUE — OBITUARY.

London, April 26, 1912.

A discussion on alcohol in any of its numerous aspects holds out little promise of novelty. Even the question whether it has any value as a remedial agent is a subject on which many will despair of finding new arguments. Yet most practitioners seem to hold a distinct opinion, one way or other. Sir Victor Horsley has a very strong opinion on the subject which he expressed with considerable decision in opening a discussion at the Hunterian Society. He remarked on the great decrease in the use of it in hospitals that he had observed and which he attributed to our increased knowledge. But, he said, it is still prescribed—sometimes as a stimulant, whatever is meant by that, sometimes as a narcotic, and now an then as a tonic. The stimulation he looked upon as merely the lowering of the control of the highest centers. The narcotic action was undoubted.

He could not speak from his own experience of its effect in pneumonia, but believed it was regarded as a sheet anchor some twenty-five years ago. He might have said twice as long, for medical history tells of the way in which it was poured into patients by Dr. R. B. Todd and his followers in this and other febrile and inflammatory conditions. The effect in pyrexia, Sir Victor said, was the sum of the effects on the infective process and on the increased catabolism. There was abundant evidence that resistance to infection was lowered by alcohol. It diminished the complement in the blood, inhibited phagocytosis, lessened the resistance of the red corpuscles and the bacterial power of the body fluids. All this it did in very small quantities. As to nitrogenous destruction, Max Gruber had shown it increased destruction of proteid at first, but after a fortnight or more immunization occurred and it acted as a proteid sparer. But even so it was of no therapeutic advantage, for as the metabolism was lowered so would be the resistance to disease. The net result, therefore, would be unprofitable and the clinical experience of fever hospitals shows this to be the case. He supposed most surgeons had given up its use in shock. The experiments on the isolated heart were not uniform. Though some had reported an initial increase of work with minute quantities and a paralysis with larger dosage others had found a fall from the very first. Normal contraction was restored by replacing the alcohol with dextrose, proving the superiority of the latter as a foodstuff for the heart. The use of sugar in armies had illustrated this fact. Sir Victor objected to alcohol as a remedial agent on account of its tendency to set up the habit.

Professor Cushny made the statement that he had no very strong conviction against the use of alcohol. As a drug he knew it had no specific action, but it often gave relief to sufferers. He looked upon experiments on the isolated heart, unprotected as it was by the plasma, as of uncertain value. He had always found weakened pulsation from the outset in animals, and in man they must dismiss the idea of alcohol being a stimulant of any value. But he could not agree that it was a deadly poison in infective processes. Intoxicant doses rendered rabbits more liable to infection and he thought all must admit the same was the case with man. Perhaps very moderate drinking could not be shown to lessen resistance to infective agents. He thought alcohol, chloral, opium, and so on were of use to patients in making their lives more comfortable, and he did not think many cases of alcoholism were the result of its medically prescribed use.

Dr. F. J. Smith used it sparingly in hospital, though he had seen it given in the old excessive style. Moderately it induced hope, in some cases restored appetite and thus was a distinct tonic. In the experiments quoted the hearts were not in normal conditions. Moreover animals before experimentation were abstainers.

Dr. T. B. Hyslop, as President of the Society for the Study of Inebriety, with great experience in lunacy, had often had the question before him. He said alcohol, chloral, aromatics, and other drugs exerted a deleterious effect on brain cells. The so-called "night cap" he regarded as specially injurious. The hypnosis produced by alcohol was in the nature of autointoxication for the oxygen used to eliminate it was taken from the supply available for oxidizing the waste products of metabolism. This accounts for the fact that after a sleep induced by alcohol the person feels very tired on waking. In asylum practice alcohol had been practically eliminated from therapeutics and also from the dietary.

One member after 30 years general practice found something to say for whisky or brandy in a few cases. Another asked if the local stimulant effect on the mouth, gullet, etc., might not have an influence, but this Sir V. Horsley replied must be very fugitive.

Rheumatoid arthritis has been discussed at the West London Medical Chirurgical Society and various views put forward. The President, Mr. McAdam Eccles, offered as a definition of this troublesome disease—arthritis of many joints, chiefly the smaller, due to absorption of a toxin, and usually affecting females more than males. A cause must be sought in the blood stream which carried the infective agent to the joints. Dr. Poynton took up one point—the demonstration that a micrococcus which he held to be the cause of acute rheumatism would produce in animals different types of arthritis. He showed lantern slides of acute transient arthritis, osteoarthritis, and periarticular arthritis, and emphasized the fact that suppuration had not occurred in any of these examples. The different lesions depended on the severity and duration of the arthritis which was set up by intravenous inoculation. The joint lesions could not be made to differentiate a case from acute rheumatism. The lesions he showed were not produced by direct infection of joints (a plan, he thought, of little value) but of intravenous inoculation. There was a perivascular fibrosis in the capsule of the joints to which he attributed the tendency to atrophy and consequent stiffness. From numerous examinations he inclined to the view that organisms of the streptococcal and also of the staphylococcal groups might produce the lesions, but cultures from diseased human joints were hitherto negative and so progress was slow. On the whole he thought rheumatoid arthritis was the result of many infections.

Mr. Jones Llewyllen had seen cases which had been preceded by vasomotor phenomena identical with Raynaud's disease.

Dr. Lloyd-Williams had much to say on oral sepsis as a source of arthritis and a condition which, if removed, often alleviated the joint affection. Pyorrhea alveolaris is a form of osteoarthritis itself from many points of view. Dr. Middleton submitted a paper in favor of counterirritation as the most effectual mode of treatment. Blisters, croton oil, acetic acid, acupuncture, galvanocautery, the whole armory of counterirritants had no value for him, and he gave few drugs. He had used thyroid, however, and also found baths and massage do good. He did not approve of breaking down adhesions or of encouraging early movements when improvement began. He had treated hundreds of cases by spinal blistering. This plan required experience to make the best of it. Dr. Horder sent a contribution on vaccino-therapy in this disease, which he thought had recently given favorable results. He objected to the ordinary name and would call it multiple arthritis. In this he is supported by Dr. P. King, who had stated that the disease was microbic before the bacillus had been discovered. Dr. E. H. Shaw did not believe in a single bacillus. He had used different vaccines successfully. Organisms from the joints and also from other regions (mouth, nose, cervix, rectum, etc.) could be employed. Dr. Rice Oxley related a case benefited by inoculations. Dr. Dauber remarked on the fashion of blaming oral sepsis for many diverse conditions. He had examined the mouth of every patient at the woman's hospital for five years and not 1 per cent. could be called clean. A yeomanry regiment he examined gave a cleaner average with general good health, but there were many foul mouths and there had not been a case of rheumatoid in the regiment for five years.

Dr. Kidd objected to experiments on animals being put forward as applicable to the question. The effect on infectivity had been considered, but he asked would it diminish the vitality of the pneumococcus? He knew it did of gonococci.

The fifth Nursing and Midwifery Exhibition has been held this week, closing to-day. Instruments, appliances, and contrivances of every kind useful to the modern nurse have well illustrated the progress that has been made. A folding cradle for a crippled child made out of a box gained the first prize in the inventions. The second was awarded for a leg-rest which permits a change of the bandages without moving the leg. The third prize was won by an arrangement for carrying two trays. Cinamatograph illustrations of nursing work were shown as helps in teaching. A model day and night nursery attracted much attention. It showed how an infective child could be nursed in isolation and provided with all necessaries and even amusements.

The Amend-the-Act League is in full swing. In the first nine days 10,000 members were enrolled, and the offer to send speakers into the country accepted by 250 places.

Col. F. Casement Reeves, late of the Indian Medical Service, has died suddenly at the age of 50. He entered the army Medical Department in 1870 and took part in the Afghan war in 1880, for which

he was awarded the medal. He was employed in various ways until 1885 and afterwards in the Assay Department of the Bombay mint as well as other official posts. He qualified at the Irish Royal Colleges in 1878.

OUR LETTER FROM PARIS

(From Our Regular Correspondent)

ACTION OF ALCOHOL ON THE ORGANISM — THE MECHANISM OF RETENTION IN PROSTATICS — TREATMENT OF VESICOVAGINAL FISTULÆ BY SUTURE OF THE BLADDER THROUGH THE SUPRAPUBIC ROUTE — RADIOGRAPHY OF TUMORS OF THE BLADDER — OBITUARY.

PARIS, March 23, 1912.

GOUGET has made an interesting study of the action of alcohol on the organism. Alcohol has no exciting influence on the kidneys, whether it be employed in small or large dose. On the contrary, it produces a vascular spasm and paralysis of the secretory function of the renal epithelium. It does not favor diuresis but rather diminishes it. The increase of the amount of urine consecutive to the introduction of alcohol into the stomach along with a large amount of water does not depend on renal stimulation, but on the acceleration of action caused by the rapid passage of so much water into the blood. Alcohol accelerates the absorption of water by stimulating gastric and intestinal peristalsis. Thus the use of alcohol should be discouraged in alimentation, while its employment as a medicine is perfectly justifiable. In small doses alcohol stimulates the heart and raises pressure in such a way that it is indicated in conditions of collapse and in certain infectious maladies.

At the Paris Society of Surgeons there was discussed an interesting question as to the mechanism of the retention of urine in prostatics. Bonneau thinks that there are several different forms of the disease classically called hypertrophy of the prostate: hypertrophy of one of the two lateral lobes of the prostate, hypertrophy of the median lobe, paraureteral adenoma, and old sclerotic prostate. Besides the anatomical causes that prevent the passage of urine there exist still other dynamic causes not well known, aside from true mechanical obstacles, which in a reflex way disturb the function of the posterior urethra. Nogués thinks that the essential cause of retention is the loss of extensibility of the walls of the urethra under the influence of the hypertrophy. The walls of the prostatic urethra have no pliability and cannot stretch under the effect of the jet of urine. Pasteau thinks that in the pathogeny of retention in prostatics we should study three factors: (1) Mechanical causes which depend on the hypertrophy itself, and which increase the retention of the canal; (2) local congestion which results from the preceding causes; (3) diminution of the expulsive force of the bladder due secondarily to the prostatic lesions. A relative inhibitive action is certain as is proven by the integral return of function after prostatectomy. As to the retention by the mechanism of the ring in hypertrophy of the median lobe of the prostate, Lance believes that this mechanism can rarely be invoked. Lefur thinks that aside from the mechanical lesions of the prostate there are other reflex and inhibiting causes very numerous, which explain the mechanism of retention in prostatics. The affections in which we may observe vesical retention from purely reflex and inhibitive causes are the following: Hemorrhoids, obstinate constipation, interrupted coitus, and prolonged coitus. The very important congestion in prostatics provokes consequences which bring to the fore the reflex and inhibitive influences causing retention.

Genouville thinks that the obstacle in the prostate is the only primary cause of prostatic dysuria. Enfeeblement of vesical contractility is only a secondary prostatic obstacle. The bladder is susceptible of taking up again its function when the condition is suppressed which constitutes for it an insurmountable obstacle. With reference to the treatment of vesicovaginal fistula by suture of the bladder by the subpubic route, Chevassu presented a patient in whom he obtained a cure of a rebellious vesicovaginal fistula by a transvesical operation. Suture by the transvesical route can only be an exceptional method, but we can make use of it with advantage in case of fistula of the upper part of the bladder. The height of the bladder allows us to see the fistulous orifice. Considering the published cases, out of 20 cases of complex vesicovaginal fistula, there have been 16 cures. Hartmann thinks that it is nevertheless easy to operate with success by the vaginal route in vesicovaginal fistulæ.

Radiography of tumors of the bladder was considered by Legueu, who has applied the principle of the radiology of the stomach to the pathological exploration of the bladder. By filling the bladder with bismuth milk we may follow its contours with radiography. We may thus obtain the radiograph of tumors of the bladder if large. On the black medium of the bismuth bladder the vesical tumor appears light; we can see its volume, the irregularity of its contours, and its point of implantation. Here we have a new application of radiography which is destined to extend advantageously the actual results of clinical and cystoscopic research, especially in what concerns the volume of tumors.

Eugene Caventou died recently, a member of the Academy of Medicine, who was a chemist, modest but very distinguished, and who had made important discoveries in organic chemistry. He belonged to the section of pharmacy of the Academy from 1870. In 1879 he was elected treasurer, and in 1897 he was made president. Most of his experiments were in the laboratory of Wurtz, of whom he was a most zealous collaborator in the Dictionary of Chemistry, in which he signed a large number of articles.

Progress of Medical Science.

The Boston Medical and Surgical Journal.

May 2, 1912.

1. The Influence of Antivivisection on Character. W. W. Keen.
2. Dr. Samuel Sheldon Fitch, a New England Consumption Specialist of Seventy-five Years Ago. By H. F. Stoll.
3. Cerebrospinal Meningitis Caused by Acti in the Blood. D. G. Hall.
4. Remarks on a Series of One Hundred Cases of Vaginal Hysterectomy for Uterine Fibromata. C. G. Cumston.
5. Medical Gymnastic Treatment in Certain Circulatory Disturbances. G. Sundelius.

1. **Antivivisection and Character.**—W. W. Keen states that the policy of vituperation indulged in by the antivivisectionists cannot but have a debasing effect upon the character of these partisans, who are thereby ill fitted to form a sound and safe judgment upon the subject about which they preach. Much of their fervor is the result of ignorance. A second reason for believing that antivivisection injures character is that, by putting a greater value on the well-being and the lives of monkeys, guinea-pigs, rabbits, dogs, cats, mice, and frogs than on the lives of human

beings, it fosters a spirit of cruelty to human beings.

3. **Meningitis and Acidity of the Blood.**—D. G. Hall states that one of the etiological factors in the production of epidemic meningitis is an excessive acidity of the blood. In this respect meningitis bears a striking resemblance to rheumatism. Both diseases were equally prevalent in Texas during the past winter.

4. **Vaginal Hysterectomy for Uterine Fibromata.**—C. G. Cumston states that in uterine fibroids the principal factor in the selection of the route to be resorted to seems to be the size of the growth and the roominess of the vaginal canal. When the uterus is larger than a fetal head the abdominal route is to be selected, for otherwise morcellation of the growth must be resorted to when vaginal hysterectomy is undertaken, an operative procedure which is always to be avoided when possible. If, for certain reasons, vaginal hysterectomy is to be preferred and the birth canal is narrow, one may resort to a deep lateral vaginal incision on either side of the rectum. After the hysterectomy has been done, these incisions are closed with sutures, and apparently do not complicate the operative results. Postoperative hemorrhages from the small arteries of the vagina have been occasionally reported, but the author has never observed this complication. To those familiar with both the abdominal and vaginal route it cannot be denied that the shock is much greater when the former is used. Perfect freedom in mobility of the uterine growth and uterus is absolutely essential when the vaginal route is to be resorted to. The author has always used the clamp-method. There is less shock in the vaginal than in the abdominal operation.

New York Medical Journal.

May 4, 1912

2. **Salvarsan and the Wassermann Reaction.**—M. L. Heidingsfeld states that salvarsan, though not an unfailing remedy, is by far the most effective present day agent for the treatment of syphilis. It effects an apparent clinical cure, with negative Wassermann reaction, in about 80 per cent. of the cases treated. A fair share of the remaining 20 per cent., with the aid of mercurials and repeated administrations, give promise of still proceeding to a negative Wassermann test in due course of time. Salvarsan fails utterly in probably more than 1 per cent. of the cases. From the author's personal experience, salvarsan cannot effect any material harm and can be safely administered in ambulatory practice; the administration of salvarsan has not been followed by complications on the part of the ocular and auditory apparatus, with possibly one exception. In this instance, it is probable that syphilis, and not salvarsan, was the causative factor, inasmuch as the Wassermann test remained strongly positive in character. Readministration of salvarsan did not aggravate but apparently cleared up the condition. The diagnosis and treatment of syphilis without Wassermann control and other specialized aid must be unscientific and, in a large degree, unsatisfactory in character.

3. **Diagnosis of the Prolonged Fevers.**—M. Manges states that twenty years ago, given a case of prolonged fever, the diagnosis would lie between malaria, typhoid fever, tuberculosis, obscure suppuration, and if one wished to be ultrascientific, cryptogenetic sepsis. Today, in spite of the differentiation of many clearly defined types of prolonged fever, there are still many unexplainable cases. These are not infrequently the cases in which irregular fever persists for years without any cause being discovered. The more the fever problem is studied, the more complex it becomes. Thus Ehrlich would explain the occurrence of fever in some salvarsan injections as being due to the liberation of endotoxins of the bacteria during the sterilization of the water which was used in the injections. Hale White has reported cases in which the taking of carbohydrate food brought on attacks of fever of 102 and 104 F., lasting almost a week, until the temperature gradually returned to normal. Finkelstein's alimentary fever is mentioned. Finally, there remain those mysterious cases of nervous and hysterical fever, the authenticity of which cannot be doubted. In some of these cases of supposed nervous fever, especially in neurasthenic blondes, the fever may be the prodromal symptom of tuberculosis. The first disease to be thought of in the differential diagnosis of any continued fever is typhoid fever. When the Widal reaction remains negative two possibilities should be considered, namely, trichinosis and acute miliary tuberculosis. Next to be considered is chronic infective endocarditis, the recognition of which in the majority of cases affords striking evidence of the great advance in our knowledge of obscure febrile conditions. The prolonged irregular fever, the cardiac changes, leucocytosis, petechiæ, infarcts, the positive blood cultures, etc., are familiar to all. Osler has laid stress upon ephemeral nodules which appear irregularly in the skin of the hands and feet. It has been largely overlooked that syphilis may give rise to irregular prolonged fevers. Neoplasms, especially if their growth is rapid, may be accompanied by fever. The fever of gallstones, with few ill-defined local symptoms, is well known. So, too, abscess of the liver may run a latent course for a long time until the upward enlargement and the local tenderness appear. Another cause of obscure hepatic fever of long duration is acute hepatitis without suppuration. This is cured by multiple aspiration. Hodgkins' disease is frequently accompanied by irregular attacks of more or less prolonged intermittent fever. Leucemia is accompanied by fever, which may be quite prolonged in duration. Pernicious anemia may be associated with such marked fever that erroneous diagnoses of typhoid fever have been made. The possibility of the colon bacillus being the cause should be considered in every case of obscure prolonged fever. The systemic or hemic infections with the colon bacillus may be divided into three groups of cases: (1) Those which run a course somewhat resembling typhoid fever; (2) those with secondary abscesses or pyemia, and (3) the terminal infections. Of the other innumerable conditions giving rise to prolonged and obscure fevers the author mentions the following commoner ones: Tuberculous peritonitis of a low grade with few signs; localized pleural empyemata, deep seated small foci in the tonsils and lymphatic glands, oral sepsis, etc. Subphrenic abscesses which are indefinitely defined without any antecedent etiological factors may tax one's skill to the uttermost. Even with definite signs of suppuration such foci may escape detection, in spite of frequent and searching aspiration. Another type deserving mention is the unilateral hematogenous infection of the kidney.

6. **Deep Pétrissage of the Abdomen in the Diagnosis of Tapeworm.**—R. J. Cyriax states that by deep abdominal pétrissage is meant a series of circular movements executed in the direction of the large intestine with sufficient energy to cause a thorough kneading of the abdominal contents. In carrying it out, it is essential that the abdominal parietes and the fingers of the operator move as one over the underlying viscera, otherwise the process is resolved into a mere superficial effleurage, which hardly influences the viscera. It is not necessary for the pétrissage to be

executed very hard in order to achieve the desired end, and unless the technique is defective, it should cause no pain. When properly performed it presumably effects the dislodging of the proglottides in two ways: by promoting peristalsis and by mechanically separating segments of the distal end of the parasite by tearing through their attachments. Of these two actions, the latter is probably by far the more important. The increased peristalsis seems to act only as an adjuvant in expelling the separated segments, and probably no intensity of it can actually dislodge the head of the worm; nor does it seem possible to reach the point of achieving this by the merely mechanical effect of the petrissage. The latter is, therefore, only a means of diagnosis as regards tapeworm infection, and cannot replace the usual curative treatment. The advantages maintained for this method of establishing a diagnosis of tapeworm are as follows: (1) It is entirely harmless, and reveals worms in some cases in which purgatives alone have apparently not been successful; (2) it does not interfere with the patient's regular work, and causes no discomfort worth mentioning. As a general rule, only about three or four applications of deep abdominal pétrissage, each of fifteen minutes, duration, are required to establish a definite diagnosis; (3) it abolishes the unnecessary administration of purgatives, alone or in combination with anthelmintics, in cases where they are contraindicated; (4) it is apparently uniformly successful.

Journal of the American Medical Association.

May 4, 1912.

1. **Treatment of Fractures.**—M. L. Harris states that the first thing in the treatment of fractures is to bring about a perfect reduction or adjustment of the ends of the bone, and it is only by the *x*-ray that this can be certainly demonstrated. It should not be forgotten also that this readjustment may not be permanent, even with a suitable fixation dressing, and constant vigilance is required. In many cases perfect reduction is impossible, and the question of an open operation arises. Formerly this was considered a serious procedure, but improved methods of technique have changed this. The technique of opening the peritoneum is a simple matter compared to the opening up of a fresh fracture, and the utmost care should be taken to insure proper technique and perfect asepsis. While, as a rule, the metal plate is the best mechanical device, there are exceptions, as in the case of fractures of the patella and the olecranon, in which passing wires around the fragment is better. In some cases also traction apparatus is required. Fractures of the neck of the femur are generally hopeless as regards perfect union, but in some cases this may occur, and the Whitman method of traction and fixation in marked abduction is undoubtedly the most important improvement in the non-operative treatment of these cases, and next in importance is the Maxwell method of longitudinal and transverse traction. Even these improved methods have not been as successful as desired, and the author describes the open method of treatment of these cases by nailing the detached portion of the neck of the bone. In cases of this kind the extension apparatus is also valuable.

2. **Antityphoid Vaccination.**—F. F. Russell concludes that: 1. Antityphoid vaccination in healthy persons is a harmless procedure. 2. It confers almost absolute immunity against infection. 3. It is the principal cause of the immunity of the troops against typhoid in the recent Texas maneuvers. 4. The duration of the immunity is not yet determined, but is assuredly two and one-half years, and probably longer. 5. Only in exceptional instances does its administration cause an appreciable degree of personal discomfort. 6. It apparently protects against the chronic bacillus-carrier, and is, at present, the only known means by which a person can be protected against typhoid under all conditions. 7. All persons whose professions or duty involves contact with the sick should be immunized. 8. The general vaccination of an entire community is feasible and can be done without interfering with general sanitary improvements, and should be urged wherever the typhoid rate is high.

5. **Experiments with Bismuth Pastes.**—F. McK. Bell states that bismuth paste as a drainage for acute suppurating sinuses is painless and efficacious, but does not assist in rapidity of cure. When a sinus shows sluggishness, if 5 per cent. iodoform is added to the bismuth paste it is much more stimulating to granulations. As a packing and drainage for localized intraabdominal and pelvic sinuses, bismuth paste is safe, painless, rapidly curative, prevents the formation of pockets of pus, lowers temperature and to a limited extent prevents postoperative adhesions. It may be used as an aid to diagnosis in fecal fistulas as well as act as a curative agent. In large cavities requiring four or more ounces of paste it should be watched carefully for symptoms of bismuth or arsenic poisoning. Unless there is free exit for paste it is dangerous. Bismuth "stones" may form in a closed sinus. In clean wounds or those discharging seropus the application of the bismuth paste retards healing and tends to establish chronic conditions. To get results, the author says, the discharge should be frankly purulent.

10. **Proctoclysis.**—H. H. Trout concludes from his experiments as follows: All patients show less rectal irritation to proctoclysis is given a saline enema before the operation. The patients given water by rectum absorbed nearly 400 c.c. more in the twenty-four hours than did the patients given salt solution, the average for the water series being 2,444 c.c. per twenty-four hours, the average for the salt series being 2,041 c.c. per twenty-four hours. The patients given salt solution by rectum required nearly twice as much water by mouth to relieve thirst, or to give exact figures, in the water cases only 332 c.c. were taken in the first twenty-four hours; in the salt cases 600 c.c. were required in the first twenty-four hours. The amount of urine was practically the same in both classes of cases, there being 2 c.c. more in the water cases for the first twenty-four hours after operation and 3 c.c. more in the salt cases for the next twenty-four hours. In seventeen cases the patients complained of tasting salt without having any idea that normal saline solution was being given by rectum. None of the water series made any such complaint. In drainage cases more fluid may be taken by rectum than in those laparotomies closed without drainage. Proctoclysis should be employed more frequently than it has been in the past and in all classes of cases in which it is possible. Care should be exercised to prevent "water-logging" of the entire system, and this applies to both salt and water. In peritonitis cases with drainage it is possible to have the patients take four or five times as much fluid by rectum as in the cases on which the author's observations are based.

The Lancet.

April 27, 1912

1. **Tuberculin.**—A. Latham states that his experience of the last six years, which includes several hundred cases, has led him to form the impression that the careful use of tuberculin gives valuable results in the treatment of pulmonary tuberculosis. Its use is not attended by any dramatic effect in occasional examples of febrile phthisis or laryngeal tuberculosis, nor does its use tend to hasten the apparent arrest of the disease or shorten the length of treatment required, except in certain instances in which the patient is just holding his own but is making no real progress. On the other hand, tuberculin, in conjunction with ordinary methods, will lead to the disappearance of tubercle bacilli from the sputum in a larger proportion of cases than ordinary methods alone, and in the author's experience diminishes the number of relapses, or, in other words, establishes a higher degree of immunity. In view of these facts, he agrees with those who hold that the best treatment for pulmonary tuberculosis is tuberculin treatment in conjunction with what is called sanatorium treatment, either at a special institution—as is necessary in a considerable proportion of cases—or at home.

2. **Progressive Lenticular Degeneration.**—By S. A. K. Wilson. (See page 946.)

3. **Treatment of Opium Poisoning by the Faradic Current.**—F. Taylor states that in cases of opium narcosis one may apply the faradic current to accomplish the same results as slapping the patient or compelling him to walk the room. The experience of cases shows that the unfavorable condition of somnolence may be increasing some hours after the ingestion of the poison, that it will increase again after temporary amelioration by lavage or "rousing"; and it is not safe to leave a patient semi-comatose until the difficulties of his respiration impel one to perform artificial respiration. He should as soon as possible be aroused or awakened, and kept aroused until it is morally certain that the sleep will not pass again into a serious condition of coma. And this can be done by the faradic current, as efficiently as by any other means. In cases in which the coma has reached a stage threatening life the faradic current should be applied persistently, in spite of the entire want of response during the first 30 or 40 minutes, other than the contraction of muscles.

4. **Treatment of Uterine Hemorrhage.**—B. Whitehouse states that it can indeed be truly said with regard to uterine hemorrhage that the keystone of the therapeutic arch lies in a correct diagnosis. Uterine bleeding must be considered as a symptom only, and no stone must be left unturned to ascertain its cause. With this in view it is not sufficient to limit the examination to the pelvic organs. The abdomen must be examined for evidence of hepatic enlargement, the blood pressure must be accurately measured, and the condition of the vessel walls should be ascertained. Evidences of syphilis or other constitutional disease should be looked for, and if possible the calcium index should be estimated. The condition of the heart, lungs, and thyroid gland must be noted, and if circumstances permit, a bacteriological examination of the uterine blood should be conducted. If the uterus is sterile, and no other cause is found to account for the bleeding, then one may confidently recommend curetting as a therapeutic measure. Individual treatment will, of course, depend upon the condition diagnosed. Thus, where the bleeding is due to a high arterial blood pressure the tension must be reduced by purgation, nitroglycerine, and dieting. Purgation will also have its place in depletion of the portal circulation where hemorrhage is due to hepatic cirrhosis. If the calcium index is low menorrhagia will probably be benefited by the administration of this agent, preferably in the form of the lactate. In the case of bacterial infections the author has obtained good results by intrauterine applications such as peroxide of hydrogen, Churchill's iodine, or protargol. Treatment in these cases must be thorough and prolonged. The curette under such circumstances should be absolutely tabooed. Finally, in cases in which hemorrhage is due to rupture of degenerated vessels in the uterine wall, hysterectomy appears to be the best and safest procedure. Howard Kelly devised a partial hysterectomy for similar cases, and it was introduced into England by Victor Bonney under the name of "utriculoplasty." So far the operation, in London at least, has received but little support, the general opinion being that if hysterectomy is required to relieve severe bleeding, it is preferable to perform the complete operation. If all patients suffering from excessive uterine bleeding could receive the benefit of a detailed examination before resort is made to the curette, the author feels sure that it would lower the 20 per cent. of failures found in these cases, and help to prevent the operation of curetting from falling into discredit.

British Medical Journal.

April 27, 1912.

2. **Mechanism of Shock.**—H. T. Gray divides surgical shock into three stages: (1) The stage of stimulation, or the pressor stage; (2) the stage of depression, or the depressor stage; (3) the stage of equilibrium, when active abnormal afferent impulses are in abeyance. It has been shown that every sensory nerve contains pressor and depressor fibres to the vasomotor center, stimulation of the pressor fibres only, induces reflex vasoconstriction and cardiac acceleration, while stimulation of the depressor fibres only induces reflex vasodilatation, and at the same time inhibits vasoconstrictor impulses. Stimulation of such a mixed sensory nerve usually induces domination of the pressor group. Domination of the depressor group only occurs when the depressors are fatigued. Prolongation of the stimulus during the depressor stage leads to: (1) Continuous lowering of blood pressure, which lowering renders inadequate the blood supply to the cardiac muscle through the coronary arteries, and this fact, combined with the lack of peripheral resistance, leads to delirium cordis, and (2) anemia and starvation of the central nervous system, which if carried to a sufficient degree render impossible the recovery of the centers.

3. **Estimating the Strength of a Vaccine.**—J. A. Braxton Hicks states that one may obtain a Gram-positive and Gram-negative "standard" by diluting and plating out processes which he describes. These "standards" keep good for at least six months. One should then take equal parts of the emulsion of "unknown" strength and a "standard" of opposite Gram-staining properties and mix thoroughly. A film is then made, fixed carefully, and stained by Gram's method, using a counterstain. One should count 200 or 300 bacteria, using a "counting square" and a one-twelfth objective and noting the Gram-negative and Gram-positive organisms in the squares counted

knowing the strength of the "standard" and the proportion of Gram-negative to Gram-positive organisms, the strength of the unknown emulsion is easily worked out by proportion.

Berliner klinische Wochenschrift.

April 15, 22, and 29, 1912.

Generalizations Concerning Tuberculosis.—Romer as a combined result of experimental and epidemiological study gives five fundamental generalizations in regard to tuberculosis. (1) Nearly every member of a given community becomes infected with the disease in childhood, but the great majority withstand its effects. This great truth, long held on insufficient evidence by some authorities, has been demonstrated by the introduction of the newer diagnostic tuberculosis tests. Localities with high tuberculosis mortality show hardly any higher percentages in this respect than those with reverse conditions. (2) Tuberculous animals show relative immunity to subsequent infection with the disease. The author refers here to experimental tuberculosis caused by the human bacillus. (3) Tuberculous human beings are similarly resistant to repeated infection. This should be the case *a priori* because no exceptions have thus far been found in the animal kingdom. It has been shown in a few cases of inoculation of cancerous patients. Finally it is in harmony with clinical and epidemiological finds, evidence of immunity being everywhere apparent. What was once believed to be natural immunity is now known to be very largely acquired immunity. (4) The less widely distributed the disease in a given community, the greater is the relative mortality. For example, in troops who come from localities where tuberculosis is uncommon, we note a much higher deathrate than in those who come from well infected localities. (5) Pulmonary consumption is due to a massive autoreinfection of a relatively immunized organism originally infected in childhood.

Recent Developments in the Treatment of Eczema.—Alexander states that radiographic treatment of chronic eczema has been proved to be the most efficacious and most convenient of all plans. The quartz lamp is also valuable in certain obstinate cases. The old ointment treatment is still useful as an adjunct, and the tarry oils both in salves and lotions are used largely in all obstinate cases. In late years the tar of the distillation of anthracite coal has been largely used. There is a tendency to polypharmacy in some quarters, and a combination of wood tar, coal tar, resorcin, sulphur, camphor, menthol, borax, etc., in a lanolin base is recommended especially in obstinate eczema in childhood. While it is admitted that eczema stands in a causal relation with diathesis, metabolic disturbance and autointoxication, it cannot be said that attempts to reach the condition through internal medication and diet are as successful as might be expected. Finkelstein's attempts to cure the eczema of nurslings by special milks have thus far done little to usurp the position of external therapy.

Clinical Results with Thorium Emanations.—Plesch has reached a number of positive results with this substitute for radium emanations. Cardiac dyspnea is said to be at once relieved, and this relief persists for a long period. The emanations lower the blood pressure, but we do not yet know the mechanism of this action. The relief from dyspnea has been seen in pneumonia, angina pectoris and other conditions. Among other affections favorably influenced were such varied conditions as gouty paroxysms, suppuration in the accessory nasal sinuses, leucemia and certain cases of rheumatism. The thorium is given in solution only, this being luminous in the dark. The best mode of administration is by intravenous injection of 1 c.cm.

Therapeutics of Cold in the Head and Its Complications.—Lindenmayr for the past twenty years has invariably contracted cold in the head as soon as the winter cold is sufficient for a pronounced temperature difference between the heated room and the external air. The pharynx participates with a vexatious cough irritation. This disturbance lasts throughout the cold weather, and no permanent relief worth mentioning has been obtainable. The measures tested have been cocainizing the nose and throat, insufflations of powders and solutions containing borax and menthol, inhalations, etc. The only relief secured was through opiates—morphine and codeine. These mitigated the unpleasant sensations in the head and lessened the profuse secretion, without, however, affecting the course of the disease. The inflammatory symptoms, furthermore, always left in their wake the impulse to cough, and even the slightest fluctuations of temperature caused convulsive paroxysms, to control which several daily doses of morphine were sometimes required. Enough morphine was used to cause unpleasant effects, such as insomnia. Codeine had not these drawbacks but its action was much more feeble. Volland, of Davos, who has warmly recommended morphine for cases of this sort, gives from 10 to 15 drops of a 1 per cent. solution. Apparently some of the newer synthetic derivatives of morphine and codeine are indicated naturally in cases of this character; the author, however, does not appear to have made any systematic trial of any of these substitutes.

Metaparalytic Psychogenous Akinesia.—Toby Cohn uses this term to throw light on the nature of certain cases of facial palsy. He has already made public that in many cases of this affection, notably in childhood, complete return of electric conductivity is not attended by return of function or by complete return of the same. The condition is not quite the same as akinesia from disuse, although very similar. An analogous state of affairs is seen in certain cases of acquired deafmutism which persists without adequate reason. In all such cases the return to the normal is effected by reëducation. It does not follow that in all these cases there is a psychogenous inhibition for there are many mild cases of facial palsy in which nothing of this sort can be placed in evidence. These cases recover in a short time. Such cases are by no means peculiar to the facialis, and in fact may occur in any peripheral nerve. The psychogenous form described by the author appears to be peculiar to the facialis. Since the latter is the chief mimetic nerve and in intimate relationship with ideomotor manifestations it should be very largely dominated by psychogenous influences. This, however, does not appear to be the author's rationale for the existence of the phenomenon, but rather that of one of his critics.

Treatment of Acute Spastic Bronchitis in Early Childhood.—Goppert states that this affection is often looked upon as practically an infantile asthma, in which the inflammatory factor is naturally more in evidence than in older subjects. The infant after developing a slight catarrh in the bronchi is seized suddenly with dyspnea and impending suffocation. Instead of cyanosis, however, a death-like pallor supervenes. Cyanosis may be present before the age of four months but not afterwards. The spastic phenomena may persist for one or two days and when they finally subside only a slight bronchitis still persists. To relieve the spasm the author depends on a clysma containing chloral but always with the fear of overaction of the remedy. The patients are spasmophilic by nature and a milder antispasmodic is desirable. Of possible substitutes the author only mentions urethan for which antiasthmatic properties were once claimed. He has used it once with favorable effects and it is believed to be safe.

Chemotropism in Neoplastic Tissue.—Von den Velden's researches have shown the existence of a tropism

on the part of neoplastic tissues to arsenic, and it remains to be demonstrated whether or not this fact can be utilized in therapy. We know that cancerous tissue in the animal organism holds a special position in virtue of its altered chemical composition, of the presence of heterolytic ferments, of its feeble resistance to various chemical and physical irritants. Hence there are present chemical reaction possibilities and affinities which are not to be encountered in normal tissues. It is the province of chemotherapy to learn these affinities. In this connection, however, results have been obtained with potassium iodide which show how slight the differences are between the organotropy to tumors and that to normal tissues. This fact is becoming more and more corroborated, and seems to militate against the employment of many substances which in theory should possess the greatest significance. It is beginning to be held that chemotropism may be only a biophysical property due to alterations in diffusibility, which in turn depend on the texture of the colloid envelopes of the cells. Ostwald terms this subject the "membrane problem."

Radiotherapy of Uterine Myomata.—Falk states that if myomata, even large ones, show no marked tendency to hemorrhage they do not require treatment of any sort, but only close watching. In rapidly growing myomata the *x* ray treatment is contraindicated. The knife is indicated, irrespective of the condition of the heart. Neither are submucous myomata suitable for *x*-ray therapy. In young women myomata which bleed profusely should be subjected to operation and only exceptionally treated with *x*-rays. The latter act upon the tumors only through their effects upon the ovaries in causing artificial climacteric. In a surgical operation the ovaries may be left intact. In myoma with adnexa disease the rays must be used very cautiously, for they are contraindicated if inflammation sets in. Specially suited to *x*-ray treatment are interstitial myomata in women over fifty years of age. Gräfenberg, whose article follows Falk's, dissents from the latter's view of the indirect action of the rays. He claims that the latter directly affect the myomatous tissues. The indirect procedure is indeed the one to employ first, but it may fail to affect the ovary. Again, operative castration does not always cure myoma. This appears to show that the rays have a direct action on the tumor cells, a fact in harmony with what is already known concerning the direct radiography of neoplasms.

Ratbite Disease in the New World.—Proescher of Pittsburg, who has made an extensive research into the older literature of this affection, naturally described without any special designation, finds more cases on record in North America than in Europe. At first the affection was believed to be endemic in Japan and China. Cases appear in American medical literature as far back as 1840 (Wilcox, Watson), and are found again in 1868 (Gilliam), 1871 (Packard), 1872 (Earle), 1885 (Cook), 1886 (Banker), and 1902 (Evans). Others have been reported under their proper designation in the past two years, so that there are now seventeen on record in the United States. In the older literature two cases were reported in France in 1884 and one in Spain (1885). In the past year or two four cases have been reported in England and one in Italy. This makes an even twenty-five cases, which shows plainly that the affection is practically world wide. The author himself reports a personal case.

Münchener medizinische Wochenschrift.

April 23, 1912.

O-Legs and X-Legs.—Francke employs these vernacular terms to designate certain degrees of bowleg and knock-knee. He has long noted that many children outgrow both these deformities and that a large proportion of Bavarian women are knock-kneed to the point of deformity. He cites an expert opinion that these malformations were unknown to the ancient Greeks. In order to obtain light on the subject he made measurements of about 1100 individuals without using any sort of selection. The limbs were classed as o-legs, x-legs, and parallels. In reality, perfectly straight legs are impossible, and what are so called commonly are the mildest degrees of x-legs, while the legs which are technically most nearly straight are the mildest degree of o-legs. The latter always convey the impression of powerful members, well able to support the body, while x-legs sufficiently developed to be noticeable give the opposite impression of weak, insecure members. If in a natural relaxed position of the limbs the knees and ankles touch evenly without forcing, the subject has straight legs. If with the ankles touching there is as much as 2 cm. between the knees, the subject has o-legs in the first degree. If the distance measures 2-4 cm. the second degree is present. If with the knees touching, the ankles are 2 cm. apart, the first degree of x-legs is present, and beyond that the second degree. The author does not consider cases of either extreme with distances above 4 cm. The material measured included practically all ages. The conclusions formed from the measurements are in part as follows: The shape of the legs in respect to lateral deviations varies considerably with the individual's age and development, especially during childhood. Children born with o or straight legs tend to become x-legged while learning to walk. This persists for many years, and as a rule disappears in men up to the twenty-third year, occasionally up to the thirty-eighth year, perhaps in twenty-five per cent. Women, on the contrary, tend to remain x-legged throughout life, as a result in part of their wearing-apparel and partly because they never exercise and have weak muscular development. The absence of x-legs in the ancient Greeks and in savage tribes is due to the opposite conditions. In other words, x-legs in the adults are one of the consequences of civilization. In a general way, the author says, the presence of x-legs tends to imply physical inferiority.

Human Tails.—Schwarz refers to the work of Bartels in 1884 in compiling and digesting all the literature of this subject. He found upon record 116 cases of so-called tailed individuals, of which a considerable number had occurred in the female. The author has sought to extend the work of Bartels to the present day, but is able to find less than half a dozen new cases, including one of his own. It will be recalled that Bartels recognized no less than five different formations described as tails, viz., 1. The true tail, composed of accessory vertebræ, which could be regarded as atavistic outright or as a mere instance of supernumerary bones. 2. An apparent persistence of the embryonal tail, which is composed of soft tissues only. This may be explained by arrested development. 3. The so-called adherent tail—a caudate formation characterized principally by its want of isolation from the underlying sacrococcygeal structures. Like the preceding form, it may be reckoned among anomalies due to arrested intrauterine development. 4. A long, thin, free formation commonly known as a pigtail. A bone component, if present, shows no differentiation into vertebræ. Its existence may be accounted for on the score of embryonal overgrowth, the normal incitation to growth being accentuated. 5. This is a stump tail like class 2, but is characterized by the presence of differentiated and ossified vertebræ. Of the cases reported since Bartels, one by Virchow was an example of adherent tail, while Schaeffer's case was a pigtail and Waldeyer's case seems to have been an example of class 2, the so-called short, boneless tail. Finally, the author's personal case, the observation of which suggested this article, must be included among the pigtails. It occurred in a newly born male child.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

THE PULSE.—The pulse rate should not exceed 90 according to the requirements of most companies. It should be counted for a full minute, so that the frequency, quality, and rhythm may be determined with accuracy. It is advisable to observe the pulse and the condition of the arteries at the beginning of the examination before the circulation becomes accelerated through nervousness excited by the exploration of the chest.

Rapid Pulse.—The exciting cause in the majority of cases of rapid pulse is pure nervousness and likely to occur in healthy subjects. This nervousness is so pronounced at times that it may even bring on syncope, and it is not a very uncommon event for some robust individual to faint when the stethoscope is applied to his chest during an examination for life insurance.

At other times a pulse will become quickened in consequence of a hurried walk or rapid ascension of the stairs just before the examination. Then, again, the condition may easily arise as the result of the loss of a night's rest, a recent meal, or the drinking of strong coffee or tea.

On the other hand, a *persistently* rapid pulse usually indicates some organic trouble such as tuberculosis, diseased kidneys, arteriosclerosis, exophthalmic goiter, some early change in the brain or nervous system, or the excessive use of coffee, tea, tobacco, or alcohol. These conditions must be definitely excluded even in those cases in which the examiner finally succeeds in getting a pulse rate at 90 or under, but experiences difficulty in doing so.

Slow Pulse.—A pulse rate as low as 45 or 50 is of no consequence unless it is associated with changes in the walls of the heart or blood vessels, or with some cerebral disturbance. While these conditions should be carefully excluded after looking especially for fatty and atheromatous changes, it will be found that the slow pulse in most instances is functional in character.

Intermittent and Irregular Pulse.—Both of these conditions may be attributed to the same causes which accelerate the action of the heart. Many of the companies do not regard an intermittent or irregular pulse very seriously, even if persistent, in an individual under forty years of age and within the normal limits of weight, provided pathological lesions and foci of irritation in all the organs have been eliminated by a rigid scrutiny of the case. When the pulse is intermittent or irregular in an applicant over 40 or one who is a light or heavy weight, the risk should not be recommended unless the examiner is successful in finding a normal pulse later on.

The reluctance of the companies to insure risks with rapid pulse, so different from the attitude adopted in regard to the acceptable cases of intermittent or irregular pulse referred to in the preceding paragraph, is not difficult to understand. The intermittent or irregular action when purely functional, does not indicate any appreciable amount of extra work by the heart, whereas the never ending tax exacted from that organ during persistent rapid action is enormous. Every one would prefer to have the number of his heart-beats average under 80 than at some figure close to the upper border line, though both rates fall within the normal limits. What is to be expected when the rate exceeds 90? A heart averaging one hundred beats a minute will pulsate 14,400 more times a day than if it worked at the already high rate of 90. After making due allowance for the usual compensation for the regular every day labor, it is quite safe to assume that the organ will show the effect of this continuous strain when the supreme test comes during illness or accident.

Taking the Pulse.—The best time to take the pulse is after the questions on the application blank have been answered and before beginning the physical examination. While the examiner is plying the applicant with questions, the latter will be seated and his mind will be occupied in giving the requested information; he will, therefore, have a chance to recover from the effects of any unusual exertion or from the nervousness excited by novelty or dread of the examination. If the taking of the pulse is deferred until after the examination, it will have often become disturbed in consequence of excitement combined with the efforts called for by the examiner. Even when this precaution has been observed the pulse may be still found too rapid, or irregular or intermittent, on account of the nervousness. In this event, the mind of the applicant must be diverted by drawing him easily into conversation on some ordinary topic; this will answer the purpose better than giving him a paper or book which he will apparently read but the chances are that his thoughts will still be running on the prospects of the examination. If the last plan fails to succeed there is no alternative to seeing the applicant again in a day or so when he will have probably become more accustomed to a visit from the examiner. It is usually better if the visit is made unexpectedly instead of giving the subject chance to become apprehensive again.

Nervous applicants with disturbances of the pulse should be handled gently and receive all necessary attention, for if a slower and regular pulse is finally obtained and there is nothing more serious to account for the transient agitation of the circulation, they are acceptable and it would be manifestly unfair and unjust to debar them from the privileges of securing insurance on their lives by sending in an adverse report without making an endeavor to find them in their normal condition. In order to achieve this end, the examiner should be willing to give extra time and not spare any effort in clearing up the case.

When the examiner is finally forced to report a persistently rapid pulse, or one that is continuously intermittent or irregular in an applicant over 40 years of age or outside the normal limits of weight, he should not omit to state whether this finding was based on one or several observations. The home office will invariably ask for a further examination in these cases when there is nothing in the report to indicate that the examiner has made at least one subsequent attempt to find a normal pulse.

The Importance of the Family History.—At a meeting of the life division conference of the Insurance Institute of Hartford, on February 29 last, Dr. Arthur B. Wright, medical director of the Travelers' Insurance Company, discussed medical aspects of insurance and especially the important part played by family history of an applicant in influencing the physician's decision as to his fitness for insurance. In the early days of insurance good

health and appearance in the applicant and no evident tendency to disease were alone required. Family history and remote disease were not considered. At the present time the medical department is an important part of a life insurance company. The home office medical men have charge of the appointment of examiners, indulge in vast correspondence with them in order to elucidate the doubtful features of a life risk, discussing with and trying to pacify the agent in regard to declined risks, making trips to the various agencies, becoming personally acquainted with the field examiners and re-examining many of these cases, which only too often result in corroborating the findings of the original examiner. Many are the borderline cases requiring judgment, and unless the doubt can be dispelled, through correspondence and in every conceivable way, that element must be decided in favor of the company. Great stress is brought to bear by the agent when a penalty is imposed on any of his cases, even to eliciting the aid of the higher officers, and the argument is generally to the effect that the particular risk is a picture of health, is active in his business affairs, is a man of standing in the community and is financially in a good position. Family history plays an important part. One or more deaths from tuberculosis in a family, together with under-average weight, calls for a rejection by some companies or an advance in premium in companies doing a sub-standard business. Also early deaths from degenerative diseases such as apoplexy, Bright's disease, diabetes, arteriosclerosis, and organic heart disease. Where there is a history of two cases of insanity or cancer, a modification is generally called for. Personal history is also important. There appears to be a consensus of opinion that one attack of acute articular rheumatism is not a menace, but a history of two attacks must be taken into consideration. Attacks of appendicitis without operation, past history of syphilis, gall or kidney stones, gout, asthma, pleurisy, fainting spells, colics, fistula, etc., are all important and must be thoroughly investigated. As for the daily use of liquor, many applicants are prone to overestimate and are not liable to strike a mean average, while others are liable to underestimate. In deciding this question, the medical department has the assistance of the inspection report, which is made up by a layman. This lay report also assists greatly in determining the hazard as to occupation, financial responsibility, standing in the community, reputation, morals, whether the home life is pleasant and so on. An important aid in passing on medical examination reports is having a personal acquaintance with the examiner, particularly as to his competency. Too often the reports are meager. Therefore the necessity for correspondence and delay. There is no grave objection to using the family physician as an examiner except that occasionally he feels he is divulging confidential information regarding his patient. Wright says that it has been the experience of the medical department of the insurance company with which he is connected that the family physician not only makes a good examiner but is willing to give the company the benefit of all the inside facts pertaining to the case.

At the present time there is being worked out a mortality experience. It is the result of the combined efforts of the medical directors and the actuaries, about forty-five companies now working along these lines. The object of the organization is to promote medical science as applied to life insurance by presentation of papers, discussion and other methods.

A Clearing House for Health Departments.—Robert Lynn Cox says that life insurance companies are now realizing that they have greater responsibilities to the public than formerly. Consequently it has seemed that if they are to take part in the public affairs of the country at large, they might give consideration to the question of the death rate. So discussion of the question was begun, and one year ago it led to the establishment of a Health Bureau in the Association of Life Insurance Presidents. The health question is made part of the regular work. It was thought desirable to have information at first hand from the men looking after the health of the country. It was further thought that the way to obtain this information was to write to ask for it. Copies of annual reports were requested and any information concerning the activities and accomplishments of these men. Letters to this effect were confined to cities of over 5,000 in population, which made up a list of 540. To the surprise of the bureau only 126 replies were received. As it was imagined the purpose for regulating this information might have been misunderstood, further letters were sent explaining that the general interest of the bureau was more or less identical with that of health officers and asking if they would inform the bureau what they were doing in this line. Eighty-three replies were received to the follow-up letters. So the bureau heard from 209 health departments representing cities of 5,000 population or upward in the attempt to organize what might be termed "A Clearing House for Health Activities." The answers received were wholly unsatisfactory, and seemed to show that the chief thing to be said about the health work throughout the country is that the majority of health departments are inadequately equipped; that the men are inadequately paid, and are expected to do much more than they can do with the funds given to them. The speaker was of the opinion that a clearing house is not so much needed for the dissemination of information, as for stimulating interest and activity.—*Report of the Eleventh Annual Conference of Sanitary Officers of the State of New York.*

Mortality in Switzerland.—Bohren gives some data from the last census report for Switzerland. He says that decrease in mortality, which has been noted in Germany during the last half of the last century, is also marked in Switzerland. The following table gives the comparative figures of expectation of a life for children born in one of the three periods named:

	1876–1880	1881—1888	1889—1900
Males	40.6 years	43.3 years	45.7 years
Females	43.2 years	45.7 years	48.5 years

The lowering of mortality is especially marked in youths and young adults. Infant mortality, which is very high in Germany, is more favorable in Switzerland and has shown a tendency to become lower with each period.—*Zeitschrift für die gesammte Versicherungs-Wissenschaft*, March 1, 1912.

Italy's Ban on Foreign Insurance Companies.—The officers of the Paris Bourse have refused to list any Italian securities so long as that Government continues its repressive measures against foreign life insurance companies.

Book Reviews.

Pleurisy, Including Empyema and Bronchiectatic Conditions. By Alex. James, M.D., F.R.C.P.E., Consulting Physician to the Edinburgh Royal Infirmary and to the Edinburgh City Hospital. With Illustrations. Price $2.25. New York: William Wood & Company, 1911.

Dr. James states in his preface that he is "one of those who maintain that while the detection of a germ in a disease process is important enough the interpretation of the conditions which have permitted it to invade a tissue and to carry out there its morbid effects is immensely more so." In accordance with this thought Dr. James considers much more fully than is usually done the etiology of pleurisy, the anatomical and physical environment in which the disease occurs, and its predisposing and immediate exciting causes. Previous lung disease and such accidental causes as exposure to cold, trauma, disease of the neighboring structures, etc., are fully considered. A statement of physical signs and symptoms follows, numerous original observations or explanations being given by the author.

Similar presentation of empyema and of bronchiectatic conditions is given, such rarer conditions as streptothrix and leptothrix empyemata being described. A very conservative chapter on the medical and surgical treatment of pleurisy and empyema closes the book. Dr. James's volume is more the expression of one man's knowledge and observations than an exhaustive statement of other people's work. Its value, therefore, lies in stimulating original observation, and it should prove of greater worth to the advanced student of pulmonary disease than to an undergraduate.

Surgery and Society, A Tribute to Listerism. By C. W. Saleeby, M.D., F.R.S.E., Fellow of the Obstetrical Society of Edinburgh; formerly Resident Physician Royal Infirmary and Resident Surgeon Maternity Hospital of Edinburgh. Price $2.50 net. New York: Moffat Yard and Company, 1912.

The recent death of Lord Lister increases to a large extent the interest in his work at this time. This book reviews the progress of modern surgery and explains in detail its great debt to Lister. The work is a commendable addition to the list of publications designed to inform the general public on medical topics and is executed in quite an interesting and entertaining manner. The author has succeeded in restraining his enthusiasm to a large extent, though it still is irritating at times. The book is one of his best.

Manual of Practical Physiology, Designed for the Physiological Laboratory Course in the Curriculum of the American Association of Medical Colleges. By John C. Hemmeter, M.D., Ph.D., LL.D., Professor of Physiology in the University of Maryland, Baltimore; Member of the Deutsche Physiologische Gesellschaft. Price $2.50 net. Philadelphia: P. Blakiston's Son & Co., 1912.

This manual is designed to furnish the largest possible amount of practical physiology to the medical student in the limited time allotted and yet to cover that ground with the necessary thoroughness. The author has succeeded in devising a logically graded course which covers the ground in excellent fashion. The directions are adequate and the discussion is well advised. The illustrations as a whole are well selected but the general attractiveness of the volume is marred by the numerous typographical errors.

A Treatise on Tumors. By Arthur E. Hertzler, M.D., Ph.D., Associate Professor of Surgery in the University of Kansas, formerly successively Professor of Histology, Pathology, Experimental Surgery, and Gynecology in the University Medical College, Kansas City, Mo.; Attending Surgeon to the Halstead Hospital, Halstead, Kan.; and Consulting Surgeon to the Swedish Hospital, Kansas City, Mo., and St. Margaret's Hospital, Kansas City, Kan.; Member of the Western Surgical Association, the American Academy of Medicine, the American Anatomical Society, etc. Illustrated with 538 engravings and 8 plates. Price $7.00 net. Philadelphia and New York: Lea & Febiger, 1912.

There is no lack in the literature of medicine of books on tumors, but in many such the attitude of the writer has been that of a specialist in pathology and the clinical side has not been emphasized sufficiently to make the volumes directly useful to the practising surgeon. The only general treatise of this sort has been that of Bland-Sutton, which was, however, concerned chiefly with the clinical aspect of tumors in relation to their etiology and occurrence in both man and animals, and though revised through several editions no longer represents the modern standpoint of tumor pathology. On the other hand, the texts of Borst and Ribbert are mainly valuable to those who read German and are interested in the purely scientific side, and hence there has been a need for a clinical-pathological text which would bring together the important points in diagnosis. This need is admirably filled in many ways by this treatise of Hertzler's. Typographically the book is a credit to the publishers. The illustrations are numerous and on the whole satisfactory, though many of the microscopical drawings do not show all that their legends state and would hardly be valuable in teaching the microscopical appearances seen in the original sections. The photographs of patients, on the other hand, are especially good.

The volume opens with a general chapter on the biology of tumors. This is followed by a portion discussing the different types of new growths and including cysts and inflammatory tissues. The third part is devoted to an original consideration of various forms of neoplasms. The writer has evidently had considerable training in tumor pathology; but few will agree with him that the removal of a diagnostic section before operation is not justifiable, and we would like a fuller statement of the evidence that the chances of cure are lessened by the removal of such diagnostic material. From the patient's point of view it would seem that the removal of a small fragment of tumor for diagnosis is less likely to be followed by distribution of the tumor cells throughout the tissues than the constant handling and pressure on the tumor which occurs during its removal, by which process cells must certainly be impelled along the lymphatics. Recent studies have shown that large numbers of cells undoubtedly do escape into the lymphatics and tissues, but are promptly cared for by the phagocytic and cytolytic activities of the body, and there are many cases in which the removal of a small fragment for diagnosis will save the patient from a prolonged operation and even death from shock and hemorrhage, since the tumor may ultimately prove to be a benign growth, in which an extensive operation is unwarranted. The surgeon who has not met with such cases has done but little surgery. Examples will arise in the mind of any pathologist of even limited experience. The time required for making sections is overstated also. It is perfectly possible to make satisfactory frozen sections in two or three minutes, and rapid paraffin sections in four to six hours. The writer is correct in stating that a poor pathologist is as bad as a poor surgeon, but that a good pathologist may often be of great value to an operator who is untrained except in the technique of his trade if the latter will rely on the diagnosis furnished him from sections. There is little to criticise in any portion of the text of this book. About minor points there may be considerable difference of opinion, but such differences do not interfere with the successful operative removal of tumors. It is, for example, certainly not generally believed at present that the mixed tumors of the parotid are of endothelial nature. Nor is the difficulty in making a diagnosis of tuberculosis of the breast, even under the microscope, sufficiently emphasized, for many of the chronic inflammatory lesions of the breast simulate tuberculosis very closely, an inflammatory reaction about masses of retained fat with the production of typical Langhans' giant cells and areas resembling tubercles. There is also at the present time no reason to consider even the possibility of a close relationship between Hodgkin's disease and sarcoma, even though this is supported by "several surgeons." Except for such minor defects the volume is an unusually good one and should be widely useful. Its perusal will perhaps instill a certain caution into the operator who prefers to make his diagnosis on the operating table rather than at the bedside, and should lead to very much greater success in the operative treatment of tumors than now is obtained in this country. No clinic has set a higher standard than that at Rochester, where pathology and surgery go hand in hand, and the results there obtained can be duplicated elsewhere if the same scientific equipment is available.

The Taylor Pocket Case Record. By J. J. Taylor, M.D. Price $1.00. Philadelphia: The Medical Council Co., 1912.

This book supplies in convenient form and pocket size a means for recording the histories of 120 cases. A syllabus provides the important items which are to be considered in each history, and the blank for the first thorough examination, diagnosis, and treatment is followed by spaces for sixteen subsequent visits. The chief virtue of this book is its compactness.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held March 19, 1912.

DR. WALTER L. NILES IN THE CHAIR.

Pneumonia Simulating Localized Peritonitis.—Dr. H. F. L. ZIEGEL reported this case. (See page 942.)

Dr. ROBERT T. MORRIS said that surgeons were often called to operate for abdominal conditions simulating the first stages of pneumonia. He had been caught once, many years ago, and operated for appendicitis which was not present, but had not made the mistake since. He depended chiefly upon two signs for differentiating between abdominal signs of pneumonia and peritonitis. First, if one pressed upon the abdomen deeply and then removed the hand quickly, he did not elicit in pneumonia cases the symptom of pain characteristic of peritonitis. Second, early hypersensitiveness of the lumbar ganglia and semilunar ganglia, so common to peritonitis, did not belong to pneumonia. General disturbance of vital signs was more marked in early stages of pneumonia than in early stages of peritonitis. Recently Dr. Morris had been called to a hotel where two doctors were puzzled over a diagnosis. A third doctor called in had blamed the two for not making an immediate diagnosis of appendicitis with peritonitis; they called the speaker in a hurry, and had nurses and operative arrangements all made by the time of his arrival. Finding the case to be one of pneumonia, it required some diplomacy to disagree with the friend who had called him, and to agree with the two doctors whose feelings had been hurt.

Typhoid Fever Observed During the Incubation Period.—Dr. H. F. L. ZIEGEL reported this case. (See page 942.)

Experimental Demonstration of the Identity of So-Called Brill's Disease and Typhus Fever.—Dr JOHN L. ANDERSON, Director Hygienic Laboratory, and Dr. JOSEPH GOLDBERGER, Passed Assistant Surgeon, Public Health and Marine Hospital Service, presented this communication, which was read by Dr. Goldberger and accompanied by lantern slides. He said that he had the honor to present the results of some experimental work that had recently been completed by Dr. Anderson and himself and their results proved, as they believed, that the disease observed and studied in New York City by Dr. Nathan E. Brill, who described it as "an acute infectious disease of unknown origin" was identical with typhus fever. They had returned from Mexico just after Dr Brill had published his paper based on a clinical study of 221 cases of the disease which he characterized as "an acute infectious disease of unknown origin," and they were struck with the fact that Dr. Brill's description of the disease observed in New York was a splendid delineation of the disease which they had been observing in the typhus wards of the General Hospital in the City of Mexico. The writers were of the opinion that Brill's experiments with monkeys which were particularly susceptible to typhus, though extremely interesting and suggestive, were by no means conclusive. Their reasons for this conclusion were that the blood used for making the inoculations was taken from very mild cases and might have been of very low virulence and again the temperatures of the monkeys were not taken and the observation of monkeys without taking temperatures could not be relied upon to detect even a fairly sharp reaction and certainly not a mild one. About the time that Brill published this paper Louria, in the MEDICAL RECORD, August 26, 1911, published a study of 18 cases of fever, conforming to the type described by Brill, observed at the Jewish Hospital in Brooklyn, and he was disposed to regard these cases as typhus. Through the courtesy of Dr Brill, Dr. Leo Kessel, and Dr. Louria, they had been able to obtain material for inoculating rhesus monkeys, and their experiments demonstrated that it was possible to produce Brill's disease in these monkeys. They showed, as had also Ricketts and Wilder, Nicholle and his colleagues, Gaineo and Girard, and others, that rhesus and capuchin monkeys reacted in a definite way after inoculation with blood of the human cases of typhus. They had also found that fever was the only definite index of reaction, and it was this fact that deprived Dr. Brill's third experiment of any significance. As soon as they were satisfied that the monkey was susceptible to Brill's disease and that they could conserve the virus in passage, they prepared to test its relationship to typhus fever by a series of cross immunity tests. They proceeded to Mexico City where typhus was endemic in order to test the susceptibility to typhus of some of the monkeys that had recovered from an attack of Brill's disease and from there to send to Dr. Anderson in Washington, for a test as to their susceptibility to Brill's disease, animals recovered from an attack of typhus. Following this plan of procedure they had tested the susceptibility to Mexican typhus of seven rhesus monkeys that had recovered from Brill's disease, and the susceptibility to Brill's disease of ten monkeys that they had reason to believe were resistant to Mexican typhus, with the following result: Of the seven Brill's immune monkeys not one had developed typhus, although of nine healthy controls, not one failed to react, the reactions being well marked in seven and abortive in two. Of the ten typhus immune animals, not one had developed Brill's disease, whereas of eight monkeys inoculated as controls only one had failed to react. A diagram of the details of these tests was shown on the screen. They were of the opinion that the results justified the conclusion that an attack of Brill's disease conferred immunity to subsequent infection with Mexican typhus and also that the converse was true. In other words Brill's disease and typhus were identical. If this was true it was then clear that typhus had been endemic in New York City for many years and that this was equally true of other large American and Canadian cities, and there was reason to suspect that this was also true of Europe. Hereafter they must carry in their minds the picture not only of the grave and fatal forms of typhus recognized by their fathers, but also the mild and benign type so patiently studied and carefully depicted by Brill. It might be pointed out that a recognition of these mild forms of typhus gave them a rational explanation of what Osler had characterized as a "remarkable feature of this disease," namely, "the occurrence of a few cases at long intervals of time from other outbreaks and at great distances from any known foci of the disease." In other words, these mild forms constituted the missing epidemiological link between so-called sporadic cases. It might be interesting to learn that they had succeeded in transmitting Brill's disease from monkey to monkey by the bites of body lice and that they had been successful in propagating this disease in the guinea pig. In studying the epidemiology of these diseases they had concluded that the key to the mystery lay in some insect intermediary and they had considered the flea, the bedbug, the louse, the tick, and the mosquito as possibilities. They had been able to rule out of serious consideration all but the louse, and they had found that the louse served to explain all the important facts in the epidemiology of typhus. Transmission by the louse would explain why typhus was peculiarly a disease associated with misery and poverty, why it was a vagabond's disease, why it was a disease of jails and of armies, in brief, why it was a disease of the "unwashed." They believed that from their experiments they were justified in considering the fact as established that Brill's disease was capable of being transmitted by the bite of a louse. They also believed that their experiments justified them in concluding that typhus fever might be transmitted by the bite, not only of the body louse, but of the head louse as well.

Dr. N. E. BRILL said that he would confine his remarks to only the experimental and clinical aspects of the subject. Before introducing the discussion, however, he desired to express his tribute of praise and admiration for the extraordinary and brilliant results of Dr. Anderson's and Dr. Goldberger's investigations. He said that he knew of no other investigators who could have so ably carried on the work, nor of any institution devoted to research work where the work would have been so thoroughly done as it was in the Hygienic Laboratory of Washington. This tribute was due them because, with an abiding faith that Brill's disease and Mexican typhus were identical, they had continued the work after Dr. Brill had asked for other investigators than himself to make further attempts at inoculation experiments. Previous to September, 1909, it was held that typhus was non-inoculable to the lower animals. Nicolle and his collaborators, Comte and Conseil of the Pasteur Institute, went in 1909 to Tunis, Africa, where typhus fever was epidemic, and there studied the subject of the transmission of this disease. Apparently without knowledge of Nicolle's successful work in transmitting typhus fever to monkeys by the inoculation of human typhus-infected blood into such animals, Anderson and Goldberger, and the lamented Ricketts and Wilder proceeded to Mexico City for the purpose of making the same investigations. These investigations were conducted independently of each other, and without the knowledge on the part of either that another set of investigators was doing identical research work. Nicolle of France was the first to find that such an inoculated monkey was immune to further inoculaton tests, he was also the first to show

that the body louse was able to transmit the disease from man to monkey and from monkey to monkey. It was marvelous that the two sets of workers should have undertaken the same work, covered the same ground, and reached results so uniformly identical. This gave strong proof of the truth of these results. Dr. Brill said that he accepted without any arguments the facts of their results. However, he wished to call attention to certain features which made their results lack absolute proof. This was not done in a spirit of criticism, but in the hope that it would further add to the proof that Brill's disease and typhus fever were the same. In the first place all monkeys inoculated with human typhus blood did not respond to the infection. This difficulty applied with greater force to the attempts at inoculation with Brill's disease. In using virulent blood from two patients each suffering with a sharp and pronounced attack of Brill's disease for inoculating monkeys he had met with negative results. In fact Dr. Anderson and Dr. Goldberger succeeded only once in the first four monkeys used. It seemed to be much easier to get a reaction from monkey to monkey than from man to monkey, as shown by the success of Dr. Goldberger and Dr. Anderson in transmitting the fever to fifteen generations of monkeys. Why should this be so? There were no characteristic signs of typhus fever in the monkey after inoculation. He might lose his activity for a day or two and have some fever, but the fever did not run any determinate course nor was it the same in all the monkeys; it varied greatly in duration. There was no eruption which would prove the existence of typhus fever as in man. Fever was the only symptom by which the experimenters determined a successful transmission excepting the immunity test to further reaction by subsequent inoculation with similar virulent blood. This was very thin ice to tread upon as a support of absolute proof that Brill's disease and Mexican typhus were the same. The immunity test, however, admitted of no criticism and undoubtedly showed at least a relationship between the two diseases. He did not believe that it showed that the disease was typhus fever, because in the absence of a proven specific organism, such proof did not seem to him possible. It was well known that under apparently normal conditions monkeys ran a febrile course which might last some days. The handling of monkeys might produce an elevation of temperature. Monkeys in captivity were especially prone to acute and chronic tuberculosis which gave rise to continuous elevations of temperature covering wide fluctuations. The positive results of these experiments were then: (1) The ability by inoculating virulent blood to produce a fever in the monkey. (2) The ability to reproduce a fever successively in a series by transmitting the infected blood from monkey to monkey. (3) Monkeys thus infected were immune to the production of fever on subsequent inoculation. (4) Monkeys so immune showed no febrile reaction to inoculation with blood from Mexican typhus. (5) Monkeys inoculated with Mexican typhus showed no febrile reaction to inoculation with blood from one infected with Brill's disease. In order to complete their proof they should show what the effect of the inoculation of non-virulent human serum was on the monkey; whether the inoculation of human serum from a febrile non-typhus patient would produce a febrile reaction in the monkey, and finally it ought to be shown whether normal human serum was not a toxic factor when inoculated into a monkey and whether it acted as an immunizing agent against human blood from an infectious fever patient. They had furnished no proof of the relationship either of Mexican typhus or of Brill's disease with European typhus. These might bear an analogous position to European typhus, as did the paratyphoid and related infections to typhoid fever. Until these conditions were satisfied one could not say that the identity of Brill's disease and European typhus was absolutely established. He agreed, however, that these authors had undoubtedly shown the closest relationship, if not the identity, between these two diseases. When one viewed the subject from the clinical standpoint he would say that all the recorded knowledge of typhus fever was the result of experiences with typhus fever as it occurred epidemically. One looked in vain in monograph and text book for information of typhus as it occurred sporadically. Even Murchison made a bare mention of typhus in mild form. Dr. Brill then gave a description of typhus fever as he had seen it in the epidemics in New York in 1881 and 1893, and he followed this by a description of Brill's disease. The comparison showed marked differences, such as the absence in the latter of marked nervous symptoms, delirium, stupor, and coma, the absence of extreme prostration and tremor, and the invariable mild course and low mortality. This low mortality was unknown with any form of typhus, Old World or Mexican. He finally stated that there was absolutely no evidence of communicability in any of his cases to others of the same family or in the same house. He further stated that every known writer spoke of the communicable character of typhus fever, most writers stating that it was the most contagious disease. After citing a number of instances showing how the admission of one typhus fever patient to a hospital resulted in a general epidemic in the institution even when conditions were ideal, he stated that no case had ever developed in the wards of Mount Sinai Hospital notwithstanding that they had at least five times as many cases yearly as Murchison mentioned as having occurred in the London Fever Hospital in 1800 and 1801, when the diseases were communicated to so many others in its wards. If lice were the means of transmitting the disease it would seem inexplicable how in a house infected a husband could be afflicted with typhus and his wife escape. In about 300 cases of Brill's disease which he had observed no such family infection had ever occurred. While he thought that the proof of the transmission of typhus by lice was incontestable, he also believed that it could be transmitted in other ways. Finally it should not be forgotten that he had never said that he had pointed out a new disease, nor had he given his name to the disease; his sole object was to point out a disease which every clinician in New York insisted was a modified form of typhoid fever and which he thought he had conclusively proven could not be typhoid. He had been the first to indicate the resemblance of the disease to typhus, and in the absence of demonstrable cause he had called it "an infectious disease of unknown origin." When he reported two cases, one in 1901 and one in 1902, to the Health Department as typhus fever, the department, even after an autopsy, refused to regard it as such. In the light of such circumstances it was no wonder that he had a disinclination to regard the disease as typhus fever. He stated that if Brill's disease were typhus fever, it was entirely different clinically from typhus fever and represented a typhus fever so modified by modern conditions of improved sanitation as to render it a disease shorn of its qualities of a deadly scourge, deprived of its attributes of virulence, of its communicability, and of fatality.

Dr. L. Louria of Brooklyn said that he was thankful for their kind invitation to take part in the discussion of the paper, but that he could hardly add to the comprehensive and admirable description of his predecessors: the detailed experimental evidence adduced by Drs. Anderson and Goldberger, and the clinical picture so ably delineated by Dr. Brill, to whom they were indebted for a most critical observation calling their attention to a set of cases which they were prone to regard and treat as atypical, aberrant typhoids. His personal experience with the so-called Brill's disease was confined to some thirty-odd cases seen in private and hospital practice. And he spoke here this evening, no doubt, because, being a Russian, he had studied and practised medicine in the land where typhus was endemic, and was thus able to draw a comparison between the classical typhus of Russia and the debated Brill's of New York. When he first came to this country he found that even his countrymen who had emigrated some years before, and upon whom he had expected to rely for a clientèle, displayed a hesitancy in calling upon a foreigner to diagnose and treat American diseases. And this attitude, though harsh and at first seemingly unwarranted, he soon recognized as somewhat justifiable, for, though labeled with a common nomenclature, he found that the acute infectious diseases, modified probably by their environment, climatic, hygienic, or sociologic, ran a different course from that which he had learned and observed abroad. They were prone to conjure up the descriptions of typhus fever of the text-books which pictured the disease of fifty or one hundred years ago, and naturally so, for typhus was a comparative stranger to New York. The last visitation dated back some thirty years, and hence it came perhaps as a shock to learn that Brill's and the much dreaded typhus were one and the same, though appearing in an unfamiliar guise. Synonyms of typhus, as jail fever and famine fever, indicated the importance of the conditions favoring the outbreak of the disease. Unhygienic surroundings and privation were responsible for the terrible ravages of this disease in the past, while modern sanitation in peace and war had materially modified the outbreaks of the disease of the present day. Reviewing the literature the speaker ran across numerous reports of recent epidemics of a mild typhus. Thus Beard, in the *Edinburgh Medical Journal*, reported an outbreak in the City of Carlisle and concluded that typhus might be met with in a very mild form. Uttujaminoff reported a series of cases which, following the method of Jovorovsky, were treated with three or four drops of tincture of iodine three or four times daily. In forty-five cases thus treated there

was no fatality. It was inconceivable to ascribe to such small doses of tincture of iodine the property of a therapia sterilisans magna, and it was but rational to conclude that here, too, a mild form of typhus was encountered. Again Verekundoff in *Russkii Vrach*, August, 1911, reported an epidemic of one hundred and twenty cases of a mild typhus varying from the well-known typical picture, having a slower onset, less characteristic rash, etc. And, despite the unfavorable sanitary hygienic surroundings, the mortality had not exceeded 8 per cent. Africa furnished us with an epidemic of mild typhus, and the so-called Manchurian typhus apparently belonged to the same group. Then might one not grant to cosmopolitan New York a like possibility? The clinical picture of Brill's disease following closely that of typhus, was so characteristic that once seen it was never forgotten, so much so that their internes and nurses could readily make a correct diagnosis. It had been asked why it was that Brill's disease was found almost entirely in Slavs, particularly in the Russian and Polish Jews. This might be answered in two ways: (1) that most of the patients were of this nationality; (2) that when these cases came into other institutions they were not recognized as such. He once had had occasion to refer three cases of Brill's disease, the only instance which showed distinct evidence of contagion, to another hospital, and learned that they were not recognized but were regarded as atypical typhoids. It seemed to him that the profession at large was not well enough acquainted with this clinical entity and that Dr. Brill, in justice to the profession as well as to himself, should have his articles, which contained admirable descriptions of the disease, disseminated more widely.

Dr. William H. Park wrote that he had gone over the temperature charts with Dr. Anderson and the proofs seemed to him conclusive that the monkeys suffered from a true typhus fever. He did not see how it was possible to explain the immunity which developed in any other way.

Dr. W. Gilman Thompson said that his excuse for saying a few words in discussing the paper was because he had had some experience with typhus fever and so-called Brill's disease. Some years ago at the New York Hospital they had a few cases of typhus fever. As illustrating the fact that the disease was not always contagious to an active extent one patient came to the hospital with the disease, when there were no known cases of typhus in New York City. The symptoms he presented were those of typhoid fever, and this patient was treated in the general wards of the hospital and handled as a case of typhoid fever. It was only on the tenth day, when the patient made a prompt recovery, that it was learned that he came from a house where there were a number of typhus fever patients. Those in the ward did not contract the disease. Dr. Thompson said he had seen a few of the cases that Dr. Brill had described. Probably many of the cases of typhus fever had been overlooked because of the absence of an active epidemic. He took issue with Dr. Brill; the older writers laid great stress upon the contagiousness of the disease and in those days but little stress was laid upon hygiene. They should remember the contagiousness of yellow fever, cholera, etc., diseases which were the dread of the whole world until modern science and sanitation relieved them of their terrors. The first time Dr. Thompson had seen a case of Brill's disease he regarded it as a mild case of typhus fever. However, in the consideration of typhoid fever one should not overlook the existence of the paratyphoids and the colon bacilli forms which modified the fever, and showed the great variations they had in the disease which they all recognized.

Dr. William H. Thomson said that he began his medical career in 1859. In the previous year the health officer, the general physician of the hospital, and three assistants died of ship fever. Several vessels were boarded and found to be in a dreadfully unsanitary condition. Dr. Thomson took charge of the hospital in 1859. These ships landed batches of patients with true typhus fever or ship fever or contagious fever, and he carefully studied them. They all corresponded to the description of true typhus fever. He left the quarantine hospital in 1862 and had since been connected with Bellevue Hospital. They had an outbreak there of typhus; it was the same fever that he had studied at the quarantine hospital. Four promising internes fell victims to it. One could not confound these cases with the cases he saw at quarantine.

Dr. Matthias Nicoll, Jr., said that in 1893 and 1894 there appeared many cases of typhus fever and he saw about 100 cases at the Hudson Street Hospital. He had seen very few cases of the modified type of the disease, but from the description given the disease seen now compared with the type seen then, although there was not a great deal of resemblance. It seemed rather remarkable that a disease occurring in such an epidemic form in 1893 and 1894, a rather fatal disease, should become so modified in its type as was claimed.

Dr. E. Libman said that up to 1906 blood examinations were made of these cases and showed that they were neither paratyphoids nor typhoids. Dr. Edward G. Janeway pointed out the fact that they should be on the alert in looking out for typhus fever. A supposed case appeared at the hospital, the Board of Health was notified, but no response was made. In 1902 and 1903 the same thing happened. While it was clear that they were dealing with typhus fever, or a modified typhus, the Health Department took no notice of it. If a disease occurred in the wards of a hospital, and if the windows were opened, authorities abroad stated that the disease would not spread.

SECTION ON SURGERY.

Stated Meeting, Held April 5, 1912.

Dr. Lucius W. Hotchkiss in the Chair.

Resection of Elbow for Tuberculous Osteomyelitis.—Dr. Aspinwall Judd presented this patient, one of a series of cases of total destruction of this joint in which he obtained good function. When he opened up the joint he saved the muscles and attachments. The boy was operated upon twice, the first time fifteen months ago, the second time eight months ago, for what seemed to be tuberculous involvement. A radiograph showed the condition very clearly. The joint was about the size of the knee. The boy ran a septic temperature. Since the last operation he had gained thirty pounds in weight.

Sarcoma of the Inferior Maxilla, with Complete Resection of the Right Half—Good Function.—Dr. Aspinwall Judd presented this patient, a woman, whom he saw in January, when she had a tumor mass involving the entire one-half of the inferior maxilla. A diagnosis of osteosarcoma was made. At operation he had to remove the sublingual and the submaxillary glands as well as the entire chain of glands as far as the articular process. All the muscular attachments on the right side were practically gone. There was very little distortion; the jaw was rotated to one side. The patient had very good control. The entire chain of glands was removed.

Sarcoma of the Superior Maxilla, Resection, Recurrence, X-ray, with Recovery.—Dr. Aspinwall Judd presented a man upon whom he had operated seven years ago for sarcoma of the superior maxilla of the left side. The cavity left was filled with paraffin. There followed a recurrence and the patient was treated with the *x*-ray for two years. Splendid results were obtained and to-day there was apparently nothing remaining except a lump which was supposed to be a fibroma. This was, in fact, an *x*-ray and not a surgical case. These spindle-celled sarcomata acted best under the use of the *x*-ray.

Pneumococcus Infection of the Hip and Shoulder.—Dr. Aspinwall Judd reported a case which he considered a novelty. One year ago he saw a patient whom he thought was suffering from a septic arthritis of the hip. At operation he found a pneumococcus infection and the patient left the hospital apparently cured. One month later the patient returned with a temperature of 105° and 106° F. and symptoms of some bone infection. This time he found a pneumococcus infection of the shoulder joint. At no time had he had any pulmonary infection.

Strangulation of Undescended Testes.—Dr. Charles E. Farr presented a baby, seven months old, which was to illustrate his paper. Three days before admission to the hospital the patient vomited and cried and seemed to be in pain. Two days before admission a swelling in the left groin was found. The bowels moved. The pain became so intense the child lay with its legs drawn up. A diagnosis was made of a strangulated bubonocele because of the swelling in the groin. When in the hospital a diagnosis was made of bubonocele and lymphadenitis. The diagnosis, however, was uncertain. When the child was anesthetized they found that the testes did not come down and they made a guess diagnosis of a strangulation of the testes. When an incision was made they found the swelling inside the canal and extending outside the ring. There free fluid and the testes were found at the bottom of the vas completely twisted to 360 degrees. When the testicle was untwisted the color did not at once return. The child was now in perfect health.

The Value of Warmed Anesthetics.—Dr. James T. Gwathmey read this paper. He said that we were indebted to Dr. Seelig of St. Louis for the opportunity to discuss again the value of warmed anesthetics. Dr. Seelig had written an article on "The Fallacy of Warmed Ether

Vapor" which had appeared in the *Interstate Medical Journal*, September, 1911, in which he had stated that one was almost impelled to adopt some procedure by which anesthetics could be warmed, although he disliked to add any further complicated and expensive apparatus to the already complex armamentarium of the operating room. After reviewing Dr. Seelig's experiment the author pointed out that it only proved that the tidal air of the lungs was not changed by the temperature of the anesthetic as given by Seelig's method. The deduction that warmed anesthetics were unnecessary was not warranted by this experiment. In other experiments Seelig had stated positively that he was unable to warm the ether vapor. He had stated that, despite the fact that ether vapor was driven through a temperature approximately 100° C., it radiated its acquired heat so rapidly that at a distance of one meter from the source of the heat it had practically assumed room temperature. And from this he concluded that one need not concern oneself much with securing a special warming apparatus. In order to test the validity of Seelig's experiments a special glass tube was blown with openings 10 cm. apart, into which thermometers were inserted. At the openings and over the thermometers a rubber collar was placed to insure against leakage. A thermometer was also used to determine the room temperature. This glass tube was attached to a heater immersed in a water bath which was heated and kept at the boiling point by an electric hot plate. The Gwathmey vapor apparatus was attached to this heater, compressed air was then passed through the ether bottle, the vapor again passing through the water bottle of the vapor apparatus, and then through the heater, and through the tube to which were attached the thermometers. Readings were made every five minutes for an hour, and from the results it was seen that ether vapor might be heated, and the heat maintained for any length of time and delivered to a patient as determined by the anesthetist. About the same amount of ether was used in this experiment as was usual in practice. In another experiment on another occasion, using a rubber tube of the same length as was used in actual practice, and with a thermometer placed at the end of this tube and also a thermometer for room temperature, and passing compressed air through for one hour, it was found that at the end of 55 minutes the temperature was raised 6° C. higher than room temperature. It was then passed through the ether and water bottle of the vapor apparatus without the heater and readings kept for 45 minutes. These readings showed the desirability of heating the ether vapor. At the end of 45 minutes the vapor was approximately 16° F. below blood temperature. After reviewing his laboratory and experimental work with chloroform, nitrous oxide and oxygen, and ether, and his experiments to determine the value of passing ether vapor through water, which he said had been more than verified by Dr. S. G. Davis of Baltimore, Dr. Teter of Cleveland, and others, he concluded that with warmed anesthetics using chloroform, ether, or nitrous oxide and oxygen, not only was the value of the anesthetic increased as regarded life, but the after effects were reduced to a minimum. Dr. Teter used a lamp to heat the gas and oxygen and had noted a number of times the difference between the warmed gas and the cold. Dr. Davis had made a valuable contribution to the literature of warmed anesthetics by a series of observations on human subjects undergoing surgical operations. In 26 patients anesthetized with warm ether vapor there was a loss of temperature averaging 0.20° F., as against a loss of 1.02 in 140 cases anesthetized under similar conditions with the open drop method. The shortest period of anesthesia in which the temperature was noted was 40 minutes, the longest 4¼ hours. The temperature was taken by rectum immediately before starting and immediately after the removal of the anesthetic. These experiments of Dr. Davis on human beings undergoing surgical operations were more conclusive than the experiment of Dr. Seelig on a dog. With the idea of testing the value of heat in the more rapid recovery from the anesthetic, and of preventing nausea and vomiting, the writer had anesthetized three animals at the same time under glass receptacles for ten minutes, afterwards placing them in receptacles, one at 0° F., another at 100° F., and the third, as a control, in the room temperature to come out of the anesthetic. The animals were changed in position for three successive days. In each instance the animal in the warm chamber made a slightly more rapid recovery than the others. The animal in the cold box came out in chills, while the one in the room temperature came out a close second to the one in the warm box. With reference to human beings, it might be stated that by applying hot towels to the patient's face or aerating the lungs with hot air toward the close of the anesthesia the patient was brought out quickly, and this procedure aided considerably in modifying the unpleasant after effects. The results of the laboratory experiments were emphasized when one took into consideration Dr. Davis's clinical experiments and the fact that the patient's temperature was necessarily lowered in the majority of instances by surgical operation. It was to be hoped that improved technique would be adopted in more clinics. He hoped that the method would be tried out conscientiously. With their knowledge of warmed anesthetics and improved surgical technique it was unnecessary ever to return a patient to bed to have him complain of being cold or uncomfortable.

Dr. A. G. DAVIS of Baltimore said that Dr. Gwathmey must have spent many hours of laboratory work and thought in the preparation of his paper. As to the value of warmed anesthetics, there was no question about it, whether the anesthetic was ether, chloroform, or what not, for this was the proper thing to do. Dr. Davis presented many drawings which were from the laboratory experiments on dogs, showing temperature curves when cold vapor was administered, when warmed vapor was administered, etc. He also showed charts of temperatures when warmed and cold vapor was given in complete amputations of the breast in six cases, three with the cold and three with the warmed, which showed conclusively the value of the latter.

Direct Transfusion of Blood as a Preliminary Step in Certain Surgical Operations.—Dr. A. L. SORREL read this paper. (See page 835.)

Personal Observations on Wassermann's Experiments on Mouse Tumors.—Dr. OTTO G. T. KILIANI read this paper. (See page 789.)

Strangulation of Undescended Testes.—CHARLES E. FARR presented this paper. He stated that the phrase "strangulation of the testes" was rather loosely used to indicate a severe grade of interference with the blood supply of that organ. It might be brought about by torsion, compression, kinking, or stretching of the cord. When one considered the exposed position of the testis, its great mobility, and especially its long stalk or pedicle in which its small and tortuous vessels were conveyed, the wonder was that more cases of strangulation were not more frequently reported. The first recorded case was that of Delasiauve in 1840. Nicoladoni, in 1885, reported two cases of his own and several from the literature. Since that time the number had rapidly increased, and now amounted to about 100 cases. Of these practically 50 per cent. were in frankly undescended testicles, while a considerable proportion of the remainder gave some evidence of late or mal-descent. Many others showed abnormalities of development. In fact, most of the authors had considered abnormal descent or development a necessary condition of strangulation. On the other hand, carefully observed cases had been reported in which no such condition was present. It was well known that the condition of torsion of the cord could not be produced in the normal human cadaver, though it was frequently done to stallions to produce atrophy of the testes and sterility. The probability was then that no one anatomical defect could be called the necessary predisposing cause to strangulation. True strangulation by occlusion at the ring was hardly possible to imagine, although a few cases had been reported of compression of the kinked or looped cord between the body of the testes and the pillars of the ring. A few more were recorded in which the circulation was shut off by excessive stretching of the cord *en masse* when the inguinal testis was forced out of the external ring. The great majority of cases, however, were strangulated by torsion, either of the testes on the epididymis, the epididymis on its own axis, or, by far the more often, the testes and epididymis on the cord. This latter condition might occur within the tunica vaginalis, or very rarely without it, in which case the tunic and testes were both strangulated. In this paper those cases in which a strangulated hernia was present or those cases presenting fully descended testes were not considered. Cases of inflammation without strangulation and unoperated mild cases were also excluded. Strangulation might occur at any age, but it was most common during the ten years following puberty. It might affect either testicle. Undoubtedly it led to aseptic gangrene, abscess, or simple atrophy. In animals the gland was completely lost after 22 hours of strangulation, while in man 75 per cent. of the cases had to be castrated; of the remaining 25 per cent. nearly all sloughed or atrophied. In strangulation by torsion the conditions usually present were: (1) A free-lying testis, like an ovarian cyst on its pedicle. If the twist was of the testis proper the true mes-orchium must be abnormally long. If the testis and

epididymis turned upon the cord, the mes-epididymis must be long and covered on each side with reflections from the tunic. More often the testes and epididymis hung free on the cord. In this case the mes-orchium was said to be absent, but more properly speaking it was abnormally long. (2) The relative size and position of the testes and epididymis varied greatly, the latter lying above, below, or even in front of the testes after the twist was reduced. The two might be quite separate, with separate portions of the cord leading to each. The testis might be, and frequently was, flattened and abnormal in shape and position, as was also the epididymis. (3) The tunica vaginalis was usually well developed and capacious, frequently containing fluid and usually communicating with the general peritoneal cavity. (4) The cord might be abnormally short or long and was usually well developed; but it might be flattened out and even divided into two quite distinct bundles, one containing the vas and its arteries, the other the spermatic vessels. A history of repeated attacks of pain was common and in some cases undoubtedly twists had recurred repeatedly, being reduced without operation, or in a few cases spontaneously. The testes in these cases had usually atrophied. The mechanism of torsion was obscure, each author advancing a theory to fit his own case. All laid great stress on trauma, even though this were of the lightest. Walking, jumping, straining, even the violent contraction of the cremaster had been advanced as the immediate cause. One author believed that the torsion was of slow development and that symptoms only developed following the last partial turn which completed the obstruction. If this were true one would expect to find occasional twists of the cord in the numerous operative exposures for hernia, etc. Adhesions would probably form and the twist would probably remain after the cord was removed, whereas, as a matter of fact, it nearly always disappeared. In some cases the torsion occurred during sleep, this would presumably, but not necessarily, exclude trauma. In a rather noticeably large percentage of cases there was a distinct history of increased intraabdominal pressure immediately preceding the onset of symptoms. The force might act upon the different elements of the cord as they approached the internal ring, but more probably it was exerted through the open funiculus directly through the weak posterior wall of the canal. A coincident contracture of the cremaster very likely pulled one part of the cord more than another, thus starting the twist. It was easy to see how a quarter turn of the testis might be present at any time and the flattened testis would naturally lie on its side in the confined space of the canal. A very slight turn would thus suffice to give another quartet of a turn. With the onset of torsion great congestion ensued, accompanied usually by a serous transudate, more or less sanguinous in character, into the tunica vaginalis. The increasing congestion dilated the veins, changing their lengths, and thus again increasing the tendency to twist around the unchanged arteries and vas. In general, the cord did not untwist spontaneously, perhaps because of the irregular shape of the testes and epididymis allowing rotation in one direction only. In several cases there had been an apparent reason for the maintenance of the twist, which was easily reduced and showed no tendency to recur. In one case, however, a tendency to recur was noted. The number of twists varied from a half turn to four or more complete turns, averaging about two. Curiously, the left testis usually tended to turn clockwise, the right anti-clockwise. This might possibly be due to the above-mentioned pull on the different elements of the cord or to the natural tendency of the heavier and larger body of the testis to fall downward and outward towards Poupart's ligament as it came through the internal ring. He had found no record of supravaginal torsion of the cord in an inguinal testis. In the descended cases it must imply simply a very loose connection between the dartos and the parietal layer of the tunic. It seemed fair then to assume that torsion of the undescended testis was largely due to intraabdominal pressure, acting directly or indirectly upon the cord and testis, an attempt, perhaps, on nature's part at a forced descent, and comparable to the passage of the fetal head through the pelvic outlet. The symptoms of torsion strongly imitated those of strangulated bubonocele, even in some cases to the extent of obstipation. Generally, however, the symptoms were less severe, shock less in evidence, and temperature and pulse only slightly elevated. Vomiting was apt to occur repeatedly, and the pain was exceedingly severe. This with the testicle missing from the scrotum should lead one to suspect the condition, but remembering the frequent coincidence of a hernia with possible incomplete strangulation, one was never quite sure of the diagnosis. Less than 10 per cent. of the cases had been correctly diagnosed, a few more had been guessed at, but the great majority had been treated first for orchitis, epididymis, or strangulated hernia. The treatment in the undescended cases was obvious; immediate operation offered the only hope of saving the testis and relieving the patient of intense suffering. The prognosis for the patient was always good, or the testis nearly always bad except in very early and very mild cases. The testes removed had all shown intense passive congestion, ecchymosis, and subcapsular hemorrhage, degeneration of the testicular substance, and varying degrees of necrosis, and even gangrene. Infection was rarely present.

Dr. MARTIN W. WARE said that infection was a part of the torsion of the cord. He had had six cases of strangulation of undescended testes, but, unlike Dr. Farr's, his cases occurred among the old, one patient being as old as sixty-two years. In some cases the bacteriological examination showed infection, and one in particular was seen and examined by Dr. William W. Keen of Philadelphia. Some years ago Dr. John Van der Poel undid a twist, replacing the testes, and no atrophy followed. Nearly all of these cases occurred in adults about the age of puberty. Dr. Ware passed around some drawings to illustrate the condition.

Two Instruments for the Reduction of Fragments in Fractures (Preliminary to Plating).—Dr. JOHN C. A. GERSTER presented these instruments.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

AT a stated meeting held April 26 Dr. ROBERT N. WILLSON, JR., demonstrated slides illustrating "Lesions of the Spinal Cord from a Case of Pernicious Anemia." The patient was a woman whose blood yielded a Wassermann reaction and who presented, in addition to symptoms and blood changes of pernicious anemia, also symptoms of posterior spinal sclerosis. After death the spinal cord exhibited characteristic degenerative changes of a diffuse character involving especially the ganglion cells and columnar fibers. Other members of the family presented clinical features suggestive of a syphilitic origin. Dr. ALFRED GORDON presented a specimen of "Spina Bifida Complicated by Tuberculous Meningitis." The patient had been a child five weeks old and after death, in addition to other lesions, a tuberculous focus was found at the apex of one lung. Dr. Gordon presented also a specimen of "Extensive Hemorrhage into the Brain." The patient had been a man about thirty-eight years old, who had complained of recurrent headaches, and who while reading in the recumbent posture became comatose, with slight signs of hemiplegia, and soon died. After death a copious extravasation of blood was found in one lateral ventricle. Dr. E. M. WILLIAMS described "A Form of Degeneration of the Brain Known as Etat Vermoulu." The disorder occurs especially in association with arteriosclerosis, and is characterized by superficial and deep-seated losses of tissues in areas of varying, though not great, size. Drs. E. A. SPITZKA and H. E. RADASCH presented a communication entitled "The Brain of the Recently Electrocuted." They described a condition that they had observed constantly in the brain stem of electrocuted individuals and not under other conditions, and consisting of multiple rarified areas surrounding small blood-vessels and which in turn were bounded by dense areas. The changes were believed to be due to electrolytic effects induced by the powerful electric currents employed and conveyed through the blood stream. Dr. WM. G. SPILLER presented a communication entitled "Some Pathological Conditions Complicating Operations for Tumor of the Brain." He pointed out that in some cases in which operation, radical or decompressive, has been performed for the relief of symptoms of brain tumor, and in which there is reason to anticipate a satisfactory result, death at times occurs suddenly. In some of these cases it may be that there had been gradual distortion or displacement of parts of the brain from the presence and extension of the new growth, and with the reestablishment of more nearly normal relations fatal interference with respiration or circulation results. Thus he has observed undue separation of the occipital lobes and displacement or deflection of the pons. In other instances hernia of the brain becomes an unpleasant or even a fatal complication. This is sometimes due to swelling of the brain tissue and in other instances to an actual increase in the tissue of the brain. Dr. W. WAYNE BABCOCK described "A Quick and Accurate Method of Determining the Specific Gravity of Minute Quantities of the Cerebrospinal Fluid." The procedure consists in introducing a drop of the fluid to be examined into a succession of test tubes containing mixtures of glycerin and water and hav-

ing known specific gravities until the drop neither rises nor falls. In this way it was found that the specific gravity of the cerebrospinal fluid varies little from 1.006 under the most varied clinical conditions at all ages. The information gained in this way furnishes a guide as to the specific gravity of the fluid employed by intraspinal injection for the induction of anesthesia, in accordance with the desire of the operator that the fluid should rise to a higher or fall to a lower level.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS

BOARD OF MEDICAL EXAMINERS, SOUTH DAKOTA

Huron, January 10 and 11, 1912

ANATOMY, EMBRYOLOGY, AND HISTOLOGY.

1. What are the distinctive types of embryonal cells? In the formation of what part of the anatomy is each type mainly concerned?
2. Describe briefly the histological structure of the kidney.
3. Name the principal subdivisions of the lymphatic glands of the head and face and give their respective location.
4. Give origin and distribution of the great sciatic nerve.
5. Name the extensor muscles of the foot, give origin and insertion of each.
6. Where is the circle of Willis? Name the component parts.
7. Name the branches of the radial artery in the forearm.
8. What structures would you sever in making an amputation of the arm midway between the shoulder and elbow?
9. Describe a dorsal vertebra.
10. Give the nervous supply of the heart

PHYSIOLOGY.

1. Describe the glands and villi of the intestines.
2. How is heat produced in the body?
3. Describe cholesterin, and state where found, and also its function.
4. Mention some of the ductless glands.
5. What is the function of the retina?
6. How is the sensation of sound conveyed to the brain?
7. What exercises injuriously affect the heart? And why?
8. What is the normal ratio of heart pulsation to respiration?
9. Give some examples of morbid reflex action.
10. Give the reaction of the following fluids, and state the cause of the reaction: (*a*) gastric juice, (*b*) urine, (*c*) pancreatic juice, (*d*) blood.

CHEMISTRY.

1. Give chemical formulæ for common salt, nitrate of silver, sulphuric acid, hydrochloric acid, and nitric acid (*b*) Complete following:

$$HCl + CaCO_3 =$$
$$Zn + H_2SO_4 =$$
$$Ba + 2HCl =$$

2. How would you test for hydrochloric acid in gastric juice? (*b*) Give a test for lactic acid. (*c*) What are the normal limits of total acidity and free hydrochloric acid in gastric juice?
3. Give common names and properties of mercurous chloride, corrosive sublimate. (*b*) Mention two easily applied tests that will distinguish one from the other. (*c*) How would you treat a case of poisoning from the latter?
4. Define specific gravity. (*b*) What are the normal limits of the specific gravity of urine? (*c*) How would you determine the total amount of solids in the urine, knowing the specific gravity?
5. Give the characteristics of the urine in diabetes mellitus, cystitis, and chronic parenchymatous nephritis. (*b*) Give and describe a reliable test in each case.

PATHOLOGY

1. What is the pathology of acute lobar pneumonia? How does it differ from bronchopneumonia?
2. Give the pathology and diagnosis of typhoid fever. (*b*) What connection has typhoid fever with the formation of gallstones?
3. Give the pathology of osteomyelitis.
4. Differentiate pathologically between a typhoid ulcer and a tubercular ulcer of the intestine.
5. What is pathological leucocytosis? (*b*) Name three physiological conditions which produce leucocytosis.
6. What is ascites and state its causes.
7. Differentiate pathologically between osteomyelitis and inflammatory rheumatism.
8. Differentiate between fatty degeneration and fatty infiltration.
9. What is meant by metatastic growth?
10. Give the pathology of parenchymatous nephritis

BACTERIOLOGY

1. Describe the technique of making a microscopic examination of urethral pus for gonococci.
2. What is (*a*) an antitoxin? (*b*) A bacterial vaccine?
3. What do you understand by the term anaphylaxis?
4. How would you make a culture from a throat in a suspected case of diphtheria? Describe the growth as it appears on the culture media. How would you stain the bacteria? What is the appearance of the diphtheria bacillus under the microscope?
5. A dealer in hides has a carbuncle on the back of his hand. Tell how you would make and grow a culture for diagnosis. Describe briefly the organisms you would expect to find

THERAPEUTICS AND PRACTICE

1. What do you understand by cardiac insufficiency? Give some causes and symptoms.
2. How would you treat a case of lobar pneumonia during the first twenty-four hours of the disease?
3. Give causes, symptoms, and treatment of acute anterior poliomyelitis (infantile paralysis). Would you quarantine the patient? If so, for how long?
4. If a patient came to you complaining of "indigestion, distress, and pain in the stomach" how would you proceed to make a diagnosis? What questions would you ask? What physical examination would you make?
5. Give full directions to the patient and family for the care of a case of pulmonary tuberculosis in the home.
6. Give directions for the artificial feeding of an infant.
7. Give diagnosis and treatment of pleural effusion.
8. Name the chronic systemic diseases in which skin lesions are of diagnostic value. Give the characteristic lesion of each disease.
9. Give symptoms and physical findings in a case of exophthalmic goiter.
10. November 1, 1911, A. B., a real estate agent, twenty-six years old, gave the following history: Scarlet fever when two years old. Ten years ago had a mild attack of tonsillitis; at this time his physician told him he had albumin in his urine. Since that time he has had his urine examined frequently, and traces of albumin were always present. September 10, 1911, he was exposed to a cold rain, "caught cold" which was followed by capillary bronchitis. He has coughed ever since, raising small amount of white tenacious mucus streaked with blood. He has felt tired and weak, but ate and slept fairly well until four days ago, when breathing became difficult; could not breathe when lying down. When first seen he was sitting in his chair, leaning forward with his head on the table. Breathing labored; thirty times per minute. Harsh respiration over both lungs. No rales. Pulse 130. Apex beat two inches to left of nipple. Soft systolic blow over base of heart. Arteries of temple prominent and tortuous. Blood pressure 180 mm. Hg. Feet and ankles slightly edematous. Liver one inch below costal arch. Spleen not palpable. Urinary examination showed specific gravity 1008, large amount of albumin, numerous casts, hyaline and granular. What diagnosis would you make in this case? Give treatment you would institute. What prognosis would you make? What other data would you need to complete the history?

OBSTETRICS.

1. Diagnose pregnancy in early months.
2. Give treatment of pernicious vomiting of pregnancy
3. Name stages of normal labor.
4. What would you do for puerperal eclampsia?
5. Give management of adherent placenta.
6. Diagnose placenta prævia and give method of procedure.
7. How would you control postpartum hemorrhage?
8. Give indications for forceps.
9. How would you manage a case of shoulder presentation?
10. Treat a case of inevitable abortion.

GYNECOLOGY.

1. Define endometritis. Give varieties, cause, and treatment.

2. Describe and treat a case of prolapsus uteri.
3. What organs are usually affected in gonorrhea in the female? Describe and treat a case.
4. What conditions do you think of that might cause sterility that are susceptible to treatment?
5. What can you say about the hygiene of puberty?

SURGERY.

1. Give diagnosis and treatment for case of indirect inguinal hernia.
2. Give diagnosis and treatment for acute appendicitis.
3. What is Lane's kink? Give treatment for same.
4. Give etiology, diagnosis, and treatment for empyema.
5. Give treatment for varicose veins of leg.
6. Diagnose and treat fracture of clavicle.
7. Discuss briefly the use of Lane's bone plates, giving indications and contraindications for their use.
8. Give in detail your treatment for incised wound of scalp.
9. Give diagnosis and treatment for downward dislocation of shoulder.
10. Discuss briefly (*a*) ether; (*b*) chloroform; their administration and dangers of each.

EYE, EAR, NOSE, AND THROAT.

1. What do you understand by the following: Hypopyon, Argyll-Robertson pupil, mydriasis, presbyopia, ptosis?
2. (*a*) Treat a case of severe corneal ulcer. (*b*) Treat a case of severe iritis.
3. Give two indications for use of atropine in eye.
4. Give technique for removal of foreign body imbedded in cornea.
5. Diagnose and treat a case of ozena.
6. Give symptoms and treatment for hypertrophied turbinate.
7. What is your treatment for a child of ten years who often has discharge from ears and habitually breathes through the mouth?
8. Patient presents with following history: Age 25, three weeks ago had severe attack of la grippe, since which time there has been a great deal of frontal headache aggravated by stooping forward or blowing nose, discharge from nostrils, temperature 100°, marked tenderness along the supraorbital ridge, eyelids somewhat puffy. What is your diagnosis and treatment?
9. Describe thoroughly your method of examination of patient complaining of loss of hearing.
10. Treat a case of chronic laryngitis.

SKIN AND GENITOURINARY.

1. Give causes for orchitis and treatment for same.
2. Name stages of syphilis.
3. Diagnose and treat acute cystitis.
4. Describe acne.
5. Write a page on eczema.

HYGIENE AND SANITARY SCIENCE.

1. Trace the entrance of (*a*) typhoid; (*b*) tuberculosis into the system.
2. Give in detail an effective method for controlling an epidemic of diphtheria.
3. Describe the method of making examination of school children for infectious diseases and general defects.
4. What is antitetanic serum? and give uses for same.
5. (*a*) Give method for pasteurizing milk. (*b*) Name two diseases commonly carried by means of milk.

MEDICAL JURISPRUDENCE.

1. Describe rigor mortis and tetanus.
2. What is the order of occurrence of rigor mortis in different parts of the body?
3. If summoned to view the dead body of an infant, how would you determine whether it was mature, and whether it had been born alive?
4. How would you determine if a woman had died from the effects of a criminal abortion, at about the third or fourth month of pregnancy?
5. Define (*a*) delusion, (*b*) hallucination, (*c*) illusion.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, SOUTH DAKOTA.

Huron, January 10 *and* 11, 1912.

ANATOMY, EMBRYOLOGY, AND HISTOLOGY.

1. The distinctive types are the epiblastic, mesoblastic, and hypoblastic cells.

From *the epiblast* are derived: The skin, and its appendages (hair, nails), and glands (including the mammary glands); the nervous system (brain, spinal cord, ganglia, and nerves); the epithelial parts of the organs of special sense.

From *the mesoblast* are derived: The skeleton; connective tissues; muscles and bones; heart, blood-vessels, lymphatics, and spleen; the urinary and generative organs.

From *the hypoblast* are derived: The epithelial lining of the alimentary canal and its glands; the epithelial lining of the respiratory tract, Eustachian tube, thyroid, and thymus.

5. *Extensor muscles of the foot:* Gastrocnemius, soleus, tibialis posticus, peroneus longus, peroneus brevis, flexor longus digitorum, and flexor longus hallucis.

For their *origins and insertions* see Cunningham's "Anatomy" (1909), pages 370, 378, 379, and 375; or Gray's "Anatomy" (1910), pages 530, 534, 535, and 536.

6. The circle of Willis is situated at the base of the brain. The *circle of Willis* is formed: In front by the two anterior cerebral arteries (branches of the internal carotid) which are connected by the anterior communicating artery; behind, by the two posterior cerebrals (branches of the basilar artery), which are connected to the internal carotid on each side by the posterior communicating artery.

7. Branches of the radial artery in the forearm: Radial recurrent, muscular, anterior radial carpal, superficial volar.

8. Structures severed in an amputation of the arm midway between the shoulder and elbow: Skin, fascia, the humerus. *Muscles:* biceps, coraco-brachialis, brachialis anticus, triceps; *arteries:* brachial, superior profunda, inferior profunda; *nerves:* median, ulnar, musculospiral, internal cutaneous, musculocutaneous.

9. See Cunningham's "Anatomy" (1909), page 81; or Gray's "Anatomy" (1910), page 53.

10. *Nerve supply of the heart:* From the superficial and deep cardiac flexures, and through these it is connected with the pneumogastric, spinal accessory, and sympathetic; also the cardiac ganglia.

PHYSIOLOGY.

2. *Heat is produced in the body* by: (1) Muscular action; (2) the action of the glands, chiefly of the liver; (3) the food and drink ingested; (4) the brain; (5) the heart; and (6) the thermogenetic centers in the brain, pons, medulla, and spinal cord.

3. *Cholesterin* is a monoatomic alcohol belonging to the terpene series. It has no odor and no taste; is insoluble in water, but soluble in ether, glycerin, hot alcohol, and solutions of the biliary acids. It is found in almost every animal tissue and fluid, chiefly in the bile, nerve tissues, intestinal contents, sebum, and feces. It is also found in biliary calculi, brain tumors, pus, hydrocele fluid, etc.

It is a waste product of cell life, and at the same time it exerts an important protective influence against toxins.

4. *The ductless glands* are: Thyroid, parathyroids, thymus, spleen, suprarenals, carotid, coccygeal, pineal, and pituitary.

5. *Functions of retina:* Perception of light, of form, and of color.

6. "The waves of sound are gathered together by the pinna and external auditory meatus, and conveyed to the membrana tympani. This membrane, made tense or lax by the action of the tensor tympani and laxator tympani muscles, is enabled to receive sound waves of either high or low pitch. The vibrations are conducted across the middle ear by a chain of bones to the foramen ovale, and by the column of air of the tympanum to the foramen rotundum, which is closed by the second membrana tympani, the pressure of the air in the tympanum being regulated by the Eustachian tube. The internal ear finally receives the vibrations, which excite vibrations successively in the perilymph, the walls of the membranous labyrinth, the endolymph, and, lastly, the terminal filaments of the auditory nerve, by which they are conveyed to the brain."—(Brubaker's *Physiology.*)

7. Any exercise which is severe, prolonged, or indulged in when the person is tired may be injurious. Unusual and violent exercise is particularly apt to be harmful. It is largely a question of what a man is accustomed to. "If the exercise is too severe the heart is overstrained, breathlessness and palpitation are brought on, and the pulse becomes small, very frequent, and irregular. Prolonged exertion of a severe kind thus tends to cause cardiac pain and palpitation, and may give rise to hypertrophy of the left ventricle if the overexertion is habitual. Rupture of blood-vessels from overexertion is uncommon before middle life. The muscles, including the cardiac muscle, require rest to get rid of the accumulated products of their action (possibly lactic acid), and to take

in a fresh store of oxygen. Without definite periods of rest suited to the kind of exercise the muscles become exhausted and their contractions are gradually enfeebled until they cease altogether. The diastole of the heart is quite sufficient for its recuperation when the body is at rest."—(Parke's *Hygiene.*)

8. The normal ratio of the heart pulsation to respiration is about 72:18, or 4:1.

9. *Examples of morbid reflex action.* Increased patellar reflex in neurasthenia, hysteria, tetanus, cortical hemiplegia, and lateral sclerosis.

10.

	REACTION.	CAUSE OF REACTION.
Gastric juice	Acid	Hydrochloric acid
Urine	Acid	Acid sodium phosphate
Pancreatic juice	Alkaline	Sodium carbonate
Blood	Alkaline	Alkaline sodium phosphate

CHEMISTRY.

1. The *chemical formula* of common salt is NaCl; of nitrate of silver, $AgNO_3$; of sulphuric acid, H_2SO_4; of hydrochloric acid, HCl; of nitric acid, HNO_3.

$$2HCl + CaCO_3 = CaCl_2 + CO_2 + H_2O$$
$$Zn + H_2SO_4 = ZnSO_4 + H_2$$
$$Ba + 2HCl = BaCl_2 + H_2$$

2. *Test for free hydrochloric acid in the gastric juice.* The best is probably the Dimethylamido-azobenzol test; the reagent is used in 0.5 per cent. alcoholic solution, of which one or two drops are added to a like amount of the filtered gastric juice. If free HCl is present, the yellow solution turns red.

"*The presence of lactic acid* is detected by *Uffelmann's reagent*, which consists of a solution of Fe_2Cl_6 and phenol, diluted to an amethyst blue color, which is changed to yellow by lactic acid. In order to avoid error by the action of other substances which have a like action upon the reagent, 10 c.c. of the filtered gastric contents are agitated with ether, and the ethereal extract separated and agitated with the reagent; or, it may be evaporated, the residue dissolved in water and the solution added to the reagent."—(Witthaus' *Manual of Chemistry.*)

The *total acidity* is said to be about 50 to 75 *degrees*, the *free hydrochloric acid* is normally about 0.2 to 0.3 per cent.

3. *Mercurous chloride*, calomel, mild chloride of mercury; is a heavy cream colored powder, insoluble in water, alcohol, or ether; it sublimes without fusing when heated to about 800° F.

Corrosive sublimate, mercuric chloride, bichloride of mercury; heavy, colorless crystals; soluble in water, alcohol, and ether.

The two can be distinguished by (1) the solubility; (2) when treated with potash, calomel gives a black precipitate, while corrosive sublimate gives a yellow precipitate.

Corrosive sublimate poisoning is treated by the administration of white of egg, or milk in moderate quantity, and then emptying the stomach by emetic or siphon.

4. *Specific gravity* is the weight of a given volume of a substance as compared with the weight of an equal volume of some substance taken as a standard of comparison, under like conditions of temperature and pressure.

The normal limits of the specific gravity of urine are generally given as 1015 to 1025.

To determine the total amount of solids, multiply the last two figures of the specific gravity by 2.33. The product is then multiplied by the number of cubic centimeters of urine voided in 24 hours, and divided by 1000. The result is the total solids in grams.

5. In *diabetes mellitus:* "The quantity of urine is very large. The color is generally pale, while the specific gravity is nearly always high—1030 to 1050, very rarely below 1020. The presence of glucose is the essential feature of the disease. The amount of glucose is often very great, sometimes exceeding 8 per cent., while the total elimination may exceed 500 grams in twenty-four hours. It may be absent temporarily. Acetone is generally present in advanced cases. Diacetic and oxybutyric acids may be present, and usually warrant an unfavorable prognosis. Accompanying the acidosis there is a corresponding increase in the amount of ammonia."

In *cystitis:* "In *acute* and *subacute* cases the urine is acid and contains a variable amount of pus, with many epithelial cells from the bladder—chiefly large round, pyriform, and round squamous cells. Red-blood corpuscles are often numerous. In *chronic* cases the urine is generally alkaline. It is pale and cloudy from the presence of pus, which is abundant and settles readily into a viscid sediment. The sediment usually contains abundant amorphous phosphates and crystals of triple phosphate and ammonium urate. Vesical epithelium is common. Numerous bacteria are always present."

In *chronic parenchymatous nephritis:* "The quantity is usually diminished; color variable, often pale and hazy; specific gravity 1010 to 1020. Urea and chlorides low. Largest amounts of albumin, up to 3 per cent. Reaction acid. Sediment rather abundant. Many casts of all varieties; fatty casts and casts of degenerated epithelium most characteristic. Blood present in traces; abundant only in acute exacerbations. Numerous fatty degenerated renal epithelial cells, often free globules of fat, and a few leucocytes."—(From Todd's *Clinical Diagnosis.*)

Sugar: Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid in two test tubes. To one test tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color.

Pus in the urine: Acidify the urine with acetic acid, then filter it, and treat the filter with a few drops of freshly prepared tincture of guaiacum; a deep blue color denotes the presence of pus.

Albumin: The urine must be perfectly clear. If not so, it is to be filtered, and if this does not render it transparent it is to be treated with a few drops of magnesia mixture, and again filtered. The reaction is then observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral or alkaline, it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present, a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of HNO_3.

PATHOLOGY.

4. In a *typhoid ulcer of the intestine:* "The edges are undermined, its floor is smooth, its main axis is parallel with that of the intestine, it lies opposite to the mesenteric attachment; on the corresponding serous surface there is no fibrinous deposit; and perforation is common." In a *tubercular ulcer of the intestine:* "The intestine is girdled by the ulcer, its general outline is oval, it lies with its long axis at right angles to the main intestinal axis unless produced in a plaque by junction of several small ones, its edges are thickened and firm because of the fibrous hyperplasia and are not undermined, the base is uneven and covered with pus and necrotic tissue, and on the corresponding serous surface there is an exudation of fibrin together with little lines and series of tubercles in ring form about the intestine. The ulcer may perforate, but the fibrinous process makes adhesions between neighboring coils or other parts and prevents the escape of fecal matter." (Thayer's *Pathology.*)

5. *Pathological leucocytosis* is an increase in the number of colorless blood corpuscles found in certain diseases and pathological conditions.

Physiological leucocytosis may be produced during digestion, during pregnancy, and after exercising.

6. *Ascites* is an abnormal collection of serous fluid in the peritoneal cavity. And see French's "Practice of Medicine" (1910), page 880; or Osler's "Practice of Medicine" (1909), page 580.

8. In *fatty infiltration* the tissues contain fat brought from without; there is no change in the cell protoplasm, and such damage as the tissue undergoes is due to the mechanical pressure caused by the fat.

In *fatty degeneration* the cell protoplasm undergoes change; the fat is in the cells, and not between them.

9. A *metastatic growth* is one that is set up in a part of the body not directly continuous with the original growth.

BACTERIOLOGY.

1. To demonstrate *gonococci.* On a cover-glass make a smear with the discharge as thin as possible, and let it dry in the air; cover it with a freshly made solution of anilin-oil-gentian-violet for one or two minutes; wash it in distilled water; leave it in Gram's solution for two minutes; wash it in 95 per cent. alcohol until decolorized; wash it in distilled water; counterstain with a dilute carbolfuchsin without heat, or with a saturated aqueous solution of Bismark brown; wash in distilled water, dry with filter paper, mount, and examine with an oil-immersion lens. The gonococci will appear as *diplococci within the leucocytes*, which have been *decolorized by Gram's stain*, and have taken the counterstain.

2. An *antitoxin* is a substance formed in the body, of a protective character, and capable of rendering inert the poisonous products of bacteria.

A *vaccine* is an emulsion of dead cultures of specific bacteria.

An *antitoxin* consists of products of bacteria, but not the bacteria themselves; whereas a *bacterial vaccine* is a preparation of killed bacteria.

3. *Anaphylaxis* is a condition of supersensitization induced by the injection of a serum. It is the opposite of prophylaxis, and in place of rendering the person injected immune the serum has made him particularly susceptible. It has been manifested in some instances by alarming symptoms, such as: Heart failure, collapse, convulsions, coma.

4. *To obtain a culture.* A sterile swab is rubbed over any visible membrane on the tonsils or throat, and is then immediately passed over the surface of the serum in a culture tube. The tube of culture, thus inoculated, is placed in an incubator at 37° C. for about twelve hours, when it is ready for examination. A sterile platinum wire is inserted into the culture tube, and a number of colonies of a whitish color are removed by it, and placed on a clean cover slip, and smeared over its surface. The smear is allowed to dry, is passed two or three times through a flame to fix the bacteria, and is then covered for about five or six minutes with a Loeffler's methylene-blue solution. The cover slip is then rinsed in clean water, dried, and mounted. The bacilli are from 2 to 6 mikrons in length and from 0.2 to 1.0 mikron in breadth; are slightly curved, and often have clubbed and rounded ends; occur either singly, or in pairs, or in irregular groups, but do not form chains; they have no flagella, are non-motile, and aerobic; they are noted for their pleomorphism; they do not stain uniformly, but stain well by Gram's method and very beautifully with Loeffler's alkaline-methylene blue.

The *bacillus of anthrax* is a large, rod-shaped microorganism; with slightly thickened ends; it has a tendency to form long threads; it is non-motile and non-flagellated; it is aerobic.

For treatment of the endocarditis and nephritis, see French's "Practice of Medicine" (1910), pages 582 and 615; or Osler's "Practice of Medicine" (1909), pages 701 and 690.

THERAPEUTICS AND PRACTICE.

8. By *chronic systemic diseases* is probably to be understood "constitutional diseases." See French's "Practice of Medicine" (1910), pages 943, etc.; or Osler's "Practice of Medicine" (1909), pages 389, etc.

10. From the case as reported one might diagnose acute nephritis and endocarditis. The patient may also have cardiac asthma. No final diagnosis or prognosis can be made from the history alone; the patient must be seen and examined more than once; the physical signs may change.

OBSTETRICS.

3. *Labor* is divided into three stages: The *first stage* begins with the commencement of labor, and ends with the complete dilatation of the os uteri. The *second stage* begins with a complete dilatation of the os uteri, and ends with the birth of the child. The *third stage* immediately follows the second, and ends with the expulsion of the placenta and the beginning contraction of the uterus.

10. *Management of inevitable abortion:* "Two methods of treatment have been advised for these cases. The first is *the expectant plan:* Place the patient in bed, and if the bleeding is profuse insert a tampon of iodoform gauze (one yard) well up against the cervix. If this fails to control the hemorrhage, reinforce it by another yard or two of gauze and a perineal pad and binder. Small doses (3ij) of the fluid extract of ergot should now be given every two or three hours. At the end of from eight to twelve hours remove the tampon, when the ovum may be found extruded from the cervix; if not, a vaginal douche of mercuric chloride (1:4000) must be given, and another tampon introduced. If, upon the removal of this second tampon at the end of ten or twelve hours, the ovum is not discharged, then more vigorous methods to secure its expulsion must be adopted. *Active plan:* The physician's hands and instruments are sterilized; the patient is etherized and placed on an appropriate table; the genitalia are thoroughly cleansed and a vaginal douche of mercuric chloride (1:4000) is given; the anterior lip of the cervix is brought down to the vulvar orifice; the cervix is dilated if necessary; the placental forceps is introduced into the uterus, and as much as possible of the ovum is removed; the uterus is thoroughly curetted, and an intrauterine douche of sterile water is given. A light tampon of iodoform gauze is placed in the vagina; the patient is then returned to bed. A strip of gauze may be placed in the uterus in cases of sharp retroflexion, to secure free drainage, and occasionally an intrauterine tampon will be necessary, when the uterus refuses to contract and hemorrhage persists after the use of the curette."—(Gould & Pyle's *Pocket Cyclopedia.*)

GYNECOLOGY.

1. *Endometritis* is inflammation of the mucous membrane lining the uterus. The acute form is due to the introduction of septic bacteria, and is manifested by pain, constipation, irritability of bladder, rapid pulse, rise of temperature, and a profuse discharge. *Treatment* following miscarriage or labor consists in curettage, intrauterine hot sterile douche, free purgation, heat over the lower abdomen, milk diet, and stimulants. Chronic endometritis may accompany numerous pathological uterine conditions, but is generally due to gonorrhea. The symptoms are backache, headache, leucorrhea, profuse menstruation, and impairment of the general health. *Treatment* consists in removing the cause when possible, and when due to gonorrhea curettage and irrigation of the uterus, with the application of an antiseptic.

2. PROLAPSUS UTERI. *Definition:* "A condition in which the uterus sinks below its normal level, but does not protrude through the vagina. *Pathology:* "Decrease in the power of uterine support. Distention and eversion of the vagina with decrease in the power of its sphincter and thickening of its epithelium. The uterus is enlarged from impairment of its circulation, its cavity is increased in size, and hyperplasia of its areolar tissue may result. The endometrium becomes thickened, congested, and inflamed. Ectropion may occur. Varicose degeneration of the vessels of the cervix may take place with consequent absorption of its proper tissue; ulceration may also occur. Pelvic congestion from compression of the hypogastric veins. Tension on the broad ligaments may produce obstruction of ureters and hydronephrosis. Occasionally, epithelioma from continued irritation of the cervix. Varicocele of the pampiniform plexus from torsion of the broad ligaments. When cystocele is present, complete evacuation of the bladder cannot be obtained, and the result is dysuria, ardor urinæ, and cystitis or retention of urine."

Etiology. Injury at childbirth, lacerated perineum, relaxation and elongation of the ligaments of the uterus, loss of rigidity of the abdominal walls, increase in the weight of the uterus, subinvolution, increased intraabdominal pressure. *Treatment:* "Operative, unless some contraindication to operation exists. In such a case some *mechanic device* should be tried for the support of the uterus. Pessaries are not to be recommended, as their constant use leads to irritation and excoriation of the vaginal walls. Probably the best means for supporting the uterus is by Braun's colpeurynter. This is worn only during the day, and can be introduced by the patient herself every morning. The uterus is replaced and the colpeurynter well anointed with carbolized vaseline and containing about an ounce of water, is introduced into the vagina. It is then distended with air, thus making an even pressure on the vaginal walls and not causing ulcerations. *Operative treatment* gives the most satisfactory results in prolapse. In slight cases of prolapse repair of the perineum will effect a cure. The severer grades will require, in addition, some operation on the anterior vagina. The best of these is Martin's operation for cystocele. If the cervix is hypertrophied it should be amputated. Three operations—on the perineum, for cystocele, and amputation of the cervix—are required in the usual case of prolapse. In addition, hysterorrhaphy may be advisable, since there can be no prolapse so long as the uterus maintains its normal position of anteflexion. These operations failing, hysterectomy may be performed."

3. GONORRHEA. *Symptoms:* Pain and burning in the vulva; pain and burning on micturition; dyspareunia; yellowish or greenish discharge, in which the gonococcus can be found; the vagina is hot, red, swollen, and tender. *Possible results:* Cystitis, urethritis, vulvitis, endometritis, salpingitis, septic peritonitis, sterility, condylomata of vulva, abscess of Bartholin's glands.

Treatment: Rest, if possible in bed; freedom from alcoholic or sexual excitement; a mild and unirritating diet; salines and diuretics; plenty of water to drink; a warm sitz bath; douching of vagina with about a gallon of a 1:5000 bichloride solution, or of borax (1 dram to the quart); the douche is to be taken in the recumbent position.

4. Conditions that might cause sterility, and that are susceptible to treatment: Atresia of cervix, malposition of the uterus, membranous dysmenorrhea, lacerations, and anemia.

5. *Hygiene of Puberty:* Constipation must be remedied; diet must be nutritious but simple; frequent rest, moderate amusements, and adequate exercise are necessary; the girl should be instructed with regard to menstruation and the menstrual periods; overwork at school, and nervous excitability, late hours, and much company should be avoided; books, amusements, and associates should be carefully selected.

SURGERY.

3. *Lane's kink* is a condition in which there is a bending or twisting of the ileum near its junction with the cecum; there are also adhesions, generally in the ileocecal region. The condition is caused by descent of the cecum. *Treatment:* Laparotomy and division of the adhesions; Lane recommends ileocolostomy, ileosigmoidostomy, or excision of the colon.

7. *Lane's bone plates* are used in the treatment of fractures. Opinion as to their use is divided. They are probably *indicated* when reduction is difficult and apposition hard to maintain, when tissues or structures are interposed between the fragments, when there is considerable displacement, when the fracture is spiral or multiple. They are *contraindicated* when the fracture is simple, the bones easily reduced and easily maintained in position.

EYE, EAR, NOSE, AND THROAT.

1. *Hypopyon* is a collection of pus in the bottom of the anterior chamber of the eye. *Argyll-Robertson pupil* is a condition in which the pupil accommodates for distance but not for light. *Mydriasis* is dilatation of the pupil. *Presbyopia* is loss of accommodative power of the eye, occurring normally in advanced life. *Ptosis* is drooping of the upper eyelid.

2. *Management of corneal ulcer:* The treatment consists in putting the eye at rest, instilling atropine, and the application of a bandage. Leeches to the temple will relieve the pain. Hot compresses have the same effect. The eye should be douched with sublimate solution, 1:5000, and iodoform dusted upon the cornea. Stronger sublimate solution, boroglycerid 50 per cent., and formalin 10 per cent. are sometimes necessary. Cauterization is occasionally indicated. If perforation seems probable, it should be hastened by a puncture.—(Gould and Pyle's *Cyclopedia.*)

Treatment of iritis: Atropine, dionine, the application of leeches to the temples, hot fomentations, absolute rest in bed, protection from the light, light diet, purgatives, abstinence from alcohol, avoidance of all use of the eyes for near work, constitutional treatment varying according to the etiology, paracentesis, and iridectomy.

3. Atropine may be used: (1) To dilate the pupils. (2) to paralyze the accommodation.

4. "The eye is cocainized; the patient is seated facing a good light, with the surgeon standing behind and supporting the head; the lids are separated and the eyeball is steadied by the fingers of the left hand, the index finger is applied to the margin of the upper lid, and the middle finger to the lower lid, and the two fingers are separated, at the same time gently pressing backward. The instruments used are either the blunt spud, the gouge, or the foreign-body needle. When the foreign body is superficial, the blunt spud will answer. When it has penetrated into the corneal substance, it must be picked or dug out with the gouge, or the needle; in such cases, the instrument is passed behind the foreign body. The wound which results must be kept clean by frequent irrigation with solution of boric acid; frequently a protective bandage is indicated. If a ring of rust is present this also should be removed. Care must be taken to inflict as little injury as possible, and when the foreign body is deep, not to perforate the cornea."—(From May's *Diseases of the Eye.*)

7. Examine the child for adenoids, and if present, remove them.

8. The case is probably one of inflammation or suppuration of the frontal sinus. See Rose and Carless' "Surgery" (1911), page 755; or Da Costa's "Surgery" (1911), page 882.

9. *To examine for deafness:* "If the ticking of a watch or the vibrations of a tuning fork are heard faintly or not at all when held at varying distances from the ear (aërial conduction), but become distinctly audible when the watch or the handle of the fork is placed in contact with the skull or mastoid process (bone conduction), the deafness is of the ordinary variety and due to aural disease. If, on the other hand, watch and fork are heard indistinctly or not at all, both in contact and at a distance, the deafness is due to some lesion of the nerve or its connections. In the first case the nerve is normal and can appreciate vibrations brought by the bone, while, through some fault in the mechanism, aërial vibrations are not transmitted to the nerve endings. In the second case the nerve is at fault and cannot appreciate vibrations, no matter how well they may be conducted." (Butler's *Diagnostics of Internal Medicine.*)

SKIN AND GENITOURINARY.

4. "*Acne* is an inflammatory disease of the skin occurring in and around the sebaceous glands, characterized by papules, pustules, or tubercles, affecting chiefly the face, and running a more or less chronic course. Puberty, gastrointestinal disorders, menstrual disorders, uterine disease, anemia, and general debility are etiological factors. Bromides and iodides internally and tar externally may produce acne." (Gould and Pyle's *Pocket Cyclopedia.*)

5. ECZEMA. "An acuate, subacute, or chronic, noncontagious inflammatory disease of the skin, characterized primarily by erythema, vesicles, papules, or pustules, and, secondarily, by scales and crusts, and accompanied by itching and burning. The various forms of eczema constitute about 30 per cent. of all skin diseases. There are several varieties corresponding to the most predominant lesion. These may continue as such or terminate in eczema rubrum or eczema squamosum.

"*Etiology:* The causes of eczema are both *internal* and *external*. *Internal* causes include in their category disorders of the alimentary canal (dyspepsia, constipation, intestinal autoinfection, etc.), functional and organic nerve affections, general debility, rheumatism, uric acid diathesis, Bright's disease, diabetes, affections of the uterus and appendages, dentition, and scrofula. These may at times act as predisposing causes, at other times as exciting causes. The number of *external* causes is legion. They may be classified under the heads of chemic, thermal, and mechanic irritants.

"*Diagnosis:* The diagnosis of eczema is, as a rule, easy. The most distinctive features are: (1) Serous exudation; (2) the gradual merging of the patches into the surrounding healthy skin; (3) polymorphism of the lesions; (4) the symmetry of the eruption; (5) the marked itching and burning.

"The diseases for which eczema may be mistaken are scabies, herpes, zoster, impetigo, sycosis, erysipelas, psoriasis, and ringworm.

"*Prognosis:* Nearly all cases will yield to judicious and persevering treatment. Factors influencing the prognosis are: (1) Type of the disease; (2) duration and extent of the eruption; (3) history of previous attacks; (4) removability of the cause or causes; (5) ability of the patient to care for himself properly.

"*Treatment:* A careful study of the hygiene, digestion, occupation, etc., should be made, and, if necessary, treatment instituted. The gastrointestinal tract most frequently needs attention. The diet must be carefully regulated. Tea, coffee, and alcohol should be reduced to a minimum. Laxatives, salines, and diuretics are often indicated, and alteratives and tonics are of great value." Gould and Pyle's *Pocket Cyclopedia.*)

HYGIENE AND SANITARY SCIENCE.

3. For details of the method of examining school children, see a good text-book on *Diagnosis* or *Pediatrics.*

4. *Antitetanic serum* is a serum prepared on the same general plan as the diphtheria antitoxin, and after injection into a person it supplies sufficient antitoxin to prevent the development of tetanus after infection. It is used as a prophylactic and also as a curative agent in all cases liable to be infected by the bacillus of tetanus. Besides being used in all suspicious punctured wounds it should be used in "fourth of July wounds."

5. Milk may be *pasteurized* by being heated for about thirty minutes to 150° F.

Two diseases commonly carried by means of milk: Typhoid and tuberculosis.

MEDICAL JURISPRUDENCE.

1 and 2. *Rigor mortis* is the condition of rigidity or contraction into which the muscles of the body pass after death. It begins at a period varying from about fifteen minutes to about six hours. It usually begins in the muscles of the eye, neck, and jaw; then the muscles of the chest and upper extremity, and last of all those of the abdomen and lower extremity are affected. It passes off in the same order, in about twenty-four hours. It is said to be due to the coagulation of the muscle plasma.

If respiration has taken place, the lungs will float on being put into water; if respiration has not taken place, the lungs will sink. Further, the lungs before respiration are situated at the back of the thorax and do not fill the cavity; whereas, after respiration, they fill the whole cavity.

4. It may be impossible to determine whether the woman had died from the effects of a criminal abortion. The vagina and uterus should be examined for marks of injury by the use of instruments. Wounds on the walls of the vagina would indicate the use of instruments, most probably by an inexperienced hand; while perforations of the neck of the womb, and sometimes of its fundus, indicate the use of pointed instruments, very possibly in

the hands of a professed abortionist. In some instances a blunt instrument, such as a catheter, is employed; and the instrument may pass up between the membranes and the uterine walls, and tear the placenta, producing internal hemorrhage, and ending fatally. In cases of instrumental violence there will frequently be discovered marks of metritis and peritonitis. The stomach and bowels should likewise be carefully inspected for signs of irritant poisons (abortives), such as redness and the remains of the various reputed abortives, as powdered cantharides, savin, ergot, etc.; also for the oils of savin, tansy, pennyroyal, etc.; the latter may sometimes be recognized by the odor, or they may be separated by distillation or by ether.—(From Reese's *Medical Jurisprudence.*)

5. A *delusion* is a belief in something which has no real existence, but is purely imaginary, and out of which the person cannot be reasoned. An *illusion* is a false or perverted impression received through one of the senses. An *hallucination* is the same as an illusion but without any material basis.

If an individual believes himself to be made of glass, and is afraid of being touched lest he be broken, he is suffering from a *delusion*. If the whistling of the wind is mistaken for a voice telling a person to do a certain thing—that would be an *illusion*. If a person fancied he heard a voice when there was nothing at all to be heard that would be an *hallucination*.

Medicolegal Notes.

Non-expert Opinion as to Condition of Injured Person.—The opinion of a non-expert witness as to the apparent condition of an injured person is not, it is held, admissible unless the injury is such that its nature, extent, and effect would be obvious to the common mind—such injuries, for instance, as the loss of a limb. The apparent condition of an injured person might not be the real condition and testimony thereof by one not an expert on the essential effect of appearances would have very little, if any, tendency to disclose that the injured party "was not injured as badly as he claimed to have been."—Carr v. Stern, (Cal.), 120 Pac. 35.

Admissibility of Physician's Expert Evidence.—In a murder case where the theory of the State was that the deceased was asleep when he was shot and never moved after the fatal injury was inflicted it was held proper to allow practising physicians to testify that a man shot in that part of the head where the deceased was shot, the bullet ranging as they judged this one did, "no voluntary movement would occur, as there would be no volition and would produce instant paralysis of the entire physical system."—Streight v. State, Texas Court of Criminal Appeals, 138 S. W. 742.

Limitation of Actions for Malpractice.—In an action of damages for injuries caused by unskillful treatment the defense was not guilty and also that the cause of action did not accrue within three years before the action was commenced. The declaration alleged that the defendant did "undertake the treatment of" the plaintiff, and that "it was the duty of the defendant as physician to properly and skillfully treat the plaintiff; but the defendant did so carelessly, negligently, and unskillfully treat the plaintiff that he was thereby injured." These allegations, it was held, are applicable to a tort growing out of a contract, and they do not exclude the existence of an express or implied verbal contract relation between the parties which is usual in such cases. Thus considered, the action was upon an "obligation or liability not founded upon an instrument of writing," and was barred in three years under the Florida Statute (1906), Section 1725, Subd. 5.—Palmer v. Jackson, Florida Supreme Court, 57 So. 240.

Necessity for Medical Expert Evidence.—A railroad passenger's breast was pierced by an umbrella rib while he was alighting from a train. The physician who attended him testified that he took the plaintiff's statement to that effect for granted, and that he saw that the wound had a scab on it which he did not pull off. Whether the wound was a mere surface wound or whether the instrument which made it went through the chest the evidence failed to describe. The physician's evidence showed nothing as to an injury to the plaintiff's lungs or speaking organs. It was held to be error to permit the plaintiff to testify that the injury to his chest had affected his lungs or speaking organs. That was a matter for an expert diagnostician, whose opinion, when rendered upon a given state of facts, would, without being held infallible, go to the jury as evidence to be weighed by them, along with the other evidence, in passing on the question of the true cause of the disease.—Central of Georgia Ry. Co. v. Clements, Alabama Appellate Court, 57 So. 52.

Medical Items.

Value of the Wassermann Reaction in a General Medical Service.—O. Weill tested all the patients who entered his medical service during six months with the Wassermann reaction. None of these patients came in on account of florid syphilis, and all syphilitic cases were supposed to have been sent to another clinic. The patients tested were 225 in number; of these 64 reacted positively to the Wassermann test, that is, 28.44 per cent. After the positive test they were carefully questioned as to their previous illnesses and in all cases they admitted having had syphilis. There were among these patients cases of visceral sclerosis, diabetes, bronchial dilatation, aortic dilatation, neoplasms, icterus, cerebral hemorrhage and softening, tabes, general paresis, amyotrophic lateral sclerosis, Jacksonian epilepsy, meningomyelitis, and other nervous phenomena. The author's results give a valuable demonstration of the value of the Wassermann reaction in general medicine. This reaction allows one to recognize many cases of syphilis that would not be otherwise detected, and to treat them properly. It shows the terribly disastrous effects of the disease and the profound mental and moral decay that it causes. Nearly all the nervous maladies of organic form seem to be due to syphilis.—*Journal Médical de Bruxelles.*

Chronic Prolonged Angina Due to a Staphylobacillus.—J. Perquis and F. Cheverel present the history of a case of prolonged sore throat lasting for some nine months, in which there was every local appearance on the tonsils of a diphtheritic membrane, but without general symptoms. Applications of antiseptics caused the membrane to be absorbed, but it soon reformed. Antitoxin given repeatedly did not produce any curative effect, although symptoms of anaphylaxis developed. The bacteriological examination showed no Klebs-Loffler bacilli, but revealed an organism that was Gram positive, slightly virulent to the guinea-pig, and that was a white staphylobacillus. This same organ has been reported by several other authors as causing angina. It was found in the throats in two cases of meningitis, one tuberculous, and the other caused by the meningococcus; in the intestinal mucus of a case of enteritis, and in the blood of one case of septicemia. It probably resides generally in the intestine. Systematic examination of all cases of pharyngitis might show this germ frequently present in chronic sore throats.—*Gazette des Hôpitaux.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended May 11, 1912.

Places	Date	Cases	Deaths
CHOLERA			
India: Bassein	Mar. 10–16	3	2
Moulmine	Mar. 10–16	2	2
Indo-China: Saigon	Mar. 12–18	24	16
Siam: Bangkok	Jan. 28–Mar 24		489
Turkey in Asia: Aleppo	Apr. 6–13	5	2
YELLOW FEVER			
Venezuela: La Guaira	Mar. 17–Apr. 1	2	2
PLAGUE			
Chile: Iquique	Mar 24–Apr 6	3	
China: Hongkong	Mar. 10–23	30	27
Peru: Salaverry	Mar. 27–Apr. 3	2	
▶ Trujillo	Apr. 10		
22 cases in the lazaretto			
Siam: Bangkok	Feb. 25–Mar 23		2
Straits Settlements: Singapore	Mar 3–16	2	1
Trinidad: Port of Spain	May 1	1	
Venezuela: Caracas	Mar 27–Apr. 13		2
SMALLPOX			
Austria-Hungary: Galicia	Mar 31–Apr 6	3	
Trieste	Mar. 31–Apr. 6	1	
Canada: Hamilton	Apr 21–27	8	
Montreal	Apr 21–27	3	
Ottawa	Apr. 14–20	6	1
Quebec	Apr. 21–27	15	
Vancouver	Apr. 14–20	1	
Winnipeg	Apr. 14–20	1	
China: Dalny	Mar. 24–30	1	
Hongkong	Mar. 10–23	66	52
Germany	Apr 14–20	16	
Hamburg	Apr 7–13	1	
Great Britain: London	Apr. 7–20	2	
Indo-China: Saigon	Mar. 12–18	1	
Italy: Genoa	Apr. 1–15	2	
Naples	Apr. 14–20	3	
Palermo	Apr 7–13	16	5
Rome	Jan 1–31	4	1
Rome	Feb 1–29	16	2
Rome	Mar 1–31	11	
Mexico: Juarez	Apr. 21–27	2	
San Luis Potosi	Feb 18–24	2	1
Russia: Libau	Apr 8–14	1	
Odessa	Mar. 24–Apr. 6	3	
Riga	Mar. 17–Apr 13	11	
Warsaw	Feb. 18–24	13	2
Siam: Bangkok	Jan 28–Mar. 23		84
Spain: Cadiz	Mar 1–31		2
Straits Settlements: Singapore	Mar. 3–16	4	
Turkey in Europe: Constantinople	Apr. 8–14		21

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Original Articles.

THE LUETIN TEST FOR SYPHILIS.

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BY R. B. H. GRADWOHL, M.D.,

ST. LOUIS.

IN the *Journal of Experimental Medicine*, Vol. XIV, No. 6, 1911, Noguchi gave a brief report of his work with the use of dead cultures of the *Treponema pallidum* in the diagnosis of syphilis, using them by the "cutaneous test" method. This work follows up the idea of von Pirquet with respect to the diagnosis of tuberculosis by a skin test, in other words, an effort was made by Noguchi to elicit from syphilitic tissue by means of stimulation with dead cultures of the specific organisms a reaction dependent upon "anaphylaxis," or active or passive immunity, or "allergy," as it has been variously called. It is undeniable that tissues thoroughly infected by a specific organism take on characteristics of such a nature that when these selfsame tissues are irritated so to speak, by rubbing or injection with killed specific organisms of that disease, typical and classical phenomena occur, to wit, redness, swelling, the formation of papules, pustules, etc. In the von Pirquet test for tuberculosis we know that the reaction is a reddening of the skin following the scarification and rubbing in of dead cultures of the tubercle bacillus. Up to the time of Noguchi's discovery that he could artificially cultivate the *Treponema pallidum* by means of a culture medium composed of ascites fluid and agar, with a piece of kidney of a rabbit, all contained in a long tube covered with paraffin oil, to promote anaërobiosis and at the same time prevent the evaporation and drying out of the medium, no one had succeeded in definitely producing a skin test for syphilis. Meirowsky, Wolff-Eisner, Tedeschi, Nobl, Ciuffo, Nicolas, Favre and Gauthier, Neisser and Bruck, and Jadassohn had all attempted to induce this reaction by using extracts of syphilitic tissue. These attempts were not uniformly successful.

Noguchi succeeded in obtaining uniformly a characteristic reaction upon the skin of syphilitics by putting into the superficial layers of the skin a dead culture of *Treponema pallidum*. He made the cultures for the cutaneous test, as described in his original paper, in the following manner: "Two strains of the pallidum were used. Pure cultures were allowed to grow for periods of six, twelve, twenty-four, and fifty days at 37° C., under anaërobic conditions. One was cultivated in ascitic fluid containing a piece of sterile placenta, and the other in ascitic fluid agar also containing placenta. The lower portion of each solid culture in which a dense growth had occurred was cut out and the tissue removed. The agar columns which contained innumerable spirochætæ were then carefully ground in a sterile mortar. The resulting thick paste was gradually diluted by adding, little by little, the fluid culture which also contained an enormous mass of the pure organisms. The dilution was continued until the emulsion became perfectly liquid. The preparation was next heated to 60° C. for sixty minutes in a water bath, and then 0.5 per cent. carbolic acid was added. When examined under the dark-field microscope, 40 to 100 dead pallida per field could be seen. Cultures made from this suspension remained sterile, and with them no infection could be produced in the testicles of rabbits. The suspension was kept in a refrigerator when not in use. I propose to speak of this preparation ununder the name of "luetin." In order to ascertain whether the reaction produced with this suspension might not be due to the introduction of the carbolized culture medium alone, it was necessary to prepare a similar emulsion with uninoculated media for control purposes."

I wish to briefly catalogue a series of cases in which I attempted to determine the value of the test in the diagnosis of syphilitic infection, in conjunction with the Wassermann complement fixation test. Dr. Noguchi was good enough some time ago to supply me with a quantity of luetin for this purpose. Some of the cases in my series were injected by Dr. Noguchi himself, upon the occasion of a recent visit made by him to this city. I can do no better than by submitting the cases at once, with a very brief clinical history of each. I wish to express my sense of obligation to the following gentlemen for the privilege of using their cases for this work: Drs. H. J. Scherck, W. M. Robertson, W. W. Graves, L. Sale, G. Cale, L. Schuchat, O. L. Suggett and W. B. Dorsett.

It can readily be seen from scanning this list that the luetin test is negative in primary syphilis, negative at times in secondary untreated syphilis, negative in some latent and parasyphilitic diseases. Also, it is to be noted that it is positive in treated secondary cases, particularly after an injection of salvarsan; positive in tertiary cases as a rule. Its relationship to the presence and absence of the Wasserman reaction can also be seen from the above; namely, the Wassermann is often positive when the luetin is negative, and vice versa. We know that the Wassermann test is dependent upon the infectivity of the invading microorganism, while the luetin test is dependent entirely upon the anaphylactic reaction of long-infected syphilitic tissue. Naturally, we cannot expect the luetin test to be positive until the individual has been infected long enough for his tissue to become sensitized. Once this sensitization of tissue has taken place, a positive luetin reaction will be observed as long as the patient is infected. Noguchi advances the hypothesis that the disappearance of the luetin reaction may mean that the patient is "cured" of the disease. We know that the disappearance of the Wassermann has no rela-

LUETIN RESULTS

		Luetin.	Wassermann.
	City Hospital		
	C., infection 6 mos., one month ago rupial eruption al[illegible] [illegible] wel[illegible] Hg. med..	Negative	Three weeks ago Positive = + + + +
	W., 2 months ago, initial lesion; 5 weeks ago, secondary; [illegible] weeks ago, 0.6 Salvarsan.	Positive	Positive = + + + +
	H., three penis lesions, probably chancroidal..	Negative	Negative
4	M., initial lesions 6 weeks ago..	Negative	Positive = + + + +
	S., mac. pap. eruption appearing 3 weeks ago; initial lesions 42 days ago.	Negative	Positive = + + + +
6	D., 12 yrs. ago initial lesion, sores on lower lip, lingua geogr.	Positive	Positive = + + +
7	E. W., trauma of nose simulating saddle nose. No history lues.	Negative	Negative
	E. M., 6 yrs. ago, initial lesion; 3 mos. ago, ulcerative lesions on legs; 3 weeks ago Salvarsan intramusc.	Positive	Negative
	Jos. W., 9 yrs. old infection saddle nose, etc.	Positive	Negative
10	P. (control), g. c. arthritis.	Negative	Negative
11	R. B. (control), g. c. acuta.	Negative	Negative
	Alexian Bros. Hospital Cases		
12.	Mc L., diagnosis	Negative	Negative
13.	C., general paresis	Negative	Positive, blood c. s. fld = + +
14.	S., c. s. lues	Positive	Positive = +
15	M., definite history lues	Positive	Positive = + +
16	Baby (Dr. Lipman's case), Jewish chi., congenital syph. [illegible] 6 weeks old. (Case has yielded to Hg. medication)	Negative	Blood of mother negative.
17.	P. (Dr. Schuhhat), primary lesion, three weeks old, classical Hunterian chancre, spirochæta in dark field	Negative	Positive + + + +
18.	L., [illegible] sore on penis, no spirochæta found in dark field or culture.	Negative	Negative
	City Hospital Medical Cases:		
1	S., G 30, liver syphilis tertiary	Positive K. A. umstimmung	Positive + + + +
20	F., gall bladder	Negative	Negative
21	B., surgical (control)	Negative	Negative
22.	B., diabetes bronze, cirrhosis hepatitis	Negative	Negative
23	B., tertiary (Dr. Englebach).	Positive	Negative
24.	B., (Dr. Richter), G 20	Positive umstimmung	Negative
25.	M. L., G 50, aneurysm aortæ	Positive umstimmung	Positive + +
26	C. (control)	Negative	Negative
27	C. (control)	Negative	Negative
28	B. (control)	Negative	Negative
	Dr. W. (Dr. Meisenbach), 5 yrs. treatment. W. [illegible] different men, negat. This test applied 2 yrs. after treatment stopped	Negative	Negative
	C., latent, 3 yrs. after infection, sores in mouth. Salvarsan administered. Test to be repeated	Positive	Positive + + + +
	C. (Dr. Suggett), tertiary lesion nose.	Negative	Positive + + + +
	R. E., old well treated case, blood has been tested repeatedly, always negative.	Negative	Negative
	G. T. (Dr. I. J. Harris), tabetic, incipient	Negative	Positive + + + +
34	B., 4 yrs. very little treatment, sore throat, enlarged glands, etc.	Positive	Positive + + +
	W. (Frisco Hosp.), man unconscious, aphasia, etc. [illegible] but death ensued [illegible] 2 hrs., no P. M.		Positive + +
	R., old case, well treated.	Negative	Negative
	R., congenital case supposed reinfection and reported as [illegible] Drs. Suggett, Graves	Negative	Negative
	R. W., case of 5 yrs. infection, patient took very little treatment, liver up to 3rd rib, [illegible] thought of surgery on gall bladder, 3 Wassermann in period of 6 weeks. Negative	Strongly positive umstimmung	Positive, after KI for 10 days.
	G. A., well treated case for 6 yrs., 3 Wassermann's in last 2 yrs. Negative	Negative	Negative
40	Mr. N. (Dr. Graves), diagnosis = C. S. lues, others call it [illegible] neurasthenia, etc. Three [illegible] of this case sent to me under different names all positive. Husband denies syph. His blood is negative to Wassermann. Noguchi positive	Strongly positive umstimmung	Positive + +
41	R., one year ago mac. pap. syph. severe type, constitutional symptoms pronounced, fever, etc. Salvarsan at that time followed by Hg. No symptoms now	Positive	Positive + + +
42	M. (Dr. Chilton), case 5 yrs. old, palmar syph., last year all over hands like gauntlet. Salvarsan alone cleaned it up, had been resistant to Hg altogether. 3 intravenous injections in past year	Positive	Negative
4[illegible]	[illegible] (Dr. [illegible]), supposed syph. stricture rectum, no history		Negative
4[illegible]	A. F., optic nerve atrophy, luetic case 1½ yrs. old. Salvarsan [illegible] 1 yr. ago into hip, lot of pain, swelling, no other treatment until 1 week ago, another Salvarsan intravenous, with Hg. injection now being taken, more tests to follow	[illegible] a "torpid" reaction. Negative	Positive + +

tionship at all to a definite stamping out of the disease. Sometimes it becomes negative without any treatment. Sometimes after becoming negative the Wassermann becomes strongly positive under full treatment, not on account of such treatment, but in spite of it. Sometimes there is a fluctuation in the complement fixation test, now positive, now negative, and again positive. In other words, the Wassermann to my mind has no prognostic or therapeutic importance. It is present in my personal series of reactions in about 40 per cent. of tertiary cases, whereas the luetin test I believe will show up in a much greater percentage of cases.

I should like to say a word or two regarding the technique of administration of the luetin test. Dr. Noguchi keeps it in cork-stoppered bottles. It should be kept on ice when not in use. It is used by mixing one part of the luetin to two parts of sterile salt solution. Two syringes are to be used, one for the luetin, the other for the "control" fluid, which is simply a suspension of the culture medium without any spirochetes. The luetin is injected into the left arm, the "control" fluid into the right arm. About 0.05 c.c. of the solution is to be injected. The skin is prepared by rubbing briskly with sublimate-alcohol solution, then allowing it to dry. The luetin is injected intradermically, that is to say, as superficially as possible into the layers of the skin, not subcutaneously. To do this properly one should use a very fine needle with a short sharp point. The needles that ordinarily come with the regulation tuberculin syringe I find quite ideal for this purpose. Syringes and needles should be thoroughly boiled before use. Where one has a large number of cases to test, the two needles attached to the syringes loaded with many doses of the luetin and control fluid respectively, can be "flamed" between each injection, thus saving a good deal of time and also preventing infection. No dressing is applied to the inoculated places. The injection is made into the outer aspect of the arm just above the elbow joint. If the injection is made properly, a small white wheal is raised by the fluid. Extreme caution is to be used to make the injection as superficial as possible. This can be done by sliding, as it were, the needle into the skin so that the eye of the needle just passes beyond the observer's vision into the skin. Every step of the process must be carried out with a full "bacteriological conscience," from the time of opening the bottle containing the luetin or control fluid until the needle is withdrawn from the skin of the patient. The stopper of the bottle should not be touched by the fingers except where it does not come in contact with the neck of the bottle.

The stopper can be "flamed" before it is put back into the neck of the container. The luetin and control fluid should be sucked up into the syringe from a sterile glass container so that any chance of contamination of the bulk of the fluid may be properly avoided. Before using either the luetin or the control fluid, it should be inoculated upon culture tubes to determine whether there is any bacterial contamination. These culture tubes should have been placed in the incubator twenty-four hours before they are inoculated, to determine their own sterility. If found sterile, then they may be inoculated, and, if the test fluids show no growth after twenty-four hours incubation, one may safely proceed with the test. From time to time, reinoculations from the bottles should be made on culture tubes in order constantly to control their sterility. It is manifest that if these fluids become contaminated with gas-producing organisms such as the staphylococcus, one will obtain pustules in all cases in the left or right arms, or both, dependent upon whether one or both bottles are contaminated. This of course vitiates the findings. Too much care cannot be taken in preserving inviolate the sterility of these two fluids.

The reaction which takes place should be looked for after the seventy-second hour or later. One should not look at the subjects until the third day, so as to give the traumatic effect time to subside. One will observe a positive reaction in the three following forms (quoting from Noguchi):

"(A) Papular form: A large, raised, reddish, indurated papule, usually five to ten millimeters in diameter, making its appearance in forty-eight hours, surrounded by a diffuse zone of redness and marked telangiectasis. The dimensions of this lesion increase slowly for three or four days, after which the inflammatory signs begin to disappear. The induration lasts about a week, except in certain instances where the reaction persists; this is seen in secondary syphilis under full mercurial treatment where there are no manifest signs at the time of the making of the test. Congenital syphilis shows this also.

"(B) Pustular form: This resembles the papular form until the fourth or fifth day, when the inflammation increases, the surface of the papule becomes edematous and multiple vesicles form, with central softening of the papule. In twenty-four hours the papule changes into a vesicle filled with semi-opaque fluid that becomes purulent. This pustule soon breaks, with a definite defect in the skin. I have seen this become quite severe, almost resembling a very large pustular infection of the skin (Case 38). This had to be treated surgically, bichloride packs, etc. This is seen in tertiary cases.

"(C) Torpid form: In rare instances, the injection sites fade in three or four days and then suddenly flare up." This was true in Case 43, where I made the mistake of calling the reaction "negative" after the fourth day. Three days later it suddenly flared up, with pustular formation.

I have seen all grades of these three forms in the cases cited above. I must say in regard to the normal or control cases that all traces of the injection in both arms disappeared in three days, the only visible indication that anything had been done to the skin being a faint bluish discoloration. In other words, there seems no possibility of mistaking a negative for a positive reaction, provided one has made the injection properly, and also provided the fluids are sterile.

Noguchi describes a peculiar phenomenon of the skin of syphilities seen in the right or "control" arms of the patients upon whom this test is performed, namely, what he calls, after Neisser's celebrated designation of the peculiarity of syphilitic tissue, "Umstimmung." Neisser first called attention to the pathological condition of the skin of syphilities whereby a slight traumatism will produce much more severe reaction than would be the case with the skin of normal individuals. Finger called this "superinfection," presupposing that a trauma applied to syphilitic skin created a spot of weakened resistance and wandering of the spirochetes thither from some hidden focus. Neisser's view seems to be more correct inasmuch as no one has ever found spirochetes in such traumatic spots. I have seen this "umstimmung" reaction in the control arm in five of the forty-four cases just cited. The reaction in this "umstimmung" arm was not nearly as severe as in the luetin-injected arm. Noguchi does not believe that the luetin reaction is altogether "umstimmung" in nature; rather does he incline—and I believe rightly—to the original idea of its being an allergic phenomenon. Of course, some "umstimmung" might be mixed up with the allergic reaction.

I wish to state that the Wassermann reaction worked out in conjunction with these cases was made according to the so-called "straight" Wassermann technique, using the anti-sheep system, with careful controls, with two kinds of antigen, etc. Definite quantities of the patient's serum were used in falling doses, beginning with 0.2 c.c. and dropping to 0.1, 0.05 and 0.025 c.c.

From these considerations one might conclude that the luetin test of Noguchi will become quite useful in assisting in the diagnosis of lues and, possibly, may help us in estimating a "cure" of the disease, if one can conjure up his imagination sufficiently to believe that this disease can be cured. We cannot expect any help from the test in the primary and secondary stages. When active treatment has been given in the secondary stage, particularly salvarsan, one can expect a positive luetin reaction. It will be of greatest service, I believe, in those obscure tertiary manifestations where the Wassermann reaction so often fails. As to its presence in so-called parasyphilis, I have not as yet had sufficient opportunity to draw deductions in this group of cases. We expect to try it out thoroughly in the service of Dr. W. W. Graves in the Neurological Department of the Alexian Brothers Hospital, due report of which results will soon be published. Noguchi has certainly given us a test which will rank up close to the Wassermann reaction in certain cases. Nevertheless, like the Wassermann, it is a symptom and only a symptom, and until further light can be thrown upon it, it should be regarded only as such.

222 Victoria Building.

GONORRHEAL ARTHRITIS: METHODS OF DIAGNOSIS AND TREATMENT.*

By G. K. SWINBURNE, M.D.,

NEW YORK.

For the intelligent treatment of all cases of arthritis an accurate diagnosis is essential. The following case will illustrate the importance of this point:

Case I.—In November, 1911, a physician, age 33 years, married about four or five years, and

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having one child, came under my care with a chronic arthritis of the left knee-joint. The leg was fixed in extension, the knee swollen and painful and surrounded by a good deal of old inflammatory exudate. At the age of 13 he acquired a gonorrhea which lasted about two months. Two years later, when 15 years old, his left knee-joint became severely inflamed and he was taken to an orthopedic surgeon, who pronounced it tuberculous. He had been under this surgeon's care for a period of 18 years, during which time the knee had never been completely well, though the condition varied from better to worse. At times it was so nearly well that he was able to dance, and then the condition would relapse. At the age of 23 he acquired a second gonorrhea, for which he was treated about seven weeks, but no further trouble from this infection was noted. For the last few years his knee gave him a good deal of trouble. It was almost always painful, and slight trauma would lay him up in bed for several days. Finally, in the early fall of 1911, he had an *x*-ray plate made. The physician who took this stated that it did not appear to indicate a tuberculous joint, so he took the plate to another orthopedic surgeon, who stated that the plate suggested a gonorrheal joint. The patient came to me and asked if I would give him injections of gonococcic bacterins. An examination of the prostate and vesicles showed that he had chronic prostatitis and vesiculitis. Examination of the expressed material did not reveal any gonococci, nor could I find any microorganisms in it. I did not have a culture made. I advised that before anything was done that the complement-fixation test for gonorrhea should be made from a specimen of his blood. This specimen was examined by Dr. H. J. Schwartz, who reported that the blood reaction was positive for gonorrhea. I then started in with gonococcic bacterins, beginning with twenty millions and running up at each successive injection, every other day, until five hundred millions were reached for the dose. The prostate and vesicles were also treated. At the end of two weeks the pain had practically ceased, the patient was able to walk without a cane, and to stand all day without fatigue. At the end of six weeks the bacterin treatment was ended. At this time there was absolutely no pain in the knee and it was reduced three-quarters of an inch in circumference. The prostate and vesicles were treated during the remainder of the winter. The patient from that time to this has remained in the same condition. As regards pain there is none. The knee is still stiff, but there is no pain and the slight movement would seem to indicate that there is no bony ankylosis.

The second case, which would show the importance of diagnosis, was a case appearing in the practice of Dr. George W. Warren, who gave me the man's history.

Case II.—H., age 42, married, manufacturer. Had many previous attacks of gonorrhea. Last attack occurred four years ago. He had then empyema of the seminal vesicles, acute prostatitis, double epididymitis, a general systemic infection which manifested itself in a rise of temperature varying from 101° to 104° for four weeks. During this time the knee was swollen and contained fluid. A finger and one sternoclavicular articulation were also involved. At this time, four years ago, he left town with pus in the prostate, but no gonococci were found at that time. He remained in fairly good condition for a year and a half. During the past two years he has been losing weight, his general condition going down hill; both knees alternately swelling, with great pain in the muscles of the back, and great difficulty of motion after rest for a short time. During the time that he was out of New York he spent most of the time in business in Ohio, and he sought relief by going to various springs and places where he received the bath treatment for rheumatism, not only without relief but getting worse all the time. Present history: He returned to New York early in December with a loss of weight of twenty pounds since the last visit; inability to walk in an upright position; his right knee markedly swollen, and with inability to bend it; his urine clear and containing a few shreds, with an indurated seminal vesicle felt on left side; his prostate hard and nodular and yielding a secretion showing pus and cultures of which were found to contain pure *Staphylococcus aureus*. Nevertheless, on December 28, 29 and 30, he was given 2 c.c. of antigonococcic serum without improvement. His bladder was washed daily and massage of the prostate was performed at regular intervals. In view of the fact that there was no improvement from the serum and that the *Staphylococcus aureus* and no gonococci were found, on January 1 treatment with the combined bacterins (Van Cott) was begun. These were administered twice a week, while on the other days of the week he was given the new Schäfer products with which we are experimenting. The one used was the "mixed infections vaccine." I will give a description later of the different varieties of the Schäfer so-called vaccines. Under this treatment, which continued from January 1 to January 25, there was steady improvement in the patient's condition, rapid at first, slower afterwards. The injections were oftentimes followed by considerable reaction. Sometimes there was a sleepless night, with chill, fever, and sweating. There was steady diminution of the swelling of the knee. On January 23 the patient was able to enter a bowling match, to spend an entire afternoon at the Automobile Show, where he was exhibiting, and to run up and down stairs. At this period he left town without further treatment. In reviewing the history of this case it is to be noted that the greatest improvement followed each of the injections of the "combined bacterins" (Van Cott).

The importance not only of making an accurate diagnosis of joint lesions, but in gonorrheal arthritis of accurately determining what lesions exist in the urinary and genital tract, is exemplified in the following case:

Case III.—The first year that I began experimenting with Rogers-Torrey antigonococcic serum, I had a Swedish patient, about 35 years of age and weighing about 200 pounds, who visited the dispensary. At the time of admission he had an acute gonorrhea, which rapidly became posterior. In about three weeks he developed acute gonorrheal rheumatism in both knees and feet and the right shoulder. The urethral discharge was profuse; the urine in both glasses was very cloudy. I thought this a good case for treatment with the serum, which was administered for a period of nearly six weeks, during which time the patient lost fifty pounds in weight. There was not the slightest indication of improvement in his condition; the only change seemed to be loss of appetite and weight. It was with great difficulty that he could get to the dispensary, although he lived only a few doors away. This patient gave a history of gonor-

rhea fifteen years before, and despite the fact that he now had a profuse purulent discharge, well loaded with gonococci, I made an examination of the urethral canal for the first time and found a narrow stricture situated about three inches from the meatus through which I could barely pass a flexible bougie No. 12 F. This stricture yielded readily to dilatation, so that in ten days I had the urethra up to its full capacity, and without further medication the patient's condition began to improve. The pain left his joints, the discharge ceased, the urine became clear, and from then on for a period of six weeks he had entirely regained his weight. The only lesion remaining was a stiffness of the right shoulder joint. In raising the arm the scapula would move with it, showing marked adhesions about that joint without ankylosis. I then again injected antigonococcic serum with the result that in about two months he was completely restored to health.

CASE IV.—This is another example illustrating the importance of accurate diagnosis. A. J., 35 years, single, had been irregularly treated at the dispensary three years previously for gonorrhea. One year later he appeared with marked stiffness and swelling of the fingers of both hands so that he was unable to work. He got at that time a few injections of the antigonococcic serum and then disappeared. A year later he returned to the dispensary with his hands in the same condition and asked me if something could not be done, that he had been unable to work for the last year or more, and was down and out. I took it for granted at that time that his trouble was gonorrheal rheumatism, and I made a complete examination of the urinary tract. Everything, however, appeared practically normal. I began to treat him with the gonococcic bacterins with negative results. I decided on a complete change of treatment and employed electrical treatment with the D'Arsonval current, the static current, the different forms of sparking and brush discharge, and the Morton wave current. Some slight improvement was noted which allowed him to go back to work for a few days, at the expiration of which time he returned to the dispensary as bad as ever. In July, 1911, I obtained some of his blood for the complement-fixation test for gonorrhea. The test gave a negative reaction. At this time I was carrying on a series of experiments with the gonorrheal vaccines (Schäfer) and the fixed infection vaccine (Schäfer), giving on alternate days 5 c.c. subcutaneously beneath the scapula. Ten injections were administered and steady improvement was noted in the fingers of both hands. He left the dispensary, went back to work, and has not been in since. What his present condition is I cannot say nor have I been able to trace him; but from the fact that he was so much improved, and was so enthusiastic regarding the treatment, I believe that if the results were not permanent he would, at least, have come to see whether anything more could be done.

The complement-fixation test for gonorrhea, in my opinion, has added a valuable means for making a differential diagnosis in cases of arthritis, and it is my habit to use it almost constantly. It is, of course, more important in chronic cases than in acute. An acute arthritis following closely upon a recent gonorrhea, with a history of repeated attacks of gonorrheal rheumatism occurring during the attack, as quite frequently we see them, renders it quite probable that such cases are pure gonorrheal arthritis. The tendency of the patients to conceal their urethral condition from the physician, unless he is the one who has been treating it, makes it important in cases of joint disease to bear in mind the possibility of gonorrheal infection.

Treatment: Since 1900 I have been working on such cases of gonorrheal arthritis as come to me in the course of my clinical work with serums and bacterins. The manner in which they have been employed has been somewhat outlined in the histories already related. On several former occasions I have given my views as to the value of the antigonococcic serum and stock gonococcic bacterins. During the past year, through the courtesy of the Department of Experimental Medicine of Parke, Davis & Company, I have been enabled to employ two experimental products prepared according to the suggestions of A. F. Schäfer, of Bakersfield, Cal. These are known as mixed infection vaccine (Schäfer) and gonorrheal vaccine (Schäfer). The application of the term vaccine to these products seems to me to be a greater misnomer than its application to suspensions of dead bacteria, commonly called bacterial vaccines, as no bacteria are in the solution, which consists merely of the filtrate of cultures grown on a fluid medium. According to Schäfer's description in the *Therapeutic Gazette*, April 15, 1911, the mixed infection vaccine is made from a large variety of pathogenic bacteria, grown in suitable culture media, and after the addition of pure carbolic acid the product is then filtered through porcelain, and the filtrate is the material employed. The filtrate, therefore, contains the metabolic substances which have developed from the growth of many bacteria on the culture media. The finished product contains about 0.5 per cent. phenol as a preservative. The mixed infection vaccine is the basis for the production of all vaccines, but for the treatment of specific conditions an excess of a similar filtrate is added, that is, in the preparation of gonorrheal vaccine (Schäfer) 50 per cent. of the product is mixed infection vaccine and the remainder is a similarly grown product in which the gonococci alone are employed.

In the use of these experimental products I have not found it necessary to change my views which I have previously stated on several occasions relative to the fact that gonorrheal arthritis, occurring in the course of a primary gonorrhea, is almost invariably amenable to treatment by antigonococcic serum, and in my opinion it may be considered an absolute specific for such cases. In chronic gonorrheal arthritis my results with gonococcus bacterins have been more efficient than with the antigonococcic serum. All my clinical experience has been limited to the use of stock bacterins, as at no time have I used the autogenous products, but so far my results from these stock vaccines have proved very beneficial in cases in which, in addition, careful attention has been given to the proper diagnosis and the proper treatment of the chronic lesions in the urinary and genital tracts. In the majority of cases of chronic arthritis occurring in the male (and my experience is chiefly limited to infections of the gonococcus in the male) the prostate, vesicles, and verumontanum are the usual seat of the lesions in the urinary and genital tract. As it may prove of some interest I am submitting some cases in which I have successfully employed the Schäfer vaccines. One of the earliest gave a history as follows:

CASE V.—A. G., age 21, single, Russian, applied to the dispensary for treatment July 29, 1911. The

primary attack of gonorrhea began four weeks before admission. Two weeks later marked swelling with acute pain, redness, and tenderness occurred in the left elbow joint, with flexion limited to 95° and extension to 130°. One week later hematuria from the posterior urethra made its appearance. Previous to his coming to the dispensary he had received six injections of antigonococcic serum. These at first produced some slight improvement, but later the condition remained stationary. At the time of admission the urine was clear, the prostate appeared normal, and the elbow was swollen and painful. On his first visit he received 5 c.c. gonorrheal vaccine (Schäfer) subcutaneously, and with the exception of a slight headache occurring a few hours after, no other reaction was noted. On his next visit to the dispensary the patient felt very much improved and the pain in the elbow was markedly diminished. Both flexion and extension were increased, the former to 85°, the latter to 145°. Similar injections were administered, usually on alternate days, until August 26. During this time a total of eleven injections were given without any reaction, but with steady and rapid improvement in the condition, so much so that by August 10 flexion and extension were practically complete. It will be noted in this history that it was an arthritis occurring during a primary attack of gonorrhea and that the administration of antigonococcic serum did not produce marked benefits. The injections of gonorrheal vaccine (Schäfer) produced immediate improvement and ultimately effected a cure.

Case VI.—This case was referred to me by Dr. Louis E. Schmidt, of Chicago. In October, 1911, the patient contracted gonorrhea, which was followed by a prostatitis, and at this time a carbuncle made its appearance on his neck which made him very ill. This was followed by swelling, pain, and redness of the metacarpophalangeal joint of the middle finger. The corresponding joint of the right foot was similarly affected and he also complained of marked pain in the region of the lumbar vertebræ. Before coming to New York the patient had received two injections of 2 c.c. each of gonorrheal vaccine (Schäfer), administered subcutaneously by Dr. Schmidt. At the time of his first visit to me the patient was still in distress, the swelling of the feet being so great that he was obliged to wear a much larger shoe than usual, and he had to use a cane and walked with a decided limp. The discomfort forced him to remain indoors, thereby delaying his visit to me for a few days. Following the local treatment of his prostate and urethra for the prostatitis, I administered a single injection of antigonococcic serum without any effect. This injection was followed two days later by an injection of 2 c.c. mixed infection vaccine (Schäfer) subcutaneously which produced a decided reaction, necessitating his going to bed. For the chilly sensation hot-water bottles were applied. The following morning he was able to walk with much greater ease and the swelling of the feet and hand were markedly diminished. Unfortunately, he was obliged to leave the city and on this account I refrained from giving him a second injection.

Case VII.—T. K., age 31, a Chinaman, born in the United States, came to the dispensary October 4, 1911, with a history of an attack of gonorrhea six months previously. On examination it was found that the prostate and vesicles were affected and the left knee was flexed with but slight motion and considerable pain, which was increased by motion. The patient walked on the ball of his foot. This condition had existed for five months. Frequent injections of 5 c.c. gonorrheal vaccine (Schäfer) subcutaneously were administered from this time until December 19, with the result that shortly after the institution of this treatment the pain had entirely disappeared. At the present time the knee is still stiff and slightly flexed and the patient still walks on the ball of the foot, but there is no evidence of pain. I have recited the history of this case for comparison with that of the first case reported, that is, the physician with a stiff knee, who had been treated for eighteen years, and I would like to ask the orthopedic surgeons if from their point of view, anything can be done to relieve the stiffness of the joints in these two cases. In one case the gonorrheal rheumatism, as far as I can see, has remained cured for more than a year, and in the other case there has been no sign of the disease for at least three months.

So far my observations have been limited to the clinical results following these vaccines. At the present time I am not in a position to formulate or fully discuss any theories as to how the Schäfer products act. Dr. Schäfer explains these results on the basis of multiple infections and quantitative reactions. The action of these products is certainly peculiar and not thoroughly understood, but some interesting facts have been noted. Dr. Schäfer has stated that the pain in an inflamed joint, whether due to trauma, as a sprained ankle or bacterial infection, as a gonorrheal joint, is relieved by the administration of these vaccines. This is probably due to relief of the tension in the joint. The phenomena that occur following the administration of these vaccines are usually quite pronounced, but vary to a marked extent. The most common are as follows: Two to four hours after the injection the patient complains of a chilly sensation which may vary from a slight sensation to a distinct chill. This is followed by headache, malaise, fever, pain over the stomach, nausea, vomiting, diarrhea, increased perspiration and urination, with usually the relief of pain and swelling in the affected area. Occasionally herpes around the mouth appears. This occurred in only one case of the series I have treated. When the reaction is complete the patient feels much improved. The majority of the cases treated by me have been ambulatory and have been controlled with difficulty. At no time have I administered the material by the intravenous method, by means of which it is claimed the reactions are more rapid and pronounced. G. F. Seaborn in a personal communication has offered a theory relative to the action of these products which may possibly explain their effect in part. He suggests that the Schäfer vaccines may cause pronounced movements of tissue lymph, thereby rapidly calling forth normal antibodies from remote areas into the blood stream, and then supplying them to the infected area. This may also explain the rapid improvement in the case of A. G., in whom the administration of antigonococcic serum did not produce beneficial effects, but in whom the ultimate use of gonorrheal vaccine (Schäfer) caused rapid improvement. The latter product may have caused the rapid movement of the antibodies administered to the infected area, thus effecting the cure. In the case referred to me by Dr. Schmidt, of Chicago, the same result may have occurred or the carbuncle may have produced a mixed infection in the joints which were benefited by the administration of the

mixed infection vaccine (Schäfer). We propose to attempt some experiments along this line in the hope that we may determine the action of this product. I have had in the past two years the following two cases of arthritis occurring with a gonorrhea:

CASE VIII.—A physician came to me with an acute primary attack of gonorrhea. The disease was confined to the anterior urethra. He had been under treatment for several days when an injection which I gave him distended the urethra rather rapidly to such an extent as to cause some pain. I immediately released it and made a slower second injection which the patient held for the usual length of time. There was some slight bleeding from the urethral canal, showing that a trauma had taken place. In the evening the patient was seized with chills, fever, and severe pains and swelling in the left knee-joint. He suffered all that night with the pain and the next day was unable to perform his work. He remained in bed that day and in the evening I was telephoned for and told that his knee had swollen and that he would like to see me. I went, thinking I had to deal with a gonorrheal rheumatism, and was prepared to give him an injection of serum. I saw him about nine o'clock that evening, but before I had arrived the pain had ceased. He was feeling much more comfortable. There was still some swelling, but I decided to do nothing until the following morning, by which time the knee had considerably improved. After remaining in bed all day the following morning he was able to go about, and experienced no more trouble. No treatment other than the local application of heat and cold and no medication other than a brisk cathartic were used in this case. He rapidly recovered from the gonorrhea and had no further trouble nor symptoms. The inflammation of the urethra did not extend beyond the cut-off muscle. He never had a posterior urethritis. It is my belief that in this case the trauma to the urethra enabled some toxins, bacteria, or what not to enter the general circulation. This arthritis was quickly overcome by the patient's own organism without further interference, and my belief is that it was a true gonorrheal rheumatism.

CASE IX.—This was a young man who was treated by me for his first attack of gonorrhea. It was a rather severe anterior urethritis, but never became posterior. One day he appeared with some slight discomfort in the wrist that increased during the day, and the following day when he came the wrist was swollen, red, and painful. I gave him at once an injection of antigonococcic serum. The following day when he appeared the signs of the trouble had markedly diminished. I then gave him a second injection with the result that on the following day there was hardly a trace of the trouble. At the end of three days the wrist had entirely recovered, and no further treatment of the rheumatism was required.

A year ago I became acquainted with the different forms of static electricity, more especially the Morton wave current, the D'Arsonval current, and also the Oudin current as employed by W. B. Snow, of New York. I have found great assistance in the treatment of chronic prostatitis and vesiculitis occurring as a causative factor of gonorrheal arthritis, by the application of the Morton wave through the prostatic electrode over the prostate and vesicles, and I have obtained more rapid and better results than heretofore.

64 EAST FIFTY-SIXTH STREET.

A CASE OF TYPHOID FEVER WITH AN UNUSUALLY LONG DURATION OF 78 DAYS OF THE PRIMARY ATTACK. TWO TRANSFUSIONS. RECOVERY.

BY MORRIS MANGES, M.D.,

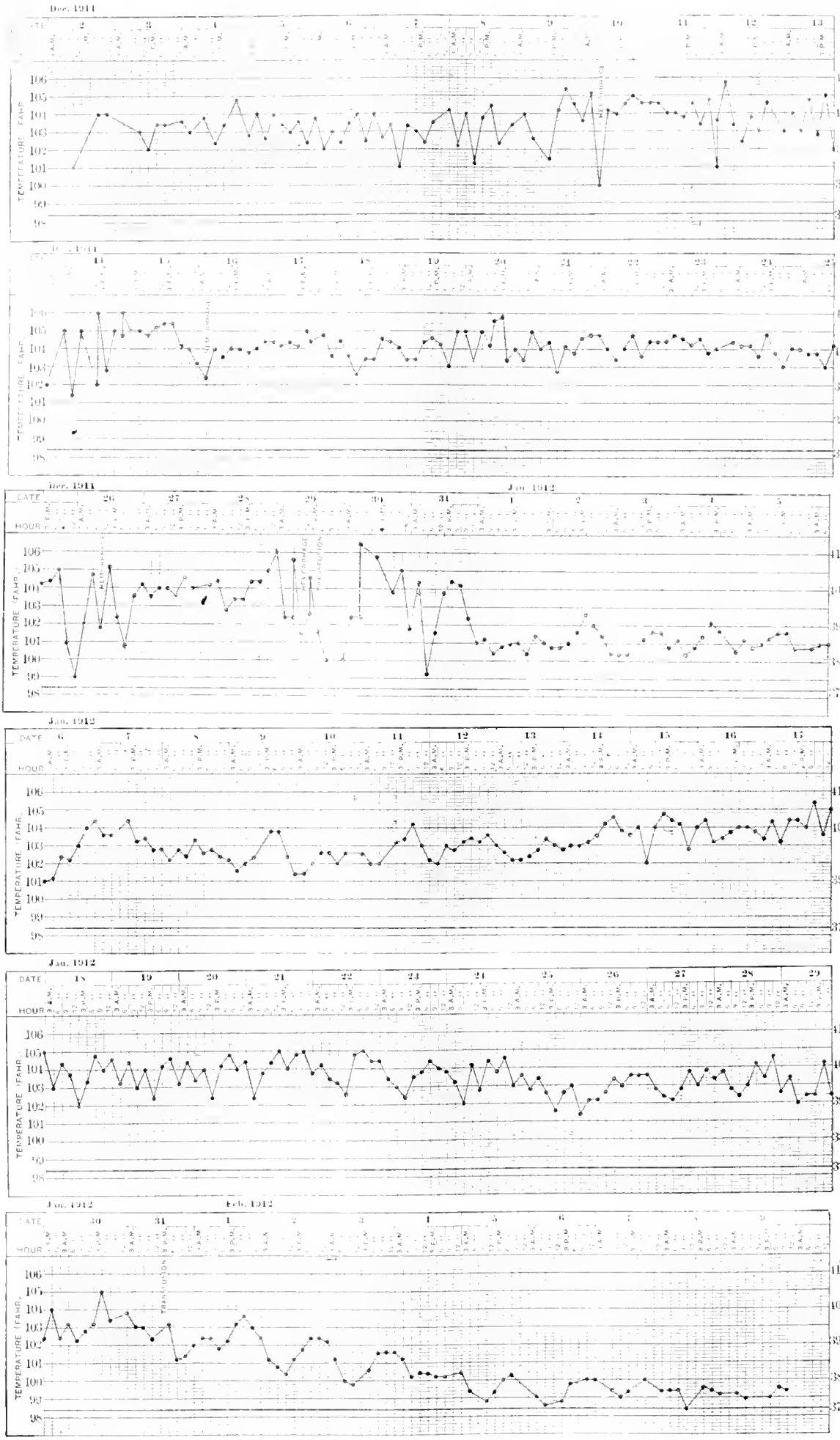
NEW YORK.

PROFESSOR OF CLINICAL MEDICINE, UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE; VISITING PHYSICIAN, MOUNT SINAI HOSPITAL.

THE present case is remarkable from two standpoints: first, from the very long duration of a primary attack of typhoid fever without any relapse; and second, from the fact that two transfusions were performed, one to save life after severe hemorrhages; the other, to terminate the disease. To enter into many details of a case of such long duration would involve needless expenditure of time; hence the reader is referred to the chart from which a general conception of the course of the disease may be gained. Only the more interesting features will be especially referred to.

W. M., 30 years of age, came under my care on December 2, 1911, with a characteristic early typhoid fever history of 10 days' duration. The Widal reaction was reported positive on the first examination, which was made on the eleventh day of the disease. The leucocyte count was 6000 with 83 per cent. polynuclears. The urine showed a mild nephritis. The roseola was very scanty, and, indeed, throughout the course of the disease few rose spots were present, the crops being widely scattered. The most profuse crop consisted only of about 15 to 20 spots and accompanied the colon infection (53d to 62d day). The course from the 10th to 17th day was that of an ordinary typhoid fever of moderate severity. On the evening of the 17th day the temperature rose to 105.4°, falling abruptly to 100° early the next morning. A very large intestinal hemorrhage was the cause of this drop in temperature. It is interesting to note that instead of the pulse and respiration rising after this large hemorrhage they actually fell, the pulse from 104 to 96, and the respiration from 32 to 30. Within a few hours after the abrupt drop, the temperature rapidly rose to 105°. After the hemorrhage the hemoglobin was 65 per cent., and the leucocyte count was 10,400, with 85 per cent. polynuclears. Twenty cubic centimeters of human serum were injected to control the bleeding. At midnight there was another drop of temperature from 104.8° to 101°, followed by a chill, and a rapid rise to 105.4°. This drop was not due to the hemorrhage or to the serum, as such oscillations of temperature never occur after injections of human serum.

The whole picture of the disease was entirely changed by the hemorrhage, from that of an average case of typhoid fever to one of a severe type; the most striking feature was the marked distention of the abdomen with pronounced rigidity and partial obliteration of the liver dullness. Flatus was expelled only in very small quantities, and with great difficulty. So extreme was this distention that for the following week a perforation seemed imminent, and all preparations were made for that eventuality, which, fortunately, however, did not occur. The white blood cells kept around 10,000, but the percentage of the polynuclears rapidly sank to 50 per cent. The hemoglobin fell to 60 per cent. About this time a diastolic murmur appeared over the pul-


Dec. 1911
DATE
HOUR
TEMPERATURE (FAHR.)
106
105
104
103
102
101
100
99
98
41°
40°
39°
38°
37°
HEMORRHAGE
Dec. 1911
Jan. 1912
HEMORRHAGE
TRANSFUSION
Jan. 1912
Jan. 1912
Jan. 1912
Feb. 1912
TRANSFUSION

monary area and persisted throughout the entire disease. Two chills, probably antipyretic, occurred on the 22d day. Clots were passed on the 24th and 25th days. Twenty cubic centimeters of human serum were injected on the 24th day. High temperatures with a clear sensorium persisted without any interruption save for occasional chills. The 33d and 34th days were marked with wide oscillations of temperature which were probably associated with a large hemorrhage which became evident on the 34th day, on which day 20 centimeters of human serum were again injected. The hemoglobin had fallen to 45 per cent. The leucocyte count was 6000 with 72 per cent. polynuclears. The evidence of the anemia had now become very pronounced; the temperature ranged between 105° and 106°, the pulse was 128, respiration was 34, and the general condition was so grave that more radical measures had to be considered to improve the situation. Accordingly, on the 37th day after consultation with Drs. Janeway and Libman, it was decided to transfuse. This was done none too soon, for on the morning of this day there was another chill and a drop of temperature from 106° to 102.4°, and 20 centimeters of human serum were again injected. Again the temperature abruptly rose to 105.4° after a chill and at once fell to 101.6°. While the patient was on the operating table, being prepared for the transfusion, there was another very large hemorrhage of fully a quart. The hemoglobin fell to 30 per cent. An arm-to-arm transfusion was rapidly performed by Dr. Buerger; the flow of blood was stopped when the hemoglobin had risen to 49 per cent.

The good effects of the transfusion on the patient's condition were very striking; the temperature fell to 100° within six hours, the pulse improved in quality and dropped to 100, and the respiration fell to 20. This improvement continued in spite of a very severe chill 10 hours after the transfusion, and a rise to 106.4°, followed by a fall to 101.8° twelve hours later. On the following day (the 39th) there were also several wide oscillations from 104.5 to 99.2°. For these wide ranges of temperature no explanation could be found. The following week was most satisfactory; the range of temperature was moderate, and the general condition was excellent. The hemoglobin kept between 47 and 52 per cent.; the leucocyte count hovered around 4,000, with 75 per cent. of polynuclears. There were no further hemorrhages at this time nor throughout the remainder of the disease.

On the 46th day the temperature again rose to 104.4°, the white blood cells also rose to 6,000, with 84 per cent. polynuclears, the cause being a bronchopneumonia in both lungs. This was not of a severe type, and lasted for five days, camphor in capsules, guaiacol carbonate, and Priessnitz compresses giving excellent results. Fresh trouble now appeared on the 53d day, when a very severe colon infection developed and lasted for nine days, the stools being numerous, profuse, and exhausting. The hemoglobin which had remained steady at about 46 per cent. now began to fall, being only 43 per cent. on the 61st day (white blood cells 6,000, 67 per cent. polynuclears); a high range of temperature persisted. There were occasional involuntary urinations, and the delirious typhoid state, which had been so conspicuously absent all along, finally appeared on the 61st day. On the 63d day the pulse became irregular and intermittent, ranging above 130. The respiration was rapid and shallow and varied between 30 and 50. Hypodermic stimulation with camphor and digalen was now begun; up to this time the requisite stimulation had been obtained with large doses of alcohol and camphor capsules. The hydriatic treatment by means of packs and sponges of various kinds was carried out with great difficulty and the vasomotor tone was lost. Excellent results, however, in improving the latter were obtained by squirting four cold siphons of aerated water, and then giving a short, vigorous sponge. Very little effect was produced upon the temperature, but a rosy glow of the skin was obtained, and the character of the pulse improved.

The condition was now very desperate. The patient lay in a typhoid state with very marked subsultus; feeding was very difficult; the temperature persisted high, between 102 and 105°; the pulse was irregular and above 130. The heart was widely dilated and displaced upward. The diastolic murmur was loud and the sounds were feeble, and an occasional pericardial rub could also be heard at the apex. The abdomen was distended. Both lungs were engorged and full of hypostatic râles with scattered areas of bronchovesicular breathing. Subicterus of the conjunctiva and a very large liver had been present since the 60th day. Two crops of petechiæ had appeared upon the chest and abdomen on the 62d and 66th day. The hemoglobin was falling steadily day by day, so that it was only 39 per cent. on the 67th day, 37 per cent. on the 68th day, and 35 per cent. on the 69th day. The blood culture which was made on the 66th day by Dr. Libman showed that the typhoid bacilli were still present in the blood. The stools were still frequent and exhausting, being nine in number on the 68th day. Evidently the intestinal ulcers were not healing, no immunity was being developed by the patient, and the persistence of the typhoid bacilli in the blood, as late as the 66th day, made it all too evident that the patient was apparently unable to fight his infection, which was still severe enough to cause temperatures of 105° on the 68th day. On the 69th day the only glimmer of hope that there might be a change for the better lay in the fact that there were no stools on that day, and for the first time there had been a profuse sweat. On this day, at a consultation with Drs. Carel, Libman, and Janeway, another transfusion was decided upon, in the hope that the addition of fresh blood might enable the patient to cope with his infection. Unless something radical were done the patient would surely succumb, as he was now almost moribund, and the circulation was rapidly falling in spite of powerful stimulation. Any additional complication of the slightest kind would surely have had the gravest consequences.

Donors having already been selected by Dr. Ottenberg no time was lost in performing the transfusion, which was done a few hours later by Dr. Buerger. In anticipation of this transfusion the fluids had been reduced to half during the preceding 24 hours, and ¼ grain of morphine was injected just before the operation. So extreme was the subsultus that an arm to arm transfusion was impossible, and the arm to leg route was chosen, so that the transfused blood would be introduced more slowly, and would thus embarrass the weak heart much less than an arm to arm transfusion might. The flow of blood was stopped when the hemoglobin had been raised from 35 to 52 per cent. The results of the transfusion were again most gratifying, the temperature fell from 103.2° to 101.2°; the pulse from being 130

and irregular fell to 110 and became regular; and the respiration fell from 34 to 24. There were drenching perspirations during the night. On the following day the temperature rose to 103.6°, but the general improvement in the patient continued. The hemoglobin kept at 52 per cent., and the white blood cells fell to 3,400, with 70 per cent polynuclears. The temperature fell by lysis, and touched 98.8° on the 75th day, five days after transfusion, being accompanied by a profuse sweat each day. On the 78th day the temperature finally touched 98.4°, and remained normal thereafter. The convalescence was rapid and uninterrupted.

The very long duration of 78 days of a primary attack of typhoid fever without relapse is especially noteworthy, as being longer than any other case which a search of the literature has disclosed. Flint's* longest case lasted 58 days. T. C. Janeway has informed me that the longest case which he could recall in the large experience represented in his father's and his own practice was 63 days. Musser† reports a case in which the temperature lasted for 73 days without any known complications. Up to the present year the longest duration of a primary attack which I had observed had been 45 days. During the past winter I had a patient in my service at the Mount Sinai Hospital, in whom the fever lasted 66 days without any complication; yet this case must be excluded, as the temperature touched normal on the 42d day, and immediately rose again; this being a recrudescence, it could therefore not be considered a prolonged primary attack. The long duration due to relapse is well known. All those who have had a large experience with typhoid fever can recall cases which lasted a very long time. Thus, I would mention a case which I saw with Dr. Post which lasted six months, the long duration being due to three relapses. I would also cite the case of a woman whose disease lasted 102 days, on account of a complicating empyema. P. Claisses's‡ case is probably the longest on record, as it lasted 200 days, the initial attack having been followed by five relapses.

That the present case lasted so long was due to a persistent typhoid bacteriemia, as typhoid bacilli were found in the blood culture taken on the 66th day. It is true that there was a distinct downward tendency after the first transfusion, and it looked as if the disease would soon end around the 46th day when the complicating pneumonia occurred. Clinically, however, the disease was still active at this time, even though the temperatures were on the low grade, as the characteristic stools, etc., were still present. After the pneumonia had subsided the severe colonic infection began, and lasted about ten days. Thus the present case presents involvement of both small and large intestines. The two transfusions which were performed are also of interest, since I can find no record of any case in which two transfusions were done successively, each having been performed for a different indication. The first which was done to relieve profound anemia was eminently successful, even though the preliminary drop of temperature that is seen after transfusions in any febrile condition was followed by a secondary rise. The latter is also often seen after transfusions. In this case, however, it rose to the unusual height of 106.4°. The subsequent course for the following week (40th to 45th days) showed a most decided improvement in every respect until the complicating pneumonia occurred on the 46th day. This first transfusion also emphasizes the importance of being prepared for emergencies in typhoid fever. For several days the possibility that a transfusion might be necessary was apparent, and donors were carefully selected by Dr. Ottenberg. Hence it was possible to perform the transfusion within three hours after a decision to do so had been made. In the meantime, the fourth and most alarming hemorrhage of all occurred, just as the transfusion was about to be begun. Had the usual delays which are so disagreeable a feature in all operations in private houses occurred, the loss of time might have been very disastrous to the already enfeebled patient. The second transfusion was performed for an entirely different reason. It is true that the hemoglobin was rapidly growing less and had fallen to 35 per cent. on the 69th day. The purpose of the transfusion, however, was not alone to raise the hemoglobin, but also for the distinct purpose of trying to combat typhoid bacteriemia, by the introduction of fresh blood which might possibly assist in the formation of the antibodies which the patient seemed so unable to produce. The possible danger that this procedure might be a two-edged sword was not lost sight of; hence in choosing a donor, one who had had typhoid fever was sought, as this would have enabled the patient to escape the possible danger that the fresh blood might have to be immunized against the typhoid infection. However, as no such donor could be obtained, and as the need was so urgent, this possible risk was run. The fears of possible harm from the transfusion proved to be groundless, nothing untoward occurring except the usual slight hemolysis, as shown in a moderate number of red blood cells in the urine. It is impossible to assert positively that this second transfusion arrested the disease, yet it is very probable that it did, because of the very marked improvement in the patient's general condition, and the marked betterment of the pulse and respiration and the rapid lysis after it. The only argument which might be advanced against this view is the fact that on the day preceding the transfusion the diarrhea had ceased, and for the first time in the course of the disease a profuse sweat had occurred without any chill; but inasmuch as the temperature was still as high as 105° during the night preceding the transfusion, and as typhoid bacilli were still present in the blood, as shown by the culture taken three days before the transfusion, both these facts would indicate that the rapid lysis which occurred would not have taken place without the transfusion. Such a marvelous change from a moribund patient to that of a rapidly convalescing patient, with a vigorous circulation, is never seen at the end of a severe typhoid fever when nature is left to its own devices.

My belief in the possibility that transfusion may have arrested the disease is strengthened by an experience which I had a year ago in the case of a young woman who was admitted to my service at the Mount Sinai Hospital. For two weeks before admission on November 15, 1910, she had had very severe metrorrhagia and fever from no apparent cause. She was markedly anemic; the red blood cells were 2,000,000. The hemoglobin was 21 per cent.; the colon index 0.5; the white blood cells were 15,000, and there was 73 per cent. of polynuclears. The red cells showed marked poikilocytosis

*"Practice of Medicine," 5th Edition, 1884, page 950.
†*University Medical Magazine*, Philadelphia, 1895.
‡Hare & Beardsley: "Typhoid Fever and Exanthemata," 2nd Edition, 1900, page 277.

and anisocytosis. A few normoblasts were found. The coagulation time was seven minutes. There was no family history of hemophilia. The physical examination was practically negative in every respect. The stools were also negative. The temperature was 102°. The patient stated that she had been feverish for some time. In spite of all treatment, the bleeding and a moderate fever persisted. The patient became so exsanguinated that ten days after admission the red cells had fallen to 1,400,000, and the hemoglobin to 16 per cent. The qualitative changes in the red cells became more pronounced. Several blood cultures were sterile; the Widal and Wassermann tests were negative. On November 27 Dr. A. A. Berg transfused the patient and raised the hemoglobin to 48 per cent. On the following day the red cell count was 3,000,000; the hemoglobin was 56 per cent., the white blood cells were 7,800; the polynuclears were 79 per cent., and the colon index was .9. Microscopically the red cells were almost normal. On December 1 the red blood cell count was 4,200,000, and the hemoglobin was 60 per cent; on December 27 the red blood cell count was 5,200,000 and the hemoglobin was 67 per cent. The bleeding from the uterus ceased after the transfusion and has never returned. During the year following the transfusion the menstruation has always been normal, and the patient has otherwise remained healthy. The temperature was 103.4° before the transfusion; 103 , eight hours after it, and there was a rise to 104.8° 24 hours after the transfusion. On the following morning it had fallen to 100°, but it rose to 104.4 in the afternoon. From this time on there was a gradual lysis to normal within four days. Thus within a week after the transfusion the temperature had become normal, the bleeding had been arrested, and besides a very marked improvement had been obtained in the condition of the blood. In this case the addition of the fresh blood not alone stopped the hemorrhages, but also arrested a fever which had persisted in spite of all treatment for over a month. The nature of this fever must remain unknown, since the blood cultures remained sterile. It was not due to the anemia, but was the result of the same unknown cause which produced the metrorrhagia.

A number of other features deserve mention. Thus the pronounced change in the type of the infection after the first hemorrhage. From running an ordinary course of a moderate infection the patient at once became very ill and the abdominal distention and rigidity became extreme, so much so that perforation seemed imminent. Indeed, those who lay much stress upon performing laparotomy in the pre-perforative stage would more than once have found all their indications for operative interference. A curious feature in the abdominal rigidity was due to the state of distention of the bladder. Polyuria was pronounced throughout the disease; on many days 120 to 130 ounces were passed in 24 hours; on one day the total amount of urine reached 159 ounces. The amount of urine at one time was frequently 26 to 30 ounces; and as soon as the bladder was emptied the rigidity of the recti muscles became very much less marked. Often dullness in both flanks was present; whether, however, free fluid was present or not I do not know. At all events I wish to emphasize the fact that free fluid in the peritoneal cavity without perforation is by no means an infrequent occurrence in typhoid fever. I have seen a number of such cases both in private and hospital practice. Dr. Albert Kohn has also seen a number of these cases in my service at Mount Sinai Hospital.

As I was enabled unfortunately to prove the presence of free fluid in the peritoneal cavity by operation even early in the course of the disease, I will cite a few details of the case. The onset of this attack of typhoid fever was very abrupt, and the symptoms were apparently due to the taking of some tainted food. On the third day the pain in the right iliac fossa was very marked, the fever had rapidly risen to 104 , there was an increasing rigidity of the right rectus muscle and a vaguely defined mass could be felt about the caput coli. The leucocytosis was 15,000 with 85 per cent. polynuclears. The Widal reaction was negative, and the suspicion that a typhoid fever might be present, possibly with a typhoid appendicitis, was ruled out. This possibility has been considered because of the slowness of the pulse, and because there was something about the patient which suggested that one was not dealing with an ordinary appendicitis. On the fourth day free fluid could easily be demonstrated in the peritoneal cavity, and as the pain and fever persisted an operation was insisted upon. On opening the abdomen a large amount of fluid escaped. The appendix and gall bladder were normal; nothing could be detected except injected and infiltrated areas in the ascending colon with enlarged glands in the mesentery. The operation was well borne. But the fever and the leucocytosis persisted; there were neither roseola, enlarged spleen, or any other symptoms of typhoid fever, except diarrhea. Repeated Widals all remained negative, and it was not until the fourth week that the blood cultures revealed a few typhoid bacilli, and thus enabled the making of the diagnosis of typhoid fever, from which the patient eventually recovered.

Human serum was injected on four different occasions after each hemorrhage. It is very difficult to say whether the serum had any effect or not. It certainly did no harm, which is more than can be said of rabbit serum, which so often is followed by a chill and high fever and other anaphylactic phenomena. The coagulative power of the blood was very high, the time of coagulation being less than four minutes. Hence the cause of the bleeding was the erosion of blood vessels in the ulcers, rather than any deficiency in the coagulating power of the blood. It is also of interest to note that in spite of this high coagulating power of the blood no venous thrombosis occurred.

The development of the basal diastolic murmur in the third week is also difficult of explanation; it was persistent throughout the course of the disease. During convalescence it was still present, but was gradually becoming less marked. In spite of this murmur the heart and the peripheral circulation remained excellent until the beginning of the tenth week, when dilatation of the heart became extreme, the arrhythmia pronounced, and the peripheral circulation in the skin so poor that no tâche could be obtained. It was at this time when the peripheral circulation was so poor that the squirting of the cold siphons of aerated water gave so much aid in producing such good reactions of the skin. This procedure of Dr. Baruch's can certainly be recommended as an easy and efficient way in restoring tone to the paralyzed vasomotor system, and

thus affording great relief to an embarrassed circulation. The subicterus and the enlargement of the liver which were constant features after the 60th day, and the appearance of two crops of petechiæ on the 62d and 66th day should also be mentioned. The petechiæ appeared after the last crop of rose spots had disappeared. That these petechiæ were not due to the typhoid bacteriemia alone is probable; otherwise they would be of frequent occurrence. I myself have never seen them in typhoid fever, except in the rare forms of the fulminating hemorrhagic cases.

In conclusion I would say that the experience of this case would indicate that the possible benefits of transfusion should be considered in the treatment of desperate cases of typhoid fever, and that its sphere of usefulness may be a wider one than the relief of acute anemias after profuse hemorrhages.

72 East Seventy-ninth Street

AUTOINTOXICATION THE DIRECT RESULT OF MECHANICAL DEFECTS WHICH PRODUCE STASIS IN THE COLON.

By CLARENCE E. COON, M. D.,

SYRACUSE, N. Y.

ASSOCIATE PROFESSOR OF CLINICAL SURGERY AND RONTGENOLOGY, COLLEGE OF MEDICINE, SYRACUSE UNIVERSITY; ORTHOPEDIC SURGEON, ST. JOSEPH'S HOSPITAL; ORTHOPEDIC SURGEON AND RADIOLOGIST, WOMEN'S AND CHILDREN'S HOSPITAL AND FREE DISPENSARY.

Metchnikoff announced about four years ago that after a careful study of the causes which tend to shorten life, he was of the opinion that chief among the general causes was autointoxication or self-poisoning, and that the chief source of this self-poisoning was the large intestine. "The human organism is by no means perfect; we have within us many defective parts; it is being clearly shown that one of the chief of these is the large intestine. There can be no doubt as to the damage which it inflicts." To overcome some of the evils of autointoxication and thereby prolong life, he advocated the introduction into the colon of bacteria which tend to prevent fermentation, putrefaction, etc. As a result of his studies, we have the sour-milk treatment.

During the past four years, this neglected part of our anatomy has been the subject of considerable study and attention. Sufficient facts have been proven to surely warrant further study, to the end that another subject will be added to those included in preventive medicine, that many lives will be prolonged, and that a majority of our chronic sufferers will be made more comfortable.

The following is compiled from the histories of fifty-five cases, examined and treated between February 1, 1911, and February 1, 1912. I have excluded those examined previous to the former date because of lack of completeness of the clinical examination. A comparative study of these fifty-five cases was undertaken with the idea of possibly finding some symptoms common to all and to make it possible to diagnose most cases without the *x*-ray. In a majority of the cases, the *x*-ray was used and the relation between the clinical symptoms presented by the patient, and the information furnished by the *x*-ray plate, was so constant, that there can be little doubt as to the correctness of the reasoning. It is a well known fact that the patients with obscure troubles which reach the *x*-ray man for study, do so after having consulted from five to twenty-five or more doctors. They belong to the large class of chronic sufferers always seeking relief.

When presenting himself for examination, the patient frequently gives a history of more or less constant abdominal pain more often in either the left or right hypochondriac region and I am requested to make an *x*-ray examination for renal calculi. When I obtain the clinical history, I am apt to find that the patient is always nervous and irritable, and is liable to be restless at night, even when free from pain. He sometimes sleeps very sound and wakes in the morning feeling very tired. He complains of lack of ambition; he is very liable to feel dull or dizzy; he has always had symptoms of indigestion; and he is quite often subject to bilious attacks and sick headache. A majority of the cases have always been constipated and have required very frequent cathartics ever since they can remember. Most of them complain of constant coldness of hands and feet and if the case is at all extreme they present a symptom which I have come to believe to be almost pathognomonic of self-poisoning, namely, a peculiar numbness of the ends of one or more fingers, more often found in the index and middle fingers. The finger presents a blanched, bloodless appearance, a changed sense of feeling, and no interference with motion. This condition is most pronounced on the palmar surface and may persist for an hour or more in spite of the application of heat, friction, motion, etc. When it begins to assume normal tone, there is considerable prickling and a sense of swelling and the part becomes very hyperemic. Since October 1, 1911, I have made this symptom a point of routine examination and out of a total of twenty cases, it was positively present in twelve, doubtful or not given in seven, and surely absent in one. It has been observed that these patients, as a rule, have a subnormal temperature and do not perspire easily.

Many of these patients complain of floating specks before the eyes. Tinnitis aurium is frequent. So-called rheumatic attacks either of muscles or joints are very common. It is rare to find one of these patients that eats meat freely and in general they are underfed and improperly nourished. They have gradually discontinued different articles of diet because of some symptoms which appeared; not necessarily from the food last eaten, which may have been easily digestible. The actual cause of the symptoms having been other food taken some hours previously and which had had time to reach the colon. The distress, of course, was charged up to the last food, and thereafter this was eliminated from the diet and so gradually they get to a starvation diet. Comparatively few have distress soon after eating. Occasionally the active symptoms are referred to the stomach and there may be frequent nausea and quite constant pain. Fermentation and gas formation are usual. In women painful menses are the rule.

The posture of these patients is almost invariably bad. In the relaxed standing position, the lower abdomen is prominent and pendulous, the upper abdomen is constricted and depressed between the level of the umbilicus and the free border of the ribs; the hips are thrown forward and the trunk backward and the lumbar lordosis is less than normal or entirely absent. The shoulders may be thrust forward with the production of the round-shouldered slumped posture. It is often very easy to outline the

stomach and frequently the colon by light percussion, because of the gas present. Quite often, the right kidney is freely movable and it is not at all uncommon to find both kidneys well down. The following is a fairly typical case of visceroptosis:

Miss C. K., age 27, referred by Dr. Larkin. Complains of distress after eating, with gas formation and pain in the right side of the abdomen. She has had this right sided abdominal pain more or less since the age of 14; she has always been subject to bilious attacks, headaches, vomiting, etc. Says she has never been constipated and that several years ago the bowels moved two or three times daily. The menses have always been painful. One year previous to her visit to me she was operated upon for appendicitis and a ventral fixation was done at the same time; two weeks later there was a second operation in which the right kidney was anchored. Pain in her right side is still present and is only relieved by lying down; she is sure the pain is much worse when the bowels do not move regularly. She describes the pain as the dull pulling kind. She is very nervous, and at times very depressed; liable to be restless at night without apparent cause; feels very tired in the morning; she has lost about ten pounds in weight in the last few months. Her diet is very limited, eats very little meat; she finds it necessary to lie down each day for an hour following the midday meal, otherwise she is completely exhausted during the latter part of the afternoon. Examination: patient rather above medium height, inclined to be slim, very little subcutaneous fat, abdomen pendulous below and constricted above, lumbar lordosis nearly normal. Posture erect. This patient was treated by means of an abdominal support. Ten days later she volunteered the information that she did not think it possible to ever feel as well again as she had felt most of the time for the past few days.

In order to make the *x*-ray examination of value, it was first necessary to know the normal size, shape, and position of the stomach and colon. It was very early discovered that the position of the stomach in life is quite different from that found post-mortem, and so with the colon. In the normal, the ascending and descending portions of the colon are located in the position described by all anatomics. The transverse colon is seldom, if ever, above the umbilicus when the patient is in the upright position, so that instead of crossing the abdomen with an easy curve, convex upwards, there is somewhat of an angle at both the hepatic and splenic flexures and the curve of the transverse colon is convex downwards; in other words, the transverse part of the colon in the normal does not remain in one location, and varies from two inches above to some point well below the umbilicus, depending upon the position of the individual, so that if we find the flexures at the normal level and the lowest point in the curve of the transverse colon, not more than one and one-half inches below the level of the umbilicus, and the patient is in the upright position, I would consider the condition as normal and would not expect to find evidence of autointoxication. All *x*-ray examinations are made with the patient standing. The first plate is made immediately after administering an ounce or two of bismuth; this plate gives the size, shape, and position of the stomach; another plate is made at an interval a little longer than the average normal time in which the stomach empties itself, three and one-half to four hours. It was a matter of great surprise to find that many markedly ptosed and dilated stomachs, even when the lowest point of the greater curvature is down nearly to the level of the symphisis pubis, are capable of emptying themselves in normal time. This would seem to indicate that the mere fact of having a dilated stomach is not necessarily of serious consequence. If there is moderate activity of the stomach some of the bismuth will be shown in the colon at this time. Eight or nine hours after the bismuth meal all bismuth is found in the ascending colon and the first part of the transverse colon. The bismuth is widely diffused while passing through the small intestines; only in rare instances is it possible to get a shadow of anything like a mass after the bismuth leaves the stomach until it reaches the colon. The normal time for the journey from pylorus to cecum is much shorter than we have believed to be possible, and probably in less than two hours after leaving the stomach the bismuth has arrived in the colon. It was suggested to me some time ago by an internist that because of the slow action of the colon, some of the symptoms were due to the backing up and retention in the ileum of the products of digestion. I have made several examinations to determine whether there was stasis in the ileum in the region of the ileocecal valve; in no single instance have I been able to show any such condition. The material is very promptly delivered to the cecum and ascending colon. The average normal individual requires about twenty-four hours for the complete process of digestion, from the time food is taken until it is evacuated. From sixteen to eighteen hours of this time it is contained in the colon; it enters this part of the intestine as a fluid and during its progress a large part of its moisture is absorbed. I think physiologists are agreed that the absorptive function of the small intestine is selective in character and that only the products of the digestive action are abstracted here and that the large intestine removes the water and what it contains in solution. The gradual change from fluid consistency with its smooth outlines in the cecum and ascending colon to the lumpy condition and irregular outline in the transverse and descending portions is clearly shown on the *x*-ray plate. Now, if for some reason this material is delayed in its passage through the colon, and this delay may be a day or a week or a month, what is to prevent the growth of bacteria, the fermentation, putrefaction, etc.? And, also, what is to prevent the absorption of the soluble toxins elaborated by the changes which must take place in a medium well suited for the growth of bacteria?

There is a wide variation of positions in which the colon is found in these cases of chronic autointoxication. It is seldom that any part of it is found in the normal position. In all cases examined the degree of displacement of the colon corresponded quite closely to the severity of symptoms as given by the patient. The splenic flexure, or in these cases the splenic angle, is more often located nearer the normal level than any other part of the colon. In cases of obstinate constipation I expect to find the cecum and ascending and transverse colon well down in the pelvis, while the splenic flexure is held high. On the other hand, if the hepatic flexure retains the nearly normal position and the splenic flexure has slumped, there may be no constipation. This is accounted for by the fact that the contents of the bowel are fluid until the hepatic angle is passed, and solid when the splenic angle is reached. In other

cases, the entire colon may be full of kinks and massed in the pelvis, and the surprising thing is not that these people suffer from constipation and its attendant evils, but that an evacuation of the large intestine is possible even when forced by a drastic purge, and it seems logical to believe that in a majority of these cases, the colon is seldom if ever completely emptied. It has been found that constipation is not an absolute essential to the development of self-poisoning. With an abnormal position of the gut, and some kinking, local stasis may result. Fecal masses may be firmly attached to the walls of the colon and remain there long enough to produce ulceration. Frequent attacks of diarrhea may occur and yet the colon may retain material for a long time. One may emphasize the following facts: first, that in the ordinary case of autointoxication food is not unduly delayed either in the stomach or small intestine; and second, at least two-thirds of the first twenty-four hours after food is taken it will be found in the colon in the normal case, and in the abnormal case it may remain many days. It is, at first thought, very surprising that in the past more attention has not been given to this part of the digestive tract. I believe the explanation of this fact is or was the lack of any means of making a satisfactory examination. The former methods of inflating with gas, with the patient in the horizontal position are absolutely without value unless the colon is held by adhesions. The *x*-ray examination with patient horizontal is of some value but does not give the true picture. Examination should always be made with the patient in the upright position.

Not all of these ptoses are acquired either as a fault of diet or dress; the condition is found about as often in men as in women; many are born with the mesocolon of the quadruped. It is estimated that one out of every five individuals has a congenital visceroptosis. I have examined one case of a frail sickly boy with obstinate constipation who had a very marked congenital visceroptosis. It seems hardly probable that the ptosis, of itself, can account for many of the constitutional disturbances; the symptoms are too farreaching to be accounted for on the theory of a pressure or a pulling, or other similar local influence on the nervous system. The symptoms are, with some exceptions, essentially chronic; the patient's versions of his troubles will often seem not to indicate the actual cause. He is cognizant only of results. He has had so many digestive disturbances all his life that they have become second nature to him. Many will tell you that they are not constipated and yet under careful questioning you may find that frequent laxatives are taken. I have found that the patient's idea in regard to his present trouble is not of great value.

It would be of the greatest interest to know what proportion of those who acquire tuberculosis in some form are habitually self-poisoned as a result of stasis in the defective colon and because of the lowered general resistance become an easy prey for the bacillus of tuberculosis. It would also be of the greatest value to know the possible relation between the obstinate constipation of insanity and a ptosed colon. It is very easy to explain why most cases of appendicitis are the direct result of a fault of the colon. As has been shown, the ileum very promptly delivers the material into the cecum and ascending colon; if there is obstruction by an angle at the hepatic flexure or an impacted colon beyond, it is quite certain that the ascending colon, the cecum, and even the appendix itself, are going to be distended. I have a number of plates which show the appendix distended with bismuth. Unless this pressure is relieved by onward movement of the contents of the colon, it will be seen at once what will happen to a rudimentary organ like the appendix as a result of stretching. Later in life, there are many toxic symptoms that are as bewildering to the doctor as they are disagreeable to the patient; symptoms referred to any part of the body—arteriosclerosis, arthritis, neuritis, tonsilitis, catarrhal deafness, chronic blepharitis, acne, urticaria, etc.; in fact, most any chronic condition which is clearly the result of an irritant and which cannot be explained by the presence of some well defined exciting cause. The study of these chronics will be much simplified if we keep in mind the probable toxic cause.

The fairly constant symptom previously mentioned, of numbness of fingers, I believe to be very important and having some manifestations similar to those of erythromelalgia and Raynaud's disease suggests a possible cause for the latter. The fact that a patient has been under medical treatment for a long time, perhaps many years, and has not obtained relief, ought to stimulate us to try to find the reason for the failure on the part of the medical man, before we class our patient as a neurotic and prescribe a placebo and allow him to migrate to the next doctor. Is it not worth while to investigate all possible causes? The chronics are always with us, and by chronics I mean those who have been examined many times and have been assured each time that there was no organic trouble. Yet it is evident that they are miserable. How much are we able to accomplish for their relief? The diagnosis of stasis in the colon is not difficult, but there is much work to be done before an entirely satisfactory line of treatment can be outlined. It ought to be comparatively easy for the chemist to study the results of changes which take place in the retained contents of the colon. The physiologist and pathologist should be able to study the effect of the toxins upon living animals; the surgeon should seek to aid nature in the disposal of waste products by relieving some of the kinks and angles; the orthopedist is called upon to afford some temporary relief in the way of artificial support, and when there is a more general recognition of the actual cause of autointoxication—the ptosed colon—treatment will be devised which will do a lot to relieve these cases. The only satisfactory treatment depends upon the recognition of visceroptosis in the young child; then by careful attention given to the posture and habits, associated with special exercises and perhaps a little medicine, it will be possible to prevent a great deal of suffering later in life. Much can be done to relieve those who have reached the class known as chronics. If the condition is extreme, a surgical operation may be performed to relieve some of the kinks in the colon, the entire sagging transverse colon may be removed, an anastomosis may be made between the ileum and the sigmoid flexure, etc. Excellent results from these procedures have been reported. In less severe cases it is sometimes necessary to put the patients in bed, and keep them in the dorsal horizontal position with no pillow under the head and to elevate the hips in order to facilitate gravitation of the colon to the normal location; many mild cases do very well with a simple abdominal support. In

a great majority of cases, the improvement begins very soon after the recognition of the cause of the trouble and the beginning of treatment, and whatever the treatment, surgical, mechanical, hygienic, or physical, if we keep the idea in mind that we are striving to correct an abnormal position of the abdominal viscera and by so doing enable nature to better eliminate waste products, the real proof of the correctness of the reasoning will be the marked improvement of the general condition of the patient.

The subject is entirely too large to consider in detail in a brief paper. The reasoning from cause to effect, oftentimes a very remote effect, is so complete, the demonstration of abnormalities by means of the *x*-ray and of the results obtained by treatment is so positive, that there will be danger of overdoing this subject in the near future. Let us not forget that there are other organs in the abdomen.

SITOPHOBIA: A DIGESTIVE PHANTASM.

By GEORGE M. NILES, M.D.,

ATLANTA, GA.

PROFESSOR OF GASTROENTEROLOGY AND THERAPEUTICS, ATLANTA SCHOOL OF MEDICINE.

This term, signifying a morbid fear of, or aversion to food, merits the consideration of every thoughtful student of dietetics. Though the term itself is of somewhat recent use, the condition is an ancient one, being one of the manifestations of those peculiar "distempers" in which certain foods were repugnant or even dangerous, and in which the horror of some highly esteemed viands was ascribed to demoniac possession. When, as happened over 200 years ago, the last witch was hung in Salem, the doctrine of personal devils, with all the accompanying devilish attributes, entered into a swift decline, and at present we hear but little of such cant outside of the ignorant and superstitious, with the exception of an occasional echo voiced by some attenuated disciple of the late Mother Eddy.

From the days of "nervous prostration" we arrived by easy stages to the period of "neurasthenia," and then, with a closer insight into various nervous and psychic states, came the present-day psychasthenias and obsessions and phobias. In the same class of phobias as comes the fear of high places, or of open places, or of closed rooms, may be placed sitophobia, with its fixed and often apparently causeless antipathy to some articles of food. Frequently this phobia is confined to a single viand. Probably every physician who reads this study will call to mind a patient, who fancies that some ordinarily harmless article contains for her or him a dreadful potentiality for evil. The patient will explain that since a child this article has been tabooed, and that to eat it would invite direful consequences. Close inquiry may elicit the admission that the aforesaid article has never been eaten, but perhaps it disagreed with some other member of the family and the inference has been drawn that it would necessarily act as a poison to this particular individual.

I have in mind a neurotic traveling salesman, who is morbidly afraid of butter or any dish prepared from it. The sight of butter on the table before him fills his mind with fearful forebodings, while much of his pocket money is spent in tips to waiters and cooks that nothing may be served him containing this evil agent. An eminent neurologist of New Orleans, some months ago, related to me the experience of a citizen of Louisiana, who developed a phobia for garlic, a flavoring agent of high repute in some sections of that State. As nearly all of the savory French and Spanish dishes there contain a "touch" of this somewhat pungent condiment, the patient, who lived in a hotel, found his protein diet extremely restricted. One day, however, in desperation, and at the earnest solicitation of his physician, he partook of a dish containing a little garlic, but he required his medical attendant to stay by his side for six hours to save him from the disastrous consequences anticipated by his abnormal imagination. Finding that he was not injured nor even distressed his phobia fortunately disappeared, and he has since relished the toothsome flavor imparted by this bulb of ancient use, the same that comforted the laborers as they built the pyramids for Cheops, and for which the Children of Israel yearned on their dreary journey in quest of the Promised Land.

As the years go by, and the physiologists delve more deeply into the underlying factors controlling various digestive phenomena, we are disposed to accord to these factors more respectful consideration. Since the epoch-making experiments of Beaumont upon the Canadian voyageur, St. Martin, the chemical functions of the stomach have been fairly well understood. The mechanics of the stomach and intestines when disposing of a meal have also been graphically depicted by Cannon and made clear by many demonstrations with the Röntgen ray. Up to quite a recent date, however, insufficient weight was allowed the psychic factors responsible for the excitation or inhibition of these juices, or for the orderly movements accompanying physiological stomach and intestinal digestion. Briefly stated, when food is taken the secretion first inaugurated is due to the sensations of eating and of taste, that is, it is purely a psychic secretion. The afferent stimuli, whose duty it is to transmit messages of gastronomic interest, originate in the mouth and nostrils, and these stimuli, in their intelligent manner, send the necessary tidings through the afferent path containing the secretory fibers, which path is embraced in the vagus nerve. This psychic message insures the beginning at least of gastric digestion, though its effort is supplemented by further action arising in the stomach itself.

Certain foods contain substances called secretagogues, which are capable of causing a flow of gastric juice when taken into the stomach, for instance, meat extractives, meat juices, soups, etc. Other foods bland in quality such as bread and white of eggs, are lacking in these ready-formed secretagogues, and have to depend practically on the psychic secretions for their digestion. In addition, there are substances generated in the intestinal and pancreatic secretions, designated by Starling hormones, from a Greek word meaning to arouse or excite. These hormones are influenced by the food ingested, varying from a slight to a potent effect, and to a marked extent regulating the various digestive juices, so that both the amount and specific quality are supplied according to the mechanical and chemical needs. These needs are previously interpreted by the psychic sensations evolved, so that it can readily be seen how the mental impress of food as it is eaten may regulate the supply and character of the necessary juices for its digestion; how a placid and cheerful frame of mind may aid the organs concerned in the bodily upkeep, or how a distaste or antipathy may, as it were, "dry up the

fountains" for certain articles, converting them to all intents and purposes into foreign bodies. Thus, it is apparent that a violent dislike or fear amounting to a phobia for any particular foods, will, through the influence of these hormones, exert a real and tangible inhibitory effect on the special agencies required for their digestion, and that to force a fearful patient to eat them might result in serious damage.

The borderline between nervous anorexia and sitophobia is but dimly drawn. The former may deepen into the latter, or the sitophobia may dwindle down to a simple, unreasoning dislike, unexplainable to the patient himself. Such a dislike may be ascribed to temperamental peculiarities, to education, or to environment, and to trace back some of these antipathies or phobias to their starting point is often interesting indeed. Several instances will be mentioned that have come under my personal observation.

A gentleman of intelligence relates to me that when a lad on his father's farm there grew an apple tree right at the stable. This tree which was of the "June apple" variety exhibited a most luxuriant foliage and bore immense quantities of luscious red apples; but, knowing the immediate cause of this bountiful fruitage, he could never eat any of the apples from that tree nor has he to this day been able to eat any June apples. The sight or thought of them sets up a train of disgusting associations which would disturb his whole digestive apparatus were he to attempt to partake of them.

Some years ago a disciple of Izaak Walton betook himself to the Flint River, a Georgia stream, at a time when it was high from a recent freshet. Finding a promising eddy, where the swirling waters circled under an overhaging willow, he began fishing, and, to his gratification, soon caught an amazingly large number of fine catfish. Two days later he decided to again seek that spot, but when he arrived, the fallen river disclosed the putrid carcass of a cow, entangled in the dèbris collected by the eddy, and he quickly understood his phenomenal "catch." From that day to this he has never been able to eat catfish, nor can he enjoy a meal when any of this fish is on the table.

Another etiological factor in producing a sitophobia is a disagreeable or painful personal experience with some food or food product, as the following shows: A lady of mature years informed me that, when a little girl, she was inordinately fond of apple dumplings, thinking she could never get enough. On one occasion, however, the cook made a special baking of the coveted delicacy, so as to permit this youthful epicurean to have her fill. The result was a severe attack of indigestion, leaving in its wake a phobia for apple dumpling that time has not erased.

One of the most fruitful causes of the various sitophobias lies in the "half-baked" writings of self-appointed health teachers, who with lurid philippics hurled at some of our most wholesome articles of food, couched as they are in attractive language, and bolstered up by specious arguments, create injurious dietetic fads. I have in mind one religious sect who constantly inveigh against meat, so that some of its members possess a real sitophobia for this most econominal protein. Thus we find the cults and isms, the schools of "new thought," the vegetarians and fruitarians, and others, who with a cheerful ignorance, flavored with more zeal than discretion, are constantly sowing the seeds of fear for the very classes of food most necessary for the well-being of the bodily economy.

Man is essentially an omnivorous animal. Our food customs are not of recent date but are evolved from the earliest antiquity; they are built upon the inherent needs of the human body, as interpreted by countless millions, and to lightly cast aside the rational dietaries fixed by the natural craving not of individuals but of nations and peoples would invite nutritional disaster.

The chronic dyspeptic especially of the nervous type furnishes the most comprehensive sitophobia. Ascribing, sometimes correctly, sometimes not, his ills to certain articles, he proceeds to omit one after another, eschewing the ones he most loves, and, as it were "crucifying the flesh" at the fancied behest of a finical stomach. These are the melancholy examples of an unreasoning phobia for the very viands for which a starving body is crying night and day, and whose inarticulate wails react on the entire personality, souring the disposition, depressing the spirit, and clouding the mental horizon.

The question now arises, how to manage this phobia; how shall we induce a distorted digestive viewpoint and a recalcitrant stomach to "get in line?" Suggestions must, of necessity, be general, embracing more of the psychic than medicinal, more of the educational than coercive. Children should be informed that a varied diet is the heritage of civilization and that a restricted one is a step backward toward savagery. The domestic sciences, including cookery, should be more universally taught, for often a sitophobia is first started by badly cooked or illy served food, which may cause either bodily distress or mental disgust; it little matters, the results being the same. Actual idiosyncrasies should be respected, but they are not as frequent as one would suppose. A mere dislike does not constitute an idiosyncrasy, nor does a phobia necessarily render an article indigestible, though, as previously mentioned, an inhibitory psychic influence may be exerted, militating against its easy digestion.

In order to act with intelligence and confidence, the physician should investigate both the secretory and motor functions of the stomach, and if they are found in fair condition he should set about gaining the patient's confidence, thereby paving the way for a systematic onslaught on the sitophobia. With a courage born of confidence, he must urge these timid and rebellious alimentary tracts to do their duty, and every available aid, medicinal, psychic, and otherwise, must be brought to bear. I have many times assured such patients that if they would eat certain articles I would help them with their digestion, and if I could once get them to take the supposed risk and no harm arose, the victory was won. In exceptional instances strategy is justified in getting some feared article ingested, and afterward pointing out that it had been eaten without discomfort. The physician should be quite sure of his ground, however, before risking this procedure, for breaking the news might result in both indignation and retroactive disgust, defeating the desired end. Some sitophobias, limited to unimportant articles, are best ignored. If the patient is well enough nourished, if other foods in the same class are taken in sufficient quantities to furnish ample calories, and if no special inconvenience is given other members of the family, strenuous efforts to abate such harmless phobias are not justified.

Change of environment, of food, of habits, and of occupation, all exert a helpful influence on fearful

and unreasoning appetites. Muscular exercise to the point of fatigue is perhaps the best of all remedial measures in overcoming a sitophobia. Manual labor in the open air, if pushed to the physiological limit, seldom fails to produce a keen hunger. Those who in years gone by earned their bread by physical toil will remember the joy accompanying the arrival of meal time, and will also remember that sharp and comprehensive appetite, relishing everything in sight, and that zest which small deficiencies in food or preparation could not dull. Thus, if we can induce our ill-nourished and timorous patients to enter into a complete change of habits and diet, so that as far as practicable muscular effort may take the place of sorrowful meditation; that live, outward interests may banish morbid introspection; that real, bodily fatigue may replace microscopic self-analysis, then may we confidently anticipate a healthy desire for those articles of food demanded by a normal body, a desire whose cheerful and harmless indulgence will effectually dispel the doubts and apprehensions of that digestive imp, sitophobia.

920 Candler Building.

SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.

SOME INTERNISTS' VIEWS AND SURGICAL EXPERIENCE.

By MARTIN B. TINKER, B.S., M.D.,

ITHACA, N. Y.

Over fifteen years ago a medical man, and not a surgeon, R. J. Möbius of Leipzig, presented some of the strongest arguments yet advanced for the surgical treatment of goiter. Writing in 1896 he presented evidence to show that exophthalmic goiter produces a general systemic poisoning, which would explain all the manifestations of the disease; that cure under the usual medical measures is extremely doubtful; in nearly all cases improvement is only temporary, and that recurrence with advance of the disease is the rule; that partial excision of the thyroid removes the source of the poisoning and reduces secretion to a relatively harmless amount, and that there can be no question of the completeness and permanency of surgical cure.

Osler, writing in the same year, prefaced his recommendations as to treatment by the statement that "medical methods are extremely uncertain," and gave the results of operative treatment as known at that time. Although surgical treatment was suggested by these distinguished internists as long as fifteen years ago, very little had been done with the operative treatment of exophthalmic goiter in this country until five years ago. The first considerable series of operations undertaken in this country were then being performed. In the 1906 edition of Osler we find the following: "After three months' careful treatment, if the patient is not better, the question should be considered of surgical treatment. Removal of part of the thyroid gland offers the best hope of permanent cure. It is remarkable with what rapidity all the symptoms may disappear after partial thyroidectomy. . . . The operation under cocaine may be done with safety when the condition of the heart and the extreme tachycardia do not contraindicate an operation." It is interesting to note how positively the distinguished internist speaks with regard to the advisability of surgical treatment. At that time, and even now, many surgeons have done little with thyroid surgery. Indeed, with the single exception of Kocher, a few progressive internists have been the prophets in advocating the surgical measures which have proved so successful in the treatment of goiter in recent years. This is not an unusual condition as concerns progress in cases on the borderline between medicine and surgery. The internists have frequently been well in the van, urging operative measures at a time when the surgeons were still in doubt. As an example of this attitude one may note the recommendation of von Leyden, who advised surgery in the treatment of gastric ulcer and other diseases leading to perforative peritonitis several years before Mikulicz performed the first operation; and also the paper of Reginald Fitz, advocating the surgical treatment of appendicitis. The advocacy of the surgical treatment of goiter by Möbius and others was based on sound logical reasoning.

Why is operative treatment the only logical treatment in all well-developed cases of goiter? The symptoms of goiter are the symptoms of poisoning, similar to those produced by narcotic poisons. The excessive secretion, acting as a poison, is produced by the thyroid. In removing a portion of the thyroid gland we remove the cause of the trouble. The overuse of tobacco causes tachycardia and weakness of the heart's action, not at all unlike the condition seen in hyperthyroidism. Excessive use of tobacco also causes nervousness, general unrest, tremor, sleeplessness; sometimes nausea, vomiting, and diarrhea. The presence of excessive thyroid secretion in the circulation has a very similar effect. No sensible man would consider it logical to treat tobacco heart or tobacco amblyopia and allow the patient to continue the excessive use of tobacco. It is just as logical to treat exophthalmic goiter with drugs without removing the source of the excessive thyroid secretion. That the symptoms are produced by excess of thyroid secretion is further shown by the fact that they may be produced by feeding large quantities of thyroid extract to healthy persons, and by the fact that removal of a good-sized portion of the overactive gland cures the symptoms in the average patient. Ligation of one or more arteries of the thyroid gland, perfect rest in bed, the application of cold, and all other measures which reduce the activity of the overactive gland improve the patient's condition. Study of the evidence supporting these statements will convince almost anyone who doubts the efficacy of surgical treatment.

When is operation advisable? If we are convinced that surgical treatment is the logical treatment in exophthalmic goiter, when should such treatment be advised? No one, whether internist or surgeon, is so radical as to suggest operation in all cases. Mayo has well stated that some patients get well without any treatment whatever, some with appropriate treatment, and some in spite of treatment. As with most chronic diseases, there are periods of improvement; the acute symptoms are relieved, the patient feels relatively well, although there is never complete relief. Then after a varying time the acute symptoms return, worse than ever, and so the disease goes on from year to year until death results, quite as often from some intercurrent disease or secondary condition as by the goiter itself. Osler's advice that surgical treatment should be recommended if the patient is not better after three months' careful medical treatment, if it were generally followed, would save many lives and restore to efficiency many others who do not die. All who have seen the condition of many of these neglected cases will agree with Osler's

further statement that "much valuable time is lost in trying various remedies." Sometimes this is the fault of the patient who refuses to accept the advice of a competent physician. Quite as frequently the physician is at fault. Remedy after remedy is tried for a period of months or years. Usually the patient gets discouraged from failure to get adequate relief and changes doctors many times, but each new physician as he sees the case for the first time has some new medical fad to try and so the case goes on for years until the favorable time for operative treatment has passed. Operation should certainly be advised before irreparable damage has resulted to important vital organs. The greatest strain comes on the organs of circulation and the nervous system, but almost every important vital organ suffers in the advanced cases. The arteriosclerosis which results probably from the increased blood pressure, from the pounding, over-active heart, and damage to the intima of the blood vessels by thyroid poisoning, also has its effect on the condition of the kidneys and liver, the same as arteriosclerosis from other causes. Albumin and casts are practically always found in the urine in acute cases of exophthalmic goiter. Cirrhosis of the liver is apt to result in the cases which have been allowed to drag on under various medical measures for years. Operation should certainly be advised before too great damage has been done to the kidneys and liver. The terrific strain which is put on the heart in many of these cases is often overlooked. The amount of energy required to pump the blood is not less than that required forcibly to open and close one's fist. It is not at all an extreme case of goiter in which the heart is beating 120 to 130 per minute; 140 to 160 is by no means unusual. Suppose we represent the amount of energy expended by the amount required to open and close the hand forcibly. A pulse of 130 represents 50 beats per minute above normal for the average person. Try opening and closing your hand 50 times a minute for an hour if you can, and see what an amount of energy is wasted and what strain is put on the heart. In many cases which have come under my care the heart has been considerably dilated. In cases of long standing the heart muscle and endocardium always suffer. The way to avoid a permanently weakened, crippled heart, is to relieve the strain before irreparable damage has been done.

The need for operation before the nervous system has suffered too greatly is equally urgent. Quite a large proportion of these patients come to our sanatoria for treatment with a diagnosis of neurasthenia, psychasthenia, or hysteria. In a previous paper I have pointed out that there may be discovered by examination a real lump in the throat instead of the supposed globus hystericus. The strain in the toxic cases with long continued sleeplessness and general unrest, which do not permit quiet for repair of exhausted energy night or day, must have a profound influence on the nervous system and produce permanent damage unless the strain is removed early.

A distinguished internist in talking with me recently, said that all of these goiter patients are mentally somewhat unbalanced and very close to the borderline of insanity. The superintendent of one of our large state hospitals for the insane tells me that there are always a considerable number of goiter cases in the hospitals for the insane. He believes that thyroid poisoning is the cause of insanity in these cases; in the same way that general poisoning by syphilis and alcohol is attributed as the cause of insanity in at least 25 per cent. of the cases in our state hospitals. It is extremely doubtful whether many of these cases of well developed insanity can be benefited by partial thyroidectomy. The damage to the nervous system is done. Surgery at that stage is like locking the stable door after the horse is stolen. Some cases of dementia præcox have apparently been benefited as reported by Winslow (*Journal of the American Medical Association*, 1910, Vol. 55, page 1155), but there are probably a large number in which no benefit can be hoped for. The most logical course would be to operate early, removing the cause of the nervous and mental strain before the damage is too great.

Results of Surgical Treatment of Exophthalmic Goiter.—In 1907 Kocher made the statement that all cases of goiter are curable by surgery if taken in time. My own experience in these cases is in accordance with Kocher's statement. An important point mentioned by Kocher and emphasized by Crile in this country is the need for prolonged and judicious after treatment. The worn out, damaged nervous system requires prolonged rest as the most efficient means of restoration to normal. Rest is as important in the nervous breakdown resulting from hyperthyroidism as rest in the treatment of nervous breakdown from overwork or any other cause. The dilated heart is also best restored to normal by prolonged rest in bed. Every medical man is familiar with the fact that the heart does many times less work when the person is lying down than when he is up and about. Many fail to take the load off the heart and give it this much needed opportunity for repair by perfect and long continued rest. For five years I have been an advocate of open-air treatment of these cases preparatory to and following operation. Not only do the patients get the splendid tonic effect but the higher percentage of oxygen helps them to eliminate their thyroid poisons. Flushing the kidneys by the use of large quantities of good water also helps to eliminate the toxins. Many times patients will more readily take some bottled spring water for which they pay a good price than equally pure water which they can get free of cost. Careful attention to diet is always desirable. In a recent paper Reid Hunt (*Journal of the American Medical Association* 1910, Vol. 55, page 1555), has called attention to those foods which stimulate thyroid activity and which obviously should be avoided in the treatment of goiter cases. For several years overfeeding with plenty of raw eggs which do not stimulate the thyroid has been a part of my routine treatment of these cases before and after operation. I have emphasized the importance of operating in stages in the toxic cases. These patients will not stand very much in the way of surgical interference. Experience and judgment as to what it is best to do and what to leave undone are often of more importance than even operative skill. With careful preliminary study of the patients to determine how much can be done with safety; by dividing the operation into several short stages, a few days or even weeks apart; with the operation performed under local anesthesia or in some cases nitrous oxide anesthesia, the operative risk can be reduced to a minimum. An occasional bad risk goes wrong but at one time this year my series numbered over 180 consecutive operations before a fatality occurred.

In conclusion I would advise anyone who is in

doubt about the advisability of operation for exophthalmic goiter to look up the opinions of the great medical authorities, in case they distrust the advice of the surgeon. If anyone believes that he is obtaining great success with internal remedies, I would ask him to carefully follow his cases. He will find that many fail to get the expected permanent relief, go from one internist to another, and that a large percentage are finally operated upon. Most important of all, one should not wait too long before resorting to surgical treatment.

105 North Aurora Street.

TRUE DIVERTICULUM OF THE CECUM — A UNIQUE CASE.

By J. F. BALDWIN, A.M., M.D.,

Columbus, Ohio,

Surgeon to Grant Hospital, etc.

The patient, C. C., aged 60 years, and residing in Piqua, Ohio, where he had been under the care of Dr. J. H. Baker, was seen by me for the first time December 15, 1911, at the Piqua Hospital where he had been taken for operation. Twelve years before he had had an attack of what had been supposed to be appendicitis, which lasted three or four weeks. He seemed to get over it all right, but occasionally had trouble in the appendicular region. Seven years ago he had a second attack somewhat like the first. He continued to have some disturbance in the same region after the last attack, but nothing that was serious. December 4, 1911, he was taken with a slight chilly sensation and pain in the region of the appendix. On examining himself he found that there was a distinct lump in that region. Dr. Baker saw him soon afterward and also noticed the lump. The course of the disease had been practically afebrile, the temperature having never been more than a half degree above normal. There was no vomiting whatever. The bowels readily responded to laxatives. Dr. Baker thought that the lump increased in size for a while, but that it seemed to flatten out somewhat. His presumptive diagnosis was appendicitis with abscess formation. In discussing the matter with Dr. Baker on the way to the hospital, I demurred to the diagnosis because of the age of the patient, the absence of vomiting and of fever, and particularly because of the presence of the tumor at the onset of the symptoms; objections which he had himself noted. I suggested malignancy, owing to the age of the patient, or massive tuberculosis of the cecum. A little later, when told that the patient had a right inguinal hernia, I suggested the possibility of torsion of the omentum. On personally examining the patient and getting more of the details of the history, I felt that tuberculosis could be excluded but could not exclude either malignancy or torsion of the omentum. The tumor was very distinct but a little irregular in outline, the tenderness was not extreme, nor was the muscular rigidity as pronounced as in cases of appendicular abscess. I concurred in the advisability of immediate operation.

The operation was performed under ether. In order to be sure of ample room I made the incision through the rectus. On examining the tumor from the inside I was quite inclined to think that I was dealing with cancer of the cecum. I separated the adhesions on the outer side of the tumor, and then rolled it over so as to bring it well up into the incision. It was then found that the tumor was covered by several loops of adherent small intestine, a mass of omentum, and the appendix, the last being curled up around the lower and outer border of the tumor. With gauze the adhesions, which were clearly recent, were readily pushed back so that the tumor itself was distinctly outlined. It was globular in shape, hard, and about 2 inches in diameter. It was found to spring from the cecum at a point directly opposite the attachment of the ileum. There was no pedicle but the growth could be pulled away so that a clamp was applied next the cecum and the tumor was cut away. While manipulating the tumor a few drops of very offensive mucopus escaped through a minute opening in its upper surface where the wall was becoming gangrenous. The opening in the cecum was closed in the usual way, and then the appendix was cut off, its stump being ligated and cauterized with carbolic acid. A stab incision was made to the outer side for a drainage tube, and the incision was closed in the usual way. On examining the specimen the tumor was found to be a diverticulum filled with a most solid fecal mass, which was in concentric layers. The opening connecting with the cecum would just admit a small finger. The appendix was congested and swollen but had not been the seat of any special trouble. Subsequent microscopic examination of the sac showed that its wall contained all the coats of normal intestine, so that it constituted a true diverticulum. The patient recovered.

After determining the character of the mass I told the physicians present that I could not recall ever having heard of such a diverticulum of the cecum, and had, therefore, not considered its possibility in the diagnosis. On returning home I looked the matter up in my own library but could find nothing. I then placed the further investigation in the hands of Dr. Lochboehler, of Washington, D. C., who is an expert in looking up matters in the library of the surgeon-general's office. He replied a few days later that he had gone through the entire list of references, and had looked through a large number of authorities from the earliest period up to the most recent date, but was unable to find "a single case of cecal diverticulum, or any condition which approaches the one you so carefully detail in your letter." In addition to his own researches he took the matter up with Dr. Harrison, who compiles the index catalogue and is co-editor of the *Index Medicus*, and he also was unable to throw any light upon the case. Their joint inference was that the case "must be unique."

SEASICKNESS AND THE PNEUMOGASTRIC.

By AUGUSTUS MAVERICK, M.D.,

San Antonio, Texas.

Whatever may be the exact cause of that disagreeable condition known as seasickness, a comparison of its symptoms with those of irritation of the pneumogastric nerves, as determined experimentally, makes it evident that the two conditions are closely related.

What are the symptoms of pneumogastric irritation? Here is a list of the most important; nausea and vomiting; peristalsis of the gullet; peristalsis of the stomach; dilatation of the cardiac orifice of the stomach; peristaltic action of the small intestine, causing diarrhea or spastic constipation; increased secretion of the gastric juice—hyperacidity; increase in the biliary secretion; increase in the salivary secretion (through the glossopharyngeal nerve);

spasm of the glottis; dilatation of the peripheral blood vessels and flushing of the face; sweating (nervous hyperidrosis); bradycardia; low blood pressure; contraction of the vessels of the heart; contraction of the pupil; sinking back of the eyeball (the reverse of exophthalmus); cramp of the bronchial muscles (asthma), and general irritability.

Of all symptoms, nausea and vomiting predominate in seasickness. That increased peristalsis of the stomach and probably that of the gullet are associated is evident; and that the cardiac orifice is not contracted is certain. Diarrhea is occasionally present in seasickness; constipation, however, is far more common, and that this is of the spastic type is shown by the relief atropine will give. The frequent eructations of sour material are very suggestive of hyperacidity, while the large amounts of bile often expelled after vomiting has continued for some time, point to an exaggerated activity of the liver. Increased salivary secretion is associated with nausea from any cause. Very characteristic of *mal de mer* is spasm of the glottis; so characteristic, indeed, that Stocter's article in Allbutt's "System" mentions this as the underlying cause of the whole symptom complex. The next two symptoms above listed, flushing of the face and nervous hyperidrosis, may appear in nausea and vomiting from any cause and are not particularly noticeable in seasickness. A slow pulse, I believe, is quite common, except, of course, when the victim is retching or is exhausted from a severe attack. I have no data relating to the blood pressure, the cardiac vessels, or the condition of the eyes. It would also be interesting to know whether asthmatic subjects are more susceptible to attacks during a rocky sea voyage. The last symptom named, general irritability, would certainly be acknowledged by all unfortunate enough to have experienced a touch of this distressing malady.

If overstimulation of the vagi is accepted as of chief importance in the pathogenesis of seasickness, we still have to explain what produces this overstimulation. The theories of concussion of the brain, cerebral anemia, congestion of the central nervous system, functional impairment of innervation, visual disturbances, labyrinthine disturbance, molecular concussion of the viscera, concussion of the sympathetic ganglia of the plexuses, disturbance of equilibrium, regurgitation of bile into the stomach, disagreeable odor from the bilges, spasm of the glottis, and succussion of the stomach contents, are all insufficient or altogether unsatisfactory explanations. Instead of trying to explain a simple group of symptoms with a very complex explanation it might be easier to find a simple explanation which will do just as well. A continued rocking to and fro of the stomach, loaded or empty, from any cause, would certainly be enough to excite nausea and vomiting through irritation of its motor nerves, the pneumogastrics, and would suffice to explain the symptoms of seasickness. Certain it is that a tight binder or the pressing of the stomach against some hard object often gives relief; the reason it does not always do so may be because the gradual collection of bile and gastric juice in the oversensitive stomach, splashing about with the motion of the vessel, is sufficient to excite a return of the symptoms. The imagination, aided by the special senses—the sight of the rising and falling vessel, the odor of heated oil and bilge-water, the noise of the engines—certainly plays a part in encouraging an attack, as it is apt to do in any functional trouble.

If pneumogastric irritation alone is insufficient to explain the cause of seasickness, it does help to place the treatment on a more rational basis. Given an irritation of the vagi from any cause, what would be the treatment? The answer is, artificial stimulation of the sympathetic nervous system, that great antagonist of the vagi. Atropine stimulates the sympathetic and antagonizes the pneumogastric; atropine has been used empirically in seasickness with a certain amount of success. Better than atropine is adrenalin, which is probably the purest and most powerful sympathetic stimulant which we now possess.

Crossing the Atlantic more than a year ago I had occasion to try adrenalin on a fellow passenger, a middle-aged woman, who was suffering from retching and vomiting of the most distressing type. I gave her a hypodermic injection of atropine and strychnine, but these gave little or no relief. An hour later, instead of repeating these drugs, I obtained the patient's consent to inject intramuscularly fifteen minims of adrenalin solution (1:1000). During the next thirty minutes the symptoms cleared up in a remarkable manner, and another fifteen minims some time later put the patient on her feet. Atropine, 1/150 grain three times a day, kept her well until the sea cleared a day or two later. I have since advised those about to take a sea voyage to use the ordinary stock tablets of adrenalin, dissolved on the tongue and taken every hour or two until relieved. From the small number heard from the results have been encouraging. Adrenalin is said not to be effective when given by the stomach or hypodermically, but to be readily absorbed from the mouth, nose, and rectum, and from intramuscular injections. The transitory action of this substance also demands frequent repetitions of doses or its alternating use with atropine. The above recorded instances, of course, have no practical worth in determining the value of adrenalin in seasickness, but from theoretical reasons alone the drug is well worth a trial.

507 Bedell Building.

Arthritic Diseases on the French Mediterranean Littoral.—G. Sardou gives the reasons for the value of a sojourn on the seacoast of the Mediterranean in the south of France, which region has an effect quite similar to that of American southern climates in the treatment of arthritic diseases. This climate is at once stimulant, eliminant, and protective. The warmth of the weather even in winter is such as to induce the patient to spend a great part of his time out of doors, at a season when he would be obliged in a Northern climate to stay in the house to protect his joints from the assaults of cold. Exercise in the open air induces increased elimination by means of the skin, and the action of the kidneys is increased, while the bowels act better. The bright sunshine induces a better mental and psychical state at the same time. The increased elimination enables the patient to get rid of the poisonous compounds which are causing the joint symptoms. In this the increased circulation is a great factor, while all the internal organs are stimulated to action by it. Appetite is better; the liver, stomach, and intestines all functionate better; the nervous system becomes more normal; and the glands of internal secretion increase their secretions. The dryness and purity of the atmosphere and its luminosity, the combined influences of sea and mountains, the brilliant sun and the vegetation, together with the change of surroundings and of scene all act favorably upon the nervous system of these semi-invalids.—*Bulletin Général de Therapeutique.*

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THE MILITARY TRAINING OF A PHYSICIAN.

WAR has its uses in the world other than the making of history, the settling of international disputes, the glorification of nations. It is terrible in its devastation, its ruin of hopes, its fearful sacrifice of useful lives, but there is a compensation in its moulding of character, its perfecting of the survivors of its perils. A wise writer has said (was it George Eliot?) "We find ourselves constantly in the anomalous position of loathing war and loving its discipline." And certainly there is no discipline to be compared with it. The true man who has passed through its ordeals, who has braved the horrors of battle, of disease in camp, of the hurried retreat, even of victory, has gained in a few months or years the experience of a lifetime; he has learned to be patient under trials, to be courageous in the face of death, to be hopeful in defeat and not too confident in victory, to be prompt in decision and instant in the correction of mistakes; his heart has been attuned to sympathy with the suffering, and in him has been strengthened the instinct to relieve distress and to sink self in the service of mankind. These are preeminently the qualities demanded of the physician in his mission of humanity, and little wonder is it that following the Civil War the last quarter of the nineteenth century in this country saw a race of medical men that has never been excelled in all the virtues that make for the perfect physician.

These thoughts have been prompted by the war letters of the late Dr. William T. Lusk, recently collected and published by his children.[1] When the war broke out young Lusk was studying medicine in Germany, but promptly returned to America to offer his services to his country. He enlisted in 1861 as a private in a New York regiment of volunteers, but was soon commissioned lieutenant and the following year became a captain. During the war he took part in the battles of Blackburn's Ford, Bull Run, Port Royal, Chantilly, South Mountain, Antietam, Fredericksburg, and many other engagements, and these letters from the front, the product of a young, alert, highly educated and gifted, as well as modest man, form an invaluable contribution to the history of the period. Written without a trace of personal egotism they yet betray in every page the man who afterwards became a shining ornament of the medical profession, and the same qualities of fearless courage, noble energy, and self-forgetfulness form the basis of this splendid record, as they did of the later life of the physician. In his youth he offered his life for his country on the field of battle, and in his maturity he dedicated it to the cause of humanity in a strenuous and heroic warfare against disease and death.

[1] War letters of William Thompson Lusk, Captain, Assistant Adjutant-General, United States Volunteers, 1861-1863, afterward M.D., LL.D. New York: Privately Printed, 1891.

BIOCHEMICAL STUDIES ON CELLULAR ACTIVITY.

THE recent work of Ehrlich and Wassermann upon the selective affinity between compounds of tellurium and eosin and the cells of mouse sarcoma draws attention to the other important investigations that are being undertaken with the aid of the new methods of intravital staining. E. E. Goldmann reports in the *Lancet*, May 4, 1912, the interesting results that he obtained with these methods in the study of various forms of cellular activity in health and disease. Of the different aniline colors placed at his disposal by Ehrlich he has obtained the best results with isamine blue, which when injected into rats is distributed throughout the body and is deposited in the granules of specific cells, as in the free round cells of the subcutaneous tissues. When pregnancy occurs in the vitally stained animal the blue color disappears from the skin and is concentrated in the uterus, where it appears chiefly in the free cells of the decidua serotina. But the embryo remains perfectly colorless, the placenta and the appendages forming a protective barrier against the passage of the stain from the maternal into the fetal organs. During embryonic development there occurs a functional hyperactivity in the production of glycogen, chiefly in the maternal liver. Special "glycogen carrier cells" are developed from the endothelial cells of the uterine vessels and carry the glycogen from the decidual layer of the placenta to the fetal cells. This and other facts apparently show that the placenta is not an organ which produces the material needed for the nutrition of the embryo, but that this material is attracted by the placenta from the maternal organism. The fertilized ovum moreover exercises a distinct functional effect upon the entire maternal organism, as is manifested in the resulting hyperactivity of the liver as well as of the other organs which produce material for the nourishment of the growing embryo.

Goldmann draws a striking analogy between the fertilized egg and the cancer cell. The liver and spleen evince signs of increased hemopoiesis under the influence of malignant growths, while at the same time large quantities of glycogen are hoarded up in the liver cells. It is suggested that a great step forward would be achieved if it were possible to determine which bodies are needed for the growth and which for the nutrition only of the tumor cells. In fact, in pregnant cancerous animals a race for these bodies takes place between the embryo and the tumor cell and in most cases the

embryo is victorious, and the tumor either atrophies or remains stationary in size. The thought suggested itself to Goldmann that it would be of the greatest practical value to inquire as to whether the body of the tumor-bearing animal possessed any organ analogous in function to the placenta of the pregnant animal, and to determine whether it were possible to inhibit the transmission of the substances needed for the growth of the tumor cell. Taking a cue from Claude Bernard's conception of the functional analogy existing between the placenta and the liver, the author started an experimental inquiry into the possibility of arresting the growth of cancer by producing lesions in the liver of such a nature as temporarily to impair though not entirely or permanently to suspend the normal functions of this organ.

In the production of experimental necrosis of the liver the author employed a substance first prepared by Ehrlich, and belonging to the "606" series. This substance, which is called "icterogen," when injected into the mouse produces in the latter severe jaundice and miliary necrosis of the liver cells. If the injection of icterogen was followed by an inoculation of a tumor graft, although there was no inhibition of the primary stage of the tumor growth, there was eventually a retardation in this growth. In comparing the size of the tumors in normal and icterogen mice two or three weeks after inoculation it was noted that whereas in the former the growth was the size of a walnut, in the latter it was hardly as big as a pea. The icterogen apparently brought about a more rapid degeneration of the tumor cells than usual, ulceration, and frequently a complete disappearance of the neoplasm. As the result of these observations Goldmann concludes that possibly the traditional good effects of arsenic in cancer are to be attributed to the specific effects of this drug upon the liver cells, and not, as is supposed by those who favor the parasitic theory of the disease, to its germicidal action upon the pathogenic protozoan.

SHOCK VALUES AND SHOCK INDEX.

The ability to gauge the degree of surgical shock that may be expected in any definite operative procedure is one of the signal advances in the recent application of physiological methods in the study of surgical problems. In their investigations on the mechanism of shock, H. Tyrrell Gray and L. Parsons, as reported in Medical Record, May 18, 1912, page 956, have shown that surgical shock may be divided into three stages: (1) the stage of stimulation, or the pressor stage, during which there occurs reflex vasoconstriction; (2) the stage of depression, or the depressor stage, during which there is induced reflex vasodilatation; and (3) the stage of equilibrium, during which abnormal afferent impulses are in abeyance. By means of blood pressure observations taken frequently during the course of an operation it is noted that with each step in the operation there is a definite rise of blood pressure, but as soon as the vasomotor center is fatigued each manipulation causes a fall of blood pressure instead of the previous rise. Gray and Parsons (*British Medical Journal*, May 4, 1912) point out that clinical experience has taught that the shock value associated with the operation for hernia is infinitely less than that associated with operations on bone. One of the most important factors in the production of shock is the region of the body which is attacked. A definite shock value may be attached to each organ, structure, tissue, or operation. The physiological needs of different organs require varying dispositions of pressor and depressor fibers in their nerve supply, to provide for local vasoconstriction or vasodilatation under different conditions. In comparing the tibia and femur it is noted that the former in being more exposed to injury than the latter is accordingly more amply supplied with pressor fibers, which are effective in stopping hemorrhage by causing vasoconstriction. On the other hand, the femur, which is more richly provided with depressor fibers, is thereby more able to withstand infection, by virtue of the vasodilatation brought about by the depressor fibers and the resulting greater blood supply. These theoretical considerations are borne out by clinical experience: osteomyelitis of the femur is a rarer occurrence than osteomyelitis of the tibia. On the basis of their researches, the authors formulate the following law, which they term the "law of inverse immunity," namely, "those parts which are physiologically the most active contain the largest proportion of depressor fibers in their nerve supply, are most immune to bacterial infection, and show the highest shock value; such structures are deep seated and anatomically protected against injury. The converse is equally true."

By means of graphic methods one may determine roughly the minimal shock index of any surgical operation. The total rise of blood pressure gives some idea of the resistance of a structure to pressor fatigue and the number of "spikes" observed in the graphic record gives some idea of the likelihood of depressor stimulation. The individuality of the surgeon, so far as it adds to or subtracts from the stimulus of an operation, is an unmeasurable quantity and is represented by x. "Thus x multiplied by the number of depressor spikes, multiplied by the duration, go on the multiplying line, while the total rise in blood pressure multiplied by 100 go on the dividing line. Thus, the operation for radical cure of hernia gave an average index of 0.003 x in three cases; while the operation for excision of the hip-joint gave an index of 0.09 x, or nearly thirty times as great as the preceding one." In an operation for amputation of the leg under deep chloroform anesthesia the authors recorded the relative shock values of the different structures in the lower limb. The shock value of bone excels that of the other tissues; then follow in diminishing order the great vessels, the fasciæ, and the muscular tissues, and lastly the skin.

In this manner the authors work out the shock index for the various regions of the body and for different surgical operations. The practical utility of these investigations cannot be overestimated. The introduction of mathematical methods into the study of surgical problems imparts an element of precision which may assist in bridging the chasm between the art and the science.

CHEMOTHERAPY IN TUBERCULOSIS.

RAPIDLY effective and specific treatment for syphilis having been found in salvarsan, an artificial product of laboratory synthesis, it is not surprising that similar remedies should be sought for other diseases. Cancer and tuberculosis remain the two great scourges of mankind, and already the work of various experimenters with selenium seems to show that substances exist which are limited in their chemical affinities to cancer cells and which may be adapted for therapeutic purposes. In the problem of tuberculosis the enthusiasm over simple hygienic measures has seen its zenith and the return to tuberculin during the last few years is a good indication of the fact that something else than fresh air and good food is necessary in the everyday fight with the disease. At the present time whatever is put forth as a product of Ehrlich's knowledge and ingenuity in chemotherapy should be given a fair trial, and one such product—tryparosan—is reported upon by Levasheff in *Russkii Vrach*, No. 7, Vol. XI, 1912. This preparation was tried by the Russian doctor in the apparently hopeless cases of tuberculosis which are met with in every hospital devoted to this disease, cases which are the joy of the medical student because of the numerous "physical signs" they exemplify and the despair of the therapeutist because of their regular and inexorable progress to the grave in spite of all medical and hygienic measures.

In one such patient, a young man of twenty-eight years, having a hectic fever and showing the presence of tubercular infiltration of the lungs with cavity formation, with a great many tubercle bacilli in the sputum, tryparosan was given for ten days. During that period, the subjective state of the patient was much improved; the temperature became normal and later somewhat subnormal; the drenching night sweats ceased; the quantity of urine was increased; the nutrition was bettered, as shown by increase in appetite and gain in weight; the physical signs showed corresponding changes for the better, and the number of respirations dropped from thirty to an average of twenty-four per minute.

To escape the fallacy of *post hoc, ergo propter hoc*, Levasheff discontinued tryparosan, and during the following eight days the bad subjective and objective symptoms gradually returned. The patient now himself demanded that the experimental use of the remedy should be resumed, and such resumption was again followed by progressive amelioration of all symptoms. This experiment was again duplicated and the change for the worse with the omission of tryparosan and for the better with its resumption were so regular, that the remedy could logically be looked upon as the cause of the improvement. Indeed, the patient, after thirty-eight days of treatment, felt well enough to leave the hospital, of course against the advice of his physicians. Similar observations, though perhaps less striking, were obtained in several other cases.

Levasheff shows that the drop in temperature in his cases could not be attributed to mere antipyretic properties of the drug. The usual antipyretics keep the temperature down in such continued fevers as tuberculosis or typhoid, for a certain number of days, but finally the fever "breaks through" and the temperature chart shows numerous rises in the curve in spite of the constant use of such remedies. With tryparosan, the fever disappeared, just as the fever of malaria disappears under quinine. Moreover, such special signs of tuberculosis as the sputum showed corresponding changes: it rapidly decreased in quantity and the number of tubercle bacilli in it became likewise much diminished. Levasheff thinks tryparosan may be an "advance agent" of a chemical specific for tuberculosis, just as atoxyl, arsacetin, etc., were advance agents for salvarsan. More efficacious apparently than this complex chemical product is mercury succinimide as employed by Surgeon Wright of the Navy. The drug is believed by him, as a result of numerous experiences to be antagonistic to all the vegetable microparasites as arsenic is to the protozoans.

TRICHINOSIS.

THOSE of the medical profession who obtained their education a score or more of years ago, if asked to-day as an examination question to state the salient points about trichinosis would perhaps reply that the immediate effect is violent gastroenteric inflammation, and the more remote effects the wandering of the parasites into the voluntary muscles, with the production of a severe rheumatism syndrome having little or no tendency to recovery, death resulting from exhaustion. This picture no doubt was partially correct, but applied only to severe cases, and took no account of certain accessory phenomena which were amply sufficient to contribute to death by interference with vital functions. At a recent meeting of the Verein Posener Aerzte (*Deutsche medizinische Wochenschrift*, Feb. 15) Heubner describes an epidemic of 23 cases which occurred in the town of Pinne. He performed two autopsies. Myocarditis was a very common affection, the microscope being necessary for the autopsy diagnosis. In one of the two cadavers nephritis was present. In fatal cases proof of death from trichinosis may not be made from the presence of parasites, for these may no longer be in evidence. The diagnosis is sometimes made wholly from the histological finds, especially from the behavior of the so-called trichinized muscular fibers toward hematoxylin. In the heart, intraacinous tissue of the liver, and elsewhere, clusters of eosinophile cells are visible. In life there is no proportionalism between eosinophilia and clinical severity, for a dispensary patient showed 76.2 per cent. of the former. The diazo reaction is likewise of no prognostic value. Worthy of note is the not infrequent occurrence of subconjunctival hemorrhages. The patellar reflex is often retained even in the most severe cases. Even in the graver forms no embryos were found in the blood after the third week.

THE TUBERCLE BACILLUS AND THE INITIAL HEMORRHAGES OF PULMONARY TUBERCULOSIS.

THERE is no universal or perhaps even wide agreement between medical authorities as to whether the initial hemoptysis of those suffering from pulmonary tuberculosis is accompanied by the expulsion of tubercle baccili or not. Some hold that tubercle bacilli are expelled in the initial bleeding, while others are of the opinion that the absence of bacilli in the blood expectorated is, from the bac-

teriological standpoint, the special feature of this variety of hemoptysis. Fernand Bezançon and Mathieu Pierre Weil of Paris review the matter in a paper published in the *Medical Press and Circular* of April 24, 1912. Hiller, See and Cochez found that in the initial hemoptyses bacilli were present, although in small number, while more recently Mandoul and Ortal have asserted that bacilli are never present in the blood coughed up in the early hemoptyses of tuberculosis. The tuberculosis is still closed so that the bacilli cannot find their way out and be discovered in the blood. Bezançon and Weil think this divergence of views is due to the fact that a distinction is not made between the different forms of hemoptysis. The onset of pulmonary tuberculosis characterized by hemoptysis is distinguished by preceding constitutional and functional symptoms of tuberculous infection, such as fever, loss of flesh, and so on. Attacks of hemoptysis not associated with tuberculosis, on the contrary, occur suddenly without any prodromes. In the hemoptysis of tuberculosis the specific bacilli will almost invariably be found in the blood, and the occurrence of this accident need cause no apprehension, say the writers quoted, if a careful search by microscopical and cultural methods fails to reveal the presence of tubercle bacilli in the expectorated blood.

Antis Still Discovering Mares' Nests.

The Vivisection Investigation League recently emitted one of its characteristic misstatements to the effect that Dr. Noguchi of the Rockefeller Institute had inoculated upward of 150 innocent persons with syphilis. They got the notion, possibly honestly, through a misreading and misunderstanding of an article in the *Journal of Experimental Medicine* describing Noguchi's luetin test. The charge was brought to the notice of District Attorney Whitman, who, together with Mr. Lindsay of the Society for the Prevention of Cruelty to Children, made a thorough examination, and, of course, discovered that there was absolutely no foundation for it. We have not heard that any of the lady directors of the League who signed the circular containing this false charge, or even the men, including Poultney Bigelow and Ernest Seton Thompson, have as yet apologized to Dr. Noguchi for their slander. We hope the report is true that he intends to force them to retract through an appeal to the courts. Laboratory investigators, to whom thousands owe their lives to-day, have been too patient under the malicious attacks of slanderers and it is time they brought these evil speakers to a sense of responsibility for their words.

News of the Week.

Montefiore Home.—The new buildings of the Home now in course of construction on Gun Hill Road, near 210th street, New York, are to be on the pavilion plan, nine in number, all connected by covered corridors. A special pavilion will be devoted to treatment of the diseases of the lungs, and there will be ample laboratory equipment. The plans include a small general hospital, with operating rooms and wards, for the acutely ill, and a gymnasium for those able to take properly regulated exercise, while there will also be equipment for baths, electrical treatment, and massage. The buildings will be of reinforced concrete with brick facing and terra-cotta ornamentation, and will be strictly fireproof. The two city blocks which the Home has acquired will allow ample room for walks and recreation grounds for the patients.

New Jersey Tuberculosis Law.—Governor Wilson of New Jersey has recently signed the bill passed by the Legislature which is designated the most advanced legislation so far enacted for the control of tuberculosis. It provides that tuberculous patients who refuse to obey the regulations of the State Board of Health as to prevention, and thus become a menace to the health of their associates, shall be compulsorily segregated by order of the courts, in institutions provided for this purpose. If any such patient refuses to obey the rules and regulations of the institution in which he is placed he may be isolated or separated from other persons and restrained from leaving the institution. The law further provides that all counties in New Jersey shall, within six months from April 1, 1912, make provision in special institutions for the care of all persons suffering from tuberculosis within the county limits. Maryland is the only other State which has enacted legislation providing for the compulsory segregation of dangerous cases of tuberculosis, although in a few of the larger cities this power is exercised under the provisions of the sanitary code.

Commencement Exercises.—Thirty-six graduates in medicine received their degrees from the Cooper Medical College, San Francisco, on May 9. The Medical Department of the University of Alabama bestowed the degree of Doctor of Medicine on thirty-five students at the annual exercises on May 6, held in Mobile. Governor O'Neal of Alabama addressed the class. Fifty-three students of the Medical Department of the University of Arkansas received their diplomas at the thirty-third annual exercises held in Little Rock on May 10. Dr. J. L. Greene of the Arkansas Hospital for Nervous Diseases delivered the annual address.

Nurses Graduate.—At the graduating exercises of the Training School for Nurses of the Jewish Hospital, Brooklyn, New York, on May 14, fourteen nurses received diplomas.

Oppose New Hospital.—The application made to the State Board of Charities by the Fordham University Medical College for permission to erect and operate a hospital in connection with the institution has met with some opposition, because of the proximity of the proposed hospital to the present Fordham Hospital which is a city institution. The university had proposed to maintain a hospital to be known as the Fordham University Hospital for the purpose of providing facilities for the instruction of students in the medical department. The commissioners took the matter under advisement.

Hospital Fires.—The excellent construction of the Lying-In Hospital, New York, was shown in a fire which occurred in the servants' quarters on the second floor of the building on May 14. Although the fire burned for half an hour, the patients were not alarmed as no odor of smoke reached the wards. The damage amounted to only about $300.

A fire in the basement of a dormitory adjoining the Metropolitan Hospital, Blackwell's Island, New York, on May 16, caused some alarm but was extinguished with only trifling damage.

Public Baths.—The question of municipal public baths was discussed at a conference held in the City Hall, New York, on May 14, delegates being present from many states. Dr. Simon Baruch was

elected chairman of the conference, and told of his efforts to obtain free baths under several city administrations. The delegates also paid a visit to Coney Island to inspect the new municipal bath there.

Medical Building Opened.—Caldwell Hall, the new medical building of the University of North Carolina, was formally opened on May 8.

Charitable Gifts.—By the will of the late Thomas E. Crimmins of New York, the following bequests are made: St. Joseph's Hospital, $500; Seton Hospital, $2,000; St. Vincent's Hospital, $2,000, and St. John's Day Nursery, $500.

Adenoids and Cleft Palate.—Dr. Douglas H. Stewart of 128 West Eighty-sixth Street, New York, writes he has never found adenoid hypertrophy in any patient with cleft palate, and he would be glad to learn of any facts in the experience of others in confirmation or disproof of this observation.

A New Charity.—The International Electric Light Association, which includes a large number of electric light companies in and about New York, has announced its intention of doing all in its power to aid the sick poor in the city this summer by furnishing and running electric fans for their use without cost. The charity is a new one in New York, although it was tried two years ago in Rochester with great success.

Lebanon Hospital.—At the annual meeting of the Lebanon Hospital Association held last week Mr. Jonas Weil was elected *President;* Paul Hirsch and Julius Heinman, *Vice-Presidents;* Samuel L. Hyman, *Treasurer,* and Lewis Coon, *Secretary.* The annual report of the president detailed the successful year which had just passed and called attention to the addition of a hospital building erected to increase the facilities for the outdoor patients.

Red Cross Prizes.—The first prize for the best invention for lessening suffering of sick and wounded soldiers, from the fund established by the Empress of Russia, was awarded by the International Red Cross Conference at Washington to Dr. Louis Lesage of the Necker Hospital, Paris, for a portable *x*-ray laboratory automobile for carrying the wounded from battlefields. The prize amounts to $3,000. Two second prizes of $1,500 each were awarded to Major Riggenbach of Switzerland for a wheeled and folding stretcher, and to Dr. G. Steindorf of Germany for a bicycle stretcher. Third prizes of $500 each went to Captain Henry L. Broawn, U. S. A.; Colonel Pick of Austria, Dr. Glinsky of Russia, Major Halloran, U. S. A.; Dr. L. Linxweiler of Germany, and Captain Roselli, Colonel Taschetti, and Colonel Abbamondi of the Medical Corps of Rome, Italy.

New York City Children's Hospitals and Schools, Randall's Island.—The attending staff of the Children's Hospitals and Schools on Randall's Island held a clinical conference on Monday afternoon, May 20, to which practitioners were invited. The superintendent, the force of nurses, and the house staff cooperated to make the occasion a success. Several cases of idiocy were shown, including microcephalics, hydrocephalics, mongols, and cretins, and a demonstration was made of the ocular findings in amaurotic family idiocy and in cretinism. An imbecile was shown with paralysis caused by an attack of poliomyelitis, and several cases of cerebral diplegia which had been improved by dorsal root sections. Some of the fallacies of the high enema were exposed, and a paper on the morbidity and mortality of the feeble-minded was read. A case of empyema of the accessory nasal sinus in a child with operation and recovery was shown. Several cases of Potts disease of the spine were presented with braces and plaster jackets and on Bradford frames. Many showed most satisfactory results. A case of onychogryphosis in a child was shown, and an extensive tuberculosis of the skin. The conference lasted two hours and afterward a collation was served.

Against Preventorium.—The New Jersey State Board of Health on May 18 held a public hearing to consider the opposition being raised against the establishment by the Montclair Tuberculosis Preventive and Relief Association of a sanatorium in that town. It was argued that the establishment of such an institution would cause a depreciation of 50 per cent. in the value of the surrounding property, a statement which in turn was stoutly denied by those supporting the movement. The decision of the board was reserved.

Dr. Abraham Jacobi of New York, president of the American Medical Association, celebrated his eighty-second birthday on May 6.

Dr. William F. Mathews of Brooklyn, N. Y., has been appointed Fourth Deputy Health Officer of the Port of New York, thus completing the Health Officer's staff.

Dr. Ernst J. Lederle of New York has been appointed by Mayor Gaynor as one of the delegates to the Fifteenth International Congress on Hygiene and Demography, which will be held in Washington next September. Mayor Gaynor has also appointed Superintendent of Schools William H. Maxwell and Nelson P. Lewis, chief engineer of the Board of Estimate, as delegates.

Dr. Albert C. Thomas, formerly on the staff of the Connecticut State Insane Asylum, has been appointed superintendent of the New Haven Hospital, New Haven, Conn., to succeed Dr. H. T. Summersgill, resigned.

Dr. John B. Deaver of Philadelphia was the guest of honor at a dinner given by the Washington Medical and Surgical Society at the New Willard Hotel, Washington, D. C., on May 7. Preceding the dinner Dr. Deaver gave a demonstration of methods of surgery of the stomach at a clinic at Freedmen's Hospital.

Dr. Charles W. Stiles of Washington recently received the honorary degree of Doctor of Laws from the University of North Carolina.

Civil Service Examination.—The United States Civil Service Commission announces an examination for the purpose of filling the position of assistant pharmacologist in the Bureau of Chemistry, Department of Agriculture, Washington, D. C., at $1,800 to $2,000 a year with chance for reasonable promotion. The position affords an excellent opportunity for study and research in pharmacology and physiology in the broadest sense, the laboratory equipment being of the best, and should prove attractive to men of a high degree of scientific training and experience. An educational training equivalent to that required for the degrees of B.S. and M.D., or that required for the degree of Ph.D. from an institution of recognized standing is a prerequisite for consideration for this position. Competitors must be able to show at least two years' work in chemistry. The examination allows 40 weights for general experience and scientific training, 40 for professional experience and fitness, and 20 for publications or a thesis covering the results of

original experimental work. Further details may be obtained from the United States Civil Service Commission, Washington, D. C., on application for Form 304.

The American Society for the Study of Alcohol and Other Narcotics will hold its forty-second annual meeting in the parlors of the Marlborough-Blenheim, Atlantic City, on June 5, 1912. This is the oldest medical society in the world for the study of alcohol and the degenerations following from it. All persons interested in the subject are invited to be present. Full details may be obtained from Dr. T. D. Crothers, secretary, Hartford, Conn.

Obituary Notes.—Dr. Jacob Fats of Shawneetown, Ill., a graduate of the Medical College of Evansville in 1878, died at a hospital in Louisville, Ky., on April 25, aged 74 years.

Dr. Daniel A. O'Hearn of Lowell, Mass., a graduate of the Harvard University Medical School in 1902, and a member of the American Medical Association, and the Massachusetts State and Middlesex County Medical Societies, died at his home of pneumonia, on May 3, aged 33 years.

Dr. Gardner Cox of Holyoke, Mass., a graduate of the University of Michigan, Department of Medicine and Surgery, in 1868, died at his home of heart disease, on May 2, aged 68 years.

Dr. Daniel W. Carroll of Ingersoll, Ont., a graduate of the Medical Department of Victoria College, Ontario, died suddenly while making a professional call on April 25, aged 75 years.

Dr. J. L. Finley of Collison, Ky., a graduate of the University of Louisville, Medical Department, in 1896, and a member of the Kentucky State and Vermillon County Medical Societies, died at his home after a short illness of typhoid fever on April 28.

Dr. Robert Latshaw Walker of Carnegie, Pa., a graduate of the Western Pennsylvania Medical College, Pittsburgh, in 1892, and a member of the American Medical Association and the Pennsylvania State and Allegheny County Medical Societies, died at his home on April 30, aged 41 years.

Dr. Hector Canfield, formerly of Providence, R. I., died at Philadelphia on May 8 at the age of 78 years.

Dr. Edwin Clarence Howard died of diabetes mellitus at Philadelphia on May 10 at the age of 66 years. He was graduated from the Harvard Medical School in the class of 1869. He was a member of the Philadelphia County Medical Society, of the Medical Society of the State of Pennsylvania, and of the American Medical Association. He was one of the original members of the staff of Douglass Hospital and one of the founders of Mercy Hospital. He was at one time surgeon to the Twelfth Regiment, N. G. P., and also a member of the Twelfth Sectional School Board.

Dr. William E. Menahan of Fond du Lac, Wis., a graduate of the Rush Medical College of Chicago in 1901, and a member of the Wisconsin State and Fond du Lac County Medical Societies, was among the passengers of the steamship *Titanic* who lost their lives in the sinking of the ship on April 15.

Dr. Edmund A. Donelan of St. Joseph, Mo., a graduate of the Medical College of Ohio, medical department of the University of Cincinnati, a member of the St. Joseph Medical Society, of which he was at various times president and secretary, a member and former treasurer of the Missouri State Medical Association, and an honorary member of the St. Joseph-Buchanan County Medical Society, for seven terms a member of the Missouri State Legislature, and formerly State fish commissioner, president of the St. Joseph school board, and county and city physician, and one of the founders of the College of Physicians and Surgeons, St. Joseph, later merged with Ensworth Medical College, in which he filled the chairs of materia medica, gynecology, and pediatrics, retiring some years ago with the title of emeritus professor of pediatrics, died at his home on May 10, aged 88 years.

Dr. Hubert Townsend Foote, a graduate of the Eclectic Medical College of New York in 1881, died at his home on May 17, after a long illness, aged 52 years.

Correspondence.

ARREST OF DEVELOPMENT.

To the Editor of the Medical Record:

Sir:—Your editorial in the issue of May 4 entitled "Recent Investigations on the Disorders of Growth" calls attention to a problem which is not only interesting, but also when considered broadly one of fundamental importance to medicine. You state: "In the undersized body heredity plays an important rôle. One need only mention the instances of stunted growth occurring in the offspring of the insane, the syphilitic, the tuberculous, the alcoholic, and the underfed. An undersized body is frequently the unmistakable index of a vitiated ancestral stock," etc. Also: "The tendency of modern writers is to broaden the conception of the term infantilism. It is no longer regarded as signifying a mere persistence of the infantile characteristics, but is defined as a retardation of development," etc.

My interest in the problems involved, especially in that of arrest of development, I trust, will be a sufficient excuse for this communication. This subject has occupied my attention, more especially in its relation to gynecology and obstetrics, since 1886, when in conjunction with the late Dr. Harrison Allen, a series of cases of delayed puberty in girls was studied with the conclusion that in them the arrest of development was not particular as to the sexual organs, but was general and affected their entire morphology, involving all the systems of organs and tissues. We concluded that the term hypoplasia best expressed the condition of their structures, and that the hypoplasia was due to arrest of development.

The exigencies of an active practice and the pressing nature of the surgical problems arising in the growing science of gynecology so engaged my attention that while I continued to observe the facts and study the problem in gynecology I did not write upon it until 1908, when I published a hastily written article entitled "Hereditary Hypoplasia in Man, Due to Degeneracy," etc. (*Jour. Am. Med. Ass'n.*, February 13, 1909). In this paper the hereditary factor alone was emphasized, the influence of environment being reserved for a separate presentation. In 1909 in a paper of a very general or philosophic type entitled "The Law of Degeneracy in Its Relation to Medicine" read before the College of Physicians of Philadelphia (*N. Y. Med. Jour.*, December 24, 1910) both the hereditary and environmental factors were discussed. Since then much of my time has been spent in a study of the question, and more especially of

the environmental factors involved, with the result that it seems manifest to me that the environmental factors are not only of importance in bringing about arrests of development, but also that heredity through defects in the germ plasm plays a much smaller rôle than is currently believed. The broader concept of infantilism of the Germans to which you refer leading to the term "Asthenia universalis congenita" is not only true, but also the real truth is much more general in its nature and more fundamental in its importance than is this concept. The article on Hypoplasia referred to above embraces this concept, but it is too narrow, and likewise the term congenital is unfortunate as tending to interfere with, if not prevent, the apprehension of the actual truth.

Referring now to the environmental factors alone, the subject must be viewed from the standpoint of the influence of unfavorable environment upon the organism in its various periods of development—from its dual existence in the bodies of the parents as ovum and sperm until full development is reached in the adult organism. Thus we must begin with the life history of the "primitive ova" in ovary and testis which produce the ripe, or matured, ovum and the spermatozoon concerned in the impregnation which starts the future man or woman, as a protozoon, on the road of development to become an independent organism. At this period an unfavorable environment is constituted by disease in the parent or parents, whereby protoplasmic poisons in undue amount circulate in the blood and either arrest, or tend to arrest, the development of the primitive ova or the unripe ova and spermatozoa. Thus sterility can be caused; or when impregnation occurs the ovum is defective with a resultant defective adult—from, and with, arrested development.

Likewise after impregnation an unfavorable environment is constituted by disease in the host—now the mother. This may be of two kinds: Local disease in the tube and uterus—more especially in the uterine mucosa, and systemic disease in the mother, whereby protoplasmic poisons in undue amount circulate in the maternal blood, and thus come to poison the germ, the embryo, or the fetus. When the bad environment is local disease, this, when it does not cause abortion, tends to interfere with or arrest the normal relations between the chorion and placenta and the uterus and thus serves to lessen the normal transmission of nutritious matter to the fetus, and of excrementitious matter from the fetus to the mother, and in this way serves to lessen the nutrition of the growing organism and to interfere with or arrest its development; also relatively to cause its poisoning by interfering with the transmission of effete products through the placenta. The consequences of this are: Abortion, premature labor, or arrested development of the growing organism, manifesting themselves in the same abnormalities which are caused by maternal systemic disease. That this is true has been amply proved by the investigations of Moll among others. When the bad environment of the growing organism is systemic maternal disease it exerts its influence by insuring that an excess of protoplasmic poisons—whether exogenous or endogenous in source—pass through the fetal membranes or placenta and so poison the organism and either destroy it or arrest its development. The nature and consequence of the arrests depend upon the degree of intensity of the resultant poisoning, the duration of time during which they act, and upon the period of development of the organism when the malign influence shall be exerted.

The evidence of all the experimental teratologists—Roux, Féré, Wilson, and Stockard, not to mention others—is that when exerted during the germinal period the result is either the death of the germ or the production of monsters or of gross abnormalities.

During the embryonic period the result of the arrest is either the death of the embryo, monsters, or deformities—such as clubfoot, harelip, etc. Experimental evidence does not demonstrate the result of slight degrees of poisoning, but from the collateral evidence it would seem clear that the result is merely a less gross defect—not now of form, but a defect inherent in the protoplasm of the cells of the organism—which I have called Developmental Hypoplasia, which has also been called Constitutional Inferiority and also Asthenia Universalis Congenita.

During the fetal period the result may be either arrest of development or fetal disease, or fetal death.

Disease in the mother may be either acute or chronic; the exanthemata or other fevers or infections; disorders of metabolism, as gout or diabetes; exogenous intoxications, as lead, mercury, alcohol, morphia, cocaine, etc.; or due to the absorption of the products of putrefaction in the intestine; or to disorders of excretion involving the retention of protoplasmic poisons in the blood, as Bright's disease, etc. Whatever may cause the circulation of protoplasmic poisons in undue amount in the maternal blood or may so interfere with the mother's nutrition as to prevent the adequate nourishment of the embryo or fetus (although this influence is far less potent than that of toxic conditions) may either kill the growing organism or arrest its development. It is also true that any physical agency inimical to the functional integrity of living organisms may produce similar arrests, such as the *x*-rays and various mechanical agencies. In the human the rôle of such physical agencies is small, but the evidence of experimental teratology is ample to prove their potency.

The statement above that during the fetal period the result of the action of protoplasmic poisons upon the fetus is death, arrest of development, fetal disease, or the lesser abnormalities will be found well presented and amply supported by evidence in Ballantyne's "Antenatal Pathology."

It is also important to point out that the arrests may be particular as well as general, manifesting themselves as defects in various systems, or organs, as, for example, the nervous system, the circulatory apparatus, the blood-making organs, the lymphatic system, the glandular organs, etc., thus explaining the source of diatheses from environmental causes. Yet it must not be overlooked that in particular instances the general arrest may be due to environmental causes and the particular defect or diathesis to defect in the germ plasm or heredity. That is to say, a woman hereditarily defective may suffer from disease both before and during pregnancy and thus bear children defective because of both bad heredity and bad environment.

The explanation of particular arrests is simple. It is that those systems, or organs, suffer the most marked arrest which are actively developing at the time the toxic agents exert their greatest influence, while systems and organs already developed, and

more especially those which develop at a later period, when the toxic agents are no longer active, suffer less or not at all. Particular arrest may also be caused by the selective action of certain poisons, as, for example, that of lead for the nervous system.

In order that the truth shall be fully grasped it is essential that bad environment shall be recognized as constituting that which in postnatal existence is classed as pathogenic agencies. These agencies during postnatal life when sufficient in degree, cause disordered function or local or somatic death —disease or disordered function or death. Upon reflection it will be found that this is also true of antenatal life. Prior to impregnation the function of the primitive ova and of the ova and spermatozoa is development leading to maturation. Pathogenic agencies arrest this development either relatively or absolutely. During germinal life function or physiology consists of growth or development and leads to the formation of the fetal membranes and of the neoembryo. Pathogenic agencies during this epoch cause arrests more or less profound leading to abnormalities in the membranes, subsequent development of monsters (or lesser defects) or to the death of the organism. During the embryonal period function or physiology consists of growth—organogenesis—and the pathology of the period is the formation of monsters, deformities, or individuals who approach the normal in morphology, but who are defective in *vital energy* and who do not attain to the full the adult state—relatively they are neuters or grownup infants, children, adolescents, etc.

During the fetal period function is twofold, growth and function related to that of postnatal life, and the pathology of the period, induced by pathogenic agencies, is likewise twofold and consists of the lesser abnormalities and of general or more particular hypoplasia and of diseases identical with or related to those of postnatal life.

In order that the concept of arrested development shall be complete the influence of pathogenic agencies in postnatal life during the developmental period must also be included. Function in this period is likewise twofold—growth, and ordinary function; and the result of the influence of pathogenic agencies, or protoplasmic poison, is likewise twofold—arrest of development and disease.

Thus it is seen that there exists a unity in the concept. The type of agencies (all protoplasmic poisons) of bad environment are the same in each period of life, and the results are generally the same —arrest of development—but specifically they are different, and the difference is due to the difference in function particular to the organism in its different periods of existence.

It seems to me also necessary to bear in mind that the facts and principles which apply to the development of a normal impregnated ovum under unfavorable environment are equally applicable to that of an ovum arising from defective stock—bad heredity, or defective germ plasm. Men and women of bad heredity, and therefore defective, are not only as subject to disease as are those of good stock, but also it is generally conceded to be true that they are still more liable to the incidence of disease. Hence it follows that their offspring are more liable to suffer from arrests of development, due to protoplasmic poisons, constituting a bad environment, than is true of mankind in general. This self-evident truth is the basis for the statement above that in my judgment the rôle of heredity in the production of arrests of development, defectives, degenerates, hypoplastics, or by whatever name one may choose to designate them, is less important than is currently believed. Likewise, it would follow that there is a serious error in the methods and, therefore, in the conclusions of those studying the subject of degeneracy among the feeble-minded, epileptic, the insane, etc., in attributing these conditions entirely, or almost entirely, to bad heredity.

Also, Mr. Editor, would it not follow that the first quotation from your editorial, "In the undersized body heredity plays an important rôle. One need only mention the instances of stunted growth occurring in the offspring of the insane, the syphilitic, the tuberculous, the alcoholic, and the underfed," etc., is almost absolutely erroneous? It is thought that certain insanities are due to "endogenous causes"; that is, the constitution of certain stocks is sufficiently degenerate, that even when subjected to a good environment they will become insane, or are feeble-minded from birth. Also it is true that certain other stocks are less degenerate, but sufficiently so that when subjected to the ordinary strains and stresses of life they become insane. Likewise, it is true that in certain stocks, alcoholism or dypsomania is the result of constitutional degeneracy. With these exceptions, are not the statements, quoted above, incorrect, or misconceived? and are not the conditions and results referred to (with the exceptions noted) entirely of an environmental nature?

It seems to me to be both true and unfortunate that there is a widespread misconception in our profession as to what constitutes heredity. This is perhaps best developed by Weismann in his work on the "Germ Plasm," in the chapter entitled, if I remember correctly, "Doubtful Points in Heredity." Therein is discussed the nature of the influence of syphilis, alcoholism, and tuberculosis in the parents upon their offspring, and it is pointed out that biologists are agreed that the heredity-bearing substance in the germ plasm is contained in the chromosomes of the nuclei of both ova and spermatozoa. Hence it follows that as neither alcohol nor the respective germs causing syphilis and tuberculosis is a chromosome, nor yet an integral part of a chromosome, it is impossible for either syphilis or tuberculosis to be inherited in the sense that biologists use that term; and also that the evil effects noted in the offspring of alcoholics are not due to heredity in its true sense. Weissmann discusses how these morbid agencies bring about their undoubted malign influence upon the ova and spermatozoa and classifies them as either "affection" or "infection" of the germ. The necessary limitations of this communication prevent an amplification of these points, but it is right here that the erroneous concept of many in the profession arises, and so the dire consequences of pathogenic agencies purely environmental in nature are charged to heredity.

The more one studies the subject of heredity the more it becomes evident that in general the laws of heredity are benign in their influence—indeed are those which have led, and are leading, to the evolution of the race, and that what is called morbid heredity is largely not heredity at all, but is the influence of bad environment—of pathogenic agencies—in arresting heredity and in preventing the developing organism from attaining that degree of evolution potentially present in the germ plasm of its progenitors

The apparent exception to this concept of the essentially benign nature of the workings of heredity is the existence of certain abnormalities by excess, such as supernumerary digits, and perhaps of certain diseases, due apparently to the addition to the germ plasm of a unit character insuring the development of the defect in the offspring. Further knowledge may show this view to be erroneous.

The defects due to the absence of "unit characters" or "material particles" in the germ plasm are not exceptions. According to Weismann these would be explained as caused by interference with the nutrition of the germ plasm by bad environment over a sufficient number of generations as to cause the loss of certain unit characters, and other authorities have an even more direct explanation. Here it is environment interfering with heredity, and not heredity *per se*, which is malign. Again, by crossing these degenerate, or defective strains, with pure strains—a dominant with this recessive the unit character can be restored (DR) to the germ plasm; and by continued mating with sound stock—simplex with dominants—normal individuals can continually be produced; and probably in time the germ plasm will become normal, or dominant (duplex), as to the particular character.

The further relations of the problems of arrested development, hypoplasia, or degeneration to medicine, rather than the questions discussed above, is the research upon which I am at present engaged, and the light which these studies throw upon the subject of your editorial has led me to send you this communication in the hope that it may prove of interest and of value to your readers and that it may serve to stimulate a greater interest and study of this most fascinating and important field of biology within the profession.

CHARLES P. NOBLE, M.D.

GLADWYNE, PA.

PHYSICAL EXAMINATION AND TREATMENT OF SYMPTOMS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—Every well trained physician believes in the great importance of careful, exact, properly instructed physical examination. Without it numerous grave mistakes may, and often do, occur. And this examination must be not only of all organs so far as may be, but must extend to the fluids of the economy and to the excreta. To them are applied all known laboratory investigations with microscope, test tube, chemical or physiological examination. Besides cultures and their developments and inoculations are made valuable and at times essential. Vaccines, too, are brought to bear and utilized in many cases in which other medical treatment is shown to be useless. These vaccines are products of multiplied and varied researches.

When everything is fairly considered and when all the special instruments for improved physical examinations are appealed to, if need be—laryngoscope, otoscope, urethroscope, sphygmomanometer, *x*-ray, electrocardiograph, etc., etc.—it is clearly impossible for one, or even two or three men of average ability to be expert in all. Here, then, we reach advanced specialism. Everyone is entitled to the best available knowledge and in order to obtain it must have perhaps half a dozen physicians at different times. Granted this, we then wish to know, has disease grown less and is mankind healthier and freer from ailments, taking even the limited few who always have what they consider best advice and where expense and time are not considered, or at least do not prevent securing it? Statistics may be obtained to prove that they have; statistics may also be secured to prove the contrary. Why? Because, if for no other reason, it may be credibly shown that habits and professions of our day, lead directly to more disease inevitably. Of what real use then are all our refinements of doing unless we correct causes and make prevention surer?

In apposition to the foregoing, we might say a word in favor of what has been so often, and indeed rightly, shown to be pernicious, *i. e.* the treatment of symptoms. This, however, we must still do in the vast number of cases, if we wish to afford even temporary relief. In doing so intelligently, and with the basis of wise empiricism, not infrequently we obtain apparent cures which no science, even the most advanced, has been able to obtain. I am convinced that every old practitioner, gifted with clear insight as to men's failings and individual peculiarities, has discovered special combinations of drugs, which relieve to greatest degree in largest number of instances. They fail, of course, at times—and so does everything—but not more frequently in the aggregate than anything we get from the schools of the elect. This is no appeal for quackery, or ignorance, but it is an appeal to truth and fact. I know to-day many combinations, which experience of long years has proved invaluable, and without which I should be immensely handicapped in treating patients. These have rarely been discovered in any text book, general or special, but have been found through repeated trials and observations, wholly personal. Thus it is when brought to see a case in consultation, if I merely deal in generalities and indications, I fail to do the good I ought. If, however, I urge the use of a particular combination, which I know to be useful, I can frequently be helpful.

The most scientific observer is not invariably the best physician, and there is a special mental attainment which makes a man the abler practitioner when he would fall short in the laboratory, in hospital ward, or in lecture room, where this sort of knowledge and acquisition, is at woeful discount. Alas, for suffering human beings.

BEVERLEY ROBINSON, M. D.

NEW YORK.

EPIPHYSEAL FRACTURE OF THE UPPER EXTREMITY OF THE HUMERUS.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In 1902 a girl seven years of age was brought to the Hospital for Ruptured and Crippled, for an epiphyseal fracture of the upper extremity of the humerus, with the characteristic anterior and upward displacement of the shaft. In this case I first used an adaptation of the abduction method which had proved efficient in the treatment of the similar injury at the hip. The essentials, after disengagement of the fragments, are to place the shaft in proper relation to the separated extremity, leverage and ligamentous tension being utilized in reposition. When this is accomplished, a plaster support is applied to hold the limb in the attitude that assures fixation, or practically in full abduction on the scapula, with such anterior inclination or rotation as the condition indicates.

In a second case in a boy twelve years of age, the abducted arm was still further elevated by rotating the scapula on the thorax, as a more comfortable attitude and one in which gravity might aid in fixation. This patient was presented six years later at a meeting of the New York Surgical Society, to illustrate a perfect functional result (*Annals of Surgery*, December 11, 1911).

The treatment, though demonstrated from time to time, was first recorded in the report of a discussion at a meeting of the New York Surgical Society in January, 1908, and it was described in detail in a paper in the *Annals of Surgery* for May, 1908, under the title of "A Treatment of Epiphyseal Displacements and Fractures of the Upper Extremity of the Humerus, Designed to Assure Definite Adjustment and Fixation of the Fragments."

From this paper I quote: "The details of the method are as follows: The patient having been anesthetized, the adherent fragments are separated by forcible manipulation. The head is then grasped, as well as may be, by the fingers and under traction the arm is abducted gradually to the extreme

limit, the acromion serving as a fulcrum to direct the extremity of the diaphysis downward toward the epiphysis. When the fragments are in apposition the abducted arm may be drawn somewhat forward, if necessary, to assue proper adjustment. One now proceeds to fix the parts in this attitude by means of what may be called a shoulder spica. This, as applied to the original case, is illustrated in Fig. 1. (See illustration above.) A better method, the one used in the second case, that of a boy twelve years of age, in which the reduction undertaken twelve days after the injury was somewhat more difficult, and now recommended, is shown in Fig. 2. The extended arm is raised over the head by rotation of the scapula so that one may better utilize muscular tension and the force of gravity to fix the fragments.

In the MEDICAL RECORD of May 4, 1912, I have read with interest an article by Dr. F. H. Albee, entitled "Juxtaepiphyseal Fracture of the Upper End of the Humerus; A New Postural Treatment," further designated in the text as Albee's position.

Strictly speaking, a juxtaepiphyseal fracture is identical with an epiphyseal fracture and is therefore necessarily limited to youthful subjects. It is used, however, apparently, not in the sense of adjoining, but in the neighborhood of, and several of the reported cases were in patients of mature age. Of the three personal cases described, in two (May, 1906, and November, 1907) the displacement was reduced by open operation. In the third case a fracture of the surgical neck (May, 1909) the fragments were apposed by manipulation. The distinctive attitude is fixation in abduction on the scapula by a plaster support. It differs from the attitude that I have described in that the arm is directed anteriorly, rather than sufficiently forward to appose the fragments. A comparison of the photograph of the patient treated by me in 1902, with that which shows Albee's position will indicate the essential similarity. Dr. Albee states that he first described the treatment in the *Post-Graduate* for June, 1908.

My paper was limited to the class of cases indicated by its title, the essentials being the method of reducing the deformity and the means of assuring the reduction by fixation in the attitude that apposes its fragments—namely abduction with such anterior inclination or rotation as may be indicated. It should be evident that the more extreme elevation would not be advisable in fractures of the middle or upper third of the humerus, nor can they in my opinion be properly included in a paper on juxtaepiphyseal fractures. Furthermore, the substance of Dr. Albee's paper is a description of the classical epiphyseal fracture, of its symptoms and of the difficulty in treatment by ordinary methods, and it is therefore fair to assume that the treatment is primarily concerned with this injury. In view of priority of performance and of publication of the method of treatment in the class of cases to which my discussion is limited, I feel that I shall do Dr. Albee no injustice if I still designate it as an adaptation of the abduction treatment.

ROYAL WHITMAN, M.D.

283 LEXINGTON AVE.

RELAPSES IN TYPHOID FEVER.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—In the MEDICAL RECORD for April 27 there appeared a report of my paper on "A Clinical Study of Relapses in Typhoid Fever," which had been read at Albany in the Section on Medicine at the N. Y. State Meeting. In this report are some inaccuracies which I would ask you kindly to correct. There were 25 relapses in 21 out of 166 cases of typhoid fever—one triple relapse, two double relapses, and 18 single relapses. The frequency of relapses in our series was therefore 12.6 per cent. The ages of my patients are reported as having varied between 16 and 56 years; the fact is that 9 of the patients with relapses were under 10 years of age, the youngest having been 6 years, the oldest 56 years and the average 20.4 years. The average interpyrexial period in my series was 7.92 days, the longest was 28 days (occurring after the second relapse of the triple case) and the shortest was 4 days. As to the persistent tumefaction of the spleen after defervescence, I said: "This sign was investigated in 13 of our cases. Of 12 single relapse cases, the spleen remained enlarged during the interpyrexial period in 8; in one of the double relapse cases the organ remained palpably enlarged in both afebrile intervals." Palpable spleen as a symptom of relapse

was present in 88 per cent. In 3 of the relapse cases with a negative Widal during the original attack, the reaction became positive (1:50) during the relapse. To be differentiated diagnostically from the relapse are the recrudescence, the so-called post-typhoid sepsis, typhoid pyelitis, and central or atypical pneumonia developing during convalescence. I am reported as saying that the mortality is nil; I did say that when there are no serious complications with relapses, the mortality is practically nil, also that serious complications are rare; in the only fatal case in the series the patient died of pneumonia during the relapse. I stated that while the administration of vaccines during acute febrile manifestations of typhoid fever is often harmful and is therefore not advised, it would be interesting to note the effect with regard to relapses of employing vaccine therapy during convalescence from the primary attack.

H. F. L. Ziegel, M.D.

New York.

OUR LONDON LETTER.

(From our Regular Correspondent.)

NATIONAL HEALTH WEEK—TUBERCULOSIS COMMITTEE'S REPORT—UNHYGIENIC CONDITIONS ON VESSELS—BOVINE TUBERCULOSIS—LONDON WATER REPORT—INSURANCE ACT—GOVERNMENT INQUIRY ON PATENT MEDICINES—OBITUARY.

London, May 3, 1912.

This week is the "National Health Week"—so named by a new organization formed to direct public attention to questions of hygiene and arouse the conscience of the individual as distinct from the local authority. This object was expected to be promoted by sermons, lectures, exhibitions, etc., in the various cities and towns of the country, and branches were formed for this purpose. Considerable success is reported so far, many localities having been the scenes of much enthusiasm, although others have scarcely been moved from their usual indifference. In London the Borough of Marylebone has led the way. On Sunday in several of its churches and chapels preachers took occasion to press on their audiences the duty to their neighbors as well as themselves of suppressing sanitary defects. The next day "health talks" began in a number of meetings and were illustrated by lantern views and other attractions. Quite aware that it is not an easy task to get people to assemble for instruction, the promoters of the movement have in many places induced employers to grant a remission of work during addresses on health topics. Much help is anticipated from medical inspectors of schools and from lady visitors who go round to various homes when illness is notified and endeavor to instruct mothers and families in elementary facts about fresh air, feeding children, and other points regarding health. Amusements have also been employed in this campaign, of which the cinematograph is very popular.

A letter signed by Sir E. Ray Lankester, Dr. C. Porter, M.O.H., Mr. Owen Leaman, and other well-known persons has been freely circulated to explain the objects of this National Health Week as: (1) The establishment of a definite week when synchronized attention throughout the country should be given to problems of health in and through any agency, official, public, or private, which touches in any way these problems; (2) to combat ignorance and apathy and win intelligent support for the constructive work of medical officers of health and others; (3) to collect, not money, but service to this end; (4) to drive home the facts of waste of national health and life, tragical facts of death and disease; hopeful facts as to what has already been done and what can be accomplished in the way of prevention.

The recently appointed Departmental Committee on Tuberculosis has issued an interim report, being induced to do so because the Insurance Act is to come into operation in July. This committee contains representatives of all the bodies in the kingdom which deal with tuberculosis in any aspect, but on this occasion they profess to consider diagnosis and treatment, leaving over research. It might be objected that research should rather be put before any definite scheme, but the committee is desirous of setting up at once a provision under which "no single case shall remain uncared for"—a rather large order, considering we have no means of knowing whether the act will be effective. Certainly there will not be sanatorium places for every case at first, and the danger of exciting any such expectation is obvious, especially when the report suggests "that half an acre per patient is a fair allowance." The report recognizes that in addition to the medical profession and voluntary societies, other bodies have accomplished much—hospitals, sanitary authorities, county councils, officers of health, and so on. But it adds that the resources for attacking the problem have been strongly reinforced by the passing of the Insurance Act. With an estimate of 14,000,000 to be insured the income for the purpose will be about £800,000 per annum, rising with increase of population. The responsibility of dealing with such a mass of disease does not seem to appall the committee and they go on to say that the principles of the treatment which have been for the most part elaborated in sanatoria can be applied outside special institutions, if under the care of medical men with special knowledge of modern methods.

As to this endorsement of specialism, I must protest against the statement that "at the present time there are comparatively few medical men" and nurses who possess the necessary qualifications for posts in sanatoria, and the report accordingly recommends that appointments be made "on the understanding that those selected should at once invoke adequate arrangements to secure the necessary training and experience." It is a monstrous slur on the profession to which all knowledge of tuberculosis is due, including the sanatorium treatment, which after all is only part of the subject. Moreover, would a committee in any department except the medical recommend the appointment of a staff on the understanding that it should begin the study of its duties, especially when those duties involve the health and lives of the community? The organization proposed by this report comprises dispensaries and sanatoria. The dispensary is to be the receiving house, a center of diagnosis as well as a bureau of information and curative center. It is suggested that at first one dispensary to 150,000 or 200,000 of a certain population would suffice. In scattered rural districts it could only serve a smaller number. These institutions are not to be confounded with the tuberculin dispensaries. The suggestion for the sanatoria at first is one bed for every 5,000 of the population. The cost, it is said, ought not to exceed £15 per bed and the maintenance 25 to 30 shillings per week. The problems

of administration are considered at great length. County councils or similar bodies will be responsible, but it is held that reference must be made to sanitary authorities, insurance committees, and other institutions in the several areas.

In his annual report, Dr. Herbert Williams, Medical Health Officer for the port of London, draws an unpleasant picture of the conditions under which too many seamen live on vessels. He says seamen must degenerate when, as often is the case, they are shut up below deck in unhealthy quarters which are practically in constant use for living and sleeping in, generally dark, damp, and encumbered with clothing, conditions favorable for the dissemination of tuberculosis and which are likely to continue until the Legislature takes some interest in the welfare of seamen.

The Board of Agriculture and Fisheries is intending to carry out an inquiry on bovine tuberculosis. It is known that some stock breeders have made investigations and the Board would be glad to be informed of any results that might be usefully collated with whatever information may be obtained by official agencies. Any such information would be regarded as confidential.

The London Water Board has, after some hesitation, agreed to publish the eighth report of Dr. Houston, their chief examiner. After referring to the cutting down by Parliament of the scheme for extending the reservoirs, Dr. Houston admits that flood water loaded with organic matter and swarming with bacteria is often pumped into the storage tanks, and, though long storage will destroy disease microbes, this should not be. He has frequently urged either the exclusion of river water or special purification. For this last he uses lime both as a germicide and a softener. Part of the water to be purified he overloads with lime to act as an effectual bactericide and then adds this to sufficient untreated water to combine with the excess of lime. In this process the mechanical precipitating effect is obtained, he says, as well as the softening and sterilization, and the method would give us a supply in a degree of purity never attained by any authority in the world.

The Insurance Act has been before the House of Commons and Mr. Lloyd George has been obliged to accept a resolution which is practically a censure on the Government. This he did after speaking strongly against it, but he evidently saw that a division would give him a smaller majority than any of the lately regularly falling number. Thus he avoided a defeat, but not until after he had been plainly told by a member that he had taken advantage of and insulted a noble profession. He protested that he had the greatest admiration for that profession, but was reminded of his outside speeches, and one member told him he ought to go to a medical canossa and spend the night in his shirt sleeves before the Royal College of Surgeons —a taunt which brought down the house.

The Government has appointed a Select Committee on the sale of patent and proprietary medicines and advertisements relating thereto. They are to inquire what amendments, if any, in the laws as to them are desirable. The quacks, advertising agencies, and publishing and allied interests are preparing to defend their enormous pecuniary interests.

Sir Fred. Charles Wallis, B.A., M.B., Cantab., 1885; F.R., C.S., Eng., 1901, surgeon of Charing Cross Hospital, died on the 20th ult., suddenly, aged 54. He was also surgeon to St. Mark's and to the Grosvenor hospitals and held other surgical appointments. He published important papers in the *Pathological and Clinical Transactions*, mostly on abdominal cases and operations. One of them was a case of "chronic intussusception" in which he removed 42 inches of intestine, recovery ensuing. His "Surgery of the Rectum" holds a high position among favorite manuals. He was knighted last year. He was highly esteemed by colleagues, students, and patients; in fact, a general favorite.

Dr. George Mackern, late physician to the British Hospital at Buenos Ayres, died yesterday at Eastbourne. He took M.B. with first-class honors in 1879 at the London University and proceeded to M.D. the next year. He contributed some papers to the journals, including one on "Leprosy of the Larynx" to the *Lancet*, 1882, and another on "Edema," 1886.

Progress of Medical Science.

Boston Medical and Surgical Journal.

May 9, 1912.

1. The Influence of Antivivisection on Character. W. W. Keen.
2. The Technique of Gastrointestinal Therapy. M. V. Tyrode.
3. Observations on the Intensity of Acidity of the Urine in Children. G. King.
4. The Respective Significance of Rest and Exercise in the Treatment of Phthisis. N. B. Burns.
5. A Method of Recording Exercise Data in a Sanatorium for Consumptives. C. C. MacCorison and N. B. Burns.
6. The Value of "Russo's Typhoid Fever Test." A. L. Grover.

3. **Urinary Acidity in Children.**—G. King, employing Henderson's method of determining the concentration of hydrogen ions by the use of a color scale made up of various known acid combinations and standard indicators, determined the urinary acidity in seventy children. A slight increase of acidity was found in cases of adenoids and hypertrophied tonsils, chronic pharyngitis, chronic laryngitis, chronic intestinal indigestion, Jacksonian epilepsy, moderate constipation, and secondary anemia. An intensely acid urine was present in cases of acute endocarditis, acute intestinal indigestion, acute nephritis, acute bronchitis, acute rheumatism, impetigo contagiosa, tuberculosis, acute balanitis, Bronchiectasis, and enuresis. Enuresis formed by far the largest number of the abnormal cases. In the series of fourteen cases of enuresis all had a highly acid urine, *i.e.* from fourteen to thirty times as acid as the average normal for a child, and none was alkaline, none showed any evidence of malformations or local inflammatory affections, all urines were normal in all respects save for the high acidity. Practically all the cases had previously had the ordinary treatment with no definite results. Potassium citrate in doses of from three to eight grains four times a day was administered with definite improvement in all but one case.

4. **Rest and Exercise in the Treatment of Phthisis.**—N. B. Burns states that one cannot overestimate the importance of rest as a remedy to stay the progress of tuberculosis at practically any stage of the disease. With an even temperature of 100 plus, rest in bed is the only way to prevent the occurrence of still more troublesome symptoms. Any muscular or even increased mental activity at this time may cause further wasting of the body tissues, which, together with the action of the fever, produces the effect of "burning the candle at both ends." When a patient reaches convalescence the question of rest still deserves earnest consideration. In the sanatorium this matter is well arranged for his benefit by establishing rest periods, retiring and arising hours, and stated intervals for remaining at meals. The regularity of rest is thereby prescribed, and proves to be conducive to steady improvement. Then with the introduction of exercise the patient may, under such a routine system, gradually attain to five

or six hours' active work daily without ill effect, and eventually be able to take up an outside occupation for eight or nine hours daily.

6. **Value of Russo's Typhoid Fever Test.**—A. J. Grover concludes that, although this test may be demonstrated in the urine of a large proportion of the typhoid fever cases, yet it may be demonstrated in such a large proportion of the urine of normal individuals that it is not a test that has any specific meaning or value as to the presence or absence of typhoid fever. When compared with the reliability of a blood culture it is worthless.

New York Medical Journal.

May 11, 1912.

1. Fundamentals of the Freudian Psychology. W. A. White.
2. Widening the Pylorus Without Operation. M. Emhorn.
3. Differential Diagnosis of Pancreatic Affections and Gallstones. J. F. Erdmann.
4. The Liability of Physicians for Accidents Occurring During Anesthesia. A. C. Vandiver.
5. The Experimental Proof of the Identity of Brill's Disease and Typhus Fever. J. F. Anderson and J. Goldberger.
6. On the Presence of Bacteria in Fresh Eggs. R. C. Rosenberger.
7. Von Hansemann's Plea for Conditional Reasoning in Medicine. C. F. Bolduan.
8. Surgical Anesthesia. R. H. Ferguson.
9. A Case of Hysteria in a Girl of Thirteen Years, Illustrating the Mechanism of an Hallucination. R. Reed.

1. **Fundamentals of the Freudian Psychology.**—By W. A. White. (See MEDICAL RECORD, May 11, 1912, page 98.)

2. **Legal Aspects of Anesthesia.**—A. C. Vandiver states that, assuming that the administration of anesthesia is a part of the practice of medicine, it would seem that the Legislature of New York, in passing Section 200, providing that nothing in the act should be considered as conferring any authority to practice medicine, did not intend to grant to trained registered nurses any authority to exercise any of the functions of duly licensed physicians. In the opinion of the author anesthesia should be administered to patients only by registered physicians, and the consent of the patient in all instances should be obtained for the administration of the anesthesia. The delegation of the function of the administration of anesthesia to trained nurses should be deprecated and discouraged. The liability of the physician if negligent is fixed and certain. The negligence of his agent, registered physician, or other person is imputable to the physician and renders him also primarily liable.

Brill's Disease and Typhus Fever.—By J. F. Anderson and J. Goldberger. (See MEDICAL RECORD, May 18, 1912, page 962.)

6. **Bacteria in Fresh Eggs.**—R. C. Rosenberger states that a fresh clean egg is sterile. The bacteria that are present in broken or cracked eggs, in commercial "dirty" eggs, in desiccated eggs, and in frozen eggs, get into the product from nest dirt on the outside of the egg or from the air during breaking of the eggs, in the process of desiccation, or from the hands of those who break the eggs. When an egg is what is termed "dirty," and when it is cracked so that the membrane is also broken, then colon bacilli may gain access to the egg. Or, if dirty eggs are broken carelessly, or if the hands of those who break them are not clean, then colon bacilli may gain access to the egg. The colon bacillus may even gain access to the broken eggs from dust blown about in the air. An egg can be fresh and "dirty." A clean fresh egg will remain fresh (and not show gas-producing bacteria) for at least ten months in the ordinary refrigerator, packed in sawdust or bran, or without being packed in any material.

7. **Conditional Reasoning in Medicine.**—C. F. Bolduan states that one of the great stumbling blocks to progress at the present time is the feeling that the cause, and therefore the essential nature, of many of the infectious diseases is absolutely well established, since the specific microorganism of the disease has been isolated. It is important to bear in mind that the essence, the real nature of any disease cannot be represented merely by a single symptom, be it anatomical, functional, bacteriological, or serological. Neither the presence of a particular bacterium, nor the formation of certain metabolic products, nor yet the presence of any kind of anatomical changes, constitutes the disease, but all of these together should be regarded as factors. To a large extent the false sense of knowledge is due to the loose and incorrect use of the term "cause." In the use of the term "cause" one should adhere closely to the principles so clearly formulated by Hume, namely: Cause and effect are immediately related as to space and time. Cause must precede effect; a like cause always produces a like effect; it should be possible to establish the existence of a constant connection between cause and effect. In nature, however, one hardly ever deals with relationships so simple as to allow one to speak of *one* cause and *one* effect, and yet in medicine this has been done time and time again. In this connection von Hansemann says: "The causative method of reasoning has actually grown to be a dogma, especially because it is so extraordinarily easy. To say that a certain disease has *a* particular cause, and to say that when *the* cause is removed the disease can also be removed, is very plausible when theoretically considered, and also very easy. Unfortunately, in many cases this does not correspond to the facts."

8. **Surgical Anesthesia.**—R. H. Ferguson finds that the phagocytic power of the blood which is lost to a great degree by the inhalation of ether or chloroform can be quickly restored by the proper use of olive oil, and that it is just as certain that without this oil it would not be quickly brought back, and also that there is at present no other known means of restoring it. In order to obtain results the oil must be absorbed as oil and that it is so absorbed from the lower bowel when injected high in the rectum has been proved by several investigations upon the subject of rectal feeding. One should inject six ounces of olive oil high up into the rectum in all septic cases, and in all others in which the patient's power to resist infection may be called into play. One should remember that time is an important factor in restoring the opsonic index, therefore one should not delay in the administration of the oil. In injecting the oil one should "make haste slowly." The sudden deposit of six ounces of oil may cause it to be ejected, and all will have to be done over again. Only pure, limpid olive oil should be used. Absorption to do the most good must take place comparatively quickly.

Journal of the American Medical Association.

May 11, 1912.

1. Pharyngeal Insufflation, a Simple Method of Artificial Respiration. A Preliminary Note. S. J. Meltzer.
2. The Pathogenesis of Placental Syphilis. A Preliminary Report. M. F. Engman.
3. The Study of Mind in Medical Education. W. A. White.
4. The Relation of Chronic Gonorrhea and Other Infections in the Urinary Tract to Joint Disease. F. Kreissl.
5. The Present Non-Medical Treatment of Tuberculosis Not New. R. C. Newton.
6. A New and Efficient Method of Cultivating *Bacillus Leprae* from the Tissues. With Observations on the Different Strains of Acid-Fast Bacilli Found in Leprous Lesions. C. W. Duval and C. Wellman.
7. Contribution to the Surgery of Bones, Joints and Tendons (concluded). J. B. Murphy.
8. Tendon Transplantation and Silk Inserts. J. W. Sever.
9. Further Account of a Previously Reported Case of Ischemic Paralysis and Contracture of Volkmann. C. A. Powers.
10. Meningeal Carcinomatosis. W. F. Boyd.
11. Arthrodesis of Some of the Smaller Joints in the Treatment of Paralytic and Acquired Deformities. R. E. Soule.
12. Possible Dangers of the Vertical Rectus Incision. M. F. Porter.
13. A Case of Rudimentary Clavicles. M. Boland.
14. A New Blood-Pressure Manometer. C. H. Davis.
15. A Modification of the Crile Transfusion Cuff. R. C. Bryan and F. R. Ruff.
16. Supernumerary Axillary Mammary Gland. F. J. Hirschboeck.

1. **Pharyngeal Insufflation.**—S. J. Meltzer describes under this name a new method of artificial respiration.

In its simplest form it consists (1) in the introduction of a catheter into the pharynx; (2) pulling out the tongue; (3) pressing the suprahyoid region against the roof of the mouth; (4) putting the abdomen under constant pressure, and (5) connecting the catheter with the bellows. When air is thus introduced into the pharynx its escape otherwise than into the lungs is hindered by pressure on the suprahyoid region and by the abdominal compression. The author has experimented on dogs, cats, rabbits, and monkeys, chiefly on the first two, and has found the method efficient in keeping up the life of curarized animals for many hours in a normal manner. The method has also been found effective in bringing about an ether anesthesia easily and readily. The real test of it will have to be made, however, on human beings, and when carried out with care it can do no harm. The tube to be inserted into the pharynx should be a 15-American (or 22-French) catheter. It should be introduced about 5½ inches from the teeth, the tongue should be pulled out and held by a tongue forceps, a pad about 1 inch thick should be placed under the chin and suprahyoid region and pressed upward by a bandage tied, first only moderately firmly, over the head. A weight, about 13 pounds, is placed over the abdomen; then the tube should be connected with the bellows and the compression begun, not too forcibly, nor over ten or twelve times a minute. Instead of a bellows an oxygen tank might be used with a T-tube in the connection between it and the catheter. The closing and opening of the open branch of the T-tube for about two and three seconds, respectively, will cause inspiration and respiration. For the resuscitation of new-born infants a similar arrangement can be employed, using the rubber bulb of an atomizer and proper sized catheters in the pharynx and stomach. This method would also probably be sufficient for the resuscitation of babies 1 or 2 years old.

4. Chronic Gonorrhea and Arthritis.—F. Kreissl states that gonorrheal arthritis is more common in men than in women, the latter being almost immune, and he believes the cause of this is in the difference of structures and the lesser chance of traumatic injury in the course of treatment. At first glance it would seem that the metastasis into the joints, when occurring in the first week of the disease, might be due to an idiosyncrasy, but the author doubts this. More recently the idea has been gaining ground that the source of the joint infection in the male is chiefly to be found in retention foci of the urogenital tract from the anterior urethra up into the renal pelvis. Such foci may occur in the follicular apparatus of the anterior urethra, in the glandular tissue of the prostate, in Cowper's glands, and in the seminal vesicle. Very few have yet recognized the importance of the seminal vesicle as a contributing factor, but the author believes that retention in these of septic material is responsible in a very large proportion of cases of chronic ever-recurring urethral discharges, relapse of epididymitis and cystitis and joint metastases. If urethritis is due to retention foci, all methods will fail until the septic material is recovered from these pockets, and this can be done only by massage. The ordinary recommendation of using massage for the prostate and vesicles only once in four or five days for five minutes at a time is absolutely incorrect. Massage should be repeated daily, but not for more than one-half to one minute. Chills and fever following the earlier treatment and lasting from a few hours to one or two days are positive evidence of the presence of septic material and may be taken as a favorable sign, but they should preclude massage for not less than twenty-four hours after their subsidence. Other procedures of value in the treatment of gonorrheal arthritis are immobilization, Bier's hyperemia, constriction of the affected joint and the administration of vaccines.

8. Tendon Transplantation.—J. W. Sever concludes that tendon transplantation *per se* is at times useful. Tendons lengthened or reinforced with silk are better in that they are not only stronger, but also can be used to greater mechanical advantage. Silk or linen thread is an excellent material to use to lengthen tendons in suitable cases. The growth of new tissue will penetrate and permeate the silk only slightly (in some cases not at all), and does not absorb it. When the peritendineum and tendon sheath have been removed, some foreign body is essential for regeneration, to serve as a director for the new growth. With the sheath and the peritendineum present and sutured, no foreign body need be inserted. In this case the new growth is true tendon tissue. Without the presence of the sheath and the peritendineum, no true tendon tissue can be regenerated. Such tissue is merely fibrous tissue, lacking elasticity and subject to stretching. The new "tendons" are apt to be larger and stronger than the resected ones, especially when silk has been used to replace the resected portion. Provided the sheath and peritendineum are preserved and function allowed early, adhesions may not occur. Without the sheath, adhesions may and do occur much more frequently.

11. Arthrodesis of the Smaller Joints.—R. E. Soule emphasizes the following facts to be borne in mind in doing an arthrodesis: The operator should be sure that the deformity is a permanent one, not due to temporarily paralyzed muscles or to muscle overstrain or tire. The patient should be old enough—not under 8. All resistance to correcting the deformity should be previously overcome. The operator should strive to cause as little mutilation of the contiguous bones as possible. He should not use a curette. The exaggerated idea of removing a V-shaped piece of bone is overemphasized. Success depends on ability to make a flush joint, as a carpenter would say, and thereby correct the deformity, and also depends on ability to apply a fixing dressing which allows of the least separation of the apposed denuded bony surfaces.

12. The Vertical Rectus Incision.—M. F. Porter has decided to employ the vertical rectus incision only in cases in which its advantages as compared with other incisions are very considerable, and in only exceptional septic cases. This decision is the result of the fact that the author has had two cases of alarming secondary hemorrhage from the epigastric artery, one very nearly fatal. In both cases there was infection. In neither case was the artery injured at the time of the operation, so far as is known. In one case the hemorrhage occurred on the thirteenth day after the operation, and in the other on the tenth day. In both cases the hemorrhage was stopped by clamping the artery with a hemostat. The hemostats were removed after forty-eight hours. In neither case could the hemorrhage be attributed to pressure by the drain, for in the one case no drainage was used until after the hemorrhage occurred, and in the other there was one soft rubber tube placed well to the outside of the vessels through an ample opening, and the tube had been removed seven days before the hemorrhage occurred. In both cases there was considerable fascial sloughing. Both these accidents might have been avoided had the incisions been made well away from the vessels.

The Lancet.

May 4, 1912.

1. Cardiac Debility and Cardiac Dilatation. G. A. Gibson.
2. Cellular Activity in Health and Disease: Biochemical Studies Based upon New Methods of Intravitam Staining. E. E. Goldmann.
3. A Case of Ligneous Thyroiditis. G. R. Murray and F. A. Southam.
4. The Treatment of Muscular and Joint Injuries by Graduated Contraction. M. Smart and W. Rowley Bristow.
5. The Spa Treatment of Neuritis. W. Armstrong.
6. A Note on the Temperatures of One Thousand Children. Mary H. Williams.
7. Family Susceptibility and Virulence in Scarlet Fever. G. S. Banks.
8. The Organization of an Anti-Tuberculosis Crusade: A Memorandum. R. A. Lyster.

1. Cardiac Debility and Cardiac Dilatation.—G. A.

Gibson states that in the management of milder cases of weakness, with little or no dilatation, regulation of rest and diet, as well as attention to digestion and elimination, will suffice to bring about recovery. Even in such instances the employment of some cardiac tonic is helpful as a means of accelerating improvement. Long experience has convinced the author that, for this purpose, small doses of digitalis are beyond comparison most useful. If not causing gastric or enteric irritation the tincture is best, and the dose should not exceed 5 minims twice a day. The remedy may be combined with nux vomica. In graver cases absolute rest and general massage, with careful diet and free elimination, must be employed, as well as larger doses of digitalis and strophanthus. If the arterial pressure is high, it will suggest the employment of the nitrites; if the liver is enlarged the use of mercury, along with digitalis, will be indicated; if the renal secretion is scanty the addition of citrate of caffeine and of citrate of potassium will be helpful.

2. **Cellular Activity.**—By E. E. Goldmann. (See page 993.)

3. **Ligneous Thyroiditis.**—G. R. Murray and F. A. Southam report a case of this condition, which is also known as Riedel's disease, and the symptoms of which are due to the progressive development in the thyroid gland of a dense fibrosis. This fibrosis may not only involve the capsule of the gland, but it may extend to the surrounding connective tissue and muscles. In Jeannel's case the fibrous tissue involved the sheath of the vessels and nerves in the neck and extended up to the base of the skull. This tendency of the fibrosis to extend beyond the capsule of the gland serves to distinguish the condition from the chronic atrophic fibrosis which is found in myxedema, as the latter does not extend beyond the gland itself. This tendency to extend into surrounding tissues accounts for the early compression of the trachea and dyspnea, which are characteristic symptoms of Riedel's disease, but which do not occur in myxedema. Nothing so far is known of the cause of the disease, though the character of the microscopical changes suggests that it may be the result of some chronic infection. It occurs in both sexes and most commonly develops between 30 and 40 years of age. The development of the disease is generally slow, but it may take place within a few months or even a few weeks. In some cases pain has been complained of in the affected gland and radiating to the ears and the back of the neck. Dyspnea and stridor due to compression of the trachea, which is not displaced to one side or the other, are the most important symptoms, and notable because they are associated with a comparatively slight enlargement of the gland itself, which, however, becomes hard in consistency and fixed in position. The skin overlying the gland is not adherent and the lymphatic glands are rarely enlarged. The narrowing of the trachea may be accompanied by a laryngotracheitis, causing cough. One recurrent laryngeal nerve may be involved in the cervical cellulitis, causing paralysis of one vocal cord. It is thus evident that the disease is of great interest owing to the remarkable manner in which it may resemble the harder forms of malignant disease of the thyroid gland. The following points are of value in distinguishing between the two diseases. Dysphagia, which is not uncommon in malignant disease, is rare in ligneous thyroiditis. The uniform enlargement of the gland, the early onset of severe dyspnea, the freedom of the skin from adhesion, the absence of enlargement of the lymphatic glands, and the earlier age at which it usually occurs are all in favor of chronic thyroiditis. No medicinal treatment appears to exert any influence upon the progress of the disease. When once compression of the trachea has commenced, so that there is slight stridor with dyspnea on exertion, a sufficient amount of the diseased gland should be excised to free the trachea completely.

6. **The Temperature in Childhood.**—M. H. Williams recorded the temperature in one thousand children and found that the maximum percentage was that of children exhibiting a temperature of 100° F., and the next two highest were those at 99.6° and 99.8°. Only 13.5 per cent. of children have temperatures below 99° and 55.5 per cent. have temperatures not under 99.6°. Two points are commonly raised in regard to pyrexia in children. First, that the condition is due to nervousness; and secondly, that children's temperatures "run up for nothing." In regard to the first point there is a very definite foundation for it. Nervous children bulk largely among children with raised temperatures—but the typical nervous child is the rheumatic child, and the rheumatic toxin is the agent causing both the nervousness and the pyrexia. In regard to the second point, this is a mere statement that many physicians find raised temperatures in children, after some slight disturbance, without being able to ascertain the cause. It by no means shows that there is not some constitutional cause present, provoked into action by the slight disturbance noted.

British Medical Journal.

May 4, 1912.

1. Chronic Intestinal Stasis. W. Arbuthnot Lane.
2. Infection of the Urinary Tract by *Bacillus Coli*. J. G. J. Mackey.
3. The Correlation and Distinction between Certain Symptoms in Some Abdominal Diseases, Based upon an Analysis of 124 Operations for Gastroduodenal Ulcer and 110 for Appendicitis. E. Stanmore Bishop.
4. Appendicitis and Quickness. E. Owen.
5. Retroperitoneal Perforation of the Duodenum, with a Suggestion for Treatment. E. D. Telford.
6. The Mechanism and Treatment of Shock. H. Tyrrell Gray and Leonard Parsons.

1. **Chronic Intestinal Stasis.**—W. Arbuthnot Lane states that the symptoms of this condition may be divided into two groups: first, the simply mechanical, which are those due to obstructive changes in the gastrointestinal tract and the infective results of them: and second, those produced by the presence in the circulation of a number of poisonous toxins. The simple mechanical group includes symptoms such as result from the distention of the stomach, duodenum, and small intestines, or from ulceration of the mucous membrane of the stomach or duodenum. The symptoms of stasis in the large intestine vary with the abruptness of the obstruction. In some cases there is much pain, distention, tenderness, vomiting, etc., while in others there may be no complaint whatever. This does not make the stasis any the less deadly in its poison-producing effect. Later results of stasis are ulcerative and mucous colitis. The symptoms which ensue from the presence of toxins in the circulation are the results of degenerative changes in the several tissues. The skin becomes thin, inelastic, wrinkled, sticky, and stained. The secretion of the skin is abundant and offensive, especially in the axilla and groins. The circulation becomes much enfeebled and the blood pressure is lowered. The ears, arms, and legs are cold even in the warmest weather. The temperature of the patient is habitually subnormal. The patient loses fat, the muscular system degenerates very rapidly, and various forms of visceral ptosis develop. Headache is a common symptom. The joints are very liable to degenerate with abnormal rapidity and to cause much pain and discomfort. The resisting power is diminished with reference chiefly to tuberculosis and rheumatoid conditions. The changes in the breast are characteristic, beginning as an induration in the upper and outer zone of the left breast, and later in the same area on the right side. As time goes on this induration becomes a more marked feature and extends to the rest of the breast, the change in the upper and outer segment being still in excess of that in the rest of the breast. Later cystic and inflammatory changes arise, followed after an interval of time by intracystic growths or by cancer. In almost every case

of cancer of the breast a previous history of chronic intestinal stasis can be demonstrated. The treatment resolves itself into operative and non-operative. The non-operative treatment consists in facilitating the passage of material through the gastrointestinal tract by sufficient doses of liquid paraffin and by the pressure exerted on the lower abdomen by a spring support. The method of the operative interference varies of necessity with the nature of the factors responsible for the stasis. If the symptoms be due chiefly to obstruction at the end of the ileum by a newly acquired ligament kinking and twisting this portion of the bowel and reducing its lumen proportionately the ligament must be divided and means taken to avoid its reformation. If the delayed passage of the contents through the end of the ileum results from extreme debility, the ileum must be divided and its proximal extremity introduced into the pelvic colon below the last kink. In every case of tuberculous or rheumatoid arthritis, in which simple means have failed, the bowel should be short circuited without hesitation.

3. **Correlation and Distinction Between Symptoms in Abdominal Diseases.**—E. Stanmore Bishop states that if a comparison is made between an ordinary acute appendicitis and one of the relapsing variety, certain similarities and certain differences are at once noted. In both pain is the earliest symptom; in both it at first makes its appearance in or near the epigastrium or, at least, above the umbilicus. In acute appendicitis it becomes in the course of a few hours definitely localized in the right iliac fossa; but in the relapsing cases the history of the first and even of some of the succeeding but early attacks appears to show that a much longer time elapsed between the first appearance of pain and its localization in the appendical region; while in some still less acute cases pain in the earlier attacks was sometimes entirely confined to the epigastrium, and did not show itself at all in the right iliac fossa until a second or even third attack. In both acute and relapsing cases vomiting is usually associated with the pain; but while in acute cases it is usually noted as immediately following, in subacute or relapsing cases its absence in the earlier attacks is not unusual. Probably, in comparison with the almost certain relief to pain obtained by vomiting in gastroduodenal cases, its usual absence in appendical cases is of more importance in differentiation than its occasional presence. It is a matter of common experience that in cases demonstrably gastric—such as, for instance, in "saddle" ulcers affecting and confined to the lesser curvature—the symptoms may closely simulate those of duodenal ulcer. There is frequently the same interval of time between the taking of food and the occurrence of pain, the same vomiting, the same relief afforded by vomiting, by more food, or by alkalies. There are cases of biliary calculi without jaundice or colic, the symptoms of which sometimes fairly closely simulate those of gastroduodenal ulcer. In these cases the gall-bladder may be found to be the seat of a low grade of inflammatory change, around which plastic adhesions have formed, uniting it to the stomach, duodenum, or transverse colon, while the bladder itself may or may not contain calculi, and such adhesions, pulling upon, distorting, and contracting the duodenum, may produce symptoms and results closely simulating those of duodenal ulcer.

4. **Appendicitis and Quickness.**—E. Owen refers to the speed with which appendicitis may run its course, and to the need of the surgeon losing no time in getting to work when once the presence of the disease is recognized. What is the sign by which the surgeon may be made aware of the need for operation? In the author's experience there is none; or, to put it more forcibly, there may be urgent need for immediate operation in any case and yet no danger signal may have been hoisted. The temperature certainly cannot be depended upon as a guide. Indeed, if the absorption of poison has been considerable, the chart may be tracking along the normal line or even below it. Generally, however, the most wilful cases show one sign of danger, in rigidity, tenderness, aspect, pulse, or temperature. It is an unreasonable practitioner who would expect all the danger signals, as described in books, to be hoisted at the same time.

6. **Mechanism and Treatment of Shock.**—By H. Tyrrell Gray and L. Parsons. (See page 994.)

Berliner klinische Wochenschrift.

May 6, 1912.

Congenital Tuberculosis.—Dietrich describes the following case: A servant girl aged 21 was admitted with fever, cough, and expectoration of ten days' duration. A sister had died of tuberculosis. The patient was in a miserable state of nutrition, was eight months pregnant and strongly cyanosed. There were no dull areas to chest percussion, but diffuse rales and bacilli in the sputum were positive finds. Examination of the eyes showed tubercles in the choroid. Blood tests negative. The patient lived long enough to be confined, dying three days later. The case evidently presented an exceptional opportunity for a research into congenital tuberculosis, as the mother had suffered from typical acute miliary tuberculosis. The placenta was subjected to exhaustive tests. Serial sections revealed no tubercles, but when the entire organ was treated with antiformin, dissolved and centrifuged, many bacilli were found in the sediment. The infant took kindly to artificial feeding and grew for a time. It thrived until a small abscess formed over the sacrum. The pus contained no bacilli, but the incision wound healed poorly, leaving a fistula and the child ceased for a time to thrive. It again gained in weight, but fever next appeared and did not subside. Râles developed over the chest and death took place on the 84th day. A second subcutaneous abscess formed some days before death. The two abscesses were looked upon as tuberculous from their destructive character. The first abscess was regarded as the primary manifestation. This was followed by bacilluria with eventual deposition of tubercles in the lungs, spleen, ileum, omentum, etc.

Chemotherapy of Tuberculosis.—Kapsenberg first mentions the fact that but little has been done toward a chemotherapy of tuberculosis, the field having been monopolized by the use of serums and vaccines. Naturally this kind of research is readily carried out in animal experiment. In order to find a bacteriotropic substance the author experimented freely with cultures and prepared from the latter a so-called "iodaffin" solution, which resulted from the affinity of some constituent of the bacillus with iodine. The latter is of course recognized as a specific of no mean power in surgical tuberculosis. Experiment with guinea pigs and rabbits showed that the iodaffin substance behaves as an antigen. The protocol of one experiment is as follows: Rabbit received an intravenous injection of a milky emulsion of tubercle bacilli. Four days later it received a second injection of the iodaffin substance with iodine addition. An anaphylactic shock occurred. The animal remained healthy. It received several more injections of the remedy, the reactions becoming progressively less marked. When the animal was eventually killed no evidences of tuberculosis were found. The intravenous injection of bacilli emulsion normally causes fatal miliary tuberculosis.

Histological Eye Studies of the Berlin Methyl Alcohol Victims.—Pick and Bielschowsky report their finds in three of the Berlin outcasts who were poisoned with methyl alcohol last Christmas. Two of the three had been stricken blind before their death. In brief the finds agreed throughout with those of Wood and Buller in the United

States, and also with the finds of animal experiment. The lesions can hardly be regarded as inflammatory, despite the hyperemia present. They occupied the ganglion cells of the optic ganglia, the entire retina and the optic nerve. The lesions in the fibers of the latter were clearly primary, coordinate with those of the ganglion cells and not secondary thereto. The affection, the authors hold, is to be conceived as an acute primary degeneration of toxic causation.

Münchener medizinische Wochenschrift.

April 30, 1912.

Staphylococcus Sepsis from Small Peripheral Suppurations.—Nurnberger refers to our increasing knowledge concerning this subject, the modern literature of which is barely ten years old. The peripheral pyogenic lesions known to cause general sepsis comprise furuncles, whitlow, and the like. Our increase in knowledge, however, lies purely in the fact that general sepsis may not result at all in these cases, but instead local internal suppurations such as at first and naturally behave themselves like primary lesions. Thus small, subcapsular abscesses may form in the kidney as a metastasis from ordinary furuncles, and by perforating the capsule give rise to a phlegmonous paranephritis fatal if not promptly operated on. The author has seen two cases recently. The first patient injured the tip of his finger and infected it. Shortly after he developed a pneumonia which ran its course in two weeks. While ill an abscess appeared on the back of his affected hand. He never recovered from his pneumonia, and suffered from cough, night sweats, and debility. In about a month he began to have symptoms referred to the chest and abdomen, but the most complete physical examination led to no definite conclusions. The blood was now cultivated and staphylococci recovered therefrom. Soon after this evidences of crural phlebitis appeared. The fever course was septic in character and death resulted from exhaustion. The kidneys were found to be the seat of paranephritic suppuration from the perforation of subcapsular abscesses, with secondary nephritis and eventual thrombosis originating in the renal veins. The pneumonia had evidently been a mere coincidence as no evidences could be found of intrathoracic metastases. The fever, sweats, etc., could not have been connected with a persistence of the pulmonary mischief. A second case reported was one of a type which has long been recognized, to wit, an intracranial sinus thrombosis following the occurrence of a furuncle on the face and dependent on the extension of a local thrombophlebitis.

Endocarditis Lenta.—Lorey refers to the comparatively new type of disease termed by Schottmüller endocarditis lenta and associated oftentimes with a peculiar microörganism, the *Steptococcus viridans*. Two cases are reported which were septic in character and due apparently to the aforesaid coccus, but instead of pursuing the mild course ordinarily mentioned the symptoms were acute and pronounced. The first patient gave the impression of a very sick woman who presented a high fever with daily remission and daily rigors. The endocarditis gave rise to several embolisms and infarcts. As in the majority of cases of septic endocarditis, the malady began as an acute articular rheumatism. Death occurred with the full picture of severe general sepsis. The second patient developed endocarditis without any antecedent or associated acute rheumatism and soon presented the complete picture of sepsis but eventually recovered. In comparing these two acute cases with the insidious and mild course of endocarditis lenta the author believes that the affection is practically the same for both types but that a very unusual degree of virulence was present in each of the two cases concerned.

Deutsche medizinische Wochenschrift.

April 25, 1912.

Plethora Vera.—Hart mentions the great vogue of the conception of an essential plethora and the reaction which sought to deny its existence. As a pathological anatomist he has sought light on the subject. Naturally a question must arise as to the possible identity of plethora and polycythemia. Certain cadavers appear to show an excessive amount of blood which is in no sense hydremic, and not associated with cardiac or renal lesions. These subjects are robust men at the most vigorous age, with strongly developed musculature and osseous system. The typical plethoric of a past age was corpulent, but in the class of subjects under consideration there was a relative absence of adipose. When these cadavers come to autopsy not only the veins but the arteries and heart appear surcharged with blood. Both ventricles are the seat of an essential hypertrophy, which is, as it were, physiological in character. To the microscope the heart muscle is absolutely intact. The kidneys are the seat of a similar physiological hypertrophy. The spleen and bone marrow show alterations which suggest an excessive functioning. Everything points to an overproduction of blood, which is habitual and which induces a certain degree of compensatory activity on both heart and kidneys. The only alterations mentioned which might be regarded as pathological are certain sclerotic areas in the pulmonary artery which bear no relation to ordinary arteriosclerosis. This goes to show that the pulmonary artery cannot accommodate itself to this plethoric state as readily as does the aorta, which exhibits no corresponding lesions. The author discusses this subject exhaustively and decides that two principal factors are at work in such cases, namely, a constitutional disposition and overfeeding. Some men who are noted for their overeating and overdrinking never put on fat, while notably small eaters do. It is naturally in the former case that we should expect to find essential plethora. As for polycythemia, the affection in question cannot be the socalled Vacquez's disease nor the beer plethora of certain writers, although plainly having affiliations with them. It is undoubtedly a rare affection.

Duodenal Ulcer.—Prof. Ewald as internist and Prof. Bier as surgeon contribute twin studies of this subject from their respective viewpoints. Both are in agreement as to the absolute infrequency of this affection in Germany as compared with the United States and England. It is probable that the affection is on the increase, and that this increase is making itself felt earlier in some countries than in others. This reacts by leading to increased ability to recognize and operate promptly. Prof. Bier, after between four and five years' experience in the Berlin University Surgical Clinic, has operated but twenty-three times, a small series compared with the figures of the Mayos and other leading surgeons in the United States and England. In private practice but few cases have come to him, and most of these were in foreigners. Nevertheless Bier admits that in Germany the disease is doubtless often overlooked and less rare than has been believed. Another important distinction is found in the fact that duodenal ulcer when so termed in Germany is commonly the isolated form, while in England and America the duodenal ulcer of the statistics is often a pyloric ulcer which extends into the duodenum. Hence in Germany many cases set down as ulcus pylori would, according to the Anglo-Saxon nomenclature, be classed as duodenal. The great numerical disparity, then, is due to a complex of several factors, viz., much greater incidence, superior diagnostic facility, and confusion in terminology. As already stated, any superiority in diagnosis by Anglo-Saxon surgeons is the direct outgrowth of great opportunities for study.

Insurance Medicine.

Medical Aspects of Life Insurance.—In a third lecture on this question delivered in London on March 8, 1912, Sir Richard Douglas Powell treats of various diseases which must be considered by the physician who examines applicants for life insurance. In reference to arteriosclerosis it is remarked that this condition should not exist in any appreciable degree until the later sixties. Its premature appearance is frequently associated with hereditary gout, with alcoholism or syphilitic or renal disease. In the absence of any of these favoring conditions and *a fortiori* in association with one or other of them, it may be brought about by mental strain attendant upon certain kinds of work. The mental strain involved in the management of large mercantile affairs, as on the Stock Exchange, and in certain professions, especially the medical profession, tends to favor its occurrence. Fatal occurrences as a result of arteriosclerosis tend to cluster about the ages of 50 to 65. When applicants present themselves in early life, the risk of arteriosclerosis can be guarded against only by reckoning for any contributing pathological factor—syphilis, alcoholism, albuminuria, should any of these exist, or by taking note of any strong inherited or personal tendency to gout. In many cases there is to be observed a distinct family tendency to premature death in middle or later middle life.

Such cases as present an early degree of arteriosclerosis without other defect are probably best met by the endowment form of policy calculated for about the period of especial risk with an addition appropriate to the individual case; or the premium on the endowment scale may be calculated for an age on the proximate side of the period of special risk, but remain payable during the whole of life. Much allowance must be made for the tumultuous heart of young people nervous under examination. The impulse from cardiac action may in such cases be diffused far beyond its normal limits, and murmurs may be heard at more than one orifice which are yet of purely hemic nature. A systolic murmur is not infrequently recognizable at and outside the apex beat during inspiration only, giving to it a peculiar wavy character; the murmur is not heard at the end of the inspiration nor during the respiratory pause. This murmur, the mechanism of which is difficult to explain, is not due to any cardiac lesion and may be ignored. As a general rule in cases of unsoundness of heart which are insurable, the danger zone is approached after middle life, the period when degenerative change tends to set in and the nutrition of the laboring muscle is less perfectly maintained. To meet this, the endowment scale of insurance premiums may be adopted, the proposer being charged a premium for his age, as reckoned on the scale for an endowment at 55 or 60, but the premiums to be continued through life. As for syphilis Powell thinks that the external lesions of syphilis are of little consequence from an insurance point of view in comparison with the gravity of those of internal parts. A history of syphilis, per se, requires an addition of 5 to 7 years. Any further risk must be estimated by the evidence of efficient treatment and by any signs of specific lesion.

Cases of permanent albuminuria require a decided addition to the premium. Clinically, apart from any obvious dropsy or complications that would render any further investigation unnecessary, the condition of the cardiovascular system is of most importance. The main mortality from diabetes falls at middle and later middle life, so that most cases have already been insured some years before the malady appears. The test for sugar in the urine is that usually relied on, and in addition the build, life, and general history of the applicant provide valuable indications as to fitness for insurance. In any case of appendicitis, supposing there had been within the past five years a definite attack of appendicitis and *a fortiori* a second attack, however complete the recovery may have been, an extra five or seven years according to the age would be necessary to cover the risk of relapse and operation. In cases in which the appendix had been successfully removed and a healthy scar alone remained, the life would be accepted without addition. In cases, again, in which there had been abscesses requiring operation, but the appendix had not been removed, no conclusion could be arrived at until the lapse without further symptoms of at least two years, and then an addition would be necessary in accordance with the conditions present. In the opinion of Powell, persons who refuse to be vaccinated or to allow their children to be so are an appreciable danger to insurance offices and the public, insomuch as they add much to the fatality from, and favor the spread of, smallpox. In all cases, therefore, an addition of five or at least three years, according to the age of the applicant, should be required unless he accepts vaccination and brings satisfactory evidence of its performance.

Finally, physicians examining for insurance are urged to note the features of health as well as any departure from it. A qualitative examination to satisfy as to functional integrity need not be labored; a good examiner will not tax the patience of an applicant by laboriously exploring every square inch of an obviously sound lung. The insight of clinical experience must be the guide as to where to concentrate attention while rapidly assuring oneself that each organ is sound; only where a defect is found is its full exposition necessary, and this is especially so in those cases in which such defect may be covered by a reasonable adjustment of the premium payments.—*The Practitioner*, April, 1912.

Industrial Accidents and Diseases.—The Quarterly Bulletin of the New York State Department of Labor shows that during the last three months of 1911 employees were injured in accidents reported to the department to the number of 10,322 in factories, 153 in mines and quarries, and 4,520 in building and engineering work, or a total of 14,995 in these three branches of industry alone. Of the above, 42 in factories, 3 in mines and quarries, and 93 in building and engineering, were known to have resulted fatally. That there is a special hazard of disease, as well as of accidental injury, in industrial occupations is evidenced by the returns under the law of 1911 requiring reports by physicians of cases of poisoning by lead, arsenic, phosphorus, or mercury and cases of anthrax and caisson disease. During the first six months under this law, which took effect last September, 122 cases were reported, 5 of which are known to have been fatal. These 122 cases included 87 of lead poisoning (2 of which were fatal), 2 of arsenic poisoning, 1 each of phosphorus poisoning and mercury poisoning (both fatal), 2 of anthrax, and 29 of caisson disease (only one of which was fatal).

Book Reviews.

The International Medical Annual. A Year-Book of Treatment and Practitioner's Index. Thirteenth Year. Price $3.50. New York: E. B. Treat & Company. 1912.

Those who are familiar with this unique publication will welcome its appearance for this thirteenth time. To others it will know that it contains just what they want, put in the most convenient form, to refresh the memory concerning the year's happenings in the entire range of medical science. There are thirty-three contributors, five of whom are Americans, one Austrian, one French, and the others British, and, as in previous editions, they have done their work excellently. The plan of the annual is the same as in former years. Part I consists of a general review of therapeutics with a consideration of new remedies and new applications of older drugs, "606" naturally occupying the chief place in this section. Part II, entitled "The Dictionary of Treatment," is a review of medical and surgical progress for 1911, with a synopsis of treatment of the various affections recommended during recent years. In Part III various topics—Medicolegal Medicine, State Medicine, and Industrial Diseases—are treated of, and the book closes with an article by a barrister, H. Wippell Gadd, on "The National Insurance Act as it Affects the Medical Profession." An excellent index makes all the facts in the 618 pages of the book readily accessible.

Essentials of Surface Anatomy. By Chas. R. Whittaker, F.R.C.S. (Ed.), F.R.S.E., Senior Demonstrator of Anatomy, Surgeon's Hall, Edinburgh. Second Edition, Revised and Enlarged. Price $1.40 net. London: J. & A. Churchill; Philadelphia: P. Blakiston's Son & Co., 1912.

This volume is small, containing only 56 pages of text, but the quality of the work is distinctly good. In subsequent editions we should like to see the scope of the work extended. In general arrangement the book reminds us very much of Holden's Landmarks, but it does not contain nearly as much as the older work. The outline illustrations (twenty in number) add to the usefulness of the volume. As an introduction to Surface Anatomy this little book can be commended to the medical student.

The Immediate Care of the Injured. By Albert S. Morrow, A.B., M.D., Adjunct Professor of Surgery in the New York Polyclinic; Attending Surgeon to the Workhouse Hospital and to the New York City Home for the Aged and Infirm. Second Edition, Thoroughly Revised. Price $2.50 net. Philadelphia and London: W. B. Saunders Company, 1912.

In spite of the addition of much new matter, this volume is little larger than the former edition. This work is eminently safe and sane, and can be placed in the hand of patients and lay friends without hesitation. In places where medical aid cannot be obtained for a considerable time, this volume may be of the utmost value. The author constantly emphasizes the fact (too often overlooked) that first aid should never supersede or take the place of proper medical or surgical attention. In the first part of the book a brief outline of the structure and functions of the human body is presented; the second part is devoted to bandaging, dressings, etc., and the methods of their application are thoroughly explained; the last part deals with accidents and emergencies, the author telling exactly what to do and how to do it.

Filariasis and Elephantiasis in Fiji. Being a Report of the London School of Tropical Medicine. By P. H. Bahr, M.A., M.B., B.C., D.T.M. & H., Cantab., M.R.C.S., Eng., L.R.C.P., Lond. With Many Colored and Monochrome Plates, Numerous Charts, and a Map. Supplement No. 1 of the Journal of the London School of Tropical Medicine. Price six shillings net. London: Wetherby & Co., 1912.

It would be superfluous to emphasize the importance and interest of the work which has been done, and is being done by the schools of tropical medicine of London and Liverpool. The investigating excursions sent by these schools to tropical lands have resulted in the discovery of the origin of many diseases and have made possible the colonization by white men of various parts of the torrid zone. Of not the least value has been the publication at intervals of papers, books, and journals treating of the diseases investigated. Most of those publications, in addition to their scientific and practical importance, have been true works of art. The supplement under consideration is a striking example of these united qualities. Dr. Bahr has not only given a vivid word picture of filariasis and elephantiasis in Fiji but has also succeeded in bringing these diseases clearly before the reader's eyes by means of beautifully executed plates and photographs.

Modern Theories of Diet and Their Bearing Upon Practical Dietetics. By Alexander Bryce, M.D., D.P.H. (Camb.), Author of the "Laws of Life and Health," etc. New York: Longmans, Green & Co., 1912.

The great importance of diet in the preservation of health is now receiving the wide recognition which is its due. This is shown by the large number of works published dealing with the subject. The book by Dr. Bryce considers the question of diet from the common-sense point of view. He does not unduly exalt the virtues of any particular kind of food nor does he depreciate the possibilities of a special diet. In fact, to a great extent he keeps an open mind on the subject, although, of course, on certain points his views are decided. In this volume practically all the important systems of diet which are entitled to serious consideration are discussed. The author pays particular attention to the dietetic theories of this country and must be looked upon as somewhat of an authority, having gained his knowledge of these principally at first hand. As for vegetarianism Bryce delivers himself of the opinion that the chief value of the practice is the inculcation, tacit or expressed, of the principle of moderation. He does not, of course, deny that flesh eaters, or rather the mixed feeders, frequently eat too much when intestinal auto-intoxication may and does supervene, but he does not think that sufficient proof exists to show that flesh in moderation is necessarily productive of this condition. A very interesting chapter is that which partly treats of the influence of diet on character. The entire subject of dietetics is considered succinctly, sanely and suggestively and the volume should serve as a good textbook.

Home Hygiene and Prevention of Disease. By Norman E. Ditman, M.D. New York: Duffield & Co., 1912.

The writer in his introduction emphasizes the fact that the object of this volume is not to displace the family physician but to place before the readers general medical information that will enable them to give the most efficient help in cases of incipient or of slight illness. Such knowledge will assist the individual better to determine when expert medical attention is necessary. The book should be of great aid to those living far from a physician and knowledge gained from it will often serve to relieve "the human gad-fly, 'minor ailments.'" The subjects are arranged alphabetically, often a great convenience, especially to the busy house mother. There is a good index.

Modern Urinology. A System of Urine Analysis and Diagnosis. By Clifford Mitchell, A.B., M.D., Professor of Chemistry, Clinical Urinology and Renal Diseases, Hahnemann Medical College, Chicago, Ill. Price $3.00. Philadelphia: Boericke & Tafel. 1912.

One method of book writing, essentially a mild form of plagiarism, is known as compilation. Gathering about him the standard authors on a subject, the writer culls what seems good and rounds out the work with criticism and comment. If the authorities are well chosen and the extracts wisely selected the resultant book is frquently not altogether devoid of value. This volume is obviously a compilation from many of the well-known works on uranalysis, and the author's unfamiliarity with many of the tests and methods is only too evident. His own contribution to the volume consists in numerous "Clinical Notes" and a chapter on "Essentials of Diagnosis by the Urine." To a careful reader the statements in this part of the work are not infrequently in conflict with the accepted theories of modern medical science. The book is atractively published, but the text is marred by many typographical errors.

Who's Who in Science (International) 1912. Edited by H. H. Stephenson. New York: The Macmillan Company, 1912.

There is room, almost a need, for a book of this description. In arranging such a work, however, much care and discretion should be exercised in choosing those deemed worthy of a place in its pages. The claims made for "Who's Who in Science," that is, in international science, are scarcely so thoroughly fulfilled as the title and preface would lead one to expect. Too great space is given to British men of science and discrimination is lacking in selecting representative names of other nations. The sins of commission and omission in this respect so far as American medical names are concerned are palpable to any one who is conversant with the subject. The book is useful so far as it goes and aided by discreet revision might be made yet more useful.

Society Reports.

NEW YORK ACADEMY OF MEDICINE

Stated Meeting, Held April 18, 1912.

THE PRESIDENT, DR. WILLIAM K. POLK, IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Obstetrics and Gynecology.

Fibromyoma of the Ovary, Complicated by Abdominal Ascites, Subacute Appendicitis, and Gallstones.—Dr. C. C. SICHEL reported this case. The patient was an Italian woman, 55 years of age, the mother of seven children. The menopause had occurred at the age of 52. She had had pain in the sacral region for several years and pain in the abdomen, which had been increasing in size, for about two years. The abdomen was found markedly distended and tender, with a circumference of 43 inches. A paracentesis was done and about one and one-quarter gallons of brownish serum removed. A large mass was found in the lower portion of the abdomen, moving by bimanual examination of the uterus. At laparotomy dense adhesions were found between the intestines and tumor; these were separated and a large amount of fluid evacuated from the abdominal cavity and a large pedunculated tumor of the right broad ligament removed. No ovarian tissue could be found in the right broad ligament. The left ovary was intact. The appendix was removed for a chronic catarrhal appendicitis. The gall-bladder was palpated and the presence of stones demonstrated; 240 stones were removed. The patient made a normal recovery. Pathological examination of the tumor showed that it was a fibromyoma of the ovary.

Right Pyosalpinx, Left Tubo-Ovarian Abscess, Complicated by Embolism of the Femoral Artery.—Dr. SICHEL reported this case. At the time of admission to the hospital, the patient, a woman 44 years of age, complained of pain and tenderness in the right iliac fossa. The abdomen was rigid and bi-manual examination demonstrated a mass on both sides of the uterus. A pyosalpinx and an enlarged plexus of veins were removed from the right side and a tuboovarian abscess from the left side. Four days after the operation the patient complained of pain in the right foot and loss of feeling; the pain extended up into the leg and increased in severity in spite of all local measures. A diagnosis of embolism was made and on cutting down to the popliteal artery no blood was passing through it. A probe was introduced for some twelve or fourteen inches before the clot was dislodged. The circulation returned, the popliteal was sutured, and the circulation reestablished. The circulation was kept under observation before closing the wound. Within a few hours the clot formed again at its original site in the femoral artery. They again cut down on the popliteal, as gangrene had set in. They dislodged a clot about one and one-half inches in length. After reestablishing the circulation an amputation was done at the knee and the popliteal artery tied off. The patient made a perfect recovery.

Postpartum Sepsis, Complicated by Rupture of an Old Pus Tube into the Mesentery, Rupture Through the Mesentery into the Abdominal Cavity, Diffuse Peritonitis, Death.—Dr. SICHEL reported this case. The patient, a woman 35 years of age, who had been confined ten days previously, was admitted to the hospital with a temperature of 104.4 F., pulse 120, and respiration 44. Blood examination showed: Red cells, 1,140,000; hemoglobin, 45 per cent.; leucocytes, 5,200; differential polymorphonuclears, 71 per cent. The patient died five days after admission, the temperature going as high as 106° F. At post-mortem an old pus tube was found on the left side, probably of some years' standing. It had become attached to the mesentery and had ruptured into it, distending the layers until the pus broke through, producing a diffuse peritonitis and death. This case was another example of the fact that old pus tubes could be started anew on an acute course and not infrequently ruptured into the peritoneal cavity with fatal result. Dr. Sichel said he had now on record over a dozen cases of a similar nature.

Case of Induced Abortion. Pyocyaneus Blood Culture, Antistreptococcus Serum Used without Success.—Dr. SICHEL reported this case. The patient, a woman 30 years of age, had two living children and had four abortions produced within the last four years. In the present instance the abortion had been produced by a midwife and was followed by a chill. She was curetted by the midwife. Two days after this the patient became alarmed and called in a physician, who treated the case as one of typhoid pneumonia. On admission to the hospital the patient had a mucopurulent discharge from the vagina, but no abdominal tenderness or rigidity. There was a presystolic murmur at the base of the heart. The uterus was swabbed out and iodine gauze packing inserted and allowed to remain for twenty minutes. This treatment was repeated on the following day. Four days after admission the patient developed a right sided hemiplegia, involving also the right side of the face. She ran the usual septic course and did not respond to treatment. She died two weeks after admission. Aphasia was present with the paralysis. A laparotomy was performed and the right broad ligament was removed, which contained an enlarged plexus of veins. At the time of the operation the uterus was small and contracted, and there were no signs of local peritonitis; the tubes and ovaries were apparently normal. One hundred and fifty c.c. of antistreptococci serum were given without any apparent reaction. In justice to this form of treatment it should be said that it was not employed until the patient had been ill some days. The blood culture showed pyocyaneus infection and a few colon bacilli. The autopsy findings were: abortion in the third month; recent soft yellowish thrombi in the mitral valve of the heart; bacterial endocarditis with infarctions of the kidney and spleen; chronic interstitial nephritis; parenchymatous degeneration of the liver with a probably cerebral embolism, the latter to be determined after hardening of the brain.

Pregnancy, Complicated by a Fibroid of the Anterior Wall of the Uterus with Varicosities of the Broad Ligament.—Dr. SICHEL reported this case. The patient, a woman 28 years of age, had had a normal labor one year before her admission to the hospital. After her confinement she suffered from edema of the legs and pain in the broad ligaments and a diagnosis was made of marked varicosities in the broad ligaments and the patient warned against becoming pregnant again. She came back pregnant in September, 1911, all the symptoms having returned in a much more severe form. At laparotomy a pedunculated fibroid was removed from the anterior wall of the uterus and a tremendously distended plexus of veins together with an ovarian cyst on the right side. The left broad ligament containing a number of large veins was left intact, the tube and ovary being in good condition. The appendix was inspected at the time of the operation but in no way handled. There was a marked amount of postoperative distention and on the fourth day a sudden gush of clear serum from the lower end of the wound. On the fifth or sixth day the patient's condition suddenly became serious. A gangrenous appendix was removed and the abdomen drained. The patient made a stormy convalescence, complicated by secondary anemia, but was to-day in splendid health. The swelling of the right leg had entirely disappeared, the veins in the right broad ligament having been removed. On the left side where this was not done there was at times a small amount of edema. In spite of the adhesions existing on the right side the patient had a small inguinal hernia which was easily reducible. This case was interesting as demonstrating how rapidly an appendicitis might take place, and it also showed the bearing that a large varicosity in the broad ligaments had upon the return venous circulation of the lower limbs.

Specimen of Craniothoracopagus.—Dr. ISADORE SEFF presented this specimen, a fetus having one head and two trunks. The trunks were joined on their thoracic aspects from the neck to the umbilicus, and there was no sulcus either anteriorly or posteriorly. The head was attached directly to the trunks, there being no neck. The upper and lower extremities, external genitals, and that part of the trunk below the umbilicus, showed no abnormality. The length of the specimen from the crown of the head to the soles of the feet was 33 c.m.; the width in the mid-dorsal region, from side to side, was 8 c.m.; from front to back, 6½ c.m. The measurements of the head were: fronto-occipital, 8½ c.m.; bitemporal, 7 c.m.; occipitomental, 9½ c.m.; bimastoid, 7 c.m. The ears were prominent and in the median line posteriorly at the junction of the head and neck there was an apparently double ear, formed by the joining of two ears in the median line. Between the parietal and occipital bones of the cranium were two small bones, triangular in shape and about the size of a dollar, the border of which formed the base of the skull. On opening the cranial vault the posterior fossa was found to consist of two lateral halves. These cavities were bounded by the petrous portion in front; by the accessory bones already described above; laterally, by a small portion of the occipital bone; posteriorly and toward the median line, by a large pyramidal shaped bone. In the anterior part of each cavity was a large opening, the foramen magnum. All the cranial nerves appeared to be in their normal situation, and, in addition, there were two cranial nerves making their exit through the accessory petrous bones. The accessory petrosal bones were attached directly to the posterior

wall of the intundibular fossa. There was a deep transverse groove between these bones and the pituitary fossa. On the superior ridge of the accessory petrosal bones, at the junction of the middle and posterior third, were a pair of large foramina which were pierced by a large plug of connective tissue rising from the dura. Through the accessory double ear the probe passed into a canal which led directly forward in the median line for a distance of two centimeters. The umbilical cord was large, flattened, and contained two distinct sets of vessels, one for each half of the fetus. The sternum was entirely absent anteriorly and the space between the ribs of the joining fetuses was occupied by six short ribs which bridged the space where the sternum was normally situated. These ribs articulated with the main ribs on either side. The posterior half of the hard palate and the soft palate were ununited and formed an arch opening posteriorly, exposing the nasal cavity and the base of the sphenoid superiorly. There was a broad tongue attached to the posterior wall of the nasopharynx by a ridge-like fleshy process which divided the pharynx into two lateral fossæ, each of which led into the esophagus. There was no apparent opening into the larynx and no tonsillar structure could be made out. The larynx was separated from the tongue by a cartilaginous structure, which was manifestly the epiglottis, and was closed off at its superior opening by a fibrous membrance which separated it from the epiglottis. There was one trachea. The thyroid glands were two in number and situated at either side of the larynx at its junction to the trachea. The right lung consisted of three lobes; this was also true of the left lung, which was irregular in shape; in the left the lobes seemed to be formed by two fissures which extended from the anterior margin upward and posteriorly to a distance of a little more than half the anterior posterior diameter of the lung. The heart appeared rather broad, the apex being downward and to the right. The anterior fissure divided the anterior aspect of the heart into equal parts. The auricle was one large cavity having no septum whatever. In the ventricles the septum extended upward for two-thirds the length of the cavity and the upper part of the ventricle was a large common cavity. The superior vena cava emptied into the auricle at its normal site, and there was only one. The inferior vena cava coming from the right half of the fetus entered into the auricle at the normal site, while that from the left half of the fetus entered the auricle posteriorly and directly opposite the inferior vena cava of the right side. The aorta came from the right ventricle and gave off the pulmonary arteries just above the semilunar valves; it then continued as the arch of the aorta giving off the subclavian of the upper extremities. Coming from the left ventricle from a common atrium was the aorta of the right fetus, which gave off in its course the common carotids for the head and the subclavian for the right upper extremities. The stomach was pouch-shaped like a Maltese cross. The upper arm of the cross was very short and led into the esophagus. The lower arm contained a thickening, apparently the pylorus, and led into the small intestine. The lateral arms of the cross were two pouches each about the size of a bean. From the pylorus there extended a portion of the small intestine which was 87 cm. in length and at this point it divided into two parts each 67 cm. in length: at the termination of each of these portions the cecum, appendix, and large intestine arose. Both anuses were patent. There were two distinct livers, the larger one situated on the right side, extended partly over the median line, and was divided into three or four smaller lobes. The second liver was about one-third the size of its fellow and was situated posteriorly in the median line; it also was divided into three or four small lobes. The small liver had no inferior vena cava and the portal vessels of the two livers communicated by a narrow bridge which crossed in front of the upper portion of the small intestine. There were two spleens, the one on the left side normally situated and normal in size and shape; the one on the right side situated at the upper and right corner of the posterior wall of the abdomen, just over the left kidney, but also normal in size and shape. There were two pancreases, one on each side between the liver and the spleen. The kidneys, adrenals, and genitourinary systems were double and situated in their normal sites. There were two distinct spinal columns and the ribs were articulated posteriorly the same as anteriorly.

The Earliest Recorded Case of Ectopic Gestation.—Dr. SAMUEL M. BANDLER reported this case and presented the specimen, which he thought was one of the earliest cases of tubal gestation recorded anywhere in the literature, if not the earliest. The impregnated ovum was probably ten days old and was imbedded in the tubal mucosa. It had an envelope of trophoblast cells, contained a beginning embryo, and there was as yet absolutely no suggestion of chorionic villi. The patient had been married two months and for a few days after her last menstruation had had severe cramp-like pains on the left side. Examination showed a mass the size of a walnut on that side. There were no signs of uterine pregnancy, though the uterus was somewhat enlarged. The patient was operated upon abdominally and a hemorrhagic ovary found with the tube apparently normal. The ovary suggested the possibility of an ovarian pregnancy and was removed together with the greater area of the tube. On palpation the tube felt as though it contained within the lumen a very tiny kernel. It was hardened and cut into sections and the specimen which was presented had been found.

Endosalpingitis Tuberculosa.—Dr. SAMUEL M. BANDLER reported this case. The patient was an Italian woman, 26 years of age, who had been married five years. She had had no children and no miscarriages. Shortly after marriage she began to complain of pain in the left lower abdomen, frontal headache, backache, and a gradual loss of strength. Examination showed a small, soft uterus and a tender mass to the right with the left adnexa not clearly palpable. At operation the right adnexa were found to be converted into a thin walled cyst about the size of a small orange, adherent to the lateral pelvic wall. There were associated with it several smaller daughter cysts. The left tube was somewhat distended and there were a hard nodule about one inch from the uterus and small soft nodules along the course of the tube. Both tubes were removed, as the condition was recognized as one known by the term "salpingitis isthmica nodosa," and its tuberculous nature was anticipated. Microscopical examination showed a typical picture of an endosalpingitis tuberculosa. There was no fluid in the abdominal cavity and no trace of tubercles upon the uterus or adnexa or upon any part of the peritoneum. The case was of interest because only the microscopical examination proved the character of the lesion.

Three Cases of Ectopic Gestation Removed by the Vaginal Route.—Dr. SAMUEL M. BANDLER reported these cases. The first case had been operated upon by Dr. Bandler seven months previously for a typical ectopic gestation, the right adnexa having been removed. The left adnexa showed a chronic salpingitis and was just the kind of a tube that would lend itself readily as a nest for an ectopic gestation. The patient and her husband were warned that conception should be avoided, but seven months after the first operation the patient missed a menstrual period and began to stain and to have attacks of cramp-like pain in the left side. A diagnosis of ectopic gestation was made and an anterior vaginal celiotomy was performed. As soon as the vesicouterine fold of peritoneum was reached, a distinct bluish discoloration was noted, showing that free blood or clots were present in the peritoneal cavity. The peritoneal fold was incised, the uterus drawn into the vagina, and an ectopic gestation was found in the left tube which was readily delivered into the vagina and was removed without difficulty. The patient made a smooth convalescence. The other two cases had both been diagnosed, before coming under Dr. Bandler's observation, as incomplete abortions. Owing to a retroflexed uterus held in that position by an adherent fixed tube in one case and to the fact that only an indefinite mass could be made out in the other case, and that while ectopic gestation was suspected, a differential diagnosis could not be positively made, a vaginal celiotomy was done in both these cases. In both instances as soon as the vesicouterine fold of peritoneum was reached by the inverted T-shaped incision the typical bluish discoloration was observed, and, on incising the peritoneum, the uterus was delivered into the vagina and an ectopic gestation found. The affected tube was brought into view in both cases, blood clots removed, and the tubes exsected without difficulty. Dr. Bandler said that during the preceding six months he had operated on thirteen cases of ectopic gestation and in five of these had done an anterior vaginal celiotomy for diagnostic reasons. The anterior vaginal section was preferable to the posterior for diagnostic purposes for the reason that if one saw the vesicouterine fold of the peritoneum he could make a diagnosis of ectopic gestation by getting up to the peritoneal reflection without incising it. If the fold of peritoneum was incised the pelvic peritoneal cavity might be readily examined, the uterus brought into the vagina, and the tubes palpated and brought into view, and this rendered diagnosis so definite that error could seldom occur. If it appeared that the tube lent itself readily to removal, the operation could be completed through the very incision through which the diagnosis was made. If the removal of the tube appeared to be too difficult, or if there was much free blood in the peritoneal cavity, or if active bleeding was going on, the vaginal in-

cision was closed and the operation completed through the abdominal route.

Special Meeting, Held April 25, 1912.

DR. FRANKLIN A. DORMAN IN THE CHAIR.

THIS meeting was held under the auspices of the Section on Obstetrics and Gynecology.

What Can Be Done to Improve the Teaching of Obstetrics in This Country?—Professor J. WHITRIDGE WILLIAMS, Johns Hopkins University, Baltimore, Md., made this address. He said that some of those present might have read his paper entitled "Medical Education and the Midwife Problem in the United States," which was read in abstract before the American Association for the Study and Prevention of Infant Mortality and was published in the *Journal of the American Medical Association*, January 6, 1912. In order to get information on this subject he had sent a questionaire, containing some fifty questions regarding obstetric teaching and the midwife problem, to the professors of obstetrics throughout the country. Forty-three replies were received, representing one-half of the acceptable medical schools and one-fifth of the non-acceptable ones, which indicated a most deplorable condition of affairs. This deplorable state of affairs was indicated briefly as follows: 1. Generally speaking the medical schools were inadequately equipped for teaching obstetrics properly, only one having an ideal clinic. 2. Many of the professors were poorly prepared for their duties and had little conception of the obligations of a professorship. Some admitted that they were not competent to perform the major obstetric operations, and consequently could be expected to do little more than train men-midwives. 3. Many of them admitted that their students were not prepared to practice obstetrics on graduation, nor did they learn to do so later. 4. One-half of the answers stated that ordinary practitioners lost proportionately as many women from puerperal infection as did midwives, and over three-quarters of the answers stated that more deaths occurred each year from operations improperly performed by practitioners than from infection in the hands of midwives. 5. Reform was urgently needed, and could be accomplished more speedily by radical improvement in medical education than by attempting the almost impossible task of improving the midwives. These were part of the conclusions drawn in the paper referred to above and no one familiar with doctors and medical schools could doubt the accuracy of such conclusions. It was generally admitted that much difficulty was experienced in teaching obstetrics in medical schools. New York had two of the largest lying-in hospitals in the country and for this reason conditions were better here than elsewhere, but, so far as institutions and ideals were concerned, they by no means approached that degree of perfection that they should. No one could deny that conditions in general were in great need of improvement. In the ordinary medical school the professor of obstetrics was looked down upon while greater respect was shown the professor of gynecology. One of the most eminent professors in the country had said "There is no likelihood of getting good men to go into obstetrics." As for the medical student, he did not regard obstetrics very highly and it was hard to get a first rate graduate to go into obstetrics. If one did go into it he deserted it for gynecology and surgery as soon as possible. If this country was compared with Germany in this respect, the contrast would not be favorable to the United States. One reason that students did not regard the science of obstetrics more highly was that they were not taught its importance or to regard it as a wide branch of scientific knowledge. Students could not be blamed for this. When the professor showed no interest except in the purely practical aspect of the subject one could scarcely expect the student to be impressed; again, when one looked at it from the financial side, he would find that obstetrics was the poorest paid of all branches in medicine. The trouble was also due to the fact that many schools had no facilities for teaching obstetrics and a considerable number of schools had no lying-in hospitals connected with them, and while others had the hospitals they were poorly supplied with material. In many of the schools less than one hundred women were delivered in a year and these had to serve for the instruction of seventy-five or one hundred students. Many professors took up the teaching of obstetrics as a stepping stone to the teaching of gynecology. With regard to the remedy, they would have to face a radical departure. If obstetrics was to be properly taught there should be a reorganization of the medical schools and of the lying-in hospitals and an even more drastic change in the character of the men holding professional positions. In considering hospitals Dr. Williams said that outside of New York he did not know of a single large well equipped lying-in hospital in the United States. He had looked up conditions existing in Germany and found that even in the smallest universities there was always a well-equipped women's clinic. In the hospitals there should be facilities for teaching both obstetrics and gynecology. They should be able to take a woman and treat her for everything, whether normal or pathological. He did not believe that this would solve the problem unless the professor was paid sufficient to give practically his entire time to the care of hospital patients, teaching, and research. If he attempted to carry on an extensive private practice at the same time the result would be failure. Medical colleges with seventy or eighty students in a class should have a women's clinic with seventy-five or one hundred beds. In such a hospital there was not only the practical side of taking care of women in labor and performing various operations but also the training of assistants and advancing knowledge. In most lying-in hospitals the assistants remained but six months or a year; he had had much experience with assistants and found that they were not really well trained until the end of the third or fourth year. In proper women's clinics a longer term of service would be necessary, even five or six years. The number of cases the student saw was very important and with but few exceptions the schools in this country did not have enough material of this kind. The cases should be followed before and after labor and the students taught the rudiments of gynecology and the ordinary diseases of women and their connection with child bearing. Last year there were one hundred and twenty medical schools in the United States while there were but twenty-one in Germany. It was desirable to get rid of many of these schools. The teaching of clinical medicine in connection with a university was a very expensive proceeding and some of the universities were recognizing their obligations to medicine and were facing this problem. The ordinary professor of clinical medicine in this country did not take his professional duties to heart; he devoted a few hours a week to teaching but had no idea of giving most of his time to teaching, properly training his assistants, and advancing knowledge. Such reforms were bound to come and they would gradually develop a body of men who were not going into medicine primarily to practice, but because it offered them a scientific career. If such a body of men could be developed, who would not practise outside a hospital or limit their practice to consultations only, great good would result. Every clinical professor of this kind should be trained not only to be an accomplished practitioner but to be proficient in the scientific aspects of his work and he must be prepared to work in the laboratory and to conduct researches himself. Dr. Williams considered the following reforms most important: 1. Reduction in the number of medical schools with adequate facilities for those surviving. 2. Insistence in university schools that the head of a department be a real professor, whose prime object was the care of hospital patients, the proper training of assistants and students, and the advancement of knowledge, rather than to be a prosperous practitioner. 3. Recognition by medical faculties and hospitals that obstetrics was one of the fundamental branches of medicine, that the obstetrician should not be merely a man midwife, but a scientifically trained man with a broad grasp of the subject. 4. The requirement by state examining boards that every applicant for license to practise should submit a statement certifying that he had seen delivered and had personally examined under appropriate clinical conditions, at least ten women. 5. Impressing university authorities and institutions that a medical school was most expensive, and that they were not justified in conducting one which was not along ideal lines. Each main clinical branch would require a separate clinical institute, which if properly equipped for the care of the patient, teaching students, and furthering of research, would require a large endowment. It was the duty of those interested in medical education to impress upon philanthropic persons the needs along such lines.

Dr. EDWIN B. CRAGIN said that Professor Williams did well in laying so much emphasis upon the fact that the way to improve the teaching of obstetrics was to improve the obstetrical teachers. Many of them had been obliged to train themselves in obstetrics as well as in the teaching of the subject. Twenty-five years ago many medical students graduated without having seen a case of labor. When one contrasted the teaching of obstetrics to-day with that of twenty-five years ago it showed marked progress. At the College of Physicians and Surgeons the student himself delivered from four to nine women and

saw from thirty to fifty confinements. Obstetrics had developed along surgical lines. The old teacher of obstetrics developed from the general medical practitioner without special surgical training. Modern gynecology then came on the field and developed along surgical lines, and finally obstetrics had developed along surgical lines. This made very little difference between modern obstetrics and gynecology. The two had rewedded after being long divorced. This tendency was seen in the union of the two chairs under one head in many of the medical schools to-day. It was the duty of every teacher of obstetrics to leave behind him a better trained man than he himself had been. The obstetrician and the teacher of obstetrics of the future must be a man with surgical training. He had noticed that the men on the staff at the Sloane Maternity as internes who had had a previous surgical service made better obstetrical internes than those with a purely medical training. Dr. Cragin believed that the college should have its own Frauenklinic and that the teacher of obstetrics and gynecology should spend a large part of his time in this hospital and in teaching, but he doubted if he would be a good teacher in a practical subject like obstetrics and gynecology unless he kept himself in touch with private practice. Furthermore, if the teacher of obstetrics would devote his entire time to research work, his wards, and teaching, his support would throw upon the trustees of the university a financial problem which might be more easily solved in Baltimore than in a city like New York. There was a happy medium that would work to the advantage of everyone. Dr. Cragin believed that in having an obstetrical and gynecological hospital in connection with the college and in giving the students both theoretical and practical instruction along these lines, with a sufficient number of cases to train them well in the methods they should follow and in allowing them to put into practice in the tenements the methods they had learned, a distinct advance had been made along the path of progress and that an optimistic view was justified.

Dr. J. Clifton Edgar said that all workers in obstetrics would appreciate what the guest of the evening had done and would be grateful to him for it. He then referred to the work of the Council on Medical Education of the American Medical Association, which had awakened them to the deficiencies of medical education in the United States. Dr. Edgar thought that one reason why obstetrics had not profited by the reform in medical education to the extent that it should have done was due to the fact that it was the last of the seven fundamental subjects in medicine. Reform had reached anatomy, surgery, physiology, and it was only a matter of time when it would reach obstetrics. The subject of obstetrics stood so much higher to-day than it did a decade ago that he felt most optimistic regarding the future. There should be higher requirements in State examinations for obstetrics. The Regent's Examinations belittled obstetrics by combining obstetrics, gynecology, and diseases of children in one examination. The State should require that the applicant for a license should have attended a definite number of confinements before he was admitted to examination. So far as the speaker was able to find out few states made any such requirement. There had been a change in the attitude of the general public during the past five or six years; the public was demanding better obstetrics and was beginning to appreciate its own responsibility and the responsibilities of the attendant. The public appreciated the fact that a case of obstetrics was a case of surgery; it grasped the importance of unfavorable symptoms. The prejudices and traditions surrounding obstetrics were passing away with this generation. This had been brought about by the work in preventive medicine, by the movements for the prevention of tuberculosis and infant mortality, by child welfare conventions, popular literature, and the educational influence of the newer maternity hospitals with teaching staffs. There was a tendency at present to establish more lying-in charities. Within the last few weeks application had been made to the State Board of Charities to establish two more such institutions in New York. In one of these the privilege of teaching students was asked, and in the other that of teaching both students and midwives. Dr. Edgar then considered the midwife problem and said they should not become discouraged as the Midwife Bill of 1902, in England, was the result of thirty years' work on the part of the British Medical Association. In this country 33 out of 49 states and territories had no laws on this subject. Scarcely a year ago a school for midwives was established in connection with the Bellevue Obstetric Service and at the end of six months eight midwives were graduated; each of these had seen sixty or seventy cases of confinement and had personally delivered eight. In conclusion, Dr. Edgar said that he was in favor of what might be called the personal equation in teaching. He did not think a professor should hold his position who gave but casual attention to his work, and he made a plea for what were known as obstetric conferences, that was, an open-minded and free discussion of the cases seen in which each student was asked to join and to discuss and criticise the diagnosis and treatment. As a result of such conferences at Cornell, one third-year student had proposed a simplified method of geometrically obtaining the posterior sagittal conjugate diameter of the pelvic outlet following the teaching of Rudolf Klein of Munich. A student had also invented a much simpler apparatus than the Draeger infant pulmotor for resuscitating newly born asphyxiated infants.

Dr. James W. Markoe recalled the fact that, no further back than 1850 Dr. James P. White delivered a young Irish girl before the graduating class of the Medical Department of the University of Buffalo, and while it greatly pleased the students, it was taken up by the medical profession throughout the country and raised such an uproar that it was proposed to pass laws forbidding physicians to deliver women and to limit the practice to midwives. Within the last twenty-five years there had been a great improvement in the methods of obstetric teaching, but the system was by no means perfect. Not many physicians would take up obstetrics and limit themselves to that alone, as not much could be made out of obstetrics alone. At present it was believed that the best way of teaching obstetrics was not only in the hospital wards, but in the tenements as well. In the last twenty-two years the Lying-in Hospital had cared for between eighty and ninety thousand students and eight hundred internes. An indoor house surgeon who completed the four months' service cared for approximately three hundred confinements, but the man who received the most satisfactory training was the house surgeon of the out-door service, where in six months he had under his direct supervision some fifteen hundred cases. The Lying-in Hospital had persistently endeavored to supplant the midwives by carefully supervised medical students, and this could be done throughout the country by increasing the number of such lying-in charities. He did not believe that any person not a physician should be allowed to care for women during confinement whose only training had been a six months' course of instruction with but ten or twelve cases during that time. Obstetrics should be elevated to the same plane as surgery or medicine. The question of allowing students of medicine to act in cases of midwifery had been very carefully gone into and decided in their favor, provided proper supervision was maintained.

Dr. John O. Polak said that he agreed with Dr. Cragin and Dr. Edgar that there had been a marked improvement in the teaching of obstetrics during the past twenty years. As matters stood in this country to-day efforts for improvement should be along two lines. They should endeavor to turn out students who were competent and practical enough to be first-class male midwives, and they should train assistants so that they could improve the obstetric teaching. At the present time it was difficult to turn out students who were able to handle women in confinement. This was brought about by two factors, the subject of obstetrics had not attained the high position it should hold and the remuneration received for obstetrical services was inadequate. Men received three years of instruction in obstetrics, were shown how to confine women, and confined women themselves under the instruction of a resident or assistant, and, yet, when they went out to practice, they were unsafe. They should first develop the student so that he would become a safe physician and then they should instruct assistants so that they might be safe teachers. These two points together with an increase in the lying-in charities would result in the greatest good.

Dr. Robert L. Dickinson said that Dr. Williams had omitted one of the strong points of his January paper, namely, that the best stimulus to induce strong men to take up obstetrics was to bracket it with gynecology. The speaker said that he had been informed that even in Germany the professors at the head of combined departments sometimes exhibited in the wards an ignorance of detail that showed that they left most of the midwifery to assistants. The student would never get good obstetric teaching until the obstetrician was both gynecologist and surgeon in his training, his opportunities, and his fees. At the Brooklyn Hospital the two departments had been combined. The chief who had come into gynecology through the door of obstetrics, but up a surgical staircase, was senior over both. The personnel of the two departments changed places on the first of January of each

year, and thus it was hoped all would be better obstetricians and better gynecologists.

Dr. George P. Shears said he was inclined to agree with those who regarded Professor Williams as being too pessimistic. It had recently been his privilege to examine forty candidates for the position of interne at the City Maternity and he had been surprised at the good showing that they made. Dr. Shears asked by what method of psycho-analysis Dr. Williams discovered the motives of of those who took up obstetrical teaching. Certainly the fees were less than in surgery and gynecology and the responsibility was greater, as the obstetrical operator held in his hands the fate of two lives. Dr. Shears had taken up obstetrics because he thought it the highest and finest of all branches of medicine. As to the surgical tendency in obstetrics, the obstetrical teacher ought to be qualified in surgery, but the man who thought surgery the most important thing was apt to be weak in subjects purely obstetric. The surgical tendency had not always been productive of good. New operations were dropped almost as fast as they were taken up. A thorough knowledge of the axis traction forceps would save more fetal lives in one year than would the various cutting operations in a decade. In Germany they had the advantage of State endowments which they did not have here, nevertheless, it was in this country that the first cesarean section and the first ovariotomy were done and there was no reason to despair of future obstetrical teaching.

Dr. Williams in closing the discussion, said he was sorry that he had given the impression that he was pessimistic, because he was not; but he was more or less skeptical. He wanted to see things develop along proper lines in this country. They should develop obstetrics, teach obstetrics, combine surgery with obstetrics, and science with both of them. He could not believe that a man could be a competent teacher of obstetrics who was a general practitioner. What they had to do was to educate the trustees of the universities to the fact that obstetrics was an important branch of medicine and that they wanted men "who had the goods and could deliver them" as teachers of obstetrics. Such men should have a good salary, one proportionate to those paid to professors in other branches of medicine. With regard to midwives, they could not be properly trained in four months. He had followed them in Germany and in France and was told that they were failures. The only way was to get rid of them gradually by extending out-door medical charities. The first thing was to take care of all people who could not afford to obtain medical attention. The rich man got attention because he paid for it; the poor got this attention because someone else paid for it; but the man of middle class who could only pay a little for attention usually got what was bad. To care for this latter class he knew of nothing unless it were out-door obstetric charities.

Stated Meeting, Held May 2, 1912.

The President, Dr. William M. Polk, in the Chair.

Is the Control of Embryonic Development a Practical Problem?—Dr. Charles R. Stockard read this paper in which he attempted to show that the proper development of the individual was dependent upon two main factors: first, the physical qualities of the parental germ cells; and, second, the environment in which the embryo developed. One at first sight might be apt to think that deformities and defects were rare among men and other animals, but closer observation would show that in reality the structurally perfect individual was rather exceptional. Gross anatomical defects were found among all animals, while lesser defects were to be observed in a majority of individuals. These defects in construction must be considered a disease which caused the death of about 23 per cent. of the human race before or shortly after the time of birth, and they also handicapped a proportion of the survivors throughout their lives. Experiments had proven that the great majority of monsters were due to the action of unusual conditions upon either the parental germ cells or the developing embryo. The writer then considered the modifications induced in the developing egg or embryo by alcohol or any strange chemical environment and found that the eggs of a number of animals that developed normally in sea water would, when certain chemicals were added to their environment, develop into various unusual forms. He had succeeded in producing a definite type of monster in great numbers by a given treatment. Alcohol, ether, chloroform, etc., were employed and cyclopean monsters resulted from eggs developing in these substances. Alcohol gave the most decided effects and inhibited the normal production of eyes in almost all cases. The writer had repeated Féré's experiments with hen's eggs and found that when these eggs were exposed to the fumes of alcohol many abnormal chicks developed. Many workers had shown the effects of environment on the developing egg. Furthermore, it was only necessary for the egg or embryo to be exposed to the unfavorable conditions for a very short time, just previous to the critical moment in development when the neural canal began to close and the central nervous system to differentiate. The egg or embryo might be returned to perfectly normal surroundings, yet it never recovered from the treatment and formed a monstrous individual. It was thus extremely important to guard the early stages of development, since when these steps were interfered with gross defects were certain to occur. The action of alcohol and other poisons on the embryo during the later stages of development was incapable of producing gross deformities but tended to cause minor defects, which manifested themselves in epileptic, feeble-minded, or idiotic conditions. Children were born which exhibited the same types of deformities as those described for lower animals, and there was much evidence to show that an alcoholic mother was more apt to produce an abnormal child than was a non-alcoholic mother. Tubal pregnancies were common among women with venereal diseases; in such cases the embryo must necessarily develop under abnormal environment. Mall found that only 7 per cent. of uterine pregnancies contained pathological embryos, while 66 per cent. of the embryos in tubal pregnancies were pathological. This was strongly indicative of an abnormal environment as the cause of abnormalities. The speaker then reviewed the study made by Sullivan relating to the influence of inebriety on offspring and said that that authority had concluded correctly that the influence of alcohol was due to a permanent effect of the poison on the maternal organism, inducing a transmissible degenerate condition; and that, further, alcohol had a direct toxic effect on the developing embryo and fetus, owing to the continued excesses during pregnancy and lactation. In regard to the second point as to whether abnormal chemical environment might act on the parental germ cells in such a manner as to cause them to change and become incapable of giving rise to a normal individual, it was well known that certain disease toxins and substances such as alcohol and lead affected various body tissues so as to render them unfit for normal physiological activity. It was, therefore, only logical to suppose that the same or similar substances might affect the germ cells and so derange their chemical constitution as to cause them to give rise to offspring of peculiar structure and qualities. Bertholet had found that alcohol had a peculiar affinity for the reproductive glands, just as it did for the nervous system. In examining the testicles from a large number of alcoholics it was shown that spermatozoa were entirely absent or degenerate in form in a majority of the cases. It was doubtless true that the ability of the spermatozoa to accomplish a normal fertilization would be affected long before any definite structural change could be observed. The author cited instances that indicated that when the cause was known for defective development the cure might often be established by its removal. Dr. Stockard then related his experiments with guinea pigs. He found that in 24 matings of normal females with alcoholic males only two gave normal results, whereas in the control animals the matings had all resulted in normal offspring. Of 14 matings made between alcoholic males and females, 10 gave no results or aborted very early, while 4 cases showed the following records: One young was born weak and died in convulsions on the sixth day after birth, two cases of premature birth of dead young occurred, and one female had young *in utero* when killed. The records of the control animals all showed normal conceptions and normal offspring. Finally, the author concluded that the experimental evidence went to show that the development of an offspring might be modified by either treating the parents with alcohol so as to affect their germ cells or by subjecting the developing embryo itself to the unusual and injurious alcoholic conditions. The causes of many congenital defects were therefore known. It was possible to control embryonic development in such a way as to produce abnormal structures. Might not the proposition be reversed and unfavorable environments be treated in such a way as to render them favorable to normal development? While protective measures were being used to protect the postnatal life of the individual, why not guard as far as possible its prenatal development?

The Mentality of the Alcoholic.—Dr. Smith Ely Jelliffe read this paper. He said that there was no such

thing as the mentality of the alcoholic, that a lesion rested upon no one mental type, but that he had chosen this title because if one was to understand the problem at all it must be approached from the mental side. The problems of the alcoholic were fundamentally mental problems. Approaching the subject from a long way off science had more or less employed the anecdotal method. One gathered from the alcoholic what he thought about it. Why did he drink? The answers were surprising, if not amusing, and rarely were two alike. The speaker repeated a number of these answers, which were full of inconsistencies and seemed to lead nowhere. It was evident that the real reason was more intimately bound up in the personality. The individual got something from alcohol. When wounded, or thwarted, or maimed in life's battle, relief was found by the instinctive self, and alcohol was the thing found by many. It was profitable to inquire, therefore, what alcohol gave. Alcohol was the great dissociator of function. It reduced man to the elementary principles. The effort of intelligence to supplant and augment instinct, which was the great principle in creative evolution, was thwarted by the action of alcohol and man returned by successive stages along the path he had traveled in his upward evolution. This referred not to the deterioration of the chronic alcoholic but to acute alcoholic intoxication. From the stages of gradual loss in the higher intellectual coordination, the gradual loosening of the instinctive repressions, man descended, under the influence of acute alcoholic intoxication, to the more or less rapid perceptional numbing, the gradual loosening of reflex activity from cortical control, on down through the scale until he was no longer a man, a highly complex, closely integrated, coordinately working, efficient machine, but a decomposed series of organic reflexes, a lower vertebrate, a reversion of types from the highest to the lowest. Therefore alcohol changed the outside world for the individual; it pushed facts and verities away from consciousness, and enabled the individual to get away from realities. Dr. Jelliffe then discussed memory, not as a faculty of putting facts away in a register, but as a faculty working without relaxation automatically piling up past upon past until all one had felt, thought, or willed from his earliest infancy was there leaning over the present, and that character was the condensation of the history which he had lived. Thus it took very little analysis to see the major outlines of the difficulties which caused perhaps the majority of mankind to seek forgetfulness. The grinding struggle, the fierce contest of self-preservation in a large social complex, might possibly be met with better fortitude, for a time at least, if reality could be changed to phantasy. Herein lay the usefulness of a substance that man had employed as far back as history reached. The author assumed that alcohol was of value to the instinctive reactions of the animal even if it was shown that for the intellectual animal it was a detriment. He emphasized the point that instinct and intelligence were not the same; intelligence was not a higher form of instinct. They were different guiding principles meant to do the same work in a different way. Had not that which was called intelligence been evolved man's reactions would always have been instinctive and he would never have needed alcohol to rob him of the restraining hand of his more fluid and modifiable evolutionary aid, when, as an instinctive animal, he would avoid life's problems and dodge responsibilities. This led to the consideration of some of the character anomalies which were the indices of the complexes with which they had to deal. The author then discussed alcoholism and old age, what the artistic temperament represented, sexual problems, financial dishonesty, and political crookedness as among character anomalies predisposing to alcoholism.

The Medical Control of the Alcoholic.—Dr. ALEXANDER LAMBERT read this paper and considered the subject from two standpoints: That of the personal control which the physician had over his patient, and that control which the State took or permitted under certain restrictions over the individual, whether the individual was willing or not. Broadly speaking, the failure of the physician to deal with the victim of alcohol had been due to the fact that he had endeavored to reason and deal with a mind poisoned by a narcotic through normal standards. The psychology of the alcoholic was vastly different from that of the normal mind. Dr. Lambert said that it made no difference whether they employed the method that he had suggested or some other so long as they realized the fact that an individual suffering from narcotic poisoning must be unpoisoned before he could be given a fair opportunity and before one could reasonably expect him to respond to one's endeavor to control. It was useless to endeavor to instil in these people any idea of confidence in themselves, in the endeavor to shake themselves free from their narcotic, unless one had faith in their ability to do so and could inspire this confidence in them. These victims of alcohol could not be controlled against their wills. They could not be helped unless they were willing to be helped. If willing to help themselves, this class, if given a chance, were easily controlled and would make every endeavor to free themselves from their addiction. When the alcoholic had no desire to free himself, the only alternative was State control. The real State control of the alcoholic had been slow of development in this country. A mind which had become degenerate from alcohol had also lost its normal connection with the past and did not answer normally to the ordinary stimuli of daily existence; the mind thus poisoned must be protected until it could recover its normal balance. This was realized some years ago in England, and in 1879 retreats were founded where people could voluntarily go to rid themselves of their narcotic addictions. This had proved so successful that they now had certified reformatories which received drunkards from the courts and State reformatories. The Commission appointed to investigate the workings of the inebriate's acts had more than ever become firmly convinced of the wisdom of the plan they were following and had recommended further legislation along these lines. Some such plan must soon be followed by the various States of this Union. Dr. Lambert spoke of the work done at the institution at Foxboro, Mass., and of the laws in respect to the committment of inebriates in various States. In regard to industrial forms of drinking, the medical endeavor must be directed to the improvement in the environment in which these men worked. Convivial drunkenness could be controlled only by public opinion and by teaching the individual the dangers of his case. In closing, Dr. Lambert made a plea for a close study of eugenics and the improvement of the race. While it had been known from Plutarch's time that drunkards begat drunkards, we had insufficient scientific data from which to draw accurate conclusions and to study the forms and tendencies in which this degeneration showed itself; the relations of this inheritance to the various forms of insanity were also very unsatisfactory, and urgently demanded prolonged and definite study.

Dr. EDWARD D. FISCHER said that he agreed with what Dr. Jelliffe had said in regard to alcohol; that was, that many of the cases were really those of mental disease in which the abuse of alcohol was "accidental or incidental," in fact, were not true cases of alcoholism. Many such instances had come under his observation during the past twenty years in the psychopathic and alcoholic wards of Bellevue Hospital. The commonest form of mental disease in which this abuse of alcohol occurred was manic-depressive insanity. While this was true, the percentage of alcoholic cases where a distinct mental disease was present was comparatively small, and the majority were due to lack of stability, idleness, viciousness, and especially hereditary tendencies. The explanation offered by Dr. Jelliffe that many resorted to alcohol to produce amnesia of their present misery or disappointment was also very true, but, again, he thought Dr. Jelliffe placed too great weight on this as a factor. Many of the younger persons had had no previous burdens in life and yet they as easily fell victims to the habit. He was glad to hear Dr. Hutchinson speak so positively from the statistical standpoint of the relatively small proportion of alcoholics and also to state, that from well-authenticated data, the offspring, unless other conditions were present, as syphilis, hereditary nervous disorders, malnutrition, etc., were not so seriously affected either in numbers or in the proportion of defectives as was generally supposed. Dr. Fischer expressed himself as thoroughly in accord with Dr. Lambert's plan of treatment, especially the colony and parole systems, which had been so successfully carried out in Massachusetts and other States.

PHILADELPHIA NEUROLOGICAL SOCIETY.

AT a stated meeting held April 26 Dr. ALFRED GORDON presented the brain from a man who died suddenly. The patient was a man, 32 years old, previously healthy, who for a short time had suffered from headache, and without obvious signs of disease. Following his evening meal he lay down to read and suddenly lost consciousness, with evidences of slight right hemiplegia, followed by coma and death. Post-mortem examination revealed a copious extravasation of blood into the left lateral ventricle. Dr. TOM A. WILLIAMS reported "A Case of Cerebellar Disease of Malarial Origin." The patient was a man, 38 years old, who had served in the army in Cuba during

the Spanish-American War, and who suffered a pernicious malarial infection. There was a history of gonorrhea, but none of syphilis, and the Noguchi test yielded a negative response. The man exhibited difficulty in the control of all four extremities, with ataxia, vertigo, incoordination of movement in the hands, and preservation of reflexes and of the action of the sphincters. Dr. Williams reported also "An Unusual Case of Dystrophy of Optic and Pyramidal Systems." The patient had difficulty in walking, with exaggerated reflexes, coarse infection-tremor, inequality of the pupils, one of which reacted but sluggishly to light, atrophy of the optic nerves, more marked on one side, but without nystagmus. Syphilitic infection was denied, and evidence thereof could not be detected. Dr. D. J. McCarthy presented a communication entitled "Hemosiderin-infiltration of the Wandering Cells of the Pia-arachnoid." He reported the results of clinical observation and experimental study showing that in cases in which hemorrhage occurs within the cranial cavity cellular infiltration with hemosiderin is likely to take place, giving rise to alterations in structure and at times also in function. Dr. Chas. H. Frazier read a paper entitled "Rhizotomy for the Relief of Gastric Crises in Tabes Dorsalis, with the Author's Experiences." He reviewed the literature of the subject and reported an illustrative case in which the seventh, eighth, and ninth dorsal roots on one side and the tenth in addition on the opposite side were cut within the dural canal, affording relief from the intense suffering to which the patient had previously been subjected. In the discussion Dr. Wm. G. Spiller suggested the possibility of injecting alcohol into the roots of the nerves involved for the purpose of controlling lightning pains or crises when present. Dr. Williams B. Cadwalader presented "Two Cases of Hereditary Spinal Paralysis." The patients were boys, one about eight and the other about eleven years old. Both presented spastic gait, with increased knee-jerks and extensor toe reflex, but without mental disturbance or involvement of the upper extremities. There had been no difficulty in birth and there was no history of syphilis, and the Wassermann test yielded negative results. Another brother and also some ancestors on the paternal side were said to present similar symptoms. Dr. Milton K. Myers made "A Report of a Case in Which Epilepsy Developed after Overuse of Thyroid Gland Extract." The patient was a woman who had used a preparation of thyroid gland for the reduction of obesity and in whom there developed convulsions of an epileptiform character, without other obvious cause.

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Progressive Medicine. Vol. XIV, No. 1. By Hobart Amory Hare, M.D., and Leighton F. Appleman, M.D. 377 pages; paper; price $5.00 per annum. Lea & Febiger, Philadelphia, Publishers.

Digest of Comments of the Pharmacopœia of the United States of America (Eighth Decennial Revision) and on the National Formulary (Third Edition). For the calendar year ending December 31, 1909. By Murray Galt Motter and Martin I. Wilbert. 735 pages; paper. Government Printing Office, Washington, Publishers.

Arbeiten aus dem Hygienisch-Chemischen Untersuchungsstellen. Vol. V, No. 52. 100 pages; paper; price 3 M. August Hirschwald, Berlin, Publisher.

Filariasis and Elephantiasis in Fiji. By P. H. Bahr, M.A., M.B., B.C. 102 pages; illustrated; paper; price 6 shillings net. Witherby & Co., London, Publishers.

Recent Methods in the Diagnosis and Treatment of Syphilis. By Carl H. Browning, M.D., and Ivy McKenzie, M.A., B.Sc., M.B., Ch.B. 302 pages; cloth. Lea & Febiger, Philadelphia and New York, Publishers.

Home Hygiene and Prevention of Disease. By Norman E. Dieman, M.D. 333 pages; cloth. Duffield & Company, New York, Publishers.

Emergency: A Manual of First Aid. By Ernest A. Wells, M.D. 48 pages; illustrated; paper. Aetna Life Insurance Company, Hartford, Conn., Publishers.

Surgery of Deformities of the Face. By John B. Roberts, A.M., M.D. 273 pages, illustrated with 273 figures; cloth; price $3.00 net. William Wood & Company, Publishers, New York.

Medical Items.

Late Epilepsy.—C. Migliucci has seen a number of cases in which epilepsy, not of the Jacksonian type, came on in later life, that is after thirty years of age, without any history of injury. These are cases similar to those that occur in earlier life, with the same form of attacks, and the same course. The author questions whether these attacks are not caused by syphilis. There can be no doubt that in some of these cases syphilis is the etiological factor, and the author questions whether this is not always the case. In young children epilepsy has for its cause some radical defect in the psychocerebral development by virtue of which the child does not react normally to its environment. Alcohol in itself would not cause epilepsy if there were not at its basis a disturbance of the nutrition of the nervous system. A syphilitic intoxication aside from any lesions of the nervous system may act as a cause of late epilepsy. In some cases there are lesions of the vessels of a syphilitic nature, giving conditions which may be placed midway between cerebral syphilis and general paresis. Some authors liken these disturbances to the appearance of the secondary skin symptoms, and think that they take their place, being due to infiltration of the meninges with syphilitic new tissue growth, the infiltrations being so small as not to be visible except to the microscope. Syphilis in a predisposed individual has been the last factor to cause cerebral irritation and the manifestation has been an epileptic one. *Giornale Internazionale delle Scienze Mediche.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended May 18, 1912.

CHOLERA

Places	Date	Cases	Deaths
India: Bassein	Mar. 17-23.	8	
Calcutta	Mar. 17-23.		5
Madras	Mar. 31-Apr. 6	1	
Madras Presidency	Mar. 1-31. Cases 2,155; deaths 1,744		
Moulmine	Mar. 17-23.	3	3
Turkey in Asia: Adana	Mar. 21-Apr. 8	25	9

YELLOW FEVER

Brazil: Manaos	Apr. 1-7		3
Pernambuco	Apr. 2		
Epidemic.			
Rio de Janeiro	Mar. 17-Apr. 6		2
Chile: Tocopilla	Apr. 1		
Still present.			
Mexico: Merida	Apr. 28-May 2	1	1
San Juan Bautista	May 11	1	
Venezuela: Caracas	Dec. 1-31		10
	Jan. 1-31		4
	Feb. 1-29		4
West Indies: Barbados: Bridgetown	Apr. 27	1	1
From steamship *Essequibo* from Para			

PLAGUE

Brazil: Para	Apr. 7-20	1	2
India: Bombay	Mar. 24-Apr. 6	268	226
Calcutta	Mar. 17-23.		133
Karachi	Apr. 1-6	105	95
Java: Pasoeroean Residency	Mar. 24-30	5	4
Mauritius	Feb. 25-29	1	
Persia: Bushire	Mar. 1-30	103	69
Peru: Salaverry	Apr. 17		
Present in vicinity.			
Turkey in Asia: Jiddah	Mar. 14-27.	7	4
Venezuela: Caracas	Apr. 27	4	
In an institution.			

SMALLPOX

Arabia: Aden	Mar. 26-Apr. 8	4	1
Austria-Hungary: Galicia	Apr. 7-13	2	
Brazil: Para	Apr. 7-20	4	3
Rio de Janeiro	Mar. 17-Apr. 6	8	
Canada: Montreal	Apr. 28-May 4	4	
Ottawa	Apr. 21-27.	2	
Summerstown	Apr. 27		
Epidemic; 10 miles from Cornwall			
Toronto	Apr. 14-20.	2	
Chile: Valparaiso	Apr. 7-13.	2	
China: Dalny	Apr. 1-6	1	
Egypt: Cairo	Mar. 26-Apr. 1.	1	
France: Paris	Apr. 7-13	2	
Germany: Hamburg			
Total Apr. 21-27. Cases 12			
Hamburg	Apr. 14-20	2	
India: Bombay	Mar. 24-Apr. 6	204	134
Calcutta	Mar. 17-23.		5
Karachi	Mar. 24-30	1	1
Madras	Apr. 1-6	8	1
Italy: Leghorn	Apr. 14-27.	5	
Palermo	Apr. 14-20.	6	1
Japan: Formosa	Mar. 17-23.	59	33
Java: Batavia	Mar. 24-30	4	1
Mexico: Mexico	Mar. 3-23.	57	22
Portugal: Lisbon	Apr. 14-20.	1	
Roumania	Jan. 1-31	2,935	143
Russia: Moscow	Mar. 24-30	7	1
Riga	Mar. 27-Apr. 16	35	
St. Petersburg	Apr. 1-6.	6	1
Spain: Barcelona	Apr. 14-20		1
Valencia	Apr. 14-20	27	
Teneriffe: Santa Cruz	Apr. 7-13		1
Turkey in Asia: Beirut	Apr. 7-13	25	
Turkey in Europe: Constantinople	Apr. 15-21.		21

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Original Articles.

VERTIGO AS A SYMPTOM OF DISEASE OF THE NERVOUS SYSTEM.*

BY JOSEPH COLLINS, M.D.,

NEW YORK,

PHYSICIAN TO THE NEUROLOGICAL INSTITUTE.

THE division of the subject allotted to me, viz., vertigo due to lesions of the central nervous system, I shall assume to be warrant for discussing vertigo as an indication or symptom of disease of the nervous system. Strange as it may seem, or unlikely as it may sound, vertigo is a symptom that does not bulk very large in the neurologist's work. Aside from tumor and abscess of the brain, disseminated sclerosis and basilar arteriosclerosis, it rarely occurs as a leading or diagnostic symptom of disease of the brain. I have recently gone over the histories of all the patients admitted to my service in the Neurological Institute in the year 1910. There were 425 and of this number only 22 complained of vertigo. When it is borne in mind that the hospital has an extremely rich and varied material, and that many of the patients are admitted for study and diagnosis, these figures may be taken to corroborate my statement as to the rarity of the symptom in nervous diseases.

Naturally the neurologist frequently encounters vertigo, but in the vast majority of instances it is a symptom of disease of the middle ear, the labyrinth, the sinuses in connection with the nasal passages, or of the digestive and blood elaborating organs.

Vertigo is a symptom of such manifold causation that it is rarely of any diagnostic value until after the most searching investigation has been made to determine its dependency. Even then its origin, in other words its significance, often eludes us. There is no symptom which is so baffling to the physician who is unprepared to make technical and oftentimes elaborate examination of the eyes, the ears, and the circulatory apparatus.

I shall confine my remarks on this occasion to an attempt to set forth the knowledge that I have gained from intercourse with patients with diseases of the nervous system who have had vertigo as a prominent symptom, and to state what there is about such vertigo that leads one to suspect the existence of the nervous disease. Before this is done a paragraph must be devoted to the connotation of the word vertigo.

"It is dizzy before my eyes," is one of the commonest complaints of our clientèle in the dispensary. This does not by any means signify that the patient has genuine vertigo, and in every instance it is necessary to make a careful inquiry as to the meaning of this complaint. It signifies in the majority of instances a disagreeable subjective sensation consisting of more or less blurring of vision, of minute black spots in the visual field, and of disagreeable sensation of mental confusion. It is rarely accompanied by any sensation of rotation or of profoundly disturbed equilibrium, and it is most frequently an expression of disordered circulation. In the same way many people complain of giddiness or of dizziness, when in reality genuine vertigo does not exist at all.

The term vertigo should be restricted in its application to describe a sensation of disturbed equilibrium accompanied by a subjective sensation of impaired static security.

The sensation is extremely disagreeable, at times terrifying, and frequently accompanied with nausea and vomiting. It is always a manifestation of disorder of the cerebellum and the subordinate cerebellar centers, which disorder is mediated by direct irritation or indirectly by abnormal stimuli reaching them through the auditory, the visual, or the kinesthetic pathways. Indeed it may be that vertigo is the result solely of cerebellar disorder and that the only part which the higher center plays in its genesis is cognition of it.

It would be advantageous to limit the application of the word vertigo to true rotatory vertigo which occurs only when the organ of static equilibrium is in some way irritated, and to call the various disagreeable phenomena occurring with ocular disorder, especially muscular inadequacies, digestive disorders, elevations and depressions of blood pressure, some nervous diseases such as disseminated sclerosis, asthenic conditions, etc., of which dizziness and giddiness are symptoms, vertiginous states. One is a very clear cut symptom of pathognomonic significance, and the other is a vague, rather conglomerate sensorial interpretation.

Vertigo is a symptom of very little specificity. Aside from the labyrinthine variety there is nothing about it, save its ancillary phenomenon that suggests its causation, or the seat of the disease of which it is a symptom. For this reason the physician cannot from a consideration of the vertigo alone materially advance the diagnosis of any disease. It is from the company it keeps that one may draw diagnostic conclusions.

Vertigo is often a symptom of:

1. Organic Brain Disease—*a*, tumors, abscess or other lesions that materially increase intracranial pressure; *b*, disseminated sclerosis; *c*, endarteritis and arteriosclerosis; *d*, meningitis; *e*, general paresis.

2. Functional Nervous Diseases—*a*, epilepsy; *b*, hysteria; *c*, dementia precox; *d*, neurasthenia; *e*, habitual vertigo.

In addition to these, vertigo may accompany any disease of the nervous system that disorders the ocular muscles such as tabes, grave myasthenia,

* Contribution to A Symposium on Vertigo. Read before the State Medical Society, Albany, N. Y., April 17, 1912.

any condition or disease that abruptly or profoundly disturbs the intracranial circulation such as anemia or hyperemia of the brain, and the taking of drugs and intoxicants.

When the physician encounters vertigo the only safe way for him to proceed in its interpretation is to make an examination of the ears, the eyes, and the blood vessels. If he can exclude middle ear disease, labyrinthine involvement, palsies of the ocular muscles, and exalted blood pressure, then he may legitimately search for disease of the nervous system that I have enumerated. To diagnosticate the organic diseases of this list requires the use of the opthalmoscope, an inexpensive instrument, whose use is readily learned but which is treated disdainfully by the medical profession.

Vertigo associated with papilloedema, optic neuritis, or optic atrophy is undoubtedly dependent upon organic brain disease which may be diagnosticated by virtue of the association of symptoms subjective and objective, rather than from the consideration of any one symptom. And of diseases causing such detectable objective symptoms or pathological states brain tumor is by far the most common.

It has been variously estimated that vertigo accompanies brain tumors in from 30 to 50 per cent. of the cases, but it is with tumors of the two poles of the brain that vertigo is most common. Tumors of the frontal pole are accompanied by vertigo in the majority of instances; and tumors of the posterior pole if they encroach upon or involve the cerebellum are invariably accompanied with vertigo. Indeed, profound vertigo of the rotatory type is frequently allowed to have some weight in suggesting the localization of the tumor to the cerebellum. In the same way attacks of vertigo associated with irritative or paralytic manifestations, whether of the sensory or of the motor functions, suggest tumor of the central convolutions.

Tumors and abscesses of the brain cause vertigo in one of two ways, either by interference with the auditory nerve or by causing ocular palsies. The view that the vertigo in such cases is the result of increased intracranial pressure has lost credibility, in view of the fact that after lumbar puncture in such cases which diminishes intracranial pressure the vertigo often increases.

Vertiginous manifestations, but not true vertigo, is a constant and early symptom of disseminated sclerosis. In 21 cases of this disease that came to the Neurological Institute in 1910, vertigo was complained of by the patient 17 times. Disseminated sclerosis occurs much more frequently than one would conclude from examining the literature. In the so-called atypical clinical cases vertigo is likely to be a conspicuous symptom. It is commoner in the early stages of the disease than in the later. There is nothing characteristic about it and its diagnostic value is entirely dependent upon its association and especially upon its association with transient ocular palsies, with nystagmus, and absence of the abdominal reflexes.

In every case of vertigo occurring in individuals above 40 years of age there should be a careful and meticulous examination made of the blood vessels, the heart, and the kidneys, unless the vertigo is associated with such distinctive phenomena as it is in Menière's disease.

Vertigo is the most common prodromal symptom, and one of the most constant accompaniments of cerebral arteriosclerosis. Its occurrence and its intensity stand in relation to the distribution of the sclerotic process in the vessels. If this is of the focal variety and the focus happens to be in the equilibratory center then true rotatory vertigo may be the result. This is comparatively a rare condition. On the other hand generalized arteriosclerosis with participation of the basilar arteries is likely to produce a vertiginous state subject to exacerbations or remissions, and accompanied with symptoms and physical signs which permit the diagnosis. Of all the cases of vertigo or vertiginous states that come to the neurologist for interpretation these constitute by far the greater number. As an illustration of such vertigo the following case is quoted briefly:

The case was that of a man, a clergyman, 62 years old, whose early life was one of great toil and hardship both physical and mental, *i.e.* in the building of a church in a poor mining district and giving aid to the members of his parish throughout a large and sparsely settled country. He began to complain on or about October 31, 1911, of attacks of vertigo, heaviness in the back of the head, occasionally getting out of breath. He also noticed a great change in his disposition, having become quite irritable. He complained also of a sensation of uncertainty as if he could not keep his balance. The attacks were apt to occur when rising from a lying posture, as early in the morning and after he had made any particular effort, but on the other hand they occurred apart from such experiences.

He had his eyes examined and one doctor stated that he found sufficient abnormality to account for the vertigo, but wearing glasses gave him no relief from the attacks.

His blood pressure was 185 (Stanton), the peripheral arteries were palpatable and tense, the heart enlarged so that the left border was ½ inch outside the nipple line, and the urine contained at times a faint trace of albumin, all unequivocal signs of the arteriosclerosis. Under treatment for a short time on a purin, salt-free diet, carbonic acid baths, high frequency electricity, and general massage he made marked improvement with regard to his dizziness, but says apart from this when walking on the street he is suddenly seized with a sense of unsteadiness and a fear of falling in one direction or other. On several occasions after walking a few blocks he has suddenly been seized with a sensation of being "all gone" in the abdomen during which time he feels too weak to walk, symptoms which indicate beginning loss of compensation in the heart.

Vertigo preceding, accompanying, or replacing the attacks of convulsions in epilepsy is a common occurrence. The frequency with which vertigo occurs in epilepsy is, however, variously estimated. There are some writers who maintain that it occurs in upward of one half the cases. But as a matter of fact the percentage depends entirely upon what we admit to be vertigo. If we limit the application of the word to instances in which there is true rotation of the individual or of objects surrounding him, then vertigo is a rare occurrence in epilepsy. If on the other hand, the slight disturbance of equilibrium, of confusion, and of darkness just preceding an attack of unconsciousness are grouped under that head, it must be admitted that vertigo occurs in nearly every case of epilepsy. As a matter of fact epileptic vertigo occurs in 15 to 25 per cent. of the cases, displaying itself either as the aura of an attack, or as the chief manifestation of the attack. That is, when the patient recovers all that he knows is that he has been profoundly dizzy.

It is difficult to distinguish epilepsy from vertigo

and particularly from labyrinthine and aural vertigo. They are both abrupt in onset and are both attended by loss of consciousness, but aural vertigo is usually accompanied by a sensation of violence, of being hurled or struck to the ground, tinnitus and impaired hearing which does not occur in epilepsy. Moreover, with our present day tests to determine the functional state of the labyrinthine and auditory nerve the dependency of auditory vertigo can readily be made out.

The occurrence of vertigo in hysterical individuals, or as a manifestation of hysteria is very well substantiated. Occasionally it occurs with migraine either accompanying or replacing an attack.

Vertigo likewise occurs in neurasthenic individuals, and Oppenheim has pointed out that there is a permanent vertigo which occurs in neuropathic or psychopathic individuals without apparent cause, and often in a very severe way, associated with nausea and vomiting. He maintains that he has met cases in which this vertigo has remained for years, subject to amelioration and exacerbation. In none of the cases has labyrinthine or cerebellar diseases been found, and neurasthenic symptoms are always present. Oppenheim believes it to be a genuine vertigo; not psychical, not dependent upon any demonstrable organic change, and probably due to perversion of the perceptive center of the cerebrum rather than to disorder of the cerebellar or of the vestibulary nuclei.

As a matter of fact it may well be that there is a neurosis of the vestibular branch of the eighth nerve which is responsible for many obscure cases of vertigo in which no organic disease can be found, quite the same as a neurosis of the motor branch of the fifth or the seventh nerve causing tic, and of the sensory branches of the fifth nerve causing pain.

The common apparent cause of what is alleged to be vertigo by the sufferer is false projection of the fields of vision induced by palsies or paralysis of some of the ocular muscles and by refractive error. Such false projection inducing vertigo is frequently seen in patients after they have had a tenotomy of some of the eye muscles. In reality as I have said before, this is not a true vertigo. Mendel some years ago attempted to show that in every case of vertigo there was some disturbance of the oculomotor nuclei, circulatory in the majority of instances. It has been satisfactorily proven that Mendel's contention is untenable. A vertiginous state may accompany palsies of the ocular muscles whether they are peripheral or of central origin. Thus it is at times a conspicuous symptom of tabes, of nuclear ophthalmoplegia, and of syphilitic meningitis, and of those mysterious transitory ocular palsies whose origin is unknown but which are sometimes spoken of as rheumatic. Practically in every instance in which vertigo accompanies ocular palsies the vertigo disappears when the individual learns to suppress the false projection of the visual field, that is when he acquires the capacity to suppress psychical cognition of it, which is usually in a short time. However, in some instances such a gratifying termination is not the result. Thus I have seen states of dizziness, giddiness, and slight mental confusion remain for several months in the wake of a tenotomy done for hyperphoria.

Vertigo is complained of by many patients who have experienced bodily injury that has not caused a definite lesion; such as fracture, laceration, and contusion, particularly in individuals who develop symptoms that lead to the diagnosis of traumatic neurosis. I have at the present time such a patient under observation. A lady 50 years old was struck and knocked down by an automobile. Aside from some bruises on her back and limbs, she was objectively injured. But since that time, now upward of two years, she has complained in addition to symptoms of nervousness, lowered vitality, and easily induced exhaustion, of subjective vertigo which though more or less constant is liable to exacerbation, especially in the early morning. It was this matinal occurrence in conjunction with our utter inability to attribute the vertigo to any disorder of her vestibular apparatus, her visual or kinesthetic pathways, that suggested its interpretation, namely that it is dependent upon a lowered blood pressure which was invariably below 100, on the Stanton apparatus.

The administration of substances which lifted the blood pressure such as adrenalin, a diet rich in proteid matter, stimulation of her heart, and peripheral neurovascular apparatus and appropriate hydriatic procedure apparently relieved her.

I have seen a number of cases in which vertigo seemed to be dependent upon lowered blood pressure, both with and without arteriosclerosis. I venture to call your attention to it as a cause of vertiginous states in every instance in which the dizziness and resulting disagreeable mental sensations occur in asthenic individuals in whom organic disease can be eliminated. It is quite possible that the subjective disorder of equilibrium which is sometimes more or less constant in these individuals but always subjective to paroxysmal exacerbation, the direct result of inadequate stimulation of the center of static equilibrium and in the cerebellum or in the interpretative area of the cerebral cortex.

Of the vertigo that accompanies intoxications such as alcohol, urea, etc., I shall say nothing, as they probably will be considered in this symposium by Dr. Stockton, nor shall I discuss that enigmatic disorder known as paralyzing vertigo, Gerlier's disease, which affects herdsmen living in the winter in closest intimacy with cows, in certain parts of Switzerland. Of the so-called reflex vertigo, the less said about it the better, in order that we may not magnify its importance. I am of the opinion that there is no such disorder, though there may be vertiginous states and transitory disturbance of consciousness and equilibrium arising from irritation of any highly sensitory organ. Finally, from a study of vertigo alone no conclusion can be reached as to its causation which is essential for its intelligent and successful treatment. We may apply certain rules of thumb which will enable us to guess shrewdly as to its origin, but really to determine it we must examine the patient.

THE SURGICAL MANAGEMENT OF NASAL ACCESSORY SINUS DISEASE.*

By LEWIS A. COFFIN, M.D.,

NEW YORK.

In opening the discussion on this broad subject, the limitations of time compel me to confine myself to the discussion of general principles, as well as to the expression of my personal experience and conclusions.

Disease of the accessory sinuses may be classified as follows: According to type, the disease may be catarrhal, empyemic, or malignant.

*Read before the Section on Diseases of the Eye, Ear, and Nose of the Medical Society of the State of New York, April 17, 1912.

According to stage, acute or chronic. (There may be an acute exacerbation of a chronic process, and, of course, an acute case may become chronic.)

According to objective signs the disease may be active or latent.

According to location the disease is named from the sinus involved.

In this connection should be mentioned the mucocele as a diseased condition sufficiently peculiar to be in a class by itself.

What I shall have to say in this paper on the surgical management of accessory sinus disease, has reference solely to the empyemic form of sinusitis in its various manifestations.

I have used the term "active sinusitis" in contradistinction to "latent," although I feel that neither is a good term, for I consider that by "latent" sinusitis is meant not so much a dormant disease of one or more of the sinuses, as a disease which presents no objective signs. It might be termed an "occult" sinusitis. Such a disease may exist in the sinuses of persons whose noses present a practically normal appearance.

It may involve any of the sinuses, and is of the utmost interest and importance because of the difficulty of diagnosis. It is, for the most part, a chronic process. When involving the frontal or antral cavities transillumination and the radiograph materially aid in the diagnosis, but existing independently in the ethmoids or sphenoids or confined to those two cavities, the diagnosis must rest upon symptoms and possibly the study of the eye. In a suspected latent sinusitis other causes which might account for the symptoms must be excluded. The suspicions confirmed and diagnosis made, one proceeds as in ordinary or active sinusitis of the involved cavity, except that no temporizing with washings and applications should be done. The diseased cavity must be opened and the disease eradicated.

I have dwelt somewhat at length upon this subject because I feel that many such cases are unrecognized, and the rhinologist should be on the lookout and alert to relieve a greater number of people who suffer from obscure or latent sinusitis.

An active sinusitis might be called "an apparent or evident" sinusitis. It is easily diagnosed as such, the difficulty being to decide as to which or how many sinuses are involved.

Just what surgery shall be done on a particular case depends largely upon the stage of the disease, on the structural deformity of the nose, and especially upon the condition of the membrane lining the sinus, which may depend upon the variety of infection or the constitutional vice of the patient.

The condition of the membrane lining an infected sinus varies from a simple, round-cell infiltration, to granulation thickening on to polypoid degeneration, which condition continuing may end in devitalizing of the membrane and bone necrosis. Probably in some constitutional conditions, notably syphilitic, the trouble may begin in the bone, in which case the disease of the membrane is secondary.

Whereas there is undoubtedly a great difference in the degree of the pathological changes which take place in the diseased lining membrane of the accessory sinuses of different individuals, as well as in the time in which the changes occur, it may be said, on general principles, that the changes are greater in the same length of time than take place in almost any other part of the body. This is due to the peculiar structure of the normal membrane. A certain number of fulminating cases develop so rapidly as to fall almost at once into the emergency class. Such cases present evidence of great pressure, on account of which one sees danger to the eye or brain. A thorough operation should be done at once, under general anesthesia, and through an external opening, if the frontal is involved. If the disease be confined to the ethmo-sphenoidal group, the attack may be made through the nose, under local anesthesia. Such a case was brought to me from the Eye Department of the Manhattan Eye, Ear and Throat Hospital, on March 11, 1912. A man, forty-five years of age, laborer, had come to the eye clinic about one week earlier on account of a swollen left upper eyelid and lowered vision. He suffered no pain, complained of no nasal discharge, and the oculist felt that he had some kind of a tumor in his orbit; but conditions grew so rapidly worse, that it occurred to him that there must be an acute process somewhere, and he asked me to examine the man as to the condition of his sinuses. The whole left side of the head was swollen and edematous to below the prominence of the malar bone. The upper lid could not be raised sufficiently to see any part of the eye. His nose was clean with the exception of the smallest bead of pus at the top of the middle meatus. When this was wiped away no more appeared. The man could not be transilluminated. A radiograph showed cloudy, but we thought the edema of the external parts might account, at least to some extent, for that. My willingness to open his frontal was based largely on the above picture, in connection with his statement that about six weeks before he had suffered for several days from an intense frontal headache. There was no history of syphilis, and a Wassermann test was negative. His frontal was filled with granulation tissue and his ethmo-sphenoidal tract filled with a polypoid membrane. Each cell seemed to yield up individually its contents which looked like the pulp of a grape expressed from its covering; there was no pus, nor was there pus in his orbit. A Caldwell-Luc operation was done on his antrum, the lining of which had likewise undergone the same polypoid degeneration. A complete and rapid convalescence was established.

I have related the above history because it shows with what rapidity this complete metamorphosis may take place. The absence of pus is interesting and lends to instructive reflection on some of our cases of latent sinusitis.

The majority of acute cases tend to recover of themselves, but this tendency may be enhanced by proper treatment, which is pretty much summed up in the establishment of free drainage. Symptoms may be relieved and a cure hastened by washing out the diseased cavities with some of the simple aseptic washes. Drainage of the frontal sinus and anterior ethmoid is generally sufficiently established by the removal of the anterior third of the middle turbinal. Much and speedy relief is frequently afforded by applying suction to the diseased sinus. This is a procedure of great use also in differential diagnosis. It may be necessary to straighten the septum, which is crowding the middle turbinal against the body of the ethmoid. Such a case was that of Mr. S. H., aged thirty-seven years, who presented himself at my office on January 6, 1912. He was suffering intense pain in the left frontal region, left frontal very tender on pressure and palpation, and dark on transillumination. A large quantity of pus was draining off through the throat. The left nostril was completely occluded at the vestibule by a deviated septum, which deviation was seen, by examin-

ing the right side, to extend well back. I put her into the hospital and temporized with inhalations and heat for three days, debating whether I should do a Killian operation and a submucous resection of the septum at the same time. I decided to do an ordinary resection of the septum and await developments. This I did on January 10. My incision was made on the left or diseased side; the cartilage was removed so that the flaps hung straight. I did not pack. The turbinal was pried toward the median line and not removed. Fearing sepsis, the nose was frequently douched from the right side. I never knew a resection of the septum to do better, nor a frontal sinusitis to clear up more promptly. He left the hospital on January 15, five days after the operation, and resumed work about ten days later.

To show the difference in handling an emergency case, I will give one other history. An Italian, about thirty-five years of age, came to the eye clinic of the Manhattan Eye, Ear and Throat Hospital, about one week later than the previous case. His left eye was exophthalmosed and closed, lids purple, vision so lowered that he could count fingers but about eighteen inches from the eye; had the same occluding deviation as the former case, but it did not seem to extend so far backward. He was placed at once on the operating table, the knuckle of cartilage obstructing the nostril was removed by knife and saw, making a large opening through the septum, and a radical Killian was done on the frontal ethmoids and sphenoid. A Caldwell-Luc operation was done at the same time on the antrum. Recovery was complete and uneventful. Vision became normal as soon as the swelling about the orbit had subsided.

Most of the mooted questions as to the method of operation on the accessory sinuses concern the treatment of the chronic cases, especially those involving the frontal, and giving histories of more or less acute exacerbations, not reaching such a state as to be considered emergency cases.

Any one of the sinuses may be independently diseased or they may be associately diseased in almost any of the possible combinations. Any of the sinuses may be reached by either intranasal or extranasal routes. Were it possible to explore and eradicate the disease of any sinus as thoroughly by the intranasal as by the extranasal route, or did the establishment of drainage ensure a cure of the disease, there would be no extranasal surgery for the cure of accessory sinus disease. One who has much to do with the treatment of these diseased cavities knows, however, that frequently the establishment of thorough drainage will not cure the disease, and certain of the sinuses can never be explored ocularly or thoroughly by instruments through the nose. On the other hand, well established drainage often does lead to a complete cure of a diseased sinus, and some of the sinuses in which it would not may be thoroughly explored and the disease eradicated through the nose; therefore, we have of necessity two operative procedures—namely, intranasal and the extranasal.

Now, again, it may be said, were it not that any scarring and any deformity which result from an extranasal attack on the accessory sinuses are on the face, there would be much less of intranasal work. The extranasal operation is done under a general anesthesia. Every operated area is within easy view, so that diseased areas are more easily made out and eradicated, and, to the writer's mind, with as little or less danger than accompanies radical intranasal surgery. But scarring and deformity of the face are great drawbacks, and both patient and surgeon are loath to have such results, if cure can be effected in any other way.

There is no doubt a greater ability at present to operate the various sinuses intranasally than a few years ago, and, consequently, I believe fewer extranasal operations are done. But many cases present as attested by the titles of the two succeeding papers on this program, in which nothing short of a most radical operation through an external opening will produce a cure.

In doing an extranasal operation for the cure of a frontal sinusitis, one makes the same incision as is made if the ethmoids and sphenoids are also to be exenterated, and, therefore, if the frontal is to be operated externally, the ethmoids and sphenoids, if diseased, should be operated at the same time, saving thus much time and pain to the patient. It often happens, however, that one feels that all can be accomplished intranasally, in' which case the ethmoids and sphenoids are cleared up and drainage from the frontal improved before it is found that, to effect a cure, the frontal must be opened externally.

On account of the bridge left by the Killian operation, the deformity is much less than by any other equally as radical procedure. The Killian operation has therefore, I believe, become the operation of choice by most operators.

We often hear of a modified Killian having been done. In a majority of cases this refers to the leaving the anterior wall of the frontal intact. While not decrying this procedure in suitable cases, the writer believes that the majority of those cases that can be cured in this way could have been cured by intranasal work. Watson-Williams has recommended this as the safer and more surgical method for establishing drainage from the frontal in acute cases. In those cases of frontal sinusitis, in which the lining membrane has become much degenerated and polypoid, the anterior wall should be removed and every nook and corner thoroughly curetted out. In the case of frontals so small that they do not extend above the upper border of the ordinary bridge the anterior wall should be preserved.

It sometimes happens that the surgeon having done what he considers a thorough Killian operation, has inadvertently failed to find some accessory cavity or offshoot from the frontal. Such a case, when the membranes are thoroughly and chronically diseased, seldom recovers until a secondary operation is done, at which time the overlooked focus of disease is generally more easily found by tracing the pus to its source.

These cases, to my mind, prove conclusively the uselessness of talking of curing all cases by the establishment of drainage. Certainly, it does not do it in the antrum, ethmoid, or sphenoid. Some operators (and Killian advises it) when there is much pus, especially if it has flowed over the cut surface, leave the wound but partially closed for two or three days and complete the suturing of the flaps after the reaction has subsided. To this, there can be no objection. Personally, I close the wound at once. The operated cavities are not packed. The soft parts over the frontal area are pressed against the posterior wall of the frontal by a compress held in place by a head bandage for about twelve hours. When the bandage is removed the compress is now held in position by adhesive strips,

and two or three thicknesses of gauze, saturated with Burows' solution, are laid over the wound. Stitches are removed in from forty-eight to seventy-two hours. The wet dressing is continued for three or four days and the compress is kept in position until the soft parts have become adherent to the posterior wall. Should the dura be exposed, the wound should be left open until granulation is well established. In cases where because of excessive hemorrhage from the bone or for other reasons, it seems advisable to pack the operated field, I leave the wound open in order to have a better control of affairs at time of removing packing and dressing.

In independent disease of the ethmoids or sphenoids, or in their associated disease, a practically radical operation may generally be done intranasally. There are various methods of opening and exenterating these cells.

Ballinger's ethmoidal knives, right and left, are constructed to cut upward and forward from the anterior face of the sphenoid encompassing the body of the ethmoid. In a thoroughly diseased condition of the ethmoid, with considerable bone necrosis, this is an expeditious and fairly easy procedure, not, however, unattended with danger, and in my hands, unless the parts be in the diseased condition just described, it is very painful.

Dr. R. C. Myles, in order to solve the question of safety, has invented a set of centripetally cutting chisels. They are safe, but on account of being necessarily small, compel one to use a great deal of time—a matter of much importance to the patient, if not to the surgeon. My own preference is to begin the exenteration of the ethmoids by the use of a Luc's forceps. One blade of the forceps can generally be pushed into the ethmoid body, the other being free in the middle or superior meatus. Closing the blades and rotating the forceps allows one to remove large masses, and but few bites are necessary in order to open up the entire middle and posterior portions of the ethmoid tract. The middle turbinated may be included in the grasp of the forceps, but unless much diseased it is better to remove it previous to attacking the cells of the ethmoid body. If I wish to begin anterior to the bulla, I generally open that cell by means of a chisel which I push or tap into the cell, and then by using the chisel as a lever, break down the wall of the bulla, thus making an opening through which one blade of the Luc's forceps may be made to enter the ethmoid body. The cells anterior to this and those cells higher up, or extending outward in such a way that they cannot be opened with the Luc's forceps, must be broken down by a small curette or some of the small angular cutting forceps. In a certain number of cases some of the ethmoid cells may extend well over the orbit. These cells cannot be entered through the nose. They can be cleaned out only through an external opening. The ethmoid tract having been opened up by any of these methods, the sphenoid is easily entered, and if necessary its opening may be easily enlarged by curette, burr, or biting forceps. The time consumed for thus opening the ethmoid and sphenoid cavities is very short, with, as a rule, very little hemorrhage. The pain is considerable, but quickly over.

The antrum, whether diseased independently or in company with other of the sinuses, presents an independent surgical problem. Acutely diseased, it tends of itself to recovery. A considerable relief from pain and acceleration of cure are accomplished by first washing it out a few times, either through the natural opening or through a puncture in either the inferior or middle meatus.

Chronic empyema of the antrum may recover from washing if kept up for a considerable time. This is easily done if a fairly large opening is made in the inferior meatus through the naso-antral wall which allows the patient himself to make more frequent washings than can be done in the surgeon's office, and through this opening applications, such as some of the silver or zinc salts, can be made.

If the disease has progressed to the extent that the lining membrane is covered with granulations or has become polypoid, a Caldwell-Luc operation should be done and the diseased lining membrane thoroughly removed. The entrance into the nose should be made sufficiently large to ensure permaneney.

156 West Fifty-eighth Street.

THE TREATMENT OF CARCINOMA BY SELENIUM.*

By EUGENE G. KESSLER, M.D.,

NEW YORK.

The application of the exact natural sciences for the relief of human ills has ever been the ideal of medicine. The progress in physics and chemistry within very recent times has brought us nearer to this ideal; these sciences now help us to solve some problems in diagnosis and therapeutics. Not empirical generalization, but exact conclusions from these sciences must lead us onward to progress in medicine.

Every disturbance of the vital functions and every sickness expresses itself in an equivalent disturbance of metabolism; the demonstration of these metabolic disturbances aids us in diagnosis, and the cognizance of these disturbances aids us in establishing a rational therapy, as shown by Dr. von Oefele.[1]

A number of rare elements, heretofore regarded as chemical curiosities, have recently been called into use and have already shown valuable therapeutic results. Some of these rare elements, not yet used medicinally, will, no doubt, find much employment within the next decades; among these is selenium.

A number of independent investigations have now put selenium in the foreground as a remedy for carcinoma. This, however, is by no means the limit of its usefulness as a remedy. The variety of uses to which selenium can be put will be appreciated by a knowledge of its chemical properties. These properties must ever be kept in view, if we do not want to fall into an aimless therapeutic empiricism.

Among the elements of the six-valent group of the periodic system (to which also belong oxygen, sulphur, and tellurium), selenium occupies the middle position. Within this group this position is the height of toxicity.

Combinations of selenium have, contrary to those of sulphur, the tendency to impart their oxygen to organic combinations and to be transformed into metallic selenium. Sulphur, on the other hand, has the tendency to take up more oxygen, and its great-

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est degree of oxidation can take place in the body. It is the only element that can burn up within the system to a higher degree than in the air.

Some selenium combinations can easily be detected even in traces. Among these is the finely divided reduced selenium shown by its striking red color, and the methylate of selenium and selenieted hydrogen by the peculiar odor of rotten horseradish. On the other hand, the salts of selenious acid formed with the metals of the alkalies, which form the main bulk of selenium combinations in the body, are detected with the greatest difficulty.

Those preparations of selenium, easily soluble in the body fluids, and which through reduction or oxidation, pass rapidly over into metallic selenium, are the most poisonous. The toxic strength of other combinations (selenates, etc.) lies between the toxicity of selenieted hydrogen and metallic selenium.

Selenium was discovered in the year 1817 by Johann Jakob Berzelius. He was nearly poisoned by selenieted hydrogen.

Among the homeopaths Stapf[2] in 1833 was the first to make experiments on the effects of selenium on his own body.

The first reports of experiments on the animal organism were made by Japha. In 1842, at the request of his teacher Krugenberg, he made observations on the effects of metallic selenium, selenious acid, and potassium selenate on animals. They suffered from diarrhea and finally convulsions; some died within several hours and others after six days.

Eulenberg[3] in his discourse on poisonous and noxious gases, during the middle of the sixties, made an extensive study of the effects of selenieted hydrogen.

Weil in 1885 began the study of the toxic effects of selenium, and Czapek continued his investigations in 1892. The important results of these two investigators were published in 1893.[4]

One of the most important facts pertaining to the effects of selenium was demonstrated by Rabuteau.[6] After the ingestion of selenious salts, he found that these were in the main excreted as such; while after the ingestion of selenic salts, he found them reduced and excreted as selenious salts. Besides this a small amount was reduced to selenieted hydrogen, which combines with methyl. The smallest trace of this methyl selenite can be perceived by its odor and was found by various investigators in all organs.

Rabuteau has observed this odor in the air of respiration. But it was Hofmeister[5] who proved that some substances which in their passage through the animal body easily take up methyl, become methylated, as far as they escape combustion, and are excreted in this form. Among these substances we find pyridin, also selenium and tellurium.

According to this selenium is a powerful oxidizing agent. The same action was demonstrated by Binz and Schultz[2] for the arsenic group. The postmortem findings in poisoning with selenium and tellurium, therefore, resemble very much those found after arsenic, antimony, and bismuth, and also vanadium, especially those in the gastrointestinal tract.

Sulphur and its combinations are oxidized in the body to sulphates. They are not reduced, and therefore do not belong to this group of selenium, tellurium, arsenic, etc.

The investigations of Scheuerlen[7] in the year 1900 have also proved that the toxic effects of selenium rest entirely on the oxidizing effect. He made a pure culture of the *Bacillus anthracis*, excluded athmospheric oxygen and added sodium selenite to the medium. The selenious acid was reduced by the anaerobic bacillus, the bacteria continued to grow and were colored red by selenium.

These results induced Klett[7] to investigate further and he found that the reduction took place within the protoplasm of the bacterial cell, and not, as might be thought, through the indirect effects of the metabolic products outside of the cell body. Tellurium in this respect acts in the same way but weaker. This shows that selenium, even highly concentrated, is not a protoplasmic poison, but acts by its oxidizing power.

Rabuteau in 1869 describes as the symptoms of poisoning vomiting, profound weakness, watery, even bloody, stools, and death from paralysis of respiration with continued heart action. At the same time the breath smells of rotten horseradish.

Heinz[9] classifies selenium among the substances which paralyze the vasomotor center. He also emphasized its great similarity to the action of arsenic.

As special symptoms he mentions decreased blood pressure, irregularity of respiration, dyspnea, weakening of the reflexes, and sopor. The decreased blood pressure is due to the paralysis of the vasoconstrictor apparatus of the splanchnic area. The kidneys never show any pathological changes.

Before we enter on the indications for selenium we would point out a peculiar property. In spite of the similarity of the oxidizing energy between arsenic and selenium, arsenic acts more readily on combinations of members of its own family as nitrogen and phosphorus; selenium, on the other hand, oxidizes more readily members of its family such as sulphur. From this we derive the indications for arsenic and for selenium.

Aside from the frequent usage of selenium in homeopathic practice for 80 years, it has been sporadically recommended in scientific medicine for external local use. In very old books of recipes we find a salve containing 7 per cent. of precipitated selenium, recommended for prurigo, pruritus, and eczema. This dates from a time when every oxidizing substance was recommended for use in such salves. We see from this that selenium, for decades, has also been empirically classed with the oxidizing remedies having local effect.

The chemical anomalies of carcinomatous metabolism, and the physiological studies quoted above, made the use of selenium in carcinoma a logical sequence.

The three elements arsenic, vanadium, and selenium stand out most prominently, when we want to bring about a powerful oxidation in the organism. These three elements stand in a certain sense in direct opposition to copper, iron, and manganese. The latter, including vanadium, facilitate the transmission of oxygen from the outer world to the living cell. Arsenic, vanadium, and selenium increase within the living cell the exchange of the supplied oxygen for oxidation of carbon, hydrogen, and sulphur.

As far as the oxidation of carbon and hydrogen is concerned, arsenic and vanadium are undoubtedly superior to selenium. To be sure one could use selenium in all those cases in which arsenic and vanadium have given good results, but it would seem irrational to substitute the weaker for the stronger and more certain substances.

As soon as we are concerned with the problem of enforcing the oxidation in the sulphur metabolism, arsenic and vanadium must unconditionally give place to selenium. Arsenic and vanadium never have the faculty of entering combinations parallel to sulphur, and of oxidizing sulphur to a higher stage within these combinations.

In olden times auripigment ($As_2 S_3$) was a popular symptomatic remedy for cancer. Vanadium preparations are now advertised for local use. But why use such substances when we have in selenium to a certain extent a specific?

The specific indications in carcinoma are the following: The urine is of low specific gravity, has a high content of sodium chloride, a low amount of ozidized sulphur, a high amount of insufficiently oxidized sulphur; there is also a constant loss of body weight. The latter observation shows us that the oxidation of the non-sulphur containing substances is so high that a deficit results. A reduction is therefore indicated in the total oxidation, while there should be an increase in the oxidation of the sulphur metabolism.

The specific gravity in the presence of the high content of sodium chloride shows that the excretion through the skin is reduced and a correspondingly increased excretion takes place through the kidneys. This is expressed in the pale gray anemic skin of the carcinomatous patients.

Permit me here to make a short digression. It must have come to the notice of one or the other among those present that the sulphur group contains sulphur, selenium, and tellurium, and that tellurium up to a certain degree can also increase oxidation. In my previous discussion I omitted to mention tellurium, for the reason that I wished to emphasize the fact that tellurium has no future as a carcinoma remedy, because, as shown by the experiments of Gies,[10] it further depresses the excretory function of the skin.

Arsenic would have the same unfavorable action on the function of the skin. The removal of the sulphur, fully oxidized in the urine, the increase of the body weight, the prevention of further diversion of the cutaneous secretion to the kidneys, can be brought about only by the use of selenium.

The theoretical proofs for this action of selenium have already been shown in the pharmacotoxicological part of this paper, and need not be repeated here. That these deductions are correct can be seen by the histories of the carcinomatous patients successfully treated with selenium.[12] The details need not be mentioned here.

For the practical use of selenium we have to consider selenium preparations which are easily soluble, not toxic, and which can be effectively carried by the blood stream to the carcinomatous tissue. We are acquainted with quite a number of old effective remedies for carcinoma, for example hydrogen peroxide, pyoktannin, etc., but it was never possible to bring these substances in contact with every carcinomatous cell, particularly not with the peripheral extensions.

The selenium preparations do not easily lose their effectiveness as oxidizing agents. Once within the body they constantly move between the higher and lower stages of oxidation, between selenic acid and selenieted hydrogen or at least selenious acid. In this way they constantly regenerate their oxidizing power. The selection of useful selenium preparations is for that reason a very wide one.

Administration and Dosage.—I have used selenium dioxide, sodium selenio-cyanate, potassium selenio-cyanate, and potassium selenio-eosine, and see no reason why in individual cases the proper preparations should not be selected.[12]

The selenio-eosine used by Wassermann[11] is so slightly toxic that a single dose, large enough for therapeutic dose in man, was given to a mouse, without causing death. The selenium cyanates and other preparations are about seventy times as poisonous. However, no advantage is gained through this relative innocuousness for practical therapy, as the deaths of mice in Wassermann's experiments were due to the too rapid absorption of the products of decomposition of the carcinoma. Therefore it seems that, if we use a preparation of which very large quantities can be given intravenously, we do not gain anything, on account of this too rapid absorption.

The administration of small quantities, often repeated and long continued, seems to be the best method. The selenio-cyanate serves best and will no doubt remain also for the future the preparation to be recommended. It is easily soluble in the body, readily absorbed, and enters with ease into every cell. These qualities are due to the close relationship with a substance that is widely distributed throughout the entire body, and occurs in the saliva principally, namely, sulphocyanic acid. The only difference is that here selenium has taken the place of sulphur. Later on perhaps the selenates will also be used.

The dosage of these preparations is best started with 1 milligram, three times a day. A dose of 4 milligrams three times a day has so far not been exceeded.

The eosine derivatives of Wassermann should be given in doses four times that amount.

The preparations can be given in the form of pills, solutions, or capsules.

The treatment as regards both the oxidation of the sulphur metabolism and the special effects of the selenium on the keratin bodies is best controlled by an exact quantitive analysis of the urine. This should be done about once in five weeks. It will also indicate whether the dose of selenium should be increased or perhaps be interrupted for a week or ten days.

So far the indication for the use of selenium is in inoperable cases of carcinoma or inoperable metastases and relapses after operations.

Later on, no doubt, the indication will be extended to the after-treatment of every case of cancer operated on. Likewise, in an operable cancer the field of operation will be reduced as soon as we know that the remaining cancer can be made innocuous by the selenium treatment.

REFERENCES.

1. F. von Oefele: Address before the German Medical Society, March 4, 1912. "Quantitative Urine Analysis, with Special Reference to Carcinoma Metabolism."

2. F. von Oefele: "Selen als Karzinomheilmittel," *New-Yorker medizinische Monatsschrift*, Feb., 1912.

3. Eulenberg: "Die Lehre von den schaedlichen Gasen," p. 454.

4. Czapek und Weil: *Archiv. f. exper. Pathologie u. Pharmacologie*, 1893, xxxii.

5. Hofmeister: *Ibidem*, 1894, xxxiii, "Über die Methylirung im Thierkoerper."

6. Rabuteau: "Researches sur les proprietés et sur l'elimination des composes oxygenes du selenium et du tellure," *Gaz. hebd. de Med. et de Chir.*, 1869, xvi, 104, 241.

7. Scheuerlen: "Die Verwendung der seleniger und telluriger Saeure in der Bacteriologie," *Zeitsch. f. Hyg. u Infectionskr.* xxxiii, 137.

8. Klett. "Zur Kenntnis der reduzirenden Eigenschaften der Bacterien," *Ibidem.*
9. Heinz: "Handbuch der exp. Pathology. u. Pharm.," 1906.
10. Gies, William J.: "The Toxicology of Tellurium Compounds," *Philadelphia Medical Journal*, March 23, 1901.
11. "A Contribution to the Problem of the Therapeutic Treatment of Tumors Through the Circulation, Based on Chemotherapeutic Experiments on Tumor-Bearing Animals," A. von Wassermann, Franz Keyser, and Mich. Wassermann, *Deutsche med. Woch. per Medical Times*, Feb., 1912.
12. Kessler: "Selen als Heilmittel bei Krebs," *New-Yorker medizinische Monatsschrift*, January, 1912.

315 East Eighty-seventh Street.

THE TREATMENT OF DISEASES OF VEGETABLE PARASITIC ORIGIN BY DEEP MUSCULAR INJECTIONS OF MERCURIC SUCCINIMIDE.

REPORTING SIX CASES OF PNEUMONIA AND SIX CASES OF GONORRHEAL ARTHRITIS.

By BARTON LISLE WRIGHT, M.D.,

SURGEON, UNITED STATES NAVY.

In a paper* which appeared in the Medical Record December 2, 1911, I advanced the theory that *for every vegetable organism mercury is the chemical affinity*, expressed by chemical formula as follows: (Vegetable antigen + Hg) + antibody = complement = complement fixation (cure). In support of this theory I reported twenty-six cases, divided as follows: One case of acute miliary tuberculosis of pulmonary type, two cases of pulmonary tuber-

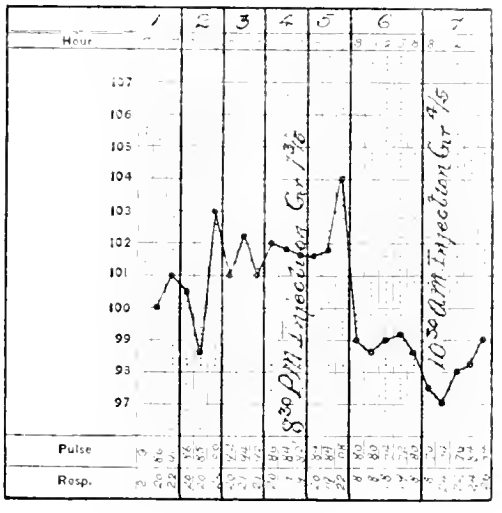


Chart 1.

culosis, one case of bronchopneumonia, three cases of typhoid fever, and the following cases of staphylococcic origin: five cases of epidemic catarrh, ten cases of follicular tonsillitis, one case of cystitis, one of cellulitis, one of chronic otitis media, and four cases of furunculosis, practically all of which, excepting the tuberculous cases were aborted by one or two injections, while the results obtained in the tuberculous cases were equally as brilliant, considering the disease. It is to be noted also that these twenty-six cases were treated in the sick bay of a battleship, most of the time at sea, when the ventilation was poor and the dietary restricted to canned soups, evaporated cream, malted milk, etc., minus the comforts and attention to be obtained in the home or hospital ashore.

Since writing the former paper I have treated three cases of croupous pneumonia, one case of bronchopneumonia and six cases of gonorrheal arthritis. With these, through the kindness of Dr. L. V. Dawson, of Odessa, Missouri, it is my privilege to report one case of bronchopneumonia and one case of croupous pneumonia treated by him according to the theory advanced. All these cases resulted in such brilliant cures that I feel justified in the hope and belief that it is strongly probable that my theory is correct. I formerly stated that "0.091 gram (1 2-5 grains) of mercuric succinimide is the most satisfactory dose for the average adult male patient," but later experience leads me to modify this statement, in so far as that under certain circumstances a larger dose is desirable, these circumstances embracing severe infection and profound toxemia. In one instance I have injected 0.117 gram (1 4-5 grains), and would have no hesitancy in injecting 0.130 gram (2 grains) should the severity of the disease or profoundness of the toxemia indicate the necessity.

Broncho Pneumonia (Lobular Pneumonia).

Case XXVII. ——, age 19. Admitted in the morning of January 12, 1912; diagnosis: Acute follicular tonsillitis, associated with slight bronchitis. The lungs were carefully examined, but at this time were negative for other signs than those of bronchitis. The patient was put in bed, magnesium sulphate 30 grams (one ounce) was administered. Solution silver nitrate (15 per cent.) applied to tonsils twice daily, Dobell's solution gargle every hour, and acetphenetidin, salol, and quinine 0.130 gram (2 grains) every two hours prescribed. His throat lesions gradually improved, on the fourth day of the disease the tonsils were healed, but the cough worse, on the fifth day, January 13, cough much worse and severe pain in left lower lobe—physical signs of pneumonia negative. At 7 P. M. the temperature suddenly rose to 104°, pulse 108, respiration 22 (see chart No. 1), and physical examination revealed scattered areas of consolidation throughout the left lower lobe. At 8:30 P. M. an injection of mercuric succinimide 0.104 gram (1 3-5 grains) was given; within an hour the crisis began and was completed by 11 A. M. the following day. On this day (January 14) the sputum contained large numbers of pneumococci. Convalescence was established and continued without interruption. On January 17th resolution was complete and he was discharged to duty on January 20th. Crisis took place in this case probably on the second day of the disease.

Case XXVIII.—Case of Doctor Dawson: Girl, four years of age, developed whooping-cough on December 18, 1911. January 4, 1912, bronchopneumonia developed, the entire area of both lungs being involved; temperature 104.6°, plus 140, respiration 57. The usual treatment with an abundance of fresh air was begun and continued until January 12, the child failing progressively. On this date the patient was in a profound stupor, the morning temperature being 102.6°, pulse 140, respiration 65; at noon an injection of mercuric succinimide 0.026 gram (2-5 grain) was given. By 5 P. M. the respiration had fallen from 65 to 33. On the following morning the crisis was complete; temperature 97.6°, pulse 132, respiration 30. A second injection of 0.026 gram (2-5 grain) was given on the 15th, the child made a rapid recovery, and on January 21 was playing about the house as usual.

*"The Treatment of Tuberculosis and Other Diseases of Vegetable Parasitic Origin by Deep Muscular Injections of Mercuric Succinimide. A Theory and the Results of Its Application in Twenty-six Cases."

These two cases of bronchopneumonia with the case reported in my previous paper make three presenting the extremely rare termination of this disease by crisis, which in each case followed immediately after the administration of the initial injection. They also present an extremely early termi-

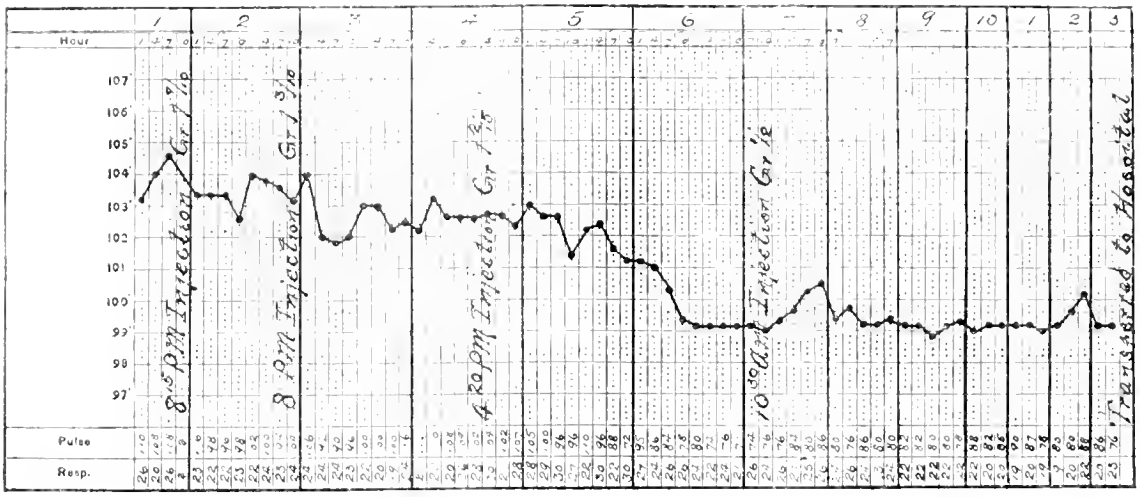


Chart 2.

nation, one on the second, one on the fourth, and one on the eighth day of the disease.

Croupous (Lobar) Pneumonia.

Case XXX ——, age 18 years. Admitted January 20, 1912. Patient presented himself as having had a chill in the early morning, severe pain in lower left lobe, with troublesome cough and expectoration. Physical examination revealed consolidation of entire lower left lobe, with prolonged expiration throughout the major portion of the right lung and left apex. Bed. Magnesium sulphate 30 gram (an ounce). At 1 P. M., temperature 103.2°, pulse 110, respiration 26, sputum positive for pneumococci, negative for tubercle bacilli. Urine normal. Blood presented the following: Total white count 10,800, polys. 55 per cent., small lymph. 17½ per cent., large lymph. 8 per cent., transitional 5½ per cent., mast 3½ per cent., eosinoph.

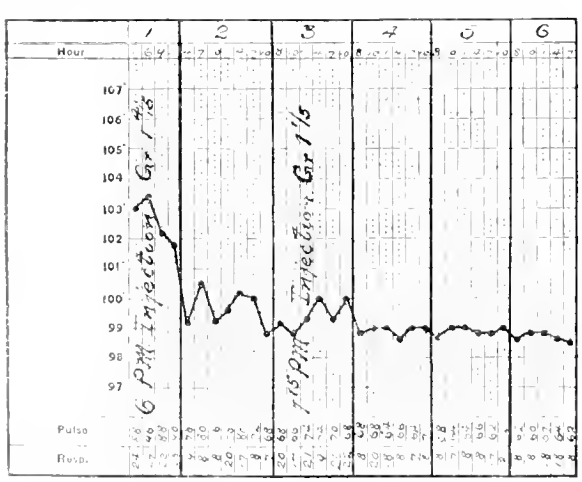


Chart 3.

2 per cent., large mononuclears 7 per cent. Diagnosis: Lobar pneumonia involving entire lower left lobe complicating pulmonary tuberculosis (semilatent). At 8 P. M., an injection of mercuric succinimide 0.110 gram (1 7-10 grains). January 21, all symptoms improved, sputum characteristic, rusty and frothy, containing numerous pneumococci, no blood examination made; severe pain in lower left lobe had disappeared. 8 P. M., mercuric succinimide 0.084 gram (1.3 grains.)

January 22. Further improvement in all symptoms, blood examination as follows: Total white count 13,000, polys. 72 per cent., small lymph. 12 per cent., large lymph. 5 per cent., trans. 5 per cent., mast 1 per cent., large mono. 4 per cent. The marked improvement on this date is well shown by the reduction in the total white count by 6,800 cells and the increase in the polys. from 55 per cent. to 72 per cent. No injection given on this date.

January 23. Patient worse, all symptoms increased (see chart No. 2). Blood examination as follows: Total white count 10,200. No differential made. It is to be noted that the white count was increased by 3,200. At 4:20 P. M., an injection of mercuric succinimide 0.091 gram (1 2-5 grains) was made. January 24. Marked improvement in all symptoms. Blood: Total white count 11,400, polys. 75 per cent., small lymph. 10 per cent., large lymph. 4 per cent., mast 2 per cent., trans. 5 per cent., eosin. 1 per cent. The improvement in symptoms following the injection is well sustained by the blood count; a reduction of total white count by 4,800. At 3:20 P. M., an injection of mercuric succinimide 0.065 gram (1 grain) was given; at 4 P. M., a slow crisis began.

January 25. Pneumonic crisis complete by 1 P. M. (see chart). The symptoms which followed this date were entirely due to the patient's tuberculous involvement. Blood: Total white count 9,800, polys. 72 per cent., small lymph. 14 per cent., large lymph. 4 per cent.

January 26. 10:30 A.M., injection mercuric succinimide 0.032 gram (½ grain). No further injections were given in order that the drug might be eliminated. January 26, patient quite comfortable. Blood: Total white count, 8,400. January 31, 4:30 P.M., fluid in left pleura; 8:15 P.M., 740 c.c. of serum removed by aspiration. Examination of this serum showed lymphocytes largely predominating. On February 1 he was transferred to hospital, Chelsea, Mass., for further treatment in relation to the tuberculous involvement. This case in itself shows the marked beneficial and curative action of mercury in the two infections present, and even under these bad conditions the pneumonic crisis occurred as early as the fifth day.

Case XXXI.—Admitted February 3, 1912. Age, 23 years. Complaint: Severe pain in right and left lower lobes, troublesome cough and expectoration. Temperature 103°, pulse 88, respiration 24. Physical examination revealed early consolidation of right and left lower lobes. Sputum characteristic containing numerous pneumococci. At 6 P.M., temperature 103.5°, pulse 96, respiration 27. Diagnosis: lobar pneumonia, involving right and left lower lobes. 6:15 P.M., an injection of mercuric succinimide 0.117 gram (1¾ grain) was given and the crisis began within an hour. At 8 P.M., blood examination as follows: Hemoglobin 90 per cent., total white count 10,800, polys. 60 per cent., small lymph. 20 per cent., large lymph. 6 per cent., trans. 6 per cent., eosinoph. 2 per cent., bas. 1 per cent., large mono. 4 per cent. February 4: Patient feels well; 10 A.M., temperature 99.3°, pulse 70, respiration 18. The slight temperature registered this day was considered to be due either to an endotoxemia or to mercurialism, but there was not the slightest evidence of salivation. Blood: Hemoglobin 85 per cent., total white count 8,000, polys. 72¼ per cent., small lymph. 15 per cent., large lymph. 5 per cent., trans. 3 per cent., eosinoph. 1 per cent., basoph. 1 per cent., large mono. 2 per cent.

February 5: 8 A.M., temperature 99.2°, pulse 68, respiration 20, consolidated areas undergoing resolution rapidly; 1.15 P.M., injection mercuric succinimide, 0.078 gram (1⅕ grain), given as a precautionary measure; 7:30 P.M., mercurialism, in the form of a severe gingivitis, developed. February 6: temperature remains about the same; a potassium chlorate mouth-wash was prescribed, the slight temperature evidently being due to mercurialism. Blood: Hemoglobin 95 per cent., reds 6,312,000, total white count 6,000, polys. 70⅛ per cent., small lymph. 12 per cent., large lymph. 3 per cent., trans. 2½ per cent., eosinoph. 1 per cent., basoph. 1 per cent., large mono. 3⅛ per cent. From this time on convalescence was uneventful, his lungs being entirely clear on February 10. For temperature, pulse, and respiration curves see chart No. 3.

Case XXXII. ——, admitted March 4, 1912.

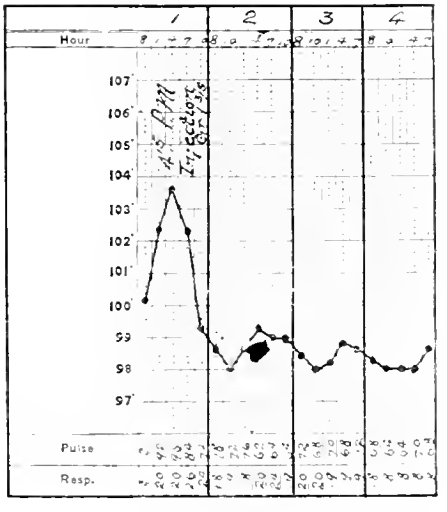


Chart 4

Complaint: severe pain in both right and left lower lobes, cough and expectoration. Temperature 100.2°; owing to the noise made by workmen repairing the ship a physical examination was impossible. Magnesium sulphate 30 gram (one ounce) was given at 1 P.M. Temperature 102.4°, pulse 92, respiration 20, sputum characteristically rusty and frothy, containing numerous pneumococci; 4 P.M., physical examination revealed consolidation of the left lower lobe, and the preconsolidation stage of the right lower lobe; 4.15 P.M., injection mercuric succinimide 0.104 gram (1⅗ grain), crisis began within an hour; 5.30 P.M., blood examination as follows: Hemoglobin 85 per cent., total white count 11,200, polys. 74 per cent., small lymph. 10 per cent., large lymph. 4 per cent., eosinoph. ½ per cent., trans. 2 per cent., basoph. ½ per cent., large mono. 2½ per cent.; 10 P.M., crisis almost complete, temperature 99.2°, pulse 72, respiration 18. March 5, 8:30 A.M.: Convalescence established; temperature 98.6°, pulse 78, respiration 18. Blood: Hemoglobin 95 per cent., total white count 8,600, polys. 71 per cent., small lymph. 17 per cent., large lymph. 6 per cent., trans. 2½ per cent., eosinoph. ½ per cent., basoph. ½ per cent., large mono. 2 per cent. Convalescence was uneventful, resolution of the involved areas being complete on March 11.

Attention is invited to the fact that in the two foregoing cases crisis began in each case about eight hours after the onset of the disease, immediately following the initial injection, a record, I believe, unparalleled in the history of the disease.

Case XXXIII.—Case of Dr. Dawson. —— (woman), age 25 years, married. Onset 12 noon, January 26, 1912. Chill lasting about two hours. 6 P.M. developed severe pain in lower right lobe, troublesome cough and expectoration. First seen by Dr. Dawson at 7:30 A.M. January 27, 1912, patient had not slept during night; temperature 103.2°, pulse 122, respiration 42. Severe headache and pain in lower right lobe, troublesome cough and bloody sputum. Physical signs of consolidation lower right lobe.

Fresh air treatment combined with the usual supportive measures was instituted at once and continued until January 31, the patient growing worse; the patient did not sleep, extreme nervous symptoms had developed, respirations were extremely shallow, temperature had reached 104.5°, pulse 132, respirations 51.

At 9 A.M. January 31, temperature 103.6°, pulse 166, respirations 42. At 10:45 A.M. a consultant saw the patient with Dr. Dawson and at this time an injection of mercuric succinimide 0.065 gram (1 grain) was given. Crisis began shortly after the injection. At 5 P.M. temperature 100°, pulse 90, respirations 32, and the patient was feeling very much better.

February 1, 9 A.M., convalescence, temperature 98.4°, pulse 90, respirations 30. From this time recovery was rapid. Out of bed February 6 and resumed her household duties on February 10.

Gonorrheal Arthritis.

Cases XXXIV to XXXIX (six cases) inclusive. All being cases of typical gonorrheal arthritis, one in which both shoulder joints were involved, two in which both knee joints were involved, one in which right hip joint was involved, one in which right shoulder and left ankle joints were involved, one in which the right wrist was involved.

Two of them had been under treatment in hospital or on board another ship. All had received previous local and general treatment without permanent relief. The first three each received two injections of 0.091 gram (1⅖ grains) and 0.052 gram (⅘ grain) with a day intervening. All symptoms disappeared immediately and have not returned. The remaining three received one injec-

tion of 0.091 gram (1⅖ grains) in the latter part of February, 1912. All symptoms immediately disappeared, and so far have not returned, results most gratifying to the patients as well as to me.

U. S. S.S. Georgia.

THE RESULTS OF RENAL DECAPSULATION FOR CHRONIC NEPHRITIS.*

By SAMUEL LLOYD, M.D.,

New York.

When it is remembered that the number of deaths from chronic nephritis in the City of New York alone approximates 7,000 annually, any procedure that offers hope of decreasing this number is worthy of careful consideration.

It is difficult to find any two authorities who thoroughly agree in their classification of the varieties of chronic nephritis; parenchymatous nephritis, or inflammation of the secreting structures—the tubules and the glomerules—of the kidney, and interstitial nephritis, or inflammation of the renal connective tissue form the basic pathological entities upon which all agree. Confusion results because neither of these conditions ever exists absolutely by itself. The variations in degree in which parenchymatous and interstitial nephritis are associated are almost infinite, and explain the great variety of classifications.

Edebohls, in outlining the work he had done in decapsulation of the kidney, suggested the following, and this has been followed in my work:

1. Interstitial nephritis includes those cases in which the gross evidence of inflammation of the connective tissue predominates.

2. Parenchymatous nephritis includes those cases in which involvement of the secretory apparatus predominates.

3. Diffuse nephritis includes those in which both the parenchyma and the connective tissue are involved in fairly equal degree.

The diagnosis of these varieties of chronic nephritis in the living kidney, when exposed at operation, is easy after some experience, pathological changes being more readily appreciated then than they are after death. The adherent capsule, nodulation, granular condition of the subcapsular surface, shrinking, unequal contraction, and occasional cyst formation of chronic interstitial nephritis; the enlargement, cloudy swelling, mottling, and discolorations due to circulatory and degenerative changes of chronic parenchymatous nephritis; the thickening, general or localized, of the capsule proper of the kidney, and the secondary inflammatory changes in the perirenal fat, common to both varieties of chronic nephritis, are readily recognized. The variations in density and hardness of the kidney, occurring widely in different parts of the same organ, are easily appreciated. Brewer (*Am. Jour. Med. Sci.*, May, 1908) says that while he has never seen a cure result from decapsulation in chronic non-febrile nephritis, he has observed marked improvement in two instances. In the second, the change after operation was so striking and so prompt, and presented such a marked contrast to the progressive deterioration of health before operation while under medical treatment, that it convinced him that in this case at least the operation had been of decided benefit to the patient.

The nephritis in any given case may be unilateral. Weir found this so in 17 per cent. of his cases, and Edebohls found eight cases where both kidneys were exposed at operation in which one organ was healthy and the other diseased. In seven other cases only one kidney was operated upon, and four of these patients remained well for periods varying from five to fourteen years. I have had the same experience, finding a nephritis on one side only at operation, and several times have found the disease present at the time of operation upon one side, and yet all symptoms have disappeared without touching the other kidney. Other observers have noted this condition so often that recently in cases of chronic nephritis coming under my observation I have advocated catheterization of the ureters and examination of the urine from each kidney separately in order to determine whether one or both kidneys were involved. In cases where we have not been able to make this preliminary examination of the urine from each kidney separately, it is advisable, in my opinion, to follow out the practice that Dr. Edebohls and I adopted in all of our previous experience—of always decapsulating the other kidney when a nephritis is found on one side, without any local apparent reason for the change, for it is reasonable to suppose that occasionally a systemic cause may act primarily on one kidney and the other become involved later on.

It is, of course, thoroughly understood that I do not advocate operation in any cases of nephritis not already *in extremis*, in which the most careful hygienic and dietetic measures have not already been thoroughly tried. I recognize the fact that chronic nephritis, under intelligent medical care, may be arrested for a long time, and perhaps a few patients taken early enough, may be even clinically cured; but all cases that are steadily progressing, in spite of rational medical treatment, should be given the benefit of operation. When we speak of cure, in connection with nephritis, we must of course be understood to mean clinically cured; we recognize the fact that sclerotic and degenerative tissues cannot be returned to the normal by either medical or surgical measures. As Porter has said, "The lesions of Bright's disease can never be cured to the eye of a pathologist and histologist, but to the physiologist and clinician the cure of the disease in a physiological sense is both possible and probable."

Tyson (*N. Y. Med. Jour.*, July 8, 1911), after reporting four cases that had been operated upon without cure, said: "I claim that the operation is so serviceable in certain instances that it ought to be done more frequently. The conditions which demand it are not far to seek or difficult to recognize. They are simply these: Stubborn persistence of symptoms, causing great inconvenience or danger to life, such as permanently obstinate dropsy which refuses to yield to ordinary treatment thoroughly carried out; uremia, manifested by convulsions or other unmistakable signs, such as intense headache, anuria, and large albuminuria, resulting in anemia and loss of function and strength; obstinate hematuria, perinephritis with miliary abscesses, hydronephrosis, and pyonephrosis.

Miller (*Am. Jour. Med. Sci.*, Sept., 1911, p. 360) says that in the majority of cases of recovery the physiological cure was complete in form thirty to forty days. This does not correspond with either Edebohls' or my own experience. Edebohls said that some who are either unable or unwilling to believe in surgical treatment for chronic Bright's disease have explained the immediate good effects

*Read before the Medical Society of the County of New York, April, 1912.

of renal decapsulation—the return of color and of strength, the disappearance of dropsy, headaches, backaches, digestive and circulatory disturbances, the improvement in the condition and action of the heart and cerebrospinal centers—undeniable and striking as they are—to the rest in bed for three weeks subsequent to the operation. The fact is ignored or overlooked that many of these patients had already spent months, and in a number of instances even the greater part of a year, in bed without experiencing the slightest improvement. The changes in the patient's condition and general health after the decapsulation, on the contrary, are nearly always impressive, and in some instances simply marvellous. The improvement, moreover, is progressive, continuing and increasing even after the patient has left his bed and resumed his place and work in life. The cure of chronic nephritis is only started by renal decapsulation, and the element of time is essential to obtain the full advantages of the operation. In some patients the health of the kidneys is restored in a few months after operation; while in others the same result is reached only after a period of three years.

My own experience bears out these statements. One of my patients, operated upon seven years ago, spent the night after the operation wandering about the hospital in a nephritic delirium. She then became comatose, with occasional convulsions during the next two weeks, and was not free from a trace of albumin and occasional casts until after a lapse of two years. She is, however, still living and well, and free from all signs of nephritis.

Another patient, who was operated upon November 19, 1908, was rapidly going down from interstitial nephritis. He did not show a clear urine report until last spring, and has but just fulfilled the requirements necessary to put him down as cured. His urine examination was practically normal for the first time May 25, 1911, and the urine report of December 5, 1911, was: Specific gravity, 1023; reaction, acid; albumin (heat, nitric acid, and Esbach's reagents), negative; sugar, negative; urea, 2.3 per cent, 397 grains in twenty-four hours; indican, normal. Microscopic examination: Casts, none; crystals, none; epithelium, occasional vesical cell; blood, none; pus, very occasional pus cell. There were a few microscopic threads and cylindroids present. It is thus seen that almost three years elapsed after the operation before the patient fulfilled Edebohls' rule with regard to the cure of his nephritis. This rule is: "The urine must remain free from albumin and casts, and the daily urea output be normal (or approximately so) for a period of at least six months following the verification of the disappearance of the albumin and casts, and the patient must be free from all the symptoms of chronic Bright's disease from which he or she formerly suffered."

It is therefore evident that these cases should have the most careful observation and medical treatment after they recover from the operation. The urine should be examined frequently, and the functional activities of the kidney be tested from time to time.

Following the decapsulation of kidneys in rabbits, in normal dogs, in dogs with induced nephritis, in dogs with infarcts of the kidneys, and in dogs with normal kidneys but with additional work thrown on them, Thorndike (*Boston Medical and Surgical Journal*) found that in all his cases of two days and under, and in controls, where the capsule was removed for over two-thirds of the surface, there was a certain amount of immediate increase in the size of the decapsulated kidney, persisting up to one month at least, and afterwards a decrease to approximately normal size which was complete at the end of six months. There was congestion, moderate in degree, most marked in the intertubular blood vessels in the cortex, lasting from three to five days after the operation. No histological change in the renal epithelium was noted, but a new capsule, very vascular at first and from two to four times the thickness of the old, was well marked at the end of eight days. The new capsule arises chiefly from the connective tissue cells in the intertubular connective tissue, but in part from the retroperitoneal connective tissue, which is present in the new bed of the kidney. No new vessels are formed which anastomose with those of the kidney. The increase in size is due, primarily, to the increase in blood supply, possibly resulting from the removal of the capsule. The evidence at hand proves that a new capsule forms within a few weeks after operation, but that the establishment of collateral circulation sufficient in degree materially to affect the renal tissue, may at present fairly be doubted.

Guiteras (MEDICAL RECORD, Feb. 10, 1906, p. 240) obtained reports from forty-two surgeons who had operated upon 120 cases. Of these, 16 per cent. were reported cured; 40 per cent. improved, and 11 per cent. unimproved; 33 per cent. died. In interstitial nephritis, the results appeared to be brilliant, as the casts and albumin disappeared, although the amount of solids excreted was not brought up to normal. The mortality in these cases, however, was 26 per cent.; in parenchymatous, 25 per cent.; in chronic diffuse, 75 per cent. Two and a half years later he asked for a report from these same surgeons—only one-half replied, reporting 40 cases, with 1 recovery, 3 improved, 3 unimproved, and 33 deaths, 82 per cent. He said, therefore, that it was evident that at that time capsulectomy was not a popular operation among the surgeons in the United States, while in Europe it had been thoroughly tried and had but few followers.

Tomaso Costa (*Giornale internazionale delle Scienze Mediche*, Nov. 15, 1906) considers that we may regard decapsulation of the kidneys as of the greatest value in most varieties of kidney diseases, acute as well as chronic. It is contraindicated in old age, cardiac disease, and albuminuric neuroretinitis which is the precursor of a fatal ending. He believes that the benefit is due to a new formation of the capsule which allows the tissue of the kidney—before bound down by the contracted capsule—to expand. New blood-vessels are formed with the new capsule. The epithelial elements are not regenerated, but the better nutrition makes them change within themselves so as better to perform their function. The hyperemia and polyuria which follow the operation aid in the absorption of morbid products within the kidney and render the urinary tubules permeable. He has produced an artificial nephritis in dogs by the injection of chlorohydrate of hydroxylamine which produces a nephritis very similar to that seen in the human race. Fifteen dogs were treated in this way; a part were then submitted to decapsulation or capsulotomy, while others were left untreated. Eight of those operated on were cured of the neph-

ritis, while those not operated upon died. The cure is more rapid in capsulectomy than in capsulotomy. After forty days the capsule is found reformed and thicker and more vascular than before. A unilateral operation by means of the renal reflex results in a cure of bilateral nephritis. This bears out Edebohls' experience and his claim that the kidney derives a new blood supply through the new capsule. In one of my cases of redecapsulation this was shown most markedly. When the thick capsule was cut away from the kidney innumerable small vessels were seen bleeding, both in the capsule and on the surfaces of the kidney. This fact has also been demonstrated by Larkin at the Laboratory of the College of Physicians and Surgeons.

Grande reports (*Revista de Medicina y Cirurgia*, 1908) 85 cases, 62 cures, and 32 deaths; but in his table, except Edebohls—who is credited with 51 cases, 37 cures, and 14 deaths—no one has more than five cases, many reporting but one or two. Such statistics are of little value in considering this operation. For operative experience must go hand in hand with the most careful after-treatment. This is the difficulty in trying to cull material from literature, as operators who have handled but one or two cases of nephritis cannot be expected to have the same results as those who have had a large number.

In Dr. Edebohls' last paper, which I read for him before the Surgical Section of the American Medical Association in Chicago, June 3, 1908—he reported 102 decapsulations of the kidneys for chronic Bright's disease; 50 of these patients were males and 52 females. The youngest was 4½ years, the oldest 67 years of age, the average being 30 years and 8 months. The majority of patients at and before the time of operation presented all or nearly all of the most serious well-known features of nephritis. Of these 102 patients, 10 died within two weeks following the operation; 30 died at times more or less remote from the operation; 3 disappeared from observation after leaving the hospital, and 50 are known to be living. In reality, however, as seven patients were operated upon twice, 109 operations were performed on one or both kidneys; one of these patients died after a second decapsulation. There were therefore eleven deaths in 109 renal decapsulations for chronic Bright's disease—an operative mortality of 10.1 per cent. In this paper Edebohls advised renal decapsulation for every sufferer from chronic Bright's disease who had a reasonable expectation of not less than a month of life without operation. The three conditions which led him to advise renal decapsulation were: First, the clear and unequivocal diagnosis of chronic Bright's disease; second, the absence in a given case of absolute contraindications to any operation; third, the possibility of securing the services of a surgeon practically familiar with the surgery of the kidney. As soon as nephritis has become chronic it is an absolute indication for decapsulation. The earlier in the course of chronic nephritis an operation is performed, the better will be the patient's chances of a perfect cure.

These cases of Dr. Edebohls' were tabulated up to May 31, 1909. From that time to the time of his death he operated upon six additional cases—one, decapsulation of the right kidney, the other kidney being done later by me; three, for chronic diffuse nephritis; (*a*) April, 1907, at the Post-Graduate Hospital. This patient had anasarca and made a very complete recovery. In a paper read before the Southern Surgical and Gynecological Association in Washington, D. C., December, 1911, and published in the *Southern Medical Journal*, April, 1912, I stated that this patient has since remained well and has been through a normal pregnancy without any appreciable kidney lesion. Since that time she has come to me in the eighth month of a pregnancy with very marked kidney symptoms. She was delivered at the end of the eighth month of a dead fetus and left the Post-Graduate Hospital on Friday, April 19, 1912, improved, but with a still active kidney lesion; (*b*) June 6, 1907. This patient was perfectly well at the time of the last report, October, 1911; (*c*) February 14, 1908; died, April 8, 1908; (*d*) one decapsulation of the right kidney for chronic diffuse nephritis, October 3, 1906, the other kidney having been previously removed. January 3, 1912, urine normal. One, November 6, 1907. Present condition, unknown.

In addition to these I have personally operated upon thirteen cases, and including these with Dr. Edebohls' last six, the nineteen cases show:

Improved, 5—31.8 per cent.; died within 2 weeks of operation, 2—10.5 per cent.; died later, unimproved, 2—10.5 per cent.; cured, 8—42 per cent.; unknown, 1—5.2 per cent.

Compared with Dr. Edebohls' statistics, this makes the operative mortality slightly more. In his 102 cases the immediate mortality was 10.1 per cent.; in this series it is 10.5 per cent., or for the whole 128 cases, a little over 10 per cent. This is very different from the mortality given by Dr. Miller, when he says that despite an immediate mortality of 30 per cent., and 44 per cent. remote (within a short period) it cannot be gainsaid that the results of operative treatment have been other than hopeful. In referring to the table it will be seen that our remote mortality in this last series of eighteen cases is, up to the present time, the same as the immediate mortality—10.5 per cent. This is a rather striking difference.

The mortality, however, will always remain high in this operation. The condition of many of these patients is such that it is surprising often that they do not die on the operating table.

It is not the mortality but the question of curability that is important. In Edebohls' 102 operative cases 33 were cured at the time of his report, while in these last 19 cases, 8 may be recorded as free from all clinical and urinary symptoms for six months or more. This makes 41 cured out of 128 patients, surely a good enough showing to make the operation well worth while.

12 West Fiftieth Street

TONSILLAR HEMORRHAGE, CAUSES, PREVENTION, AND TREATMENT.*

By GERHARD HUTCHISON COCKS, M.D.,

NEW YORK

ASSISTANT SURGEON MANHATTAN EYE, EAR AND THROAT HOSPITAL.

The daily performance of dozens of tonsil operations in the private office and hospital dispensary affords evidence that this operation is considered by many surgeons a trivial affair, with but slight risk to the patient. The object of this paper is to emphasize the dangers with which this practice is surrounded, in the hope that in the near future, in this city at least, patients subjected to tonsillar

*Paper read before the section on Laryngology and Rhinology of the New York Academy of Medicine, February 28, 1912.

surgery will be more carefully guarded against the possibility of post-operative bleeding.

A brief review of the literature shows a considerable number of fatalities from hemorrhage alone, not including deaths from shock, status lymphaticus, pneumonia, and other causes. Bardeleben[1] in 1875 reported two fatal cases. The first was observed by Beclard in Angers. A charlatan attempted to remove a tonsil with a bistoury. A fatal hemorrhage ensued, which autopsy demonstrated was caused by injury to the internal carotid artery. Bardeleben also reports that Champion was called to see a case where scarification of the tonsil had been attempted, and found the patient dead when he arrived at the scene of operation. No autopsy was permitted. The cause of death was supposed to be injury to the carotid artery. Downie[2] in 1880 reported a fatality from hemorrhage following tonsillotomy. W. E. Casselberry[3] in 1893 reported a fatality following abscission of the tonsil. Damianos and Hermann[4] in 1902 reported the case of a man twenty-three years old, operated in the Vienna Clinic for hypertrophied tonsils with Fahnestock's tonsillotome, who died sixteen days later from secondary anemia. Autopsy demonstrated an eroded vessel. Digital and instrumental compression, subcutaneous injections of gelatin, and ligation of the carotid artery failed to control the hemorrhage. Johnston[5] mentions the case of a bleeder, a boy seventeen years old, who died from hemorrhage two weeks after the application of a galvanocautery to the tonsil. Hurd[6] in 1910 reported a fatal hemorrhage in a child operated with a tonsillotome. A tonsillar clamp and ligation of the carotid failed to save the patient's life, death ensuing before transfusion could be performed. Harmon Smith[7] records six additional fatalities, as follows: Two deaths from hemorrhage after tonsillotomy in cases operated upon by Broca, one in a man twenty-five years old; the other in a male child eight and one-half years of age, who had an anomalous internal carotid artery which was wounded with the tonsillotome.

Holinger's report of a death from tonsillar hemorrhage occurring in the practice of a friend. Mackellar's report of a fatal case occurring in the practice of a colleague. Barkan's case of death after removal of a tonsil with a tonsillotome. J. V. Stucky's case, a male, fifteen years of age, a bleeder, who died from a continuous venous oozing.

Here we have a record of thirteen fatalities from tonsillar hemorrhage, two of the deaths occurring in the last eight years.

Dr. J. Wright[8] in 1890, from a search of the Surgeon-General's Library at Washington, reported a series of thirty-one alarming hemorrhages following tonsillotomy. Dr. Harmon Smith[7] in December, 1903, before this section, read a paper covering the years between 1890 and 1904, in which he reported twenty-four additional cases of severe post-operative bleeding. I have continued the search of the literature to date, beginning with January, 1904, and have found forty-four cases of alarming tonsillar hemorrhage, exclusive of one case of my own. To this number should be added the seven deaths from tonsillar hemorrhage, occurring previous to 1904, and not included in the series collected by Wright and Smith. This gives us a total of one hundred and seven cases of alarming post-operative tonsillar hemorrhage with thirteen deaths.

I have tabulated the cases of hemorrhage since 1904, using the same scheme as Wright and Smith, in order to bring the subject up to date. This table will be found at the end of the paper.

Of course, instances of many grave tonsillar hemorrhages and some cases of death from hemorrhage never reach print. The reports of alarming hemorrhages from Europe are not without interest. For example, Chiari[9] states: "Among six hundred tonsillotomies performed annually for a period of nine years he did not have a single death from hemorrhage. Yet there were twenty-seven cases of alarming bleeding, usually spurting arteries in the tonsillar pillar. The bleeding was sometimes stopped by ice, sometimes by the glavanocautery, but most often by compression with the tonsil hemostat, which he never left in place longer than twelve hours."

Again, Burack[10] reports the occurrence of but three dangerous post-operative tonsillar hemorrhages in a series of over two thousand tonsil operations. These cases all recovered.

At the Manhattan Eye, Ear, andThroat Hospital between twenty-three and twenty-four hundred adenoid and tonsil operations are performed annually—an average of almost two hundred cases a month. The house surgeon of that institution who graduated at the beginning of the year told me his staff was called to the bedside to treat on an average of from eight to twelve cases of severe post-operative bleeding a month.

Many of these hemorrhages cease if a gauze pad, soaked in gallic and tannic acid solution is held on a sponge holder firmly against the tonsillar region for a few moments. In others it is necessary to insert two or three Michel sutures.

These statistics, compiled from various sources, are surely convincing proof that the tonsil operation is often attended with great danger to the health as well as the life of the patient, from the possibility of post-operative bleeding.

We shall now consider the etiological factors which tend to induce hemorrhage.

1. Age. Our statistics show that post-operative tonsillar hemorrhage is more frequent in adults than in children.

2. Sex. Alarming bleeding is more common in males than in females. Of thirty-one cases in one series where the sex was mentioned, twenty occurred in males. In Smith's report, among fifty-four cases only eight were women.

3. Anemia is a frequent cause of bleeding, and should always be looked for. The writer has noticed that flabby, pale children at the age of puberty are especially apt to bleed profusely.

4. Menstruation and pregnancy are two conditions which especially predispose to post-operative bleeding. Marschik and Otto J. Stein each report cases of alarming hemorrhage occurring in menstruating women. One of these patients also suffered from nephritis. (See table.)

5. Arteriosclerosis and nephritis naturally predispose to hemorrhage. It must be remembered, in this connection, that the former condition sometimes occurs in young adults. The writer has seen two advanced cases of arteriosclerosis in young adults in the third decade, one in a man and the other in a young woman.

6. Fibroid tonsils, if operated upon, are more likely to be followed by severe hemorrhage than the simple hypertrophied variety. Their fibroid tissue interferes with the contraction of the arterioles.

7. Acute inflammation of the tonsils is a contraindication to operation until several weeks after the

TABLE OF CASES OF SEVERE TONSILLAR HEMORRHAGE REPORTED FROM 1904 TO JAN 1, 1912.

Reported By	Patient's Age	Sex	Disease	Instruments Used	Result	References and Remarks	Methods Used for Control of Hemorrhage
L. Katz					Recovery	Monat. für Ohren. 1904, No. 11, p. 496	Compression with Miculicz clamp
E. J. Brown	28	Male	Fibrous tonsils	Bishop tonsillotome	Recovery	Laryngoscope, 1905, p. 106	Digital compression
E. J. Brown	33	Female	Submerged tonsils	Tonsil separator snare	Recovery	Laryngoscope, 1905, p. 106	Hemorrhage 15 days after operation
E. J. Brown	6	Female		Snare	Recovery	Laryngoscope, 1905, p. 106	Hemorrhage 2 days after operation
Chevalier Jackson	20	Male			Recovery	N. Y. Medical Record, 1907, p. 303	Tonsillectomy 4 hrs., since then vomiting great quantities of blood, external carotid ligated. Family history of hemophilia
W. E. Bennett	21	Female	Hypertrophy	Mackenzie tonsillotome	Recovery	Midland Med. Jour., 1894, iii, 35	Suture of the pillars with silk
H. Jarecky	10	Female			Recovery	Med. Record, 1904, p. 695	Spurting vessel twisted with long artery clamp.
Harland	14	Female	Fibrous tonsil	Matthieu tonsillotome and scissors	Recovery	Laryngoscope, 1904, p. 449	Finger pressure. Pacquelin cautery.
L. C. Cline	5	Male	Hypertrophy	Mackenzie tonsillotome	Recovery	Larynogoscope, 1904, p. 921. Grandfather a bleeder.	Adrenalin, ice bag, Monsel's solution; chromic acid, salt solution by rectum, etc.
Marschik		Female			Recovery	Semon's Centralblatt, 1910, p. 551. Patient had chronic nephritis and was menstruating	Pillars sutured with Schureink's clamp on one side, other side external carotid artery ligated
S. M. Burack	13	Female	Hypertrophy	Matthieu tonsillotome	Recovery	Zeitsc. fur Laryngolgie, 1910-11, p. 477	Ice, tannin, peroxide, styptics. Miculicz hemostat
S. M. Burack	4	Male		Matthieu tonsillotome	Recovery	Zeitsc. fur Laryngologie, 1910-11, p. 477.	Hemorrhage 4.5 hrs. after operation; ceased after patient fainted
S. M. Burack	26	Male		Matthieu tonsillotome	Recovery	Zeitsc. fur Laryngologie, 1910-11, p. 477	Secondary hemorrhage, controlled by digital compression 1 hour
H. A. Barnes	6				Recovery	Bost. Med. & Surg. Jour., 1911, p. 119	Pillars sutured with aneurysm needle. Child considered hemophilic.
Johnston	17	Male		Tonsil cauterized with galvano cautery	Fatal	Rev. Heb. de Laryngologie, 1906, p. 545.	
Gerhard H. Cocks	Adult	Male	Fibroid tonsils	Snare	Recovery	Profuse bleeding from right side 1 hr. after operation	Miculicz hemostat, under extremely unfavorable surroundings, tenement house, poor light, no assistant
J. C. Henks	16	Male	Fibrous tonsils	Tonsillotome	Recovery	Ann. Otol. Rhin. & Laryng., 1908, J. C. Henks, p. 505	Secondary hemorrhage day after operation; controlled by pressure with specially devised clips
Otto J. Stein	20	Female	Diseased	Knife and scissor dissection	Recovery	Laryngoscope, 1908, p. 387. Patient was later found to be in 2d day of menstrual period. Primary bleeding, persisting for several hours.	
G. Goldschmidt	12	Female			Recovery	Semon's Cent., 1909, p. 539	Secondary hemorrhage several hours after operation. Controlled by adrenalin
O. Wilkinson	Adult	Female	Diseased tonsils	Matthieu tonsillotome	Recovery	Jour. Am. Med. Assn., Aug., 1907, p. 497	Suture of anterior and posterior pillars over a cotton pad, placed in tonsillar fossa
O. Wilkinson	Adult	Female	Diseased tonsils		Recovery	Jour. Am. Med. Assn., Aug., 1907, p. 497	Severe secondary hemorrhage, adrenalin, styptics, styp. collodion, bleeding finally ceased spontaneously.
Bor[illegible]					Recovery	Semon's Cent., 1908, p. 539	Very profuse arterial hemorrhage from inner surface of anterior pillar, which finally ceased spontaneously when patient fainted.
L. Cohen	23	Female	Hypertrophy	Tonsils dissected out with knife and forceps	Recovery	Arch. f. Laryn. u. Rhin., 1909, p. 481. Local Anesthesia. Secondary hemorrhage, attributed to slough caused by Monsel's solution	Profuse bleeding, both sides at conclusion of operation, left side controlled with Monsel solution, right side with Boetcher's hemostat, secondary hemorrhage, right side on 9th, 10th, 12th days, finally controlled by suturing tonsillar pillars. Saline infusions
L. Cohen	36	Male		Tonsils and capsules dissected out with knife	Recovery	Arch. f. Laryn. u. Rhin., 1909, p. 481	Secondary hemorrhage from spurting vessel deep in right fossa, controlled by clamp and ligature, small vessels in supratonsillar fossa ligated
Hurd (Operated by Colleague)	Child			Tonsillotome. Patient almost dead when seen by Dr. Hurd.	Fatal	Laryngoscope, 1910, p. 674. Reported by Hurd	Clamp on tonsil, bleeding persisted, patient dying before transfusion could be given.
Waterman	20	Female		Tonsillotome	Recovery	Laryngoscope, 1910, p. 761. Reported by Waterman	Primary hemorrhage, also secondary hemorrhage 12 days after operation due to small spurting artery in tonsillar fossa, controlled by pressure with cotton applicator.
Lederman	Adult	Male	Hypertrophy	Galvanocautery snare	Recovery	Laryngoscope, 1910, p. 762, Lederman	Astringent saturated alum solution
Coffin					Recovery	Laryngoscope, 1910, p. 762, Coffin	Clamps to tonsil, bleeding several days suture of anterior and posterior pillars, ligation of carotid
Delavan	8	Female		Tonsillotome	Recovery	Laryngoscope, 1910, p. 766	Primary capillary oozing, recurring later with con. severity after swallowing; controlled by rectal feeding
Delavan	Middle aged	Male	Hypertrophy	Matthieu tonsillotome	Recovery	Laryngoscope, 1910, p. 766. Venous plexus outside of tonsil wounded	Primary bleeding, checked by holding ice in cavity
Delavan	25	Male		Mackenzie tonsillotome	Recovery	Laryngoscope, 1910, p. 766. Patient completely exsanguinated; secondary hemorrhage of several weeks duration	Cold, pressure, cautery, hemostatics. Patient finally fainted, and hemorrhage ceased
James E. Newcomb		Male		Mackenzie tonsillotome. Separation of pillars	Recovery	Personal experience with tonsillar hemorrhage, paper before Section on Laryngology, N. Y. Acad. Medicine, Jan., 1910	Secondary hemorrhage 4 hrs. after operation. Pressure over tonsil, fossa and adrenalin

TABLE OF CASES OF SEVERE TONSILLAR HEMORRHAGE REPORTED FROM 1904 TO 1910 — CONCLUDED

Reported By	Patient's Age.	Sex.	Disease	Incidents Used	Result	Reference and Remarks	Methods Used for Control of Hemorrhage
James E. Newcomb....	55	Male		Malignant tonsillotome; Pillars separated	Recovery	Personal experience with tonsillar hemorrhage; paper before section on Laryngology, N. Y. Acad. Medicine, Jan., 1910.	Adrenalin; local pressure
James E. Newcomb	Young adult	Male		Malignant tonsillotome; Pillars separated	Recovery	Personal experience with tonsillar hemorrhage; paper before section on Laryngology, N. Y. Acad. Medicine, Jan., 1910.	Secondary hemorrhage; quiet by patient vomiting
James E. Newcomb...	8	Male	Hypertrophy	Malignant tonsillotome; Pillars separated	Recovery	Personal experience with tonsillar hemorrhage; paper before section on Laryngology, N. Y. Acad. Medicine, Jan., 1910.	Adrenalin and local pressure sa line intravenously into leg
James E. Newcomb....	Child	Female		Malignant tonsillotome; Pillars separated	Recovery	Personal experience with tonsillar hemorrhage; paper before section on Laryngology, N. Y. Acad. Medicine, Jan., 1910.	Consid. primary bleeding; continued during night. Transfusion from mother's radial artery, ligation of carotid

subsidence of the inflammatory process. Moure[11] reports a case of hemorrhage after tonsillotomy, during active inflammation of the tonsils.

8. Acute infectious diseases sometimes cause tonsillar bleeding if the patient is operated upon just before the onset. F. E. Hopkins reports a case of severe bleeding on the first and second day after operation. The child developed measles on the third day.

9. Syphilis may be a cause of tonsillar bleeding. Operations on syphilitic tonsils should therefore be avoided.

10. Abnormalities in the distribution of the blood vessels supplying the tonsil are often accountable for tonsillar hemorrhage.

The normal blood supply of the tonsil is given as follows by G. Seccombe Hett,[12] whom I quote verbatim: "The vessels supplying the tonsils are the ascending palatine and tonsillar branches from the facial, the ascending pharyngeal from the external carotid, branches from the dorsalis linguæ from the lingual, the descending palatine from the internal maxillary. The branches from the facial are the largest, and enter the capsule after piercing the superior constrictor. They reach the capsule in its lower part, and running upwards, ramify on its outer surface. They then divide into branches which pass into the tonsil along the connective tissue septa, with the exception of some which pierce the capsule of the tonsil at once to supply the lower portion of the tonsil. The branch from the descending palatine pierces the upper part of the capsule and supplies the imbedded pars palatina and the posterior pillar. One or two branches of the dorsalis linguæ reach the lingual surface of the tonsil, and supply the anterior pillar, the plica triangularis, and the lingual prolongation."

E. Henking[13] states that the facial artery often has an abnormal position, and is therefore injured when operating. In Demme's[14] experience the lingual artery often occupies an abnormal position, and is consequently injured. Leffert[15] holds the same view in regard to the ascending pharyngeal artery. The wounding of the large venous plexus at the lower and outer border of the tonsil has been a cause of hemorrhage (Harmon Smith). We have already seen that an abnormally placed internal carotid artery may be the cause of injury and hemorrhage (Beclard's and Broca's cases).

11. Traumatism, especially injury of the tonsillar pillars and extratonsillar tissue (particularly the superior constrictor muscle), is naturally a prolific source of hemorrhage. This can only be remedied by care on the part of the operator. It seems to the writer that this factor is largely responsible for the increased proportion of hemorrhages after tonsillectomy as contrasted with the old-fashioned tonsillotomy.

12. The hemorrhagic diathesis and hemophilia are a much-discussed cause of post-operative bleeding. Damianos and Hermann[16] in 1902 wrote that they found in the literature of the last sixty years one hundred and fifty cases of severe tonsillar hemorrhage. They stated that the hemorrhagic diathesis could be considered the cause of the excessive bleeding in but seven of these one hundred and fifty patients. On the contrary, a careful inspection of the wound cavity in the majority of instances showed a spurting artery to be the cause of the hemorrhage.

While it is true that many hemorrhages, which depend upon purely local conditions, are wrongfully attributed to hemophilia, yet hemophilia is a subject which demands our earnest consideration.

For several years it has been customary to give lactate of calcium to prevent post-operative tonsillar hemorrhage, by some operators as a routine measure in all cases preceding operation; by others, both before operation and during active hemorrhage, by rectal or hypodermic injection. This procedure followed the published experiments of Sir A. E. Wright on the coagulability of the blood and the influence upon the same of the soluble salts of calcium.

Wright and Paramore[17] in 1905 published a series of experiments showing that the coagulability of the blood was markedly increased by the administration by mouth of sixty grains of calcium lactate: In observation 1, from 1 minute 50 seconds to 30 seconds; in observation 2, from 2 minutes to 40 seconds; in observation 3, from 1 minute 50 seconds to 22 seconds, etc. They also determined that the dosage necessary to be employed where it was desired to maintain a permanently high level of blood coagulability was fifteen grains of calcium lactate three times a day.

On the other hand, Dr. J. Addis,[18] after a most exhaustive series of experiments, says, "While the amount of ionizable calcium in the blood may be increased by dosing with calcium salts and lessened by giving citric acid, yet the increase or decrease so induced, even when large doses are given, is considerably less than that required to alter the blood's coagulability." He says the erroneous statements

formerly published are due to faulty technique. In the first place, in Wright's coagulometer, the arrangements for maintaining a constant temperature are not satisfactory. Addis found that slight variations in temperature caused considerable variation in the rate of coagulation. Wright's second error, to quote Addis, "is in taking the first appearance of fibrin, on blowing the blood from Wright's capillary tube, as an indication of coagulation. The appearance of fibrin is a phenomenon which is due to the chance concomitance of external physical conditions, and one which bears no relation to the coagulation of the blood as a whole." Addis found that the average coagulation time is seven and one-half minutes in a healthy man. A case where the coagulation time was recently tested for me by Dr. Strong, pathologist of the Manhattan Eye, Ear, and Throat Hospital, showed coagulability four and one-half minutes to five minutes before injection of calcium lactate; five minutes to five and one-half minutes after taking fifteen grains t.i.d. for two days.

At any rate, the administration of calcium lactate does no harm, and may perfectly well be employed, if so desired, in doses of fifteen grains t.i.d. for twenty-four hours preceding operation for adults, and in five to ten-grain doses for children. Although we can no longer expect to increase the coagulability of the blood by giving the soluble salts of calcium, fortunately another remedy has come to us which offers much more both in preventing hemorrhage and in the treatment of active bleeding. I allude to fresh blood serum and transfusion. Weil (quoted by Moss and Gelien[19]) states "that the hereditary and spontaneous forms of hemophilia can be differentiated in origin, severity of clinical observations, character of the blood, and the mode of coagulation. The faulty coagulation in the hereditary form is referred to the presence in the blood of anticoagulants; in the sporadic form, to the absence of substances normally present and essential to coagulation."

Weil recommends as a cure for the sporadic type of hemophilia, and as the best agent for treating hereditary hemophilia, subcutaneous injections of 30 c.c. or intravenous injections of 15 c.c. of fresh human or animal serum. Moss and Gelien[19] have collected a series of cases of hemophilia and the hemorrhagic diathesis successfully treated by serum and transfusion. A few of these are here reported.

1. Thrombur's case of hemophilia successfully treated by injections of sheep and rabbit serum.

2. Welsh cured two cases of hemorrhage in the new-born by fresh human serum. He used 10 c.c. doses, averaging about 80 c.c. in four days.

3. Schwartz and Ottenberg transfused a child eleven days old suffering from melena.

4. Mosenthal cured a case of melena neonatorum by transfusion.

5. Moss and Gelien stopped severe intestinal hemorrhages in a case of typhoid fever by normal horse serum injected intravenously.

6. Clement F. Theisen[20] reports several cases of hemorrhage treated with serum in conjunction with local measures: (*a*) Boy six years old, post-operative tonsillar hemorrhage, treated by pressure and serum (diphtheria antitoxin); (*b*) man, forty-four years old, streptococcus infection of throat; excessive bleeding following incision of edematous tissue relieved by 20 c.c. antistreptoccus serum; (*c*) nasal hemorrhage in a woman fifty years of age relieved by injection of 10 c.c. normal horse serum.

7. At the present time the writer has under observation at the Manhattan Hospital, in Dr. Chappell's service, a case of hemophilia which he has treated by injections of blood serum and transfusion. This case will be reported in detail elsewhere by Dr. W. F. Chappell.

Moss and Gelien prefer fresh rabbit serum, and consider it slightly, if at all, toxic for the human being. They point out that if horse serum is used one should first make sure that the patient has not been previously sensitized by an injection of diphtheria antitoxin on some former occasion. They prefer the intravenous method to the subcutaneous, and state that none but fresh serum, prepared immediately before use, should be used.

What may we do to prevent hemorrhage in our tonsil operations?

In the first place, the tonsil operation is essentially a hospital operation. The patient should be regularly admitted to a hospital (unless the same facilities, including the services of a trained nurse) are obtainable at the patient's home. The heart, lungs, kidneys and arteries should be examined before operation. If indicated, the blood pressure should be estimated. The temperature is taken just beforehand, and operation deferred if it registers over 101° F. in the rectum. A history of hemophilia should naturally be inquired for, and the surgeon should take care not to operate during early pregnancy or during the menstrual period. If hemophilia is suspected, and the operation imperative, the coagulation time of the blood should be raised to the normal by injecting blood serum before operation. Of course, in a large clinic where many of the patients do not speak English, we are obliged to take our chances in regard to hemophilia. Barnes[21] says "Three places in the sinus tonsillaris are especially prone to bleed after tonsillectomy, viz., the anterior and posterior pillars at their lower halves and the base between the pillars." Barnes says "The reason for this is that the larger vessels from the surrounding tissues enter the tonsil at its lower segment." These structures should be handled carefully.

The sucking of ice directly after operation, as well as gargling with ice water or other liquids, increases the bleeding and should be prohibited.

The application of ice cloths to the face at the conclusion of adenoid and tonsil operations does much to arrest the ordinary bleeding attendant upon these operations. The face is slapped vigorously with a towel wrung out in ice water. This method was first introduced a number of years ago by Dr. W. F. Chappell, and is now used as a routine measure in the Manhattan Hospital operating room. I think it does much to promote clotting and prevent post-operative hemorrhage.

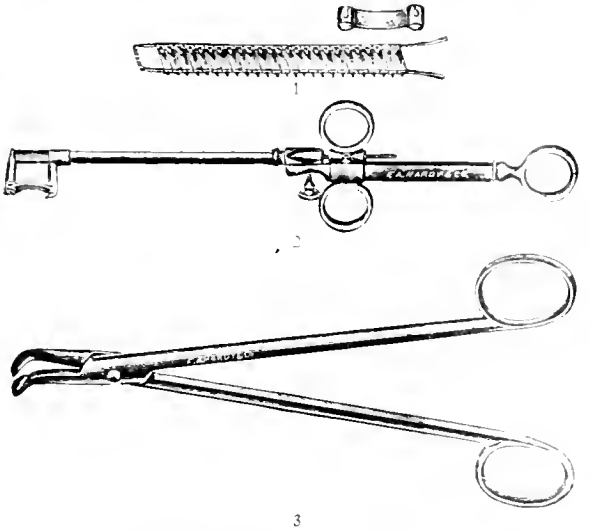
In considering the local treatment of post-operative tonsillar hemorrhage I shall mention only those methods I believe most useful.

When called to see a patient bleeding after a tonsil operation, under good illumination the tongue is depressed and the anterior pillar pulled aside so as to expose the whole raw area. If a bleeding spot or vessel can be made out it should be clamped with a long artery clamp and ligated, if possible. If we are called to a house or flat where there is very little light or assistance the best we can do is to insert a Mikuliez or Hurd tonsillar hemostat, an instrument which once played me a good turn under exactly these conditions. The tonsillar hemostat should not be left in place longer than a few

hours, at most twelve, as a slough may result, leaving an opening from the skin through into the pharynx.

In the hospital, if no bleeding vessel can be seen, pressure with a sponge on a sponge-holder saturated with gallic and tannic acid for a few minutes, may stop the hemorrhage. If this measure fails the tonsillar pillars should immediately be sutured with Michel's metal clamps. These clamps have proven very satisfactory in my hands. I believe they will replace all other local measures for the control of severe post-operative tonsillar bleeding. Before the sutures are inserted a small gauze pad, saturated with gallic and tannic acid, or covered with powdered thrombokinase (Strong[22]) should first be placed in the tonsillar fossa. If the metal sutures are used they should be removed in twelve hours.

If the hemorrhage persists after the proper application of the metal sutures we are probably dealing with a hemophile, and blood serum should be promptly used, or transfusion carried out, and the carotid artery ligated. Either the external carotid may be ligated, or, if there is urgent need of haste, the common carotid may be tied. Jackson[24] ligates



3

Wagener-Michel Metal Tonsillar Clamps.
1. Clamps for suturing.
2. Suture clamping instrument.
3. Clamp remover

the external carotid, and has performed this operation to arrest tonsillar hemorrhage seven times.

Henking[25] in 1905 stated that ligation of the common carotid on account of uncontrollable hemorrhage from tonsillotomy has been practised seven times by Guntner, Hada Siden, Sands, Fuller, Arbuthnot, Lane, Walker J. Downie and Mosetig-Moorhof. In the first five cases cited the hemorrhage definitely ceased after ligation, and the patients recovered, although two were apparently hemophiles (Guntner's and Fuller's cases). One of the two cases that died (Mosetig-Moorhof's) died of sepsis, sixteen days after the operation. In the other case that died (Downie's), Henking could not ascertain the cause of death, as he did not have access to the original reference.

In all these cases the common carotid was tied, apparently because it is more easily and quickly reached than the external carotid. In none of these seven cases did the ligation of the common carotid have any unfavorable influence upon the brain function.

REFERENCES.

1. Bardeleben: Lehrbuch der Chirurgie und Operationslehre, 1875, 7 Augsgabe, Bd. 113.
2. Downie, "Hemorrhage Following Tonsillotomy," *Edin. Med. Journal*, 1886-87, xxxii.
W. E. Casselberry: "Abscission of the Tonsil. Report of a Fatal Case," *Chicago Med. Recorder*, January, 1893.
4. Damianos und Hermann: *Wien. klin. Wochen.*, 1902, p. 225.
5. Johnston: *Rev. hebd. de Laryngologie*, 1900, p. 545.
6. Hurd: *Laryngoscope*, 1910, p. 674.
7. Harmon Smith: "Alarming Hemorrhage Following Tonsillotomy," *Laryngoscope*, February, 1904.
8. Wright: *N. Y. Med. Journal*, Aug. 30, 1890.
9. Chiari: *Semon's Centralblatt*, 1900, p. 537.
10. Burack: *Zeitschrift für Laryngologie*, vol. 3, 1910-11.
11. Moure: *Journal of Laryngology*, No. 8, 1890.
12. G. Seccombe Hett: "Anatomy of the Capsule of the Tonsil," *Journal of Laryngology, Rhinology, and Otology*, November, 1910, p. 561.
13. E. Henking: *Archiv für Laryngologie und Rhinologie*, 1905, p. 64.
14. Demme: *Wien. klin. Wochen.*, 1901, M. 48 Uber Gefassanomalien im Pharynx.
15. Lefferts: *Archives of Laryngology*, vol. 3, 1882, No. 1.
16. Damianos und Hermann: *Wiener klin. Wochen.*, February, 1902, p. 226.
17. Wright and Paramore: *The Lancet*, 1905, p. 1099.
18. Addis: *Quarterly Journal of Medicine*, January, 1909.
19. Moss and Gelien: Johns Hopkins Hospital Bulletin, July, 1911, p. 272.
20. Clement F. Theisen: *Annals of Otology, Rhinology and Laryngology*, September, 1911, p. 595.
21. Barnes: "Hemorrhage after Tonsillectomy," *Boston Med. and Surg. Journal*, 1911, p. 119.
22. Strong: "The Preparation and Use of Thrombokinase," *The Laryngoscope*, February, 1911.
23. E. Henking: *Archiv f. Laryngo'*, 1905, p. 64.

137 East Fifty-fourth Street.

ON THE IDENTITY OF TYPHUS FEVER AND BRILL'S DISEASE.*

By N. E. BRILL, A.M., M.D.,

NEW YORK,

PROFESSOR OF CLINICAL MEDICINE IN THE COLLEGE OF PHYSICIANS AND SURGEONS, COLUMBIA UNIVERSITY OF NEW YORK.

The widely adopted conclusions of Drs. Anderson and Goldberger[1] that their experimental work has proven the identity of the disease which was described by me as "an acute infectious disease of unknown origin" with typhus fever has induced me to present what seems to me to be serious objections to these conclusions. I do this with the view of directing the attention of medical men to the fact that these conclusions may have been too hastily adopted.

Perhaps it will be wise to recapitulate the experimental facts which induced these well-known and exceptionally able investigators to arrive at their judgment. Briefly they are as follows: Monkeys when inoculated with the blood of a human typhus fever patient develop after a few days a type of temperature quite similar in its course and decline with the fever of the human patient. Blood from a monkey thus inoculated will produce, when introduced into a second monkey, a similar type of fever and so on through successive serial inoculations.

A monkey thus successfully inoculated is immune to subsequent inoculations with typhus blood.

Monkeys inoculated with virulent blood from a patient with Brill's disease develop in a few days

*May I be pardoned for using the name which has been so generally given to this infectious disease? I prefer to speak of this syndrome as an acute infectious disease of unknown origin until its causative agent and identity are conclusively established, and have here not consulted my preference in order to save labor to the writer and printer.

a fever similar in course to that in monkeys inoculated with *Mexican* typhus fever. The blood of such monkeys when drawn at the height of the fever and inoculated into other monkeys will produce a similar type of temperature and so on through successive generations. Such inoculated monkeys are immune to subsequent inoculations with virulent blood from a case of Brill's disease.

Monkeys inoculated with blood of Brill's disease are immune to inoculation with Mexican typhus blood and, *vice versa*, monkeys inoculated with Mexican typhus are immune to subsequent inoculation with Brill's disease.

The natural conclusions of Drs. Anderson and Goldberger from these premises is: First, that there is an immunity conferred by each disease against the other; second, therefore the two diseases are identical. It is the second part of this conclusion which, I think, we are, in the present state of knowledge, not justified in accepting. If Drs. Anderson and Goldberger had gone no further than to say that they had proved a definite relationship between these diseases to be established, no issue could have been taken with their conclusions. But there is a great difference between kinship and identity of disease.

We are justified in saying that there is a relationship between typhoid fever and paratyphoid fever. Nobody claims that they are identical, because they differ clinically and the organisms which are the respective etiological factors productive of the respective diseases, while related organisms, show biological and cultural differences sufficient to differentiate them.

The clinical pictures due to infection with these related organisms, the course of the diseases induced by them, and the epidemiological factors, have very much in common, yet differ in many respects. In fact, before we had any knowledge of the history of the organisms which produced these diseases, typhoid and paratyphoid fever were not differentiated but existed in the minds of medical men only as typhoid fever. We all accept them now as separate, *related but not identical* infections.

I have selected these related diseases because the recent work of Metchnikoff and Besredka[2] in their studies of vaccination against typhoid fever have discomfited our attitude toward the question of specificity of immunity. It has previously been held that immunity against a disease could be established by such specific disease and by no other. Naturally with this in view, Drs. Anderson and Goldberger were within the realm of logical defense in concluding as to the identity of Brill's disease and Mexican typhus fever, because they had established that an immunity exists between Mexican typhus fever and Brill's disease, therefore on account of this immunity they affirmed that the two diseases were identical.

Metchnikoff and Besredka[3] have proved, however, that chimpanzees immunized against paratyphoid fever are immune to typhoid fever inoculation. In the light of the masterful experimental results of these brilliant investigations, are we justified in concluding that on account of the immunity of chimpanzees so inoculated typhoid fever and paratyphoid fever are identical? The same reasoning will apply with equal force to Brill's disease and Mexican typhus fever. In fact, the clinical and epidemiological differences, often referred to in my previous contributions to the subject,[4] are even greater between Brill's disease and Mexican typhus than between typhoid and paratyphoid fever and would in themselves cause a hesitancy in concluding that these two diseases were identical. In view therefore of this recent work of Metchnikoff, I think it would be wise to reserve judgment, and not hastily conclude that Brill's disease and Mexican typhus fever are *identical* diseases.

Clinically and empirically we have an analogous condition in vaccinia and variola, as they occur in man. While it is possible that vaccinia is a variola modified by bovine transmission, or what is even more remote if possible, that variola is a vaccinia modified by human transmission, nobody believes that these two infections are identical. Yet inoculation with vaccinia immunizes the individual against variola.

Further, no conclusive proof has yet been offered which proves the *identity* of *European* typhus and Brill's disease.

Personally I believe that European typhus fever, Mexican typhus fever, and Brill's disease are related fevers which subsequent development along the line of acquisition of knowledge as to their infective agents will alone clear up. It is premature to speak conclusively about the identity of diseases with such marked differences as typhus fever and Brill's disease before anything is definitely known about their causative agents.

REFERENCES.

1. Public Health Reports, vol. xxvii, No. 5, Feb. 2, 1912. Government Printing Office, Washington, D. C.

2. "Recherches sur la fièvre typhoïde expérimentale," par E. Metchnikoff et A. Besredka. Annales de l'Institut Pasteur, No. 3, p. 193, March, 1911.

3. "Des vaccinations Antityphiques: Deuxième Mémoire," Ann. de l'Institut Pasteur, No. 12, p. 865, December, 1911.

4. (*a*) "An Acute Infectious Disease of Unknown Origin," *Am. Journ. of the Med. Sciences*, April, 1910. (*b*) "Pathological and Experimental Data," etc., *Am. Journ. Med. Sciences*, August, 1911.

48 West Seventy-sixth Street

THE DIAGNOSTIC USE OF GONOCOCCUS VACCINE FOR GONORRHEAL INFECTIONS.

By EUGENE H. EISING, M.D.,

NEW YORK,

ADJUNCT SURGEON, MOUNT SINAI HOSPITAL; CHIEF OF CLINIC, GENITO-URINARY OUT-PATIENT DEPARTMENT, MOUNT SINAI HOSPITAL.

The recent publication of "A Cutaneous Reaction in Gonococcal Infections" by Dr. Ernest E. Irons of Chicago (*Journ. Am. Med. Assoc.*, March 30, 1912) has, no doubt, stimulated many others to explore this diagnostic field. As Irons mentions, Bruck (*Deutsche med. Woch.*, 1909 xxxv, 470), and Reiter (*Zeit. f. Geburt. u. Kind.*, 1911, lxviii, 471), besides himself, have noted a cutaneous reaction following the injection of gonococcus vaccine in individuals suffering from a gonorrheal infection. Bruck noted this reaction in epididymitis and Reiter in pelvic infections in women.

Much credit is due to Irons in attempting to generalize from these observations and to employ these facts for diagnostic purposes. Unfortunately in Irons' short article he fails to describe in detail the method he employs. Irons says, "I have found that a well-defined cutaneous reaction, similar to the cutaneous tubercular reaction, occurs in cases of gonococcal infection, when the extract is introduced into the skin by the method of von Pirquet." The method of von Pirquet is a method of scarification

and is epidermal. Notwithstanding this fact Irons speaks of the control showing "only the point of needle puncture." It is, therefore, difficult to understand just what method Irons has employed. Neither is it stated what "extract" he has used in his work.

The appearance of Irons' article suggested to me to try out the value of gonococcus vaccine as a diagnostic measure, using it epidermally, intradermally, and subdermally. My first cases were all done in the genitourinary department of the Dispensary of Mount Sinai Hospital in which I used a vaccine of the strength 1 c.c. = 100,000,000, prepared by Dr. Bernstein of the Pathological Department. It soon became apparent that the intradermal injection was followed by a much more pronounced reaction than either the epidermal or the subdermal. In fact the epidermal inoculation was followed by no reaction whatsoever, except the marks of scarification, and the subdermal usually by a diffuse redness. The intradermal on the other hand, with great regularity, was followed by a distinct red papule at the site of injection often surrounded by a diffuse red areola. The papule measures about 3 to 5 mm. in diameter and is slightly tender. The areola when it appears measures from 5 to 10 mm. Using normal salt solution as a control, no reaction occurs, demonstrating that the reaction is not due to mechanical effects. The injection is made within the skin layers and a small bleb should appear immediately. The observations of the papule were all made from 12 to 24 hours after inoculation. The papule endures for a variable period and vanishes within a week.

Through the courtesy of Dr. Frauenthal, a small series of cases was tried at the Hospital for Deformities and Joint Diseases upon a number of cases of chronic inflammatory joint conditions. In this series Mulford's mixed polyvalent gonococcus vaccine was employed. The tests upon these cases were of no value owing to the fact that large erythematous and edematous areas followed the use of this mixed vaccine, and the papule was less characteristic. Subsequently Mulford's pure gonococcus vaccine was used in the cases at the end of my series with the result that the characteristic papule appeared.

The series herewith appended, including 30 cases, has agreed strikingly with the clinical and bacteriological findings.

Case	Disease	Bacteriology	Reaction	Control
1	Chron. Gon. arthritis		Positive	Negative
2	Chron. Prostatitis	Gonococcus	"	"
3	Epididymitis of doubtful origin	"	"	"
4	Gonorrhea	Gon. not found	"	"
5	Prostatitis	Gonococcus	"	"
6	Gonorrhea	"	Doubtful	"
7	Epididymitis	Not found	Positive	"
8	Stricture of urethra	"	"	"
9	Prostatitis	"	"	"
10	Gonorrhea	Gonococcus	"	"
11	Gonorrhea	"	"	"
12	Gonorrhea	"	"	"
13	Prostatitis	"	"	"
14	Pyelonephritis	Not found	Negative	"
15	Gonorrhoea	Gonococcus	Positive	"
16	Gonorrhoea	"	"	"
17	Gonorrhoea	"	"	"
18	Renal Tbc.	"	Negative	"
19	Renal Tbc.	"	"	"
20	Tbc. Testis	"	"	"
21	Renal Tbc.	"	"	"
22	Impotence	"	"	"
23	Healthy man	"	"	"
24	Prostatectomy post-operative	"	"	"
25	Prostatectomy post-operative	"	"	"
26	Impotence	"	"	"
27	Gonorrhea	Gonococcus	Positive	"
28	Gonorrhea	"	Doubtful	"
29	Syphilis	"	Negative	"
30	Prostatitis	Not found	Doubtful	"

Although three cases out of a series of 19 which are clinically gonorrheal, react doubtfully to the intradermal injection, the test as a whole is more than significant and warrants further study. It is likely that the reactions stated as doubtful should be read as positive, and that their less characteristic papule is due to a non homologous strain of organism.

Cases 1 and 3, which both act positively to the cutaneous reaction, were also tested by means of the complement fixation test for gonorrhea, through the kindness of Dr. Kaliski and react positively also to that test. These two cases are of special interest, the one being an arthritis and the other an epididymitis in individuals who denied all possible gonorrheal contagion.

If further study bears out the value of this reaction, it will place in the hands of the practitioner a ready means of determining the nature of many an obscure lesion.

221 West Seventy-eighth Street.

THE ABUSE OF THE EDGE.

By DOUGLAS H. STEWART, M.D.,

NEW YORK.

As a type of edged tools let us take the surgeon's scalpel. This is a fine instrument only adapted for subdermic and soft tissues. But it is often used upon leathery skin, tough periosteum, or hard bone; not to mention such acts of vandalism as sharpening lead pencils, erasing ink spots, or cutting string.

Now if an edge is dull or broken it is simply unfitted for the purpose for which it was devised, and an expensive tool is, more or less, completely ruined. I have had made for me by the Betz Co. some knives which are termed generally "scalpel savers," because their sphere is the one which is inappropriate, and consequently damaging, to the delicate cutting edge of the "scalpel."

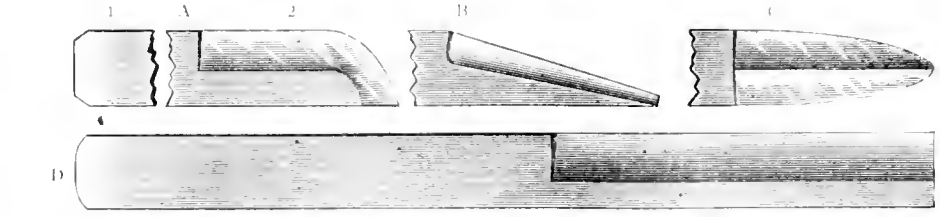
They are inexpensive and very durable. They are bigger, stronger, and heavier than the scalpel and will take a razor edge. They may be of any desired shape, but two models out of many will show the principle. They are strip steel; and if an edge is nicked or broken grind a new one. The most useful edges are straight lines, since these may be easily sharpened by a nurse, an orderly, or a boy. Take a piece of wood 9 inches long, 3/4 in. wide, and 3/16 in. thick. Now with a knife shape any kind of knife you choose. Imagine the wood to be well tempered strip steel; then, for instance, let us make a bone and periosteum knife, or a skin knife, as shown in the illustration. By blunting the point of the skin knife on an ordinary stone, e.g. a window sill, an excellent cervix knife is made. Much handier to use than a scalpel. The edge is made at such an angle that the hand of the operator is raised from the skin or does not come in contact with the vaginal wall. You can thus have the field in sight at all times as you can look under or over the hand, and the absence of shadow on one's work is desirable.

One may do anything with a scalpel saver (peel potatoes, open bundles) and with a few minutes and a good oil stone restore the edge to a first-class condition. I have one on my desk shaped like a double ink-eraser (see illustration C) at one end and with a hole through the other. It has been much and roughly used but appears quite right. This shape was planned for the operating room of

a hospital and it is always handy hanging on the wall. Far be it from me to accuse any nurse of anything, especially if she be very efficient and capable, with red hair and temper to match; but I cannot understand how it is that scissors and knives are all in so much sharper condition since that scalpel saver hung on the wall. It must be just a "happen so."

The point that I wish to emphasize is that you can have your "scalpels" sharp and can keep them so with little trouble if you use them with ordinary care and for grosser purposes employ a "scalpel saver."

78 West Eighty-sixth Street.



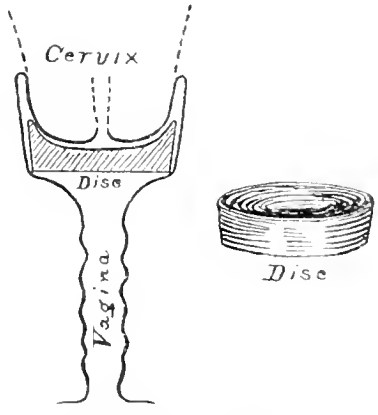
A, all around knife, bone, skin, etc. B, skin or cervix; C, desk or operating room knife; D, Thiersch's razor knife.

THE USE OF MEDICATED SUPPOSITORIES FOR VAGINAL APPLICATION.

By GEO. W. KOSMAK, M.D.,

NEW YORK.

The employment of various drugs to influence vaginal or pelvic inflammatory conditions constitutes an important part of gynecological office practice. The usual measures include the application of ichthyol and its derivatives combined with glycerin, in the forms of saturated tampons which are introduced with the aid of a bivalve speculum. There is no doubt that the depleting effect of the glycerin, particularly on various types of pelvic inflammation, is a very beneficial one, but particularly where this agent is combined with ichthyol the patients are very apt to complain of the usually profuse and annoying discharges that ordinarily accompany this form of treatment. With the idea of overcoming these objections, so-called vaginal suppositories have been devised of which the basis consists of boroglyceride, impregnated with a variety of astringent, sedative, or antiseptic substances. These are usually made in the form of a cylinder with rounded ends, or occasionally as flat disks. The shortcomings of these types of suppository must be evident to any one who has tried to use them, as it is a very difficult matter to apply them to the vaginal vault, even where they are partially retained in position by cotton tampons. One of the most ridiculous features in connection with the employment of these suppositories is their application by the patient herself, who is often directed by her physician to introduce one just within the ostium vaginæ on retiring, and as a consequence the supposedly beneficial effects are exerted in the perineal portion of the posterior vaginal wall. In order to be effective such suppositories ought to be kept in contact with the vaginal vault for a period of at least four or five hours, and this can only be done by adapting their shape to the region in question and by making them of such a size and consistence that they will dissolve slowly. If prepared in the form of a disk about three-eighths of an inch in thickness, slightly concave on one surface to admit the cervix, they can be readily enough introduced with the aid of a speculum, and after being placed against the cervix may be held there by one or two non-absorbent cotton tampons. If they melt slowly their medicinal effect is properly exerted in the region where it is required, and if the patient is directed to remove the tampons at the expiration of say, twenty-four hours, this will not be as disagreeable as with the use of the ordinary glycerin and ichthyol tampons. The accompanying sketch will aid in explaining the writer's suggestions, and it is to be hoped that some manufacturer will take up the matter and produce these articles for a practical trial by the profession.



Vaginal disc in position; it should be retained with a cotton tampon in the vagina.

23 East Ninety-third Street

The Preponderating Rôle of Perversions of Instinct in Mental Maladies.—M. Berillon divides all human instincts into four orders: instincts of nutrition, of conservation, of sociability, and of reproduction. All mental maladies result from derangements of these instincts. If one of these instincts is disarranged there results a loss of mental equilibrium. An obstacle to the satisfaction of an instinct causes a profound effect on the intelligence and sensibility. In any psychopath one should endeavor to find out the most marked imperfection in the realization of the instincts. The abnormal way in which he goes about the satisfaction of the instincts shows the psychopathic predisposition of an individual. There is an exaggeration or a lessening of these instincts; changes in nutritional instincts cause anorexia and sitophobia, gluttony, voracity and bulimia. Abnormalities of conservation cause impulsion to suicide, or anxiety and hypochondriasis. They may also cause parsimoniousness or prodigality. The social instinct when perverted causes sanguinary brutality or absurd sentimentalism. That of reproduction causes erotomania, heterosexual jealousy, or homosexual degradation. Among neuropaths, however serious be their functional troubles, the instinctive dispositions preserve their normal tendencies. There are no alterations or perversions of instincts. This is the means of differential diagnosis between psychopathies and neuropathies.—*Gazette des Hôpitaux.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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VITAL RESISTANCE OF PATIENTS.

With the great strides made in the technique of surgery in the last two decades there has developed an unfortunate tendency among many surgeons to look upon the surgical condition they are called upon to treat as something quite apart from the individual to be treated. Such surgeons examine the region of the appendix in a case of appendicitis, for instance, but do not look over the lungs or heart of the individual before advising immediate operation; still others are always ready to urge operation for a simple inguinal hernia, for a varicocele, for a chronic gastric ulcer, without considering whether the operation may not be a much graver source of danger than the morbid condition itself. However, there has recently developed the opposite tendency, which strives to counteract the unbounded enthusiasm of the technician for an immediate surgical interference, a tendency to study the patient as well as his disease, to consider the factors of safety present in the individual under consideration, and to take all possible means of increasing the chance of recovery from the operation itself as well as from the disease.

In a paper by Dr. Joseph C. Bloodgood, which embodies this tendency to a striking degree, in the May number of *Annals of Surgery*, the author insists upon the necessity of estimating the vital resistance of each patient, with the exception of those, of course, in whom no choice can be made because of the urgency of symptoms. He thinks that in the pre-operative interval physical rest must be obtained, the function of the kidneys ascertained, blood pressure recorded, and food and stimulants modified in kind and quantity to suit the individual's needs. Of equal importance is mental tranquillity and this must be obtained by natural allusions to the operation as simply a part of the general therapeutic procedure; in some cases the knowledge of its urgency should even be kept from such patients as may be thought to become too much frightened by the coming ordeal. Rest, then, physical and mental, fresh air, restricted diet, moderate catharsis, increased water, restriction or complete elimination of alcohol and tobacco are the pre-operative measures that conserve or increase the vital resistance of the operation.

During operation, anesthesia is the main item. Bloodgood speaks against trusting anesthesia to anybody but a physician; he thinks that the anesthesist should be a senior, not a junior, member of the resident staff and should be skilful in the latest anesthetic technique. In the author's experience nitrous oxide and oxygen anesthesia is the best for all purposes, while the additional use of a local anesthetic to "block" the nerves adds a great deal to the prevention of postoperative shock. Blood pressure estimations during the operation tell the condition of the patient and approach of danger better and earlier than the pulse and respiration, and a rapid and marked drop in pressure is to Bloodgood a sign that saline infusion is immediately needed. Such infusion, too, should be administered to a patient *before* he leaves the operating room if collapse in the early hours after operation is apprehended. In postoperative treatment, Bloodgood advocates salt solution by the continuous method of Murphy in all cases, so that the kidney functions may be started early; morphine in small doses to allay restlessness and pain; careful watch and early treatment of any complications, such as dilatation of the stomach, excessive distention of the abdomen, acidosis, etc. Recovery from the operation and the condition operated for should be followed by watching the patient for the development of any nervous complications, and in this the family physician and the surgeon should cooperate.

Bloodgood's paper, cursorily sketched above, is a welcome one, for it is evidence of progress in the attitude of the surgeon toward the patient, of progress that cannot but reflect further credit upon the well deserving art of surgery as practised in America.

THE POLYMORPHIC CHARACTER OF PAROTITIS.

As long ago as 1817 the close relationship between pancreatitis and mumps was pointed out by Schmackpeffer. This association has been readily explained on the basis of the histological and functional similarities between the salivary glands and the pancreas. During epidemics of mumps there have been recognized cases in which the infection of the pancreas was the initial and even the sole manifestation of the constitutional invasion. In fact some observers have regarded this invasion of the pancreas as the efficient cause of epidemic jaundice, in this case the swollen head of the pancreas producing icterus by pressing upon or excluding the common bile duct. According to Egdahl, in the etiology of pancreatitis mumps comes next in frequency to gallstones and duodenitis, and accounts for at least 10 per cent. of the cases of the former condition.

One year ago during an epidemic of parotitis in the city of Vienna, E. Freund (*Wiener medizinische Wochenschrift*, 1911, No. 49) observed eight cases presenting the following clinical picture: On the third or fourth day of the attack, after the swelling in the parotid had reached its maximum, there occurred severe abdominal pain accompanied by vomiting, constipation, and anorexia. The temperature remained normal or was slightly elevated. There was tenderness in the epigastrium about midway between the umbilicus and the ensiform cartilage.

and extending toward the left hypochondrium. In one case there was noticed a distinct tumefaction in this region. These manifestations continued for from three to eight days. In one case the epigastric pain preceded by two days the appearance of the parotid swelling. In none of the eight cases were there any evidences of disturbed pancreatic function, as revealed by examination of the urine and feces; nevertheless the localization of symptoms in the upper abdomen, occurring during an attack of parotitis, apparently justified the diagnosis of pancreatitis. The absence of any indications of pancreatic insufficiency was attributed to the fact that the affection of the pancreas was a transitory one and did not necessarily involve the entire organ.

It has been recognized for a long time that parotitis may be preceded, accompanied, or followed by manifestations in many other organs of the body, which manifestations have been regarded either as metastases or as complications. Of these the chief one is orchitis, which occurs almost exclusively in the adult, and which according to statistics gathered by Comby was present in 30 per cent. of 690 cases of parotitis in the French army. Less frequently parotitis in the female is accompanied by inflammation of an ovary. Other glands occasionally, though rarely affected, are the lacrymal, thyroid, and thymus. Among the numerous complications that have been observed during the course of parotitis are urethritis, otitis, inflammations of various parts of the visual apparatus, nephritis, endocarditis, pericarditis, peritonitis, arthritis, and, not least important, inflammatory lesions of the brain and meninges. These lesions are largely of the nature of a meningoencephalitis and give rise to restlessness, delirium, mania, and convulsions, or to various forms of ataxia. According to Cautley a mild type of meningoencephalitis is not a rare complication of parotitis.

The meningeal complications of parotitis are discussed in a comprehensive paper on this subject by H. Zade (*Archiv für Kinderheilkunde*, March 19, 1912). According to this observer one is not warranted in assigning a casual connection between parotitis and a secondary meningitis; nor in the absence of any knowledge as to the nature of the infective organism, is one warranted in comparing this meningitis to that which complicates typhoid fever, pneumonia, etc. He believes that parotitis at least acts as a predisposing cause exposing the meninges to secondary infection. The text of the author's remarks was furnished by the case of a twelve-year-old boy whose illness was ushered in with pain in the right iliac region, vomiting, chills, and sore throat. On the second day there were a relatively slow pulse and symptoms of ileus. Two days later the development of a parotid swelling suggested that the earlier symptoms were all intestinal manifestations of the mumps infection. But upon the subsidence of the glandular swelling the bradycardia continued, the headache became more intense, and other symptoms of increased intracranial pressure developed. In ten days these symptoms disappeared and complete recovery ensued. It is impossible from the history of this case to decide whether the condition was one of meningitis or of meningismus. Lumbar puncture was not performed and this omission made the diagnosis all the more obscure. According to Schottmüller a postparotitic meningitis should be regarded as a serous meningitis, with more or less of an accompanying encephalitis. In 1904 Chauffard and Boidin demonstrated at autopsy the presence of a meningoencephalitis in cases that had presented during life and following a parotitis the characteristic syndrome of bradycardia, fever, headache, and Kernig's sign, accompanied by an excess of lymphocytes in the blood and cerebrospinal fluid.

Within the past decade no work has been reported in confirmation of the results obtained by earlier investigators into the bacteriology of parotitis. In 1893 Laveran and Catrin described characteristic diplococci which they obtained from the parotid, from the edematous tissues of the face, from joint transudates, and from the blood, in cases of this disease. Bein and Michaelis in 1897 and Pick in 1902 reported a similar finding. Although these results await further confirmation there can be no doubt that parotitis is a sharply defined local infection by a specific organism which may, however, cause the most diverse and generalized manifestations, and which in extremely rare instances may even lead to a fatal outcome.

HOSPITAL SHIPS.

In the Spanish-American War hospital ships specially constructed or transformed for the purpose of receiving for care and treatment the sick and wounded of the navy and army were used for the first time. Their utility was practically demonstrated. Afterwards, in the Boer War and in the Russo-Japanese War the need of hospital ships was still further emphasized. At the present time it is freely acknowledged by naval authorities that hospital ships form an essential component part of a modern navy. As yet the ideal hospital ship has not been evolved, but as pointed out editorially in the *United States Naval Medical Bulletin* for April the utilization of vessels of this class is receiving increased attention abroad. British and German naval medical writers have been discussing the matter recently while the Italian Government has been putting the question to practical test in the war now proceeding between that country and Turkey.

Fleet Surg. D. I. P. McNabb, R. N., writing in the *Journal of the Royal Army Medical Corps*, Vol. 18, No. 2, on the functions of hospital ships, says that the ideal hospital ship should be a vessel of 3,000 to 4,000 tons with a speed of about 12 knots per hour and accommodation for some 240 patients in peace and 340 in war. It seems that in the main the views of McNabb are indorsed by the British Admiralty, as it is reported that a hospital ship is to be built and completed by June, 1913. The ship it is said will be of 5,000 tons displacement with accommodation for some 260 to 330 patients, and carrying specially equipped motor boats for their transfer. Turbines will be used and the speed will be limited to 12 or 14 knots to avoid vibration. A captain and crew will be drawn from the merchant service. Marine Oberstabsarzt Dr. zur Verth, writ-

ing in the *Marine-Rundschau*, July, 1911, says that the ideal hospital ship should be a vessel of 5,000 tons displacement, 124 meters long, 15.8 meters beam, with a coal capacity of 000 tons; such a vessel should be designed to accommodate 250 patients, with the addition of 20 beds for contagious cases. Verth is of the opinion that two vessels of approximately 250 beds each would be of greater value than a single ship of double the size. The plan pursued by the Japanese Government in so supervising the construction of certain merchant vessels as to render them well adapted to conversion into hospital transports is commended by the German writer. At the outbreak of hostilities between Italy and Turkey, the Italian Naval Department fitted up two emigrant steamers, the *Re d'Italia*, 3,802 tons, and the *Regina d'Italia*, 3,308 tons, as ambulance ships. In addition the Italian Red Cross Society equipped the merchant steamer *Memfi*. The Knights of Malta fitted up the *Regina Margherita*, 1,081 tons, under the same conditions as the Red Cross ship. The time required to transform the two first named ships into ships suitable for the reception of sick and wounded was about five days, the task being greatly facilitated by the utilization of the permanent beds already installed for emigrants. It was therefore only necessary to disinfect the ships, knock down some few bulkheads, and get the stores and personnel aboard. These vessels, however, are purely ambulance ships, used for transporting the sick and wounded from Tripolitania and Cyrenaica, to some of the large hospitals in southern Italy and Sicily, and were only intended to care for patients during the short time required to make the trip, that is from two to five days. In the *Revista Nautica*, February, 1912, Lieut. Commander N. Leonardi, Royal Italian Naval Reserve, gave an account of the operations of these vessels. The most interesting part of the description is that which states that with the arrangements followed it was found possible to take on board the wounded at the rate of one man per minute through each hatch. The Italian ships, however, are merely ambulance ships, and owing to the fact that Turkey possesses practically no navy there has been no need for hospital ships in the war. It appears likely that all the countries possessing navies will follow the example of Great Britain and build hospital ships.

Pathogenesis of Gonorrheal Rheumatism.

The pathogenesis of gonorrheal rheumatism was for long a subject for discussion. Finally, it was recognized that it was a morbid entity entirely distinct from ordinary rheumatism. Fournier was the first to formulate the proposition that gonorrhea was the necessary originating cause of this form of rheumatism. In *La Clinique*, Feb. 9, 1912, Georges Luys points out that age and sex have no great influence on the development of gonorrheal rheumatism, though men are somewhat more frequently attacked than women, and it is met with in about 2 per cent of rheumatic cases. The conclusion arrived at as a result of very numerous researches is that the gonococcus passes into the blood from the urethral mucosa, and once in the circulation, in tempestuous or cold weather localizes itself in one or in several articulations. The problem is to find out what the conditions are which favor the passage of the gonococcus into the circulatory system. Assuredly, gonorrheal rheumatism can develop as a sequence of any form of gonorrheal manifestations. Weiss and Klingelhoffer have reported a case of gonorrheal rheumatism in which the patient had never suffered from urethritis, and cases have been noted in which it followed a gonorrheal ophthalmia innocently acquired. But instances of this nature are, in the opinion of Luys, very rare, and in the vast majority of cases, gonorrheal rheumatism is developed in the course of urethritis caused by the gonococcus, and more especially when the inflammatory phenomena are located in the posterior part of the urethra.

Prevention of "Inevitable" Digital Gangrene.

Within a comparatively short time it has been shown in practice that almost inevitable gangrene of the fingers or toes may be averted by making an incision in the pulp of the digit to allow the escape of venous blood, and then applying aspiration with a suitable dry cup. Our recollection is that this resource was first practised in a nearly severed finger, which of course must have been accurately splinted to render the treatment available. At a recent meeting of the Kiel Medical Society (*Münchener medizinische Wochenschrift*, April 30) Koehler announced that the same plan of treatment had proved highly satisfactory in warding off gangrene from frozen toes. The patient had nominally frozen both his feet, but the two great toes and adjoinnig portions of the metatarsus were alone menaced by gangrene. These members showed every evidence of a freeze of the third degree. The skin was blue black, sensation was gone, needle puncture was not followed by bleeding. It had been decided to let the line of demarcation form, when the advice of Noesske to test the treatment already successful in the severed finger for all cases of threatened digital gangrene was recalled and at once carried out, with the result already stated above. Recovery was perfect from every viewpoint.

News of the Week.

Public Bath League.—As a result of the conference held recently in the City Hall, New York, the American Association for Hygiene and Public Baths has been organized with Dr. Simon Baruch of New York as president. The officers desire to enlist the interest of all concerned with hygiene and sanitation, including besides members of the medical profession, educators, lawyers, sanitary engineers, and city officials, with the object of providing a sufficiency of free sanitary baths for cleansing purposes. The formation of this association is more especially timely in New York because of the refusal of the Health Department to approve of the five sites for municipal floating baths in the Hudson River selected by the Commissioner of Public Works, since tests of the flow of the current of the river at the suggested sites had shown that the water discharged from the sewers flowed closely along the shore and would contaminate the baths. Whether any safe sites can be selected is doubtful, since as Dr. Baruch has aptly said: "Manhattan Island is a body of land entirely surrounded by sewage." Dr. George E. Soper, president of

the Metropolitan Sewage Commission, has also stated his strong objections to the floating baths as a menace to health. The questions of providing inland baths has thus been prominently brought forward and is at present under discussion by the city authorities. Dr. William H. Hale, secretary of the newly formed organization, and superintendent of public baths in Brooklyn, will probably represent New York at the International Conference on Public Baths to be held at Scheveningen, Holland, next August.

Graduates in Medicine.—Forty graduates received their medical degrees from the Medical Department of the University of Georgia at Augusta on May 16. The diplomas were bestowed by the Chancellor of the State University and the address to the graduates delivered by ex-Governor Slaton. The Medical Department of the Texas Christian University at Fort Worth gave diplomas to seventeen graduates in medicine on May 12.

New Hospital Cornerstone.—The cornerstone of the new German Hospital on Hudson Boulevard, Jersey City, N. J., was laid on May 19 by Mayor Wittpen in the presence of the Governor of the State and other distinguished persons. The hospital building will, it is estimated, cost about $18,000, exclusive of the $6,400 paid for the land.

Eclectics Protest.—The Arkansas Eclectic Medical Association, at the thirty-second annual convention in Little Rock, adopted a resolution protesting against the action of the Federal Registration Board of the United States reservation at Hot Springs, in excluding graduates of the eclectic schools of medicine from practice on the reservation.

To Fight Plague.—In submitting to Congress a special report on bubonic plague conditions on the Pacific Coast, the Secretary of the Treasury has appealed for an additional appropriation of $500,000 to be used in a crusade against the disease. The Public Health and Marine Hospital Service is expending its funds at the rate of $14,000 a month. Provided there are no new outbreaks, it is estimated that it will take four or five years to complete the task of eradicating the disease. No new cases have been found in Californian cities for some time, but the disease has been prevalent among the underground squirrels in the country and human cases have occurred in the rural districts each year. The eradication of the disease from these country districts is the problem at present confronting the Service. Money will also be needed to prevent yellow fever which now exists in several South American ports from making its appearance in the Southern States.

Swallowed 1,097 Articles.—An official report filed with the State Board of Control of California recently states that during an operation performed recently on a young woman of San Rafael, 1,097 articles, mostly metal, were removed from the patient's stomach. Among them were 108 wire hairpins, 55 open safety pins, 21 broken pins, 425 broken pieces of hairpins, 13 nails, and 40 tacks. The woman was said to be on the road to recovery.

American Hospital in Paris.—The United States Senate on May 21 passed a bill incorporating in the District of Columbia the American Hospital of Paris, the purpose of the corporation being to erect in or near Paris a hospital for the treatment of Americans traveling abroad

City Death Rate.—For the fifteenth consecutive week the death rate in New York this year has remained below that of 1911. For the week ending May 18 the rate was 14.75 with a total of 1,463 deaths, as compared with a rate of 16.27 and a total of 1,553 deaths for the same period of last year. For the first twenty weeks of this year the death rate has averaged 15.08 as compared with 17.04 for the same length of time in 1911.

Overdose of Elixir.—"Too much of a good thing" should be the epitaph of a Mr. Neumann of London, described as an herbalist, who, firm in the belief that he had discovered the elixir of life, died recently from the effects of an overdose. The elixir was based, it is said, on diluted phosphoric acid.

New York Police Surgeons.—Following an investigation, conducted during the last few weeks by Commissioner of Accounts Fosdick, of the surgeons of the New York Police Department, it is rumored that the Police Commissioner may order that hereafter the police surgeons abandon their private practices and devote themselves exclusively to their police practice. The surgeons now receive a salary of $3,500 a year, but one of their number, who considers his experience typical of all, declares that the police work nets him an average of seventy-three cents a call, and that without private practice it would be impossible to live. Mr. Fosdick's report intimated that he had found some of the surgeons rather derelict in their duties and made the more serious charge that the facts elicited led to the opinion that there had existed an organized effort to graft upon pension applications upon the part of unknown persons who seemed to have access to the records of the surgical bureau. In no case, however, was any such "grafting" traced, even by implication, to a police surgeon.

University of Pennsylvania.—Dr. David Riesman and Dr. Joseph Sailer have been elected professors of clinical medicine in the Medical Department of the University of Pennsylvania, in succession to the late Dr. John H. Musser. They will be in charge of the extramural teaching in the Philadelphia General Hospital, and will be aided by a number of associates. Under the new arrangement Dr. Alfred Stengel will be the head of the medical division, and Dr. J. Harold Austin and Dr. O. H. Perry Pepper, who will devote almost their entire time to hospital work, teaching, and medical research, will be his assistants. Dr. Richard M. Pearce occupies the John Herr Musser professorship of medical research.

German Poliklinik.—On May 17 the twenty-ninth anniversary of the German Poliklinik, New York, was celebrated at a dinner given by the Board of Trustees to the attending staff at the Café Boulevard. The president, Dr. Ludwig Weiss, acted as toastmaster, and discussed the past growth of the institution, while other speakers pointed out lines for future development. A vote of thanks was tendered to the Ladies' Auxiliary to whose able work much of the success of the institution was due.

Gifts to Charities.—By the will of the late Mrs. Cornelia Storrs of North Salem, N. Y., the New York Skin and Cancer Hospital receives a bequest of one-half of the residuary estate, which it is estimated will amount to about $25,000.

By the will of the late Mr. Frank J. Ransom of New York, the Roosevelt, St. Luke's, and New York hospitals share equally in the residuary estate, the amount of which is not given, while a trust fund of $50,000 created for the benefit of two of

the legatees, is to go on their deaths to the Society for the Relief of Crippled Children of New York.

By the will of the late Miss Lilla Gaitos of New York, the Lying-In Hospital receives $5,000, St. Rose's Home, $3,750, and the Home for Crippled Children in Philadelphia, $2,500.

Dr. George Dock has resigned the office of Dean in the Medical Department of Washington University, St. Louis, Mo. Dr. Dock will continue as professor of medicine in the school and will be able to devote more time to research work.

Harvard Medical Alumni.—The triennial meeting of the Harvard Medical Alumni Association was held in the Medical School on May 22, when an interesting series of papers and demonstrations arranged by Dr. H. C. Ernst and Dr. M. J. Rosenau was presented. The meeting was followed by the triennial dinner at the Hotel Somerset.

Dr. Harry T. Summersgill has been appointed superintendent of the New York Post-Graduate Medical School and Hospital, to succeed Dr. Frederic Brush, who resigned to take up the work of the new Burke Foundation. Dr. Summersgill has been in the employ of the Federal Government in the Panama Canal Zone, working under Col. William C. Gorgas.

Dr. Benjamin F. Beardsley of Hartford, Conn., has received the nomination for Governor of Connecticut by the Prohibition party.

Dr. Walter B. Jennings, for twelve years an attending physician at the Wilkes Dispensary of St. Mary's Free Hospital for Children, has resigned as chief of staff in that institution.

To Deport Insane Aliens.—At a conference held in New York recently by the representatives of the New York State Hospitals for the Insane and of the steamship lines, it was decided to return to their homes in Europe during the coming year some two thousand insane aliens now in the State hospitals, who would otherwise remain a burden on the State, costing annually $3,500 apiece, it is estimated. As these persons had been in the country over the prescribed time limit when they became public charges the State could not legally demand that the steamship companies deport them, and the present plan for returning them to their homes is the result of an amicable agreement by which the State will pay only the ordinary steerage rates on each passenger. It is estimated that the patients can be sent away at the rate of thirty or forty a week.

Congress on Hygiene.—Twenty-six of the larger colleges and universities in the United States have already accepted invitations to send delegates to the Fifteenth International Congress on Hygiene and Demography to be held in Washington next September. Among those which have named their delegates are Columbia University, which will be represented by Dr. Philip Hanson Hiss, professor of bacteriology; New York University, by Chancellor Brown and Dr. Hermann M. Biggs; Lehigh University, by Dr. Henry Sturgis Drinker and Dr. W. L. Estes; and the University of Pittsburgh, by Chancellor McCormack and Dr. Thomas Shaw Arbuthnot.

New York Filtration Plant.—Pure water for New York City is at last a probability and will soon be an accomplished fact if the plans prepared by Water Commissioner Thompson are approved by the Board of Estimate. The plans provide for the building in Jerome Park of a large filtration plant for the Croton water of the type known as the mechanical filter or American system. If the plans are approved ground will be broken this summer and the plant will be completed in three years. The estimated cost is $7,500,000.

Pellagra Commission.—Equipped with a complete field laboratory from the Post-Graduate Medical School of New York, the Thompson-McFadden Pellagra Commission left New York on May 27 for Spartanburg, S. C., where it will spend the next five or six months in the study of pellagra. An arrangement has been made by which patients will be brought to the Post-Graduate Hospital during the summer for treatment and further study. The commission consists of Captain Joseph F. Siler, Medical Corps, U. S. A.; Dr. Philip E. Garrison, Passed Assistant Surgeon, U. S. N., and Dr. Ward J. MacNeal, Assistant Director, Department of Laboratories, New York Post-Graduate Medical School. These will be joined in Spartanburg by two entomologists from the Department of Agriculture. The work will be done under the direction of the Division of Tropical Diseases of the Post-Graduate, to which the money for the investigation was donated.

Raid on Spitters.—The Health Squad of the Police Department turned their attention to the nuisances at the approaches to the Brooklyn Bridge one afternoon recently and during the rush hours arrested thirty-six men whom they charged with spitting, in violation of the Sanitary Code. Sixteen of them were arraigned and fined $1 each, while the cases of the others were postponed.

Dr. H. Bert Ellis of Los Angeles, Cal., was the guest of honor at a dinner given by his colleagues on April 22 at the University Club, as a testimonial of their appreciation of his able and successful management of the entertainment of the American Medical Association at the meeting held in Los Angeles last June.

Frisco System Medical Association.—At the eleventh annual meeting held in Springfield, Mo., on May 13 and 14, the following officers were elected: *President*, Dr. W. S. McDonald, Fort Scott, Kan.; *Vice-Presidents*, Dr. J. R. Dawson, Birmingham, Ala., and Dr. B. C. L. Schwab, Sapulpa, Okla.; *Treasurer*, Dr. Walter A. Camp, Springfield, Mo.

Rhode Island Medical Society.—The 100th anniversary of the Rhode Island Medical Society will be celebrated at a meeting held in Providence on June 12 and 13.

North Dakota State Medical Association.—At the annual meeting held in Valley City on May 14 and 15, the following officers were elected for the ensuing year: *President*, Dr. A. J. McCannel, Minot; *Vice-Presidents*, Dr. Murdock MacGregor, Fargo; Dr. R. Hudson Beek, Lakota, and Dr. Eric P. Quain, Bismarck; *Secretary*, Dr. H. J. Rowe, Casselton; *Treasurer*, Dr. Frank J. King, St. Thomas. The 1913 meeting will be held in Minot.

Ninth Councilor District (Ind.) Medical Association.—The annual meeting was held in Frankfort on May 16, when the following officers were elected: *President*, Dr. William R. Moffit, West Lafayette; *Secretary-Treasurer*, Dr. W. H. Dinsmore, Kramer. The next meeting will be held in Lafayette.

Bristol (Rhode Island) South District Medical Society.—At the annual meeting held recently the following officers were elected: *President*, Dr. Michael Kelly; *Vice-President*, Dr. A. B. Cushman; *Secretary-Treasurer*, Dr. A. J. Albe.

Essex South District (Massachusetts) Medical Society.—The following officers were elected at the annual meeting in Nahant on May 9: *President*, Dr. H. E. Sears, Beverly; *Vice-President*, Dr. Philip Mooney, Gloucester; *Secretary*, Dr. H. B. Bennett, Lynn; *Treasurer*, Dr. George Z. Goodell, Salem.

Hampshire (Massachusetts) Medical Society.—The annual meeting was held in Northampton on May 10, officers being elected as follows: *President*, Dr. M. W. Pearson, Ware; *Vice-President*, Dr. A. M. Beldon, Northampton; *Secretary*, Dr. J. P. Collins, Northampton; *Treasurer*, Dr. J. G. Hanson, Northampton.

Middlesex East District (Massachusetts) Medical Society.—At the annual meeting on May 8, held in North Reading, officers for the ensuing year were elected: *President*, Dr. Daniel C. Dennett, Winchester; *Vice-President*, Dr. William H. Keleher, Woburn; *Secretary*, Dr. F. Robertson Sims, Melrose; *Treasurer*, Dr. Charles Dutton, Wakefield.

Essex North District (Massachusetts) Medical Society.—The following officers were elected at the annual meeting held in Lawrence on May 8: *President*, Dr. W. H. Merrill, Lawrence; *Vice-President*, Dr. F. W. Anthony, Haverhill; *Secretary-Treasurer*, Dr. J. F. Burnham, Lawrence; *Corresponding Secretary*, Dr. G. B. Sargent, Lawrence.

Cascade County (Montana) Medical Society.—The annual meeting was held in Great Falls, Mont., on May 7, officers being elected as follows: *President*, Dr. J. H. Irwin; *Vice-President*, Dr. E. J. Greer; *Secretary-Treasurer*, Dr. P. F. Carney.

Linton District (Missouri)Medical Society.—At a meeting held in Mexico on May 7, the following officers were elected: *President*, Dr. A. W. Kampschmidt, Columbia; *Vice-Presidents*, Dr. F. J. Taintor, Warrenton, and Dr. J. E. Thornton, Columbia; *Secretary*, Dr. W. A. Norris, Columbia; *Treasurer*, Dr. C. A. Rothwell, Mexico.

Oklahoma State Medical Association.—The annual meeting was held in Shawnee on May 8 and 9, closing with the election of the following officers: *President*, Dr. J. S. Schuler, Durant; *Vice-Presidents*, Dr. J. S. Walker, Shawnee; Dr. J. M. Byron, Shawnee, and Dr. Barnes, Enid; *Secretary*, Dr. Claude Thompson, Muskogee. The next meeting will be held in Enid.

Montana State Medical Society.—The thirty-fourth annual meeting of the association held in Helena, closed on May 9 with the election of officers which resulted as follows: *President*, Dr. J. M. Scanland, Warm Springs; *Vice-President*, Dr. McGrath, Hamilton; *Treasurer*, Dr. C. T. Pigott, Roundup; *Secretary*, Dr. H. D. Kistler, Butte.

Arizona State Medical Association.—At the annual meeting held at Bisbee on May 8, the following officers were elected: *President*, Dr. John E. Bacon, Miami; *Vice-Presidents*, Dr. I. E. Huffman, Tucson; Dr. E. W. Adamson, Douglas, and Dr. Roy Thomas, Phoenix; *Secretary*, Dr Warren Watkins, Phoenix. The next meeting will be held at Globe on May 6, 1913.

Iowa State Medical Society.—The following officers were elected at the annual meeting held in Burlington: *President*, Dr. Vernon L. Treynor, Council Bluffs; *Vice-Presidents*, Dr. C. P. Frantz, Burlington, and Dr. E. E. Dorr, Des Moines; *Secretary*, Dr. J. W. Osborn, Des Moines; *Treasurer*, Dr. W. B. Small, Waterloo.

New Jersey Homeopathic Medical Association.—The annual meeting was held recently at Atlantic City, when the following officers were elected: *President*, Dr. Frank P. Ekings, Paterson; *Vice-Presidents*, Dr. A. W. Westney, Atlantic City; Dr. C. Herbert Church, Newark, and Dr. C. Winfield Perkins, Princeton; *Corresponding Secretary*, Dr. Charles F. Hadley, Camden; *Treasurer*, Dr. C. F. Adams, Hackensack.

Southwest Missouri Medical Association.—The following officers were elected at the annual meeting in Springfield recently: *President*, Dr. T. A. Coffelt, Springfield; *Vice-Presidents*, Dr. A. H. Madry, Aurora, and Dr. W. R. Beattie, Marshfield; *Secretary*, Dr. H. S. Hill, Springfield; *Treasurer*, Dr. Lee Cox, St. Louis.

Texas State Medical Society.—The annual meeting held at Waco closed on May 9 with the election of the following officers: *President*, Dr. John S. Turner, Dallas; *Vice-Presidents*, Dr. J. W. Overton, Sweetwater; Dr. O. L. Norsworthy, Houston; Dr. J. B. McKnight, Dallas. The 1913 meeting will be held in San Antonio.

Nebraska State Medical Association.—At the annual meeting in Lincoln the following officers were elected: *President*, Dr. I. N. Pickett, O'Dell; *Vice-Presidents*, Dr. W. B. Kern, Ingleside, and Dr. O. A. Quigley, North Platte; *Secretary*, Dr. Joseph M. Aikin, Omaha; *Treasurer*, Dr. A. S. Von Mansfelde, Ashland.

Obituary Notes.—Dr. John Wesley Howard of Irondale, Ala., a graduate of the Atlanta Medical College, Georgia, in 1891, and a member of the American Medical Association and the Alabama State and Jefferson County Medical Societies, died at his home of paralysis on May 16, aged 53 years.

Dr. John W. Johnston of Claysburg, Pa., a graduate of the Albany, N. Y., Medical College in 1866, and a veteran of the Civil War, died at his home of Bright's disease on May 8, aged 69 years.

Dr. Leroy S. Groves of Creston, Iowa, a graduate of the Medical College of Ohio, medical department of the University of Cincinnati, in 1859, a surgeon in the Twenty-eighth Iowa Regiment during the Civil War, and physician of Union County, died at the home of his daughter in Shannon City, Iowa, after a long illness, on May 4, aged 78 years.

Dr. R. T. Rolph, formerly of Dunkirk, N. Y., a graduate of the University of Buffalo, Medical Department, in 1873, and a member of the American Medical Association, died at Chula Vista, Cal., where he had gone in the hope of regaining his health, on May 15, aged 64 years.

Dr. Alden B. Farnham, formerly of Milwaukee, Wis., a graduate of the Bellevue Hospital Medical College, New York, in 1876, for some years a trustee of the Milwaukee Emergency Hospital, at one time president of the Milwaukee Medical Society, and secretary of the Bartlett Clinical Club, died at his home in Citronelle, Ala., on May 6, aged 67 years.

Dr. Ferdinand von Herff of San Antonio, Tex., a graduate of the University of Giessen, Germany, in 1849, and a member of the American Medical Association and the Texas State and Bexar County Medical Society, died at his home on May 18, aged 92 years.

Dr. Stephen C. Henderson of Brewton, Ala., a graduate of the Medical College of Alabama, Mobile, in 1887, and a member of the American Medical Association, and the Alabama State and Escambia County Medical Societies, died at his home on May 10, aged 51 years.

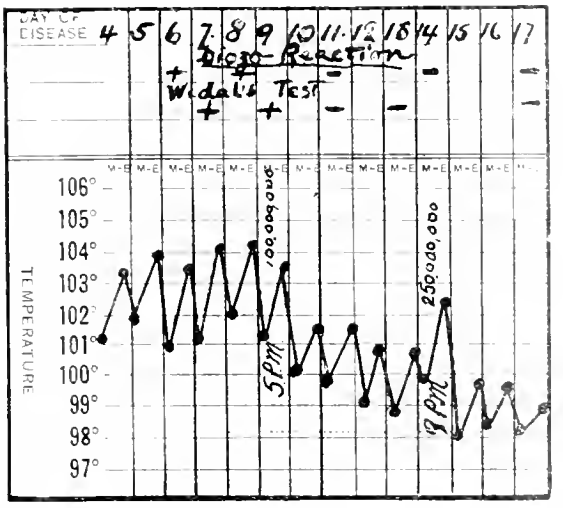
Correspondence.

AN EARLY INOCULATION OF TYPHOID BACTERINS.

To the Editor of the Medical Record:

Sir: My attention has been called to the fact that the case here reported is perhaps one of the earliest cases to receive typhoid vaccine as a treatment for typhoid fever. I have been urged to make this report, which is done merely to give the data.

On August 25, 1907, I was called to see a patient who gave the following history: Miss M. H. M., assistant superintendent of public schools in one of our large cities in the east. Family history, good. Personal history: With the exception of the children's diseases she had always been well. About a month previous a brother died of typhoid fever. During his illness the patient had assisted in various ways to care for him and thus been exposed to the infection. She came to Mt. Clemens to recuperate, which accounts for the fact that the patient came under my observation. Typical symptoms of typhoid were very apparent at my first visit. Dr. Geo. Wheeler of Madison, Wis., who at that time



was a patient at the springs, was requested to examine this case. As a result he gave typhoid fever as his diagnosis. On August 27 examination of the urine gave the diazo reaction; on the following day the Widal test was made and proved positive. With these facts before us a positive diagnosis of typhoid was made.

This patient was familiar, to a certain extent at least with the general application of bacterial vaccines in the treatment of infectious diseases. It was practically due to her own suggestion that vaccine was used in this case and while we realized that the practice was entirely within the limits of the theory of opsonins, yet we had no similar precedent to guide us, which may explain a certain hesitancy on our part in using vaccine in this instance. On August 29 a typhoid bacterin was prepared and two inoculations were given, the first on August 30, which was the ninth day of the disease, and the second on September 4, which was the fourteenth day of the disease. The initial dose consisted of 100,000,000, and the second dose of 250,000,000 dead bacteria. The diazo reaction was positive before the first inoculation and found to be negative 48 hours later.

The accompanying chart explains itself. There is nothing unusual to call attention to in this case, and as stated above it has been reported only to give the data. It is hoped that similar cases, of earlier date will be reported which will prove very interesting from a historical point of view, as it enables us to fix a definite time when the first inoculation of typhoid bacterins was made in the treatment of typhoid fever.

G. A. Persson.

Mt. Clemens, Mich.

AN APPENDICITIS OPERATION BY DR. WEIR.

To the Editor of the Medical Record:

Sir:—Your readers will no doubt be interested in the following surgical case: Dr. Robert F. Weir, famous as a surgeon for nearly a generation, but practically retired nearly a decade ago, is a cottage resident at Nassau, Bahama Islands, during the winter months. The writer (who was suffering from a protracted severe gout) visited Nassau in search of relief this last winter, and put up at the Colonial Hotel; but in spite of all medical treatment he became steadily worse. Dr. Weir, as a friend, and at the request of the writer's son, visited the writer several times and diagnosed the case as one of severe acute appendicitis. Three other surgeons, two local and one a hotel guest, confirmed this view, and it was decided at the consultation that an immediate operation was necessary to save the patient. Within an hour he was on the operating table in his rooms at the hotel, and Dr. Weir in disregard of his 74 years, his stiff fingers, and long absence from practice, operated with such skill as to excite the admiration of the three attending surgeons, the physician, and three trained nurses. The appendix was removed and found to be in such an advanced state of decomposition as to admit of no delay in its removal. The operation took place on March 17.

The feature of the case is that a retired and partially invalided practitioner over 74 years of age, operated on a man over 75 years old crippled by two years of acute gout (which disappeared after the removal of the appendix), and with such success that in eighteen days after the operation he arrived in a private car in New York and in forty-five days after March 17 was at work in his office. Certainly Dr. Weir has not forgotten his former skill and he has the satisfaction of having saved the life of the writer.

Robert V. Chesebrough.

New York.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ROYAL SOCIETY OF MEDICINE—NODULAR LEUCEMIA—ANESTHESIA; TOXIC AFTER EFFECTS; VITAL PHENOMENA—OBITUARY.

London, May 10, 1912.

The new house of the Royal Society of Medicine is practically finished and will be opened by the King on the 21st inst. The building is in the Renaissance style and covers an area of some 10,000 square feet. In the basement, besides some offices and dressing rooms, there will be storage room for 250,000 volumes above those in the library. Opening out of a tiled vestibule on the ground floor are two meeting halls, one accommodating 500, the other 150 persons. The library is on the first floor, with space for 100,000 volumes, is 110 feet long, 28 feet wide, and 10 feet high. An annex will serve for journals.

etc. The council room, committee rooms, and tea room are on the second floor. The third floor will contain the museum, histological room, smoking and conversation rooms, etc. As you are aware, the R. S. M. is really an amalgamation of other societies and its charter, therefore, only dates from 1907, when the old Royal Med.-Chi resigned its charter to form the new society, in conjunction with such others as became its sections.

Nodular leucemia is a term proposed by Dr. G. R. Ward at the Medical Society of London as a clinical expression, to include all cases of leucemia in which nodules have been observed during life in various parts of the body. This would group together mycosis fungoides, chloroma, Kaposi's disease, sarcomatosis, and other cases, but Dr. Ward did not suggest a necessary connection between them. Names applied to conditions which resemble each other are often of little consequence, and perhaps are so in this instance, but one point mentioned deserves consideration, viz., that if the conception of nodular leucemia should obtain general acceptance it might lead to the avoidance of operations which later on have proved unjustifiable. New facts have come to light, showing connecting links between diseases in which nodules are developed, and often these cannot be distinguished from those of mycosis fungoides. Such nodules have been reported, too, in chloroma, and we have learned that the green color of this last is not so constant as had been supposed. The word leucemia to many indicates a definite morbid process, to others only a symptom of several such. The condition of the blood had to be considered to determine the variety to which a case must be assigned. Leucocytosis might be differentiated by the number of cells, their nature, and the presence or absence of mitosis. It was only the mitosis which could be considered absolute, or nearly so. The most common sites for the nodules are the bones (especially the skull), the skin, and subcutaneous tissue, and wherever lymphoid tissue is found in appreciable amount in the healthy body. The distribution and clinical characteristics of the nodules in the several tissues were examined at length and presented such differences that Dr. Ward was half inclined to think "infiltrating" might have been a better adjective than "nodular" to have adopted, for the nodules are by no means always so circumscribed as the term might imply. In fact, they vary from a diffuse edematous condition to an almost bony hardness.

Dr. H. D. Rolleston preferred the term "infiltrating," but he thought the infiltration of the skin rare in leucemia and likely to be confused with lymphadenoma, which was so much more common. Pruritus was so frequent in the latter as to almost distinguish it, for it was seldom seen in the former, if ever. Dr. P. Weber referred to cases reported as showing the leonine face. Dr. Langmead mentioned one with nodules on the buccal musosa and one under the tongue. He added that acute leucemia was not so rare as supposed, for there were nine cases admitted to the Children's Hospital within three to four years, constituting 0.75 per cent. of 1,200 p.m's. Dr. Beddoes hoped this important paper would not be indexed under nodular, or it would be overlooked. D. F. Taylor, president, asked if Dr. Ward would include in his term every case in which leucemic infiltration was observed in any part of the body. Dr. Ward, in reply, said he only used the word clinically. He had met with two in a short period with the skin affected, but he agreed that experts found it difficult to differentiate it from lymphadenoma. He had references to two cases with pruritus present. Kaposi's disease had been confused frequently with leucemia. He had not seen a case in which lymphocytoma had occurred; nor had he met with nodules under the tongue, though they were frequent in the buccal mucosa.

Postanesthetic poisoning is a subject of ominous interest to every practitioner, for although considered a rarity, it may occur to any one who has to produce general anesthesia. It is more likely to occur in children, and is probably more common in its nonfatal manifestations than is generally supposed. In children's hospitals it is often regarded as a scourge, so that a paper by Dr. E. M. Corner, read at the Medical Society of London, was of special interest, as it was based on an inquiry at the Hospital for Sick Children, although that is not complete, and so we may regard the paper as a preliminary one. So far as can be ascertained, there seems no constant predisposing condition in the patient or the method of administration or the anesthetic used. Nor has anything in respect to the operation seemed to contribute to these after effects. It has been thought that acetonuria was related in some way to the toxic symptoms, but probably that is only one of several causes.

The safest way of anesthetizing children, Dr. Corner considered, was the open method with ether. Moreover, he held, the child should be carefully prepared, when time permits, by the addition of glucose to the diet for a few days before operation. Further, he advised an injection of morphia and atropine three-quarters of an hour before administering the anesthetic.

At the same meeting a paper was read which touched on the subject of toxic effects, though referring to other points more particularly. This was by Dr. Dudley Buxton, who discussed the vital phenomena—nervous, respiratory, circulatory, and metabolic—occurring under anesthesia. In modern surgery a deeper and more prolonged anesthesia is often called for than was formerly necessary. Consequently effects are met with which, if not serious at the time, may produce grave results later. Therapeutic dosage, *i. e.* what suffices for adequate narcosis, must be differentiated from toxic dosage. Besides effects on tissues, it must be remembered that the drug may inhibit the functions of organs. Patients with functional disorders may suffer a maximum effect from a minimum degree of narcotism. To minimize deleterious action the strength or amount of the anesthetic should be lessened at once when the needed narcosis is produced, and decreased further as the time passes. It is necessary to watch for intercurrent results that may be dangerous, whether due to the anesthetic or the operation, as fall of blood pressure or temperature, loss of blood, shock. It is desirable that the dangers of prolonged narcotism or excessive dosage should be more generally considered. Careful preparation of the patient and selection of the anesthetic, as well as method and management of the narcosis, would go far to minimize immediate dangers and prevent later toxic manifestations.

Surgeon-General M. W. Kerin, C.B., R.A.M.C., was returning home on furlough when, during the cross-channel passage last week, he was taken ill and on arrival of the boat at Dover was taken to a local hotel, where he died. Surgeon-General

Kerin served in the Burmese Expedition, 1885-6. He took part in the defence of Ladysmith during the South African campaign, was mentioned in dispatches on more than one occasion, and received the Queen's Medal with two clasps. He was principal medical officer during the operations, 1908, on the Indian northwestern frontier, when he was again mentioned in dispatches and received the medal with clasp. In 1910 he was made a C.B.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

REPORT OF THE ARMY BOARD FOR THE STUDY OF TROPICAL DISEASES—VARIOLOID — MEASLES—DYSENTERY AT BAGUIO—BERIBERI AND RICE—SANITARY LEGISLATION—DR. WOODBURY, TREASURER OF THE MANILA MEDICAL SOCIETY.

MANILA, P. I., March 30, 1912.

THE Manila Medical Society held its regular monthly meeting on March 4 in one of the amphitheaters of the College of Medicine and Surgery of the University of the Philippines, at 8:30 P. M. A preliminary report on sprue was read by Major Percy M. Ashburn, Chairman of the United States Army Board for the Study of Tropical Diseases. Major Ashburn stated that nothing definite had yet been developed. The work had only just begun, and the matter was being reported to the Society more for the purpose of obtaining the co-operation of members through the islands with the view of bringing cases to the attention of the Board than for the purpose of presenting a scientific report upon the disease. He stated that an investigation of the past few weeks had shown that the disease prevailed at least to a limited extent in Manila and throughout the provinces, and that the employment of a milk diet had resulted in a number of cures among persons who had not left the islands.

Varioloid still continues to prevail very extensively in Manila, and to a more limited extent throughout the provinces. So far, no cases of smallpox have been encountered, nor have there been any deaths from smallpox or varioloid. The large number of cases which have occurred this year have been attributed to the unusually long dry season which has prevailed. For a period of over five months there has been no rainfall in some portions of the islands, and in others, only a very limited amount has fallen. Experience in the past in the Philippines, extending over many years, shows that smallpox or varioloid is reduced to very small proportions two weeks after the rains begin. This fact, observed over a period of so many years, furnishes excellent additional evidence that one of the principal means of transmitting this disease is through the air.

The epidemic of measles which started in October still continues to spread. The disease has now spread as far south as the province of Batangas, and as far north as Zambales. It is estimated that in Manila and nearby provinces there are an average of at least 500 cases constantly ill with this disease. It is generally believed that the type of the disease that is now prevailing is one that is not common to the Philippines, and that it was introduced by persons who came from the United States on United States Army transports. The medical history of these shows that every transport that left San Francisco for Manila, from December, 1910, until December, 1911, had cases of measles aboard. That the type of the disease is more severe than that which ordinarily prevails in the Philippines is shown by the fact that a number of deaths have already occurred. The eruption, in the present outbreak, is very well marked, whereas, in the ordinary, so-called Philippine measles, the eruption is very slight, and the symptoms are so mild that it is difficult to recognize the disease as measles.

During the early part of March the Insular Government transferred the seat of government from Manila to the mountain capital in Baguio. A few days after the employees arrived an outbreak of diarrhea or dysentery occurred. Approximately 10 per cent. of the persons in Baguio were affected. Several competent laboratory workers from the Bureau of Science were detailed to make a study of the outbreak. The report is nearly completed, and it is apparent that at least some of the deaths were due to bacillary dysentery. This was introduced among the wild tribes before the transfer of the employees to Baguio, and the latter probably became infected either by the hands of the Igorrote servants in handling their food, or by means of the flies which prevailed so extensively at Baguio. Most energetic measures have been taken to suppress the latter. A special fund of $5,000 was appropriated; 300 men were employed for the purpose of collecting manure and garbage and burning it, and eleven American sanitary inspectors put on duty. These measures have now been enforced during the past two weeks, and it is yet too early to judge of the result. After the first ten days of the dysentery outbreak, however, the disease rapidly declined, and practically all of the cases now are confined to the Igorrotes.

Recently additional evidence has become available that beriberi is concerned with the consumption of polished rice. It may, perhaps, be remembered that several months after the use of unpolished rice was begun at the Culion Leper Colony, no further cases of this disease appeared for nearly two years. During last November, owing to the great rice shortage in the Orient, and the fact that the market had been "cornered," the Philippine Government found it necessary to engage on a large scale in the rice business in order to bring it to the normal level. In doing so, large quantities of polished rice had necessarily to be purchased. This was then distributed to Government institutions for use, and among others, to the Culion Leper Colony. The use of this rice was begun in the latter part of November and in December, and beriberi began to prevail very extensively at the Culion Leper Colony during the latter part of February and the early weeks in March. There are not yet sufficient facts available to make a report upon this matter beyond that which is stated above, but it is interesting also to observe that the light houses, where there has been no beriberi in the past two years, or since the use of unpolished rice was begun, are now beginning to send cases to the Philippine General Hospital, and it is believed that an investigation will show that these persons have been using polished rice.

A marked advance in sanitation was made in the Philippine Islands by an act that was passed by the last legislature. This law provides for the establishment of municipal sanitary divisions, the officials of which are directly under the control of the Insular Bureau of Health. The expenses are to be borne jointly by the municipalities and provinces concerned. The municipality is obliged to appropriate at least five per cent. of its revenues and the

province must provide an amount equal to that supplied by the municipality. The salaries of physicians cannot be less than $600 or more than $1,500 per annum, with the understanding that they may engage in private practice. The law is very similar to that passed in Cuba after the second American intervention, and which was found to be so necessary on account of the pernicious influences brought to bear upon local health officers when they had to depend upon local councils for their salaries.

Dr. W. E. Woodbury was elected business manager and treasurer of the Manila Medical Society, vice Dr. H. D. Kneedler, resigned.

Progress of Medical Science.

Boston Medical and Surgical Journal.

May 16, 1912.

1. Gui Patin: His Life and Character as Depicted in His Letters. A. N. Blodgett.
2. Gonorrheal Arthritis. J. W. Sever.
3. The Cold Water Cure for Nervous Diseases. V. E. Austin.
4. Hemoptysis: Its Significance and Treatment at Out-Patient Departments, Dispensaries and in Private Practice. A study of 734 Cases from the Out-Patient Department of the Massachusetts General Hospital, Boston. J. B. Hawes, 2d.
5. On the Prevention of Ophthalmia Neonatorum. R. C. Mackenzie.
6. Salvarsan and Measles: A Clinical Note. L. L. Williams.

2. **Gonorrheal Arthritis.**—J. W. Sever presents a short resume of some of the more recent literature on the vaccine treatment of gonorrheal arthritis. This review seems to indicate that the results vary considerably. Apparently in the early and acute and subacute cases, results may be good, relief from pain quick, and early function obtained in some cases. In others, relief from pain alone seems to be the one result obtained. This in itself, however, is of value. It would seem that in the early cases before a general infection has taken place, the mixed bacterins would be of the greatest value as compared to the antigonococcic serum. Apparently, however, the sera have given the best percentage of results, indicating probably that the infection had become a general one and a lack of individual resistance had become established. The matter, however, has not been studied long enough apparently for observers to have come to any definite conclusions as yet in regard to the value of these procedures, and there will probably always exist more or less uncertainty as to the value of the method so long as individual susceptibility and resistance varies. One or both methods should be used as a routine in all early cases in the hope of producing an effect. In the old chronic cases, in which the joints have lost their integrity and become partially ankylosed, orthopedic measures are indicated. The opening of the joint, and the insertion of muscle strips after the fashion of Murphy, or of fascia, or distention of the joint by oil and iodoform as advocated by Brackett, seem to offer methods of restoring some function. Stiff and tender spines are to be protected by plaster jackets until the acute irritation has subsided. The author reports a case of gonorrheal arthritis that teaches the following important things, namely, the liability of old foci to cause symptoms; the necessity of joint protection and treatment; and rapid and marked improvement following prostatic and vesicular massage.

4. **Hemoptysis.**—J. B. Hawes, 2d, states that at the Out Patient Department of the Massachusetts General Hospital, from July 1, 1903, to January 1, 1912, 114 patients came to the hospital because of hemoptysis. Of these 9 were children fifteen years old or less. In 6 of these pulmonary tuberculosis was considered to be the cause of the bleeding. Seventy-eight patients, or 68.3 per cent of the total number, were either strongly suspected or proven to have pulmonary tuberculosis. Of these 78 patients, 11 were at once admitted into the hospital on account of active hemorrhage while in the out-patient department. Twenty-eight of these patients, or 35.8 per cent. of the total number diagnosed as cases of pulmonary tuberculosis or strongly suspected of having it, never returned and thus received no adequate treatment for their condition. In order to properly handle patients with pulmonary tuberculosis, or patients suspected of having it, in large out-patient clinics or dispensaries, there should be a special department devoted to this work. The general practitioner should bear in mind that unless there is definite evidence to the contrary and a source for the bleeding found in the gums, throat, nose or elsewhere, a hemorrhage from the mouth means pulmonary tuberculosis and should be treated accordingly.

6. **Salvarsan and Measles.**—L. L. Williams reports the case of a male aged 22 years suffering from secondary syphilis with slight glandular enlargement and syphilitic orchitis. He was given 0.9 gram of salvarsan intravenously. Two days later a typical measles eruption developed. The attack of measles pursued a mild but typical course. The injection was evidently given a few hours only before the onset of measles and seems to afford some evidence that salvarsan does not affect the development and course of the latter disease. In view of the antagonism of salvarsan to some of the pathogenic protozoa, the coincidence noted above may have some bearing upon the question of the nature of the organism concerned in the causation of measles.

New York Medical Journal.

May 18, 1912.

1. The Treatment of Prolapsus of the Uterus with Attendant Cystocele and Rectocele. J. R. Goffe.
2. Apophysitis of the Os Calcis. J. W. Sever.
3. Eye Training for the Cure of Functional Myopia. W. H. Bates.
4. The Mechanotherapeutics of Muscular Torticollis. E. F. Cyriax and A. Kellgren-Cyriax.
5. Fragment of Glass Irrigating Nozzle Removed from the Bladder without Open Operation. V. C. Pedersen.
6. Notes on Conditions Resulting from Ritual Circumcision. F. Bierhoff.
7. Treatment of Chronic Diseases at Spas Particularly with Reference to the Modern Conception of Radium Emanation. G. A. Persson.
8. The Causes of Pain in the Upper Right Quadrant of the Abdomen as Determined by Means of the Rontgen Rays. G. E. Pfahler.
9. Catching Cold. W. Brady.

1. **Treatment of Prolapsus of the Uterus.**—By J. Riddle Goffe. (See MEDICAL RECORD, March 23, 1912.)

2. **Apophysitis of the Os Calcis.**—J. W. Sever concludes that apophysitis of the os calcis is not an unusual condition. It may occur from muscle strain in rapidly growing children. It may occur less frequently from direct trauma, but presents then the same clinical picture. It never occurs after puberty. The treatment is rest and protection. The cure in all cases may be arrived at eventually.

3. **Eye Training for the Cure of Functional Myopia.**—By W. H. Bates. (See MEDICAL RECORD, February 10, 1912, page 288.)

4. **Mechanotherapeutics of Muscular Torticollis.**—E. F. Cyriax and A. Kellgren-Cyriax state that the following are the chief exercises, active and passive, that can be employed in the treatment of chronic muscular torticollis. (1) Resisted exercises for the weakened muscles; (2) manual stimulation for their nerves of supply; (3) purely active movements for the weakened muscles; (4) pétrissage, friction, etc., of the weakened muscles; (5) passive stretching of the contracted muscles.

6. **Conditions Resulting from Ritual Circumcision.**—F. Bierhof states that accidents and infections are not uncommon in the performance of this rite. One of these accidents is the amputation of a small slice of tissue at the tip of the glans penis, and results from failure to employ the circumcision shield. A more serious injury is complete severing of the corpus spongiosum and urethra and partial severing of the corpora cavernosa. Another

condition not infrequently met with is the persistent and organization of preputial adhesions.

8. X-Ray Diagnosis of Abdominal Conditions.—G. F. Pfahler states that practically all pathological conditions in the chest which may cause pain in the right upper quadrant of the abdomen can be demonstrated by the Rontgen rays. Subdiaphragmatic abscess can usually be demonstrated. Biliary calculi can be shown in some cases. Duodenal gastric, and colonic adhesions can practically always be demonstrated by their effects on the position and movements of these organs. Gastric ulcer can be shown only when it has perforated, and can be suspected by spasmodic contractions, which may be present in the stomach. Duodenal ulcer may be suspected if spasmodic constrictions are present in the duodenum. Gastric carcinoma can be almost always demonstrated. Renal calculus can be demonstrated in at least ninety-eight per cent. of cases with good technique. Renal abscess can often be demonstrated by combined cystoscopic and rontgenoscopic examinations. Perinephric abscess can be demonstrated when it is large enough to produce a palpable tumor, or when it displaces neighboring organs. Colonic kinks and constrictions can be demonstrated. Each of the foregoing conditions requires careful technique and careful study in the sequence of the various steps during the examination, and usually requires not only a fluoroscopic examination, but a number of plates.

Journal of the American Medical Association.

May 18, 1912.

1. The Treatment of Persistent Pain of Organic Origin in the Lower Part of the Body by Division of the Anterolateral Column of the Spinal Cord. W. G. Spiller and E. Martin.
2. Experimental Work on the Function of the Anterolateral Column of the Spinal Cord. W. B. Cadwalader and J. E. Sweet.
3. The Blood Picture of the Autointoxication Due to Chronic Colonic Stasis. G. H. Hoxie.
4. The Utility of the Vacuum Bottle in Infant Feeding. F. O. Tonney and H. H. Pillsbury.
5. Hydrophobia (Rabies), with Report of a Case. J. G. Cumming.
6. Morphinism and Its Treatment. E. S. Bishop.
7. A Practical Method of Prophylactic Immunization Against Tuberculosis. A Preliminary Announcement. K. von Ruck.
8. A Rapid Staining Funnel. W. Lintz.
9. The Female Perineum from a General Surgeon's Point of View. R. T. Morris.
10. Salvarsan in Pellagra. Report of Cases Treated at the Georgia State Sanatorium in 1911. W. J. Cranston.
11. A Case of Fatal Hematoporphyrinuria Following the Prolonged Use of Trional and Sulphonal. A. W. Rogers.
12. A Face Mask. M. E. Smith.

1. Division of Anterolateral Column of the Spinal Cord.—W. G. Spiller and E. Martin report a case of section of both anterolateral columns of the cord for the relief of excessive pain due to a large malignant growth. The work of Petren and Spiller's studies lead to the conclusion that fibers for the conduction of pain are located in the anterolateral columns. Spiller therefore referred this patient, who was suffering intolerable pain, to Martin for division of the anterolateral column on each side. The pain was greatly relieved and the condition in other respects was not any worse than it was before.

3. Blood Picture of Autoinoculation Due to Chronic Colonic Stasis.—G. H. Hoxie notes that the blood picture in this conditions is as follows: The hemoglobin is high, with a normal red-cell count. The leucocytes also run usually under or about 9,000. The number of polymorphonuclears is low, usually below 70 per cent. The lymphocytes are correspondingly increased. Of these the larger forms with angular nuclei and wide unstained borders are in the great majority. The mast cells are infrequent. The ripe eosinophiles are about normal. In some specimens one finds many polymorphonuclears with oxyphilic granules. The platelets seem reduced in number. When studied with Wright's stain, the polynuclears show an increase in the proportion of cells, showing large ambophilic granules, so much so that the observer is struck with the "dark" appearance of the protoplasm. That is, the granules are large and purplish and seem to lie in a mauve cytoplasm. The proportion of these heavily staining cells decreases as the patient gets rid of the toxins. Hence, one can estimate rather closely how intoxicated the patient is by the proportion of these dark cells to the total number of polynuclears.

4. The Vacuum Bottle in Infant Feeding.—F. O. Tonney and H. H. Pillsbury have undertaken a series of experiments to determine the bacteriological content of milk kept in vacuum bottles for various periods. The use of the apparatus may or may not be safe, according as the milk is kept at a germicidal or an incubating temperature. In the first series of experiments two samples were used at an initial temperature of 150°. The milk was first warmed to that point and placed in a vacuum bottle, which had been previously warmed by immersion in hot water. The bottles were kept at room temperature and opened at intervals for temperature readings and bacterial tests. It was found that the temperature of the surrounding atmosphere influenced materially the rate of heat loss. The count, which was exceedingly low at first, remained so for from six to ten hours, depending on the outside temperature. After that time, and as the temperature fell below 115° F., the bacteria began to multiply rapidly and soon reached enormous numbers. It was concluded that in using this method the bottles should be kept in a warm place if the milk is to be used more than five hours after the warming. Improperly or carelessly used, the vacuum bottle becomes a potent factor for harm. The nurse may easily fall into the error of underheating the milk to only incubating temperature. In a second series of experiments made to emphasize this danger, the authors experimented with milk heated to the ordinary temperature for infant-feeding, and found that raw and pasteurized milk became dangerous in two hours. The directions given by the authors are as follows: "Warm the milk, properly modified, until a thermometer immersed in it registers 150° F., and pour it into a vacuum bottle previously warmed by hot water. Stopper the bottle tightly and put it in a warm place. At feeding time remove the stopper and take the temperature with a thermometer. For this purpose a short thermometer which can be kept inside the bottle is preferable, as the danger of bacterial contamination from this source is thus reduced to a minimum. If the reading is above 115° F., fill the nursing bottle, allow the milk to cool for a few minutes and proceed with the feeding. Replace the cork of the vacuum bottle quickly, and set it aside for the next feeding. Do not use the milk, under any circumstances, if the temperature has fallen below 115° F.

11. Hematoporphyrinuria.—A. W. Rogers reports a case of the excessive use of trional and sulphonal by a man aged 39, suffering from neurasthenia and insomnia. The symptoms were profound exhaustion of body and mind, obstinate constipation, tympanites, nausea, occasional vomiting, and much abdominal pain, localized around the navel. The urine was scanty and presented the appearance of free blood, but failed to react to blood-tests. These symptoms grew worse and the patient died from exhaustion about twenty-five days after the symptoms were noticed by the physician. The patient had been taking daily about 12 grains of sulphonal for four or five weeks with an occasional dose of 15 grains of trional. But comparatively few cases of this poisoning have been reported and the treatment is purely empirical: large doses of sodium bicarbonate and stimulation of intestinal elimination.

The Lancet

May 11, 1912.

1. The Treatment of Acute Appendicitis, When and How to Operate. Sir G. T. Beatson.
2. Hedonal as a General Anesthetic Administered by Intravenous Infusion. A Report on 75 Cases. C. M. Page.
3. Vicious Circles Associated with Disorders of the Nose, Throat and Ear. J. B. Hurry.

4 The Vital Phenomena Occurring Under Anesthesia. Nervous, Circulatory, Respiratory, and Metabolic, and Their Relation to the Safety of the Patient. D. W. Buxton.
5 Inquiry Into the Prevalence of Syphilis in the South African Native, and Its Influence in Aiding the Spread of Tuberculosis. B. G. Brock.
6 The Heating of Schoolrooms by Closed Slow Combustion Stoves Burning Coke. H. W. Sinclair and A. H. Kirkham.

1 **Treatment of Acute Appendicitis.**—Sir G. T. Beatson maintains that operative measures should be undertaken at the right time, and that that time is when the case has been brought to the conditions that constitute an "interval operation." Then, and then only, will one have complete success in the surgical treatment of appendicitis. In antiseptic surgery and its aseptic form, the author is a firm believer, but he is not satisfied that it can successfully combat infection in dealing with localized intraperitoneal suppuration or infection, and it is not fair to ask it to accomplish what is beyond its powers. Until one has a vaccine that will neutralize the virulence of intraperitoneal pus in connection with acute localized suppurative appendicitis, the author believes the wisest course is to wait and allow its virulence to subside, as it will do through the agency of the local leucocytosis that is present. In short, what one must aim at in the treatment of acute appendicitis is to bring the conditions at operation as near as possible to those that mark the "interval stage," when one can operate with comparative safety.

2. **Intravenous Injection of Hedonal as a General Anesthetic.**—C. M. Page presents a report based upon the use of this drug as a general anesthetic in 75 cases. Hedonal, or methyl-propyl-carbinol-urethane, produces general anesthesia when injected intravenously in a 0.75 per cent. solution in normal saline solution. Administration of the solution by continuous infusion gives good results. The anesthesia is steady and complete; is associated with great relaxation of the muscles, and has a wide margin of safety. During anesthesia the respiration remains steady and the pulse good; the blood-pressure usually falls slightly. The induction of anesthesia is subjectively very pleasant to the patient; little if any excitement occurs during this stage. Anesthesia is established in from 5 to 10 minutes; the rate of inflow of the fluid should be from 50 to 150 c. c. to the minute; a slower rate greatly delays the induction of anesthesia; a more rapid one may produce signs of cyanosis. The comparatively slow rate at which the drug is excreted makes it possible to maintain anesthesia for prolonged periods without infusing a very large volume of fluid. The anesthetic stage usually merges into one of deep sleep, which lasts from 6 to 12 hours. Vomiting or headache at the postoperative period is uncommon. Pulmonary complications are rare. The dangers which may arise during anesthesia are respiratory depression from an overdose of the drug and respiratory obstruction from falling back of the tongue and jaw. The method is very suitable for operations about the head and neck; the muscular relaxation and quietness of the respiratory movements also make it a valuable anesthetic for operations in the upper part of the abdomen.

3. **Vicious Circles in Disorders of the Nose, Throat, and Ear.**—J. B. Hurry states that nasal obstruction, by preventing or interfering with the expulsive force of the expiratory current, prevents the removal of the usually abnormal amount of secretion, either by blowing the nose or otherwise; its accumulation is in its turn an efficient factor in producing obstruction and a vicious circle is thus established. Inflammatory and hypertrophic affections of the nasal mucosa, and postnasal growths such as adenoids, tend to increase when stenosis is present and thus a vicious circle is maintained. Deflection of the nasal septum and nasal obstruction act on each other. Abnormal patency of the nasal fossæ by diminishing the velocity of the air stream and thereby favoring the retention of secretion, has much to do with the circle that complicates atrophic rhinitis or ozena. Reciprocal relations are frequently established in connection with sinusitis. A polypus by exciting or maintaining irritation of adjacent structures, stimulates the source of its own formation. Acute rhinitis diminishes the resistance of the nasal mucosa and so predisposes to successive attacks. Some dangerous circles are associated with stenosis of the larynx and trachea. In congestion of the aryteno-epiglottidean folds the resulting dyspnea causes the edematous masses to be brought closer together, which increases the dyspnea.

4. **Anesthesia and the Safety of the Patient.**—D. W. Buxton states that very little of any anesthetic is needed to keep up any level of narcosis when the level is once established, and that so long as the tissues are not over-narcotized the cells will by their inherent vitality part with the anesthetic, reverse the aggregation, and so regain their normal physiological state. Even in artificially produced acidosis the cells of the hepatic lobules which have undergone necrosis have been shown to recuperate, but this can only occur when the general vitality of the organism has not been excessively depressed. Indeed, this has been shown experimentally to be true of other, mainly epithelial, tissues; so that there is every presumption in favor of the belief that when a narcosis is maintained without excessive interaction between the narcotizing agent and the tissues of the body, such tissues even if temporarily damaged will rapidly recover, provided their requirements—*e.g.* adequate blood supply and so on—are safeguarded and physiological conditions are promptly reinstated.

5. **Syphilis in the South African Native.**—B. G. Brock states that 35 per cent. of natives have a fibroid condition of the lungs and 68 per cent. have induration enlargement of the epitrochlear gland. Both conditions result from syphilis, and nearly 80 per cent. of natives have one or both conditions present. Syphilis prepares the way for tuberculosis, and is, in all probability, the chief cause for the great prevalence of, and high mortality from, the latter disease in the natives engaged in mine work on the Rand. Syphilis plays a rôle in the production of lung disease in the youth and adult, the great importance of which has not been recognized.

British Medical Journal.

May 11, 1912.

1. Sanity and Insanity. F. W. Mott.
2. Coma and Its Differential Diagnosis. D. Forsyth.
3. Galvanization of the Brain. R. T. Caesar.
4. A Case of Typhoid Fever Complicated with Cholecystitis. W. A. Evelyn.
5. Green Urine Due to a Proprietary Pill. F. L. Golla and H. D. Rolleston.
6. The Mechanism and Treatment of Shock. H. T. Gray and L. Parsons.

1. **Sanity and Insanity.**—F. W. Mott states that the question is frequently asked whether insanity is not greatly on the increase. Before answering such a question, it is as well to know exactly what constitutes insanity at the present time. It is often difficult to draw the line between sanity and insanity. It may, however, be asserted that a person is insane who by virtue of mental defect or mental disorder no longer feels, thinks, or acts in conformity with the usages and customs of the society in which he lives. The great increase in insanity is more apparent than real for the following three reasons: (1) The standard of sanity has been raised; a great number of harmless idiots and weak-minded persons who formerly were allowed to roam at large are now gathered into asylums. (2) The death-rate having diminished in recent years, there is a tendency to fill the asylums with chronic incurable cases. (3) Many aged persons suffering from dementia who were formerly treated in infirmaries are now sent to the asylums, where they can be better cared for.

2. **Coma.**—D. Forsyth arranges the six important

causes of coma in the following order according to their frequency: Vascular derangement of the brain (hemorrhage, thrombosis, embolism); injuries to the head; epilepsy; diabetes; poisons; and Adams-Stokes disease. The less common causes are meningitis, encephalitis, cerebral abscess, cerebral tumor, fevers, eclampsia, cholerina, epidemic enteritis, general paralysis, and disseminated sclerosis. The rarer causes are pernicious malaria, muscular exhaustion, and heat-stroke.

Berliner klinische Wochenschrift.

May 13, 1912.

Psychiatric Instruction as Part of General Medical Education.—Bonhoeffer emphasizes the twofold aim of medical education, viz., to develop the technical skill on a basis of certain material foundation studies and to develop the personality. The latter, no less important than the former, cannot be developed by courses of lectures. It comes about of itself after prolonged intercourse with patients. The author believes that instruction in psychiatry tends to develop the personality of the physician, since it involves constant study of the mental processes. The latter is preeminently a part of general medical training, and the insane would never have been separated from sane patients simply because of their insanity, but because their presence is a source of disturbance to work. An examination of the mental processes is or should be inseparable from medical practice in general. In addition to the objective examination we ask the patient about his sensations, etc., not necessarily to elucidate his physical state, but to determine his mental processes. Medical teaching has erred too long in minimizing this problem. The crude practitioner does not want to listen to complaints, and if he finds nothing wrong objectively takes but little interest in the subjective side of the patient and does not go beyond the diagnosis "hysterical," "neurasthenic," "hypo," and the like, which only represents the impression made upon him by the patient and does not mean that he has arrived at an actual diagnosis after due examination. Failure to appreciate a really hysterical patient by physicians has been the means of innumerable unnecessary surgical procedures. The author knows of one hysterical who has submitted eagerly to two operations on the cecum, one on the kidney, and finally a Kraske resection of the sacrum. She was actually able to simulate unconsciously the various local affections which appeared to justify the operations—for the latter were not performed for their moral effect. Hystericals naturally have accidentally associated physical lesions which are in no way correlated with the mental state. Of extreme importance are the relationships between somatic and psychic states, which must fall into one of several categories—cause, effect, of common origin, coincidental, etc.

Pancreas Alterations and Diabetes.—Von Hansemann takes issue with those who claim that there is no anatomical basis for diabetes. It is now pretty generally admitted that there is but one true diabetes, although there are many types of glycosuria. This true diabetes is always of pancreatic origin. The only differences in opinion are such as are bound up in the question "structural or functional." Some would see in diabetes a disordered function of the pancreas with or without structural changes. The opponents feel equally certain that structural alterations must be present even if these are of a kind to escape recognition. The problem has been confused by accusing the islets of Langerhans, which as the supposed source of the internal secretion of the pancreas would naturally be found affected in diabetes. It has now been demonstrated that the latter affection may exist with intact islets, while in destruction of the latter it may be absent. The opinion has gained ground that the islets are in no wise distinct in nature from the ordinary parenchyma, and it is known that the latter is the source of the former. The author believes, as already stated, that the pancreas is always the seat of structural changes in diabetes, which latter is necessarily due to derangement of the harmonic functions of that gland.

Münchener medizinische Wochenschrift.

May 7, 1912.

Immunity and Anaphylaxis.—Traube states that in Germany at present immunity is being studied as if it were a question of chemistry and to the neglect of the physical possibilities of the problem. In other countries the devotees of physics and physical chemistry are studying immunity from their particular viewpoints. The exclusively chemical hypothesis or rationale has always been unsatisfactory. It has never been entirely obvious that a toxic heterologous albumin calls forth the defensive formation of a chemical antidote, and the phenomenon of the anaphylactic shock by no means fits into a chemical explanation. Quite recently chemotropsin has, despite its name, been shown to be physical rather than chemical in character; at least to the extent that the chemical activity of a selective staining principle depends upon its physical ability to penetrate the cell envelope. If chemical substances, *i.e.* substances of a definite chemical constitution, possess certain chemical activities which bring about definite changes in the organism, we cannot understand why bodies in every way similar chemically do not exert a similar action. The study of the relationship between chemical constitution and physiological action, fruitful up to a certain point, stops far short of finality and even leads to most paradoxical finds in certain cases. It is probably *a priori* that both physical and chemical phenomena are concerned in all biological reactions, and to study one component to the exclusion of the other is not good policy.

Lacerations of the Tentorium in the Newly Born.—Bauereisen believes that this accident is of much importance in connection with still and asphyctic births. He has analyzed eleven cases in the Kiel clinic. All were born asphyctic and nine were in the deepest state of suspended animation, the persistent heart action alone showing that life still remained. None of the series could be reanimated. The remaining two were reanimated but succumbed shortly, apparently from paralysis of the respiratory center. One child developed the full clinical picture of tentorium laceration (supratentorial hemorrhage). In the entire series of eleven cases, labor had to be terminated by forced extraction. In five cases the children were premature, as gestation had to be terminated for placenta previa, eclampsia, or nephritis. The full importance of this subject is bound up in the possibility that slight lacerations of the dura, especially of the tentorium, are very common and may be wholly or in part responsible for many deaths set down to quite other causes. When the children survive this lesion may also be held responsible wholly or in part for various affections of cerebral origin. There is of course no special prophylaxis, for the obstetrician is always supposed to use a minimum of force in manipulating the skull of the newly born, but it is probable that much mortality and morbidity could be prevented by bearing in mind that the tentorium is the point of least resistance to mechanical insults to the outside of the cranium.

Deutsche medizinische Wochenschrift.

May 2 and 9, 1912.

Pseudotyphoid and Bacillus Fecalis Alkaligenes.—Hanser and Springer report the following case: A girl aged 15 years died of clinical typhoid and came to autopsy.

No history was obtainable beyond the fact that she was in the sixth day of her disease on admission. The diagnosis was based on a positive Widal and the clinical picture of "typhoid state" including the brown tongue. There had been no roseola, no enlarged spleen, no typhoid or paratyphoid bacilli in the stools. Autopsy revealed absence of typhoid enteric lesions. The blood was then examined for evidences of typhoid sepsis with negative results. The blood, bile, and mesenteric lymph nodes, however, contained the *Staphylococcus pyogenes aureus* and a bacillus recognized as the *B. fecalis alkaligenes*. The problem at first sight seemed insoluble, but could be readily solved by assuming that within a certain interval she had gone through a mild walking typhoid and still had agglutinins in her blood. The fecal bacillus serum was found to be unable to agglutinate Eberth's bacillus. Terburgh once reported that such an agglutination can occur with some strains of the latter. In order to explain the case the authors assume it to have been a staphylococcus sepsis, which began as an angina. Aside from some minute abscesses in the kidneys there were no other actual lesions. The fecal alkaligenous bacillus often coexists with Eberth's bacillus in typical typhoid, and has also been found alone in typhoid suspects, but apparently not hitherto in full-fledged victims of typhoid, whether true or spurious.

The Paronychia of Confectioners.—Strauss states that this occupational disease is not very well known in Germany. Beginning with Poncet in 1870 a series of French authors have described it, yet it receives scant or no attention in systematic German works on industrial affections. The affection is not uncommon in South France in confectioners who work month in and out on candied fruits. Workers in other confections seem to be exempt. In preparing the candied fruits the finger tips are subjected to continuous thermic irritation, now hot, now cold, together with mechanical and chemical irritations. The digits most exposed—thumb and middle finger—are the worst sufferers. To these special lesions the artisans may also add the ordinary sugar itch of confectioners, usually ascribed to the fermentative action of the sugar. The author, who practises in Nurnberg, has recently had occasion to study three cases and dissents from the French opinions as to the specific occupational character of the affection. Only one patient of the three was a worker in candied fruits. The two other cases, with precisely the same lesions, occurred in a cook and dishwasher respectively. The affection resembled the ordinary "run around" but was much less acute, and the nail did not come away *en masse*, but turned dark and was shed slowly and fragmentally as new granulations formed beneath it. A form of paronychia sometimes termed scrofulous or malignant bears considerable resemblance to the occupational malady. In this the nail is not regenerated. The affection, while chronic, is very painful and attacks young subjects chiefly.

Rhinogenous Acute Articular Rheumatism.—Apropos of the recent interest manifested in this subject Stein reports a case in a five-year-old child who presented evidences clinically of nasal diphtheria with acute inflammation of the combined joints of hands, fingers and wrists, and both ankles. The nasal symptoms soon began to subside spontaneously and bacteriologically, the secretions negative for diphtheria but positive for streptococci. The diagnosis was fibrinous rhinitis and acute articular rheumatism. The entire disease lasted less than a week's time and the only treatment was menthol oil locally and aspirin inwardly.

Status Epilepticus.—Jodicke emphasizes the exclusively empirical character of our treatment of this condition, which naturally is the consequence of our ignorance of its intimate nature. What we call status epilepticus is really a very variable affection, the different types harmonizing in a few details only, such as continued high temperature and a comatose condition. The patient is menaced by death in a number of forms. After the passing of the status he may be left in a state of mental and physical exhaustion which may last for weeks. Aside from the dangers of death from symptomatic pneumonia and cerebral hemorrhage the patient may be left with pareses in the limbs and speech disturbances. The profound shock to the organism is shown by a tendency to lose flesh. The entire organism in fact must suffer, and weak points in the economy naturally suffer most. Our knowledge of causation must undergo revision. The status must in some cases be regarded as a psychoneurosis having a distinct psychical causation acting on a predisposed individual. But status is also a cumulative equivalent of ordinary epileptic convulsions, so that evidently factors which differ markedly among themselves may set the same mechanism in action. Status as a cumulative equivalent is especially associated with withdrawal of bromides, and this aspect of the affection is one with nature fairly obvious and for which we have a rational prophylaxis. It cannot be justly claimed that bromide medication has increased the frequency of status, for everything teaches the contrary. When left to itself without any sort of general or hygienic management, epilepsy doubtless terminated in a large percentage of cases in fatal status. In the institution material controlled by the author deaths from status make up anywhere from 5 to 18 per cent., in round numbers, of all deaths, the average for the past decennium being about 11 per cent. As far as can be ascertained, this rate was originally in the neighborhood of 50 per cent., which shows how unjust would be the assertion that status is due in any way to bromide therapy. It is undeniable that when a subject makes a good recovery from status he is in a measure better off. He seems to have secured a protracted period of immunity from convulsive outbreaks.

Tubercle Bacilli in the Circulating Blood.—Hilgerman and Lossen refer to the recent claims that a diagnosis of tuberculosis other than in the acute generalized type may be made from the presence of bacilli in the blood. That a few of the latter might exceptionally be found in the blood of ordinary consumptives might readily be conceded, but this is quite another thing than assigning to such fluids diagnostic and prognostic significance. On the other hand, recent claims are to the effect that such finds should be of regular occurrence with proper technique. The authors have attempted to solve this problem, and their conclusions are that perhaps 25 per cent. of consumptives show bacilli in the blood alike in the early and last stages, just as they come to examination. When these cases are followed up those who show bacilli in the early stages appear to have a more severe type of disease than the negative controls. The find in no sense implies that acute miliary tuberculosis is to develop. On the contrary, such patients may still respond to treatment. The tedious technique and the inconstancy of the finds will probably exclude the research for routine work.

Epileptoidism.—S. de Sanctis has made a study of 70 cases of a condition which he characterizes as epileptoidism. He describes this as a state in which there is great changeability of the feelings, especially in a hostile direction; nervous hyperexcitability; rapid and explosive reactions without sufficient cause, accompanied by anger, and not followed by somnolence; amnesia; involuntary micturition; refractoriness to work either physical or mental. The patients are not helped by bromides. There are poor sleep, hypoalgesia of the skin, slight functional motor alterations, spasm, retarded right-handedness and ambidexterity, mental insufficiency, criminal tendencies, and dipsomania.—*Rivista Ospedaliera.*

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

Blood Pressure.—Life insurance companies are recognizing the significance of abnormal blood pressure as a danger signal and are consequently becoming strong advocates for a more extensive employment of the sphygmomanometer by their examiners, especially since the instrument has been improved and adapted to the requirements of everyday use. The mercury type of sphygmomanometer is reliable if cleanliness of the instrument is observed and the proper precautions are taken when oxidation of the mercury occurs. The apparatus is bulky, cumbersome, and easily broken and, therefore, only fitted for office work. It will continue, nevertheless, to serve the excellent purpose of acting as a standard for the correction of the diaphragm instrument which is now so widely used, and for this reason should be in the possession of every physician unless he has ready access to one in his neighborhood.

The diaphragm dial type of sphygmomanometer has the advantage of being compact, portable, and easily applied. Like the aneroid barometer, it should be compared with a good mercury apparatus every three or four weeks in order to ascertain if any changes in the mechanism have interfered with its accuracy. If the readings vary from those exhibited by the standard apparatus the examiner will then know what allowance to make when taking observations until he can secure a readjustment of the instrument.

The blood pressure should uniformly be taken while the applicant is seated, the coat having been removed and the sleeves of the underwear, if heavy, rolled up. The cuff, about five inches wide, should be placed directly over the brachial artery, and the rest of the band neatly wrapped around the arm. The inflating bulb and the sphygmomanometer having been attached, the air bag is inflated until the pulse is lost to the finger tips. The air is then allowed to escape slowly until the pulse returns to the wrist, and the reading is made at this point. The entire procedure, after a little practice, does not require more than a few minutes, and the examiner will seldom if ever meet with any objections from the applicant.

High Blood Pressure.—The high normal limit of blood pressure may be considered as lying between 150 and 160. When the family or personal history is not too unfavorable and the weight of the applicant is under the maximum, a blood pressure as high as 160 may be looked upon as normal; then, again, under other circumstances the conditions may be such as to justify a refusal to accept the risk if 150 is exceeded.

A moderately high blood pressure will often prove to be a transitory one due to nervousness, fear of the examination, recent strenuous exercise, or a heavy meal. The report is incomplete, therefore, when a high reading is observed, until subsequent examination made under more favorable conditions indicate whether or not the tension is persistently high. The several readings should then be recorded.

The question of acceptance or rejection should be referred to the home office in cases of moderately high blood pressure. When, however, the pressure persists above 165 or 170 the examiner would better urge rejection.

Persistent high blood pressure is a danger signal of great importance, its value being particularly enhanced by the diagnostic aid rendered in the *early* stages of cardiac, vascular and renal changes which are so frequently overlooked. While we may only vaguely understand the etiology of high tension, it is at least believed by practically all observers that cardiovascular-renal disease will almost surely follow if the cause of the high tension is not removed.

Dr. J. W. Fisher (Proceedings of the Association of Life Insurance Medical Directors, October 4, 1911) in a paper on this subject stated that his company had made a strong effort to follow up rejected cases with high blood pressure. In the course of his remarks he referred to 356 applicants rejected with high blood pressure (average 171.73 mm.) and one or more impairments. The impairments consisted of arteriosclerosis in 53 cases, heart murmur in 69, cardiac-hypertrophy in 17, albumin and sugar in 10, albumin in 110, sugar in 14, albumin and casts in 10, casts alone in 6, nervous symptoms in 21, prostatic disease in 5, miscellaneous, 41. Subsequent investigation in regard to these 356 cases showed a mortality of 171.93 per cent. Dr. Fisher then presented a list of 366 cases rejected for high blood pressure only (average 170.36 mm.). The data collected later showed a mortality of 138.07 per cent.; the majority of the deaths were due to diseases of the arteries, heart, and kidneys, as would be expected. These figures afford satisfactory and conclusive evidence that high blood pressure must not be ignored in the selection of risks.

I cannot resist referring to a death claim coming under my own observation recently, as it illustrates the subject so aptly. The policy holder had been passed previously by an able and experienced examiner, the applicant at that time being 58 years old. Two years later he again came up for examination by the same examiner, and was again reported as a splendid risk with the single exception of a blood pressure of 168. On request from the home office for another reading the pressure was found to be 180 a few days later. The applicant was rejected at this time, and his death occurred nine months later from acute dilatation of the heart.

Low Blood Pressure.—The lower limit of blood pressure is not so well understood, but it may safely be asserted that an applicant should be rejected if his pressure is persistently under 100. The low blood pressure may be a temporary one and should always call for subsequent readings. Unhygienic conditions, too much work, too little nourishment, and poor air will give rise to lower vitality and consequent diminished resistance; this in turn may cause a low blood pressure. Hypotension has been particularly noticed in tuberculosis. The writer was informed within a week by an official in charge of one of the divisions of dispensaries under control of the Pennsylvania State Board of Health for treating and preventing tuberculosis, that he had a record of 1200 blood pressures taken in tubercular subjects. The records showed a uniformly low pressure of from 100 to 110, a few reaching 115, in incipient cases in which only the very first indefinite signs could be detected. In the later stages the pressure ran lower, reaching 80 in advanced cases.

Book Reviews.

WE AND OUR CHILDREN. By Woods Hutchinson, A.M., M.D. Author of "Instinct and Health," "Preventable Diseases," "The Conquest of Consumption," "Exercise and Health," etc., etc. Garden City, New York: Doubleday, Page & Company, 1911.

WITHIN recent years many books have been written on the hygiene of child life. None apparently has succeeded in presenting this subject with the degree of originality and interest that characterize this latest volume from the prolific pen of Dr Hutchinson. The reader of popular literature will recognize the titles of some of the chapter headings of this book, which is made up largely of articles that have appeared in magazine literature. The scope of this book can be best indicated by a recital of the chapter headings, which are as follows: introduction; before the little one comes; babies as bulbs; the nursery age; the sweet tooth; the kindergarten age; feeding the human caterpillar; our ivory keepers of the gate; the child's self-respect; brick walls and the growing child; eyes and ears; the worship of the race stream; reluctant parentage; the American mother; the delicate child; fiction as a diet; and overworked children on the farm and in the school. The author makes an eloquent plea for the use of natural methods in the rearing of children, whose normal instincts are not to be extinguished under the blight of theory and tradition. The craving for sugar, the need of outdoor life, the instincts of play and self-activity are but a few of the natural wants that must be respected. The author does not hesitate to demolish many a popular belief that has been sanctioned by long usage. In some instances, however, he falls into the danger of sacrificing scientific exactness in order to turn out a phrase striking for its rhetorical finish and wit. Few will agree with him that cod-liver oil is a "nauseous relic of barbarism." Almost all writers of popular medical articles, in their effort to impart interest and originality to their manner of presenting the subject, are apt to fall into the error of being inaccurate and to exaggerate the importance of certain subjects. An instance of this inaccuracy may be noted on page 58 of this book, in the use of the term animal sugar as synonymous with glycocoll, and animal starch as synonymous with carbohydrate. The author treads on firmer ground when he discusses the sociological phases of medicine such as eugenics, reluctant parentage (the euphonious substitute for race suicide) and the American mother. In exposing certain popular fallacies relating to these and kindred subjects, the author writes in his happiest vein. His book represents a unique contribution to popular medical literature and will undoubtedly attain a wide circulation.

HEALTH AND MEDICAL INSPECTION OF SCHOOL CHILDREN. By Walter S. Cornell, M.D., Director of Medical Inspection of Public Schools, Philadelphia; Lecturer on Child Hygiene, University of Pennsylvania; Director of Division of Medical Research, New Jersey Training School for the Feeble-Minded, etc. Illustrated with 200 half-tone and line engravings, many of them original. Price $3.00. Philadelphia: F. A. Davis Company, 1912.

THE conservation of the health and the medical inspection of school children are subjects that within recent years have attracted considerable attention from both public health and school authorities, and it is quite natural that there should be a demand for a textbook that would present fully and in detail the modern aspect of these subjects. This demand is admirably supplied in the present volume. The experience of the author as director of medical inspection in the Philadelphia schools has enabled him to write a book that is eminently practical and that may be used as a guide by the medical inspector, the school nurse, the public health officer, and the educational authorities. Part I takes up the subject of medical inspection; its object; administrative considerations; the methods of inspection, exclusion, and keeping records; the correction of defects; the results of medical inspection; and the present status of medical inspection in the United States. Part II deals with hygiene, including the various phases of school sanitation and personal hygiene. Part III discusses in detail the various defects and diseases, under the headings of definition, cause, prevalence, evidence and diagnosis, results and treatment. There are separate sections dealing with the eye, the nose and throat, the ear, the teeth, the nervous system, mental deficiency, the skeleton, nutrition, the skin, speech, and the infectious diseases. The section on mental deficiency, including the description of the methods of diagnosis such as the Binet test, is particularly complete. The volume is illustrated with a large number of half-tone and line engravings which admirably supplement the text. The author has succeeded in writing a book that has omitted nothing in the broad field of its subject-matter, a book that should be in every teacher's library, and indeed on the shelf of every physician who is interested in the welfare of children.

THE SURGERY OF ORAL DISEASES AND MALFORMATIONS. THEIR DIAGNOSIS AND TREATMENT. By George Van Ingen Brown, D.D.S., M.D., C.M.; Oral Surgeon to St. Mary's Hospital and to the Children's Free Hospital, Milwaukee; Professor of Oral Surgery, Southern Dental College, Atlanta, Georgia; Member of the American Medical Association; Member of the National Dental Association; Chairman of the Section on Oral Surgery of the Fourth International Dental Congress, etc. Illustrated with 359 Engravings and 21 Plates. Price $6.00. Philadelphia and New York: Lea & Febiger, 1912.

"THE discussion of a field of practice with hitherto ill-defined limitations, situated like the hub of a great physiological and pathological wheel, around which center and from which radiate almost limitless possibilities for the reception and extension of disease, has required much thought in the determination of the boundaries. In this effort the difficulty of conveying a true idea of the etiological and pathological importance of the oral region in relation to other parts and to the organism as a whole, without going too far afield in the discussion, has been realized." With these happily chosen words in the preface to the volume the author sets forth its purpose and scope and states the difficulty that confronted him in accomplishing his task. He has done a pioneer's work, indeed, in presenting in one volume, available both as a textbook and as a work of reference for dentists, dental students, surgeons, practitioners of medicine, and medical students, the vast subject of oral diseases and malformations. In carrying out his plan the author has devoted relatively little space to problems connected with the teeth alone, as may be seen by glancing over the table of contents. The chapter headings are as follows: Anesthesia, hemorrhage, shock; pathological dentition; infectious diseases; diseases of the mucous membrane of the mouth; diseases of the nervous system affecting the buccal region; diseases of bone; diseases of the glands; tumors; diseases of the maxillary sinus; diseases, tumors, and malformations of the tongue; nasal deformities and diseases in relation to the maxillæ; diseases, injuries, and malformations of the lips; and harelip, cleft palate, and defects of speech. This volume is not a mere compend of diseases of the mouth and adjoining regions. It contains many original features. Thus the chapter on harelip and cleft-palate describes in great detail and with the aid of many superb illustrations the operations devised by the author in the treatment of these conditions. This is a phase of oral surgery to which the author has devoted particular attention. The neuralgias of the triennial nerve also come in for detailed consideration, all the modern operations for their relief being described. The illustrations are numerous and of a high order of artistic merit. The twenty-one colored plates can scarcely be improved upon. The author has succeeded in writing a book that will undoubtedly gain a host of friends among surgeons, dentists, and general practitioners.

PRINCIPLES OF HUMAN NUTRITION. A Study in Practical Dietetics. By Whitman H. Jordan, Director of the New York Agricultural Experiment Station; Author of "The Feeding of Animals." New York: The Macmillan Company, 1912.

THIS book is written by one who knows well whereof he writes and appears to be a very excellent practical exposition of that vital question what to eat. The work is intended rather for popular use, although one needs to possess a certain amount of scientific knowledge to appreciate it thoroughly. The author rightly lays stress on the necessity, if good health is to be attained and preserved, of adequate mastication. Bolting food, too often the custom in the hurly-burly of American cities, is undoubtedly responsible for a large number of stomach complaints. As for the fad, which is fairly common in civilized countries, of eating food in a raw state, the author is averse to it, and thinks that the proposition to eat all foods raw is not only irrational, but even absurd, when regarded in the light of well-established facts. Jordan is not quite definite in the expression of his views with regard to the use of food preservatives, but, perhaps, wisely leans in the direction of those who oppose the method as a general practice. It may be stated with decision that the book, on the whole is useful and worthy of a place in the rapidly growing library of works on dietetics.

MATERNITY PRIMER. By A. H. F. BARBOUR, M.D., LL.D., Physician to the Edinburgh Royal Maternity Hospital. Price 75 cents. New York: William Wood & Company.

THE term "primer" aptly describes this little volume which is meant for the use of nurses about to begin their obstetric training. The language is simple and strikingly free from technicalities. The subject-matter is presented in a most interesting manner by an experienced teacher. A series of questions at the end of the volume increases its value to the pupil.

DISEASES OF THE NOSE AND THROAT. Comprising Affections of the Trachea and Esophagus. A Textbook for Students and Practitioners. By ST. CLAIR THOMSON, M.D., F.R.C.P. (Lond.), F.R.C.S. (Eng), Physician for Diseases of the Throat and Professor of Laryngology in Kings College Hospital; Physician to King Edward VII. Sanatorium; formerly Physician to the Throat Hospital Golden Square; Surgeon for Diseases of the Throat and Ear to the Seamen's Hospital Greenwich; and Surgeon to the Royal Ear Hospital, London. With 18 Plates and 294 Figures in the Text.

IT is a pleasant task to review this volume from the pen of the distinguished British laryngologist. This book is without doubt one of the best textbooks on diseases of the nose and throat that have appeared in the English language. It is complete and up-to-date, serving the needs of the senior student and more particularly those of the general practitioner. The author, while keenly alert to the vast strides made in this subject within recent years, is also in sympathy with the conservative attitude of the general practitioner. For this reason the descriptions of such subjects as adenoids, acute rhinitis, "colds," diphtheria, epistaxis, syphilis of the nose, etc., are such as cannot fail to be helpful to the physician in general practice. This conservatism does not ignore the claims of the specialist who must needs be guided by the wide horizon of the experienced clinician. For instance, in discussing the subjet of adenoids the author points out and illustrates with the aid of photographs the facts that the typical adenoid facies may be due to other causes than adenoids and that on the other hand these growths may be present to a marked degree without in any way disturbing the normal physiognomy. The conditions of the nose and throat in the acute specific fevers, and in such general affections as gout, rheumatism, myxedema, angioneurotic edema, herpes, etc., are fully described. The needs of the specialist are not ignored; the various operative procedures are described in great detail, with the aid of many drawings. This is particularly manifest in the description of the classical operation for resection of the nasal septum. Little of value in the domain of the rhinolaryngology has been omitted. Possibly Pfannenstill's method of the treatment of lupus of the nose by means of nascent iodine is too new to be included. The series of eighteen colored plates admirably supplement the text in addition to the 292 drawings and photographic illustrations. There is appended to this volume a chapter giving a long list of formulæ that have been found of value in the treatment of diseases of the nose and throat. In spite of its completeness the volume is wonderfully compact, thanks to the art of the publishers.

MODERN METHODS IN NURSING. By GEORGIANA J. SANDERS, formerly assistant matron at Addenbrookes' Hospital, Cambridge, England; formerly Superintendent of Nurses at the Polyclinic Hospital, Philadelphia, and at the Massachusetts General Hospital, Boston. With 228 Illustrations. Price $2.50. Philadelphia and London: W. B. Saunders Company, 1912.

THIS is a textbook that is adapted to the curriculum of the modern training-school. In its 881 pages it contains all that, if not a good deal more than the average nurse is expected to know. The method of turning the mattress without removing the patient from the bed, and the method of staining the tubercle bacillus, though not of equal importance from the viewpoint of the practical needs of the nurse, are given equal prominence. With the growing complexities of modern medicine, the nurse is expected to know almost as much as the general practitioner, and the aim of the writers of textbooks for nurses is usually to vie with one another in trying to include as much as possible in the text. The result is that many of the subjects that pertain exclusively to the nurse and that have very little of purely medical or scientific interest, are either omitted or hurriedly passed over. Thus, in the present volume, although the various forms of coma are accurately described, scarcely any mention is made of the methods of nursing a comatose patient. The modern textbook on nursing exemplifies the conflict between the ultra-scientific aims in the training of nurses and the practical needs of the nurse in her daily work. Possibly this criticism may be unfair, since many subjects that are taught to the nurse in the training school can not be included within the limits of a single volume. In spite of this limitation, the author has accomplished the task of writing a book that is singularly complete and accurate, written in a style that is clear, elegant, and above all, interesting. The chapters on foods and on diets and dieting are exceptionally well written. The introductory chapter dealing with the personal and commercial phase of the nurse's work and with her choice of a training-school, should be carefully read and digested by every prospective nurse. The volume represents one of the best that has been written on this subject and will undoubtedly attain a wide circulation.

ÜBER DAS KONDITIONALE DENKEN IN DER MEDIZIN UND SEINE BEDEUTUNG FÜR DIE PRAXIS. VON D. V. HANSEMANN. Price 5 Marks. Berlin: Verlag von August Hirschwald, 1912.

THIS monograph grapples with the philosophical problem of cause and effect in relation to disease and injury, as distinguished from the conditions that underlie the production of disease and injury. It is shown that the conception of efficient causes is being gradually replaced by that of conditional factors, a conception that is after all the more useful one in practical medicine.

MODERN MICROSCOPY. A Handbook for Beginners and Students. By M. I. CROSS and MARTIN J. COLE, Lecturer in Histology at Cooke's School of Anatomy. Fourth Edition. Revised and Enlarged. With Chapters on Special subjects by various writers. Price $2.00. Chicago: Chicago Medical Book Company, 1912.

THIS well-known work needs no introduction. The appearance of an enlarged and devised fourth edition is a sufficient guarantee of its popularity. This volume takes up the subject of the technology and technique of microscopy and the methods of preparing specimens for study under the miscroscope. There have been added new chapters written by specialists, on subjects that interest the amateur microscopist. These subjects are the use of the petrological microscope; rotifera; the collection, examination, and preservation of mites found in fresh water; collecting and preparing foraminifera; mosses and liverworts; the microscope and nature study; and the microscopy of foods. This last subject is illustrated with a series of six excellent plates showing the microscopic appearance of a large variety of foods. The volume is written in a style whose meaning can be readily grasped by the beginning student. It is at the same time a complete exposition of a most difficult subject.

THE OCULAR MUSCLES. A Practical Handbook of the Muscular Anomalies of the Eye. By HOWARD F. HANSELL, A.M., M.D., Professor of Ophthalmology in the Jefferson Medical College; Emeritus Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmologist to the Philadelphia General Hospital; Member American Ophthalmological Society; Fellow College of Physicians of Philadelphia, etc., and WENDELL REBER, M.D., Professor Ophthalmology in the Medical Department of the Temple University; Professor of Diseases of the Eye, Philadelphia Polyclinic and College for Graduates in Medicine; Ophthalmologist to the Philadelphia General Hospital; Consulting Ophthalmologist to the Rush Hospital for Consumptives; Member Oxford Ophthalmological Congress; Past President American Academy of Ophthalmology and Oto-Laryngology. With three plates and eighty-two other illustrations. Second Edition, Rewritten. Enlarged. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co., 1912.

THE second edition of this work constitutes a volume of 223 pages. The authors have "sought to avoid discussions and speculations, to emphasize methods that have stood the test of their own experience, and to omit no important data that have been recognized as trustworthy." The anatomy and physiology of the ocular muscles forms Part I; structural anomalies, Part II; functional anomalies, Part III. Part IV is devoted to the consideration of operations. The work is fairly well illustrated. There is much of value to the practical ophthalmologist in this volume. There are some omissions (as, for instance, failure to mention retraction movements of the eyeballs), but they are few. The descriptions are lucid and sufficintly full. The teaching of this excellent work can be heartily recommended

Society Reports.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held April 22, 1912.

THE PRESIDENT, DR. CHARLES GILMORE KERLEY, IN THE CHAIR.

Garbage Removal.—DR. LINSLY R. WILLIAMS, Chairman of the Public Health Committee, presented the following resolutions: *Whereas*, The present method of gathering garbage and ashes is unsanitary and obsolete, be it *Resolved*, That the Medical Society of the County of New York do hereby recommend to the proper municipal authorities that a study be made by them to ascertain a more sanitary method for the removal of ashes and garbage, and be it further, *Resolved*, That a copy of this resolution be sent by the Secretary of the Society, the Commissioner of Street Cleaning, and the Secretary of the Board of Estimate and Apportionment.

Results of Bone Transplantation.—DR. A. A. BERG read this paper, demonstrated the principles of bone formation by means of lantern slides, exhibited a number of cases in which bone transplantations had been successfully done, and showed *x*-ray pictures of the transplants in various stages of growth and adaptation in their new locations. He said that transplantation of bone constituted one of the most important branches of reparative and conservative surgery, as by this means the presence and function of limbs could be preserved, deformity could be done away with, and important structures could be protected from external violence and injury. Dr. Berg reviewed the normal construction and development of bone. In respect to the development of bone it was very commonly assumed that ossification commenced in the center of the primary cartilage or membrane, that was the so-called ossification center, and proceeded from there outward to the periphery where it was joined by a very limited subperiosteal bone formation. Such a view was erroneous. A study of the development of bone showed that a preliminary calcification of the cartilage that was to be replaced by bone commenced at the ossification center, but that the real bone formation started in the osteogenetic layer, the osteoblastic cells of the periosteum, and proceeded from there inward by means of ostogenetic buds made up of vascular canals lined by osteoblastic cells. The facts in the histogenesis of young bone ought to effectually dispose of the entirely erroneous views that had been recently expressed by MacEwen, namely, that the bone cells of the fully developed bone could reproduce new osteoblasts, and so form new bone. The bone cells of the fully developed bone originated from the osteoblasts of the periosteum. It was a rule that in regeneration of parts the development proceeded along the lines and in the manner that was followed in the fetal state. Thus, in bones the ossification proceeded from the periphery inward and in the regeneration of bone it ought to proceed in the same way. The writer reviewed the history of bone transplantation from the time of Ollier, who, in 1867, formulated his views on the subject. Ollier found that where one wished to restore bony continuity after the removal or destruction of bone one must make use of living autogenous periosteum-covered bone grafts, as there was a marked difference between these and every other kind of bone transplants. Every other kind of a transplant died if it was not already dead at the time of its implantation. Radimowsky, in 1881, and Bonome, in 1885, found, in contradistinction to Ollier, that every piece of bone died, even when it was autogenous and covered with living periosteum. Radzimowsky showed that bony union between fragments and adjacent bony tissue easily took place whether the periosteum was preserved or not over such fragments, but that this was no evidence of enduring life in the fragments of bone and that the presence of blood-vessels was no evidence of life therein, inasmuch as dead bone might be permeated by blood-vessels from the vicinity. Microscopic examination showed that such fragments were dead. On the other hand, he demonstrated that the periosteum lived and produced new bone that was deposited on the surface of the transplanted dead bone and into its lacunæ and enlarged Haversian canals. Dr. Berg then reviewed the work of Barth, who used for purposes of transplantation periosteum-covered, or uncovered, or decalcified, or macerated bone. Even he, however, conceded later that better results were obtained when living autogenous periosteum covered bone transplants were used. Axhausen's classical work led him to the same conclusion. Dr. Berg then outlined MacEwen's work and showed where he had been led into error and that he had failed to give histological confirmation of his conclusions. MacEwen thought he had proved by heterotopic transplantation of bone the inherent reproductive power of bone. He transplanted bone shavings minus the periosteum into the soft parts and into the peritoneal cavity and found the growth of bone. This was perfectly within their previous knowledge. If the shavings contained osteoplastic cells from the bone marrow or if the periosteum was not entirely removed by scraping before the transplant was made it was reasonable to see how a small nodule of bone might be formed in the new bed. A further critical review of MacEwen's experimental work brought one to the conclusion that the fundamental principles as stated by Axhausen were still true and that they must still look upon the periosteum and marrow as the factors in the production of new bone. In discussing the details in the technique of transplantation the writer first considered the relative merits of autogenous *versus* heterogenous grafts and concluded that new bone formation was always more rapid and more extensive in autogenous grafts because the cellular nutriment was now altered. In heterogenous transplants the access of nourishment to the periosteum and marrow of the transplant was hindered and there was no tendency either in the marrow or periosteum towards the formation of new bone. The bed for the transplant should be vascular so as to allow of rich access of tissue fluids to the graft; for until new blood-vessels formed the periosteum was nourished by these fluids. Two factors affected the survival of the periosteum. 1. Grafts did badly unless entirely free from muscle fibers. 2. The grafts did well if a number of incisions were made into the periosteum, thus exposing a larger surface of the periosteum. Two factors influenced the survival of the marrow: 1. If a transplant of the entire shaft was made the marrow died; in such cases it only survived at the ends. 2. Grafts would do well if split longitudinally, thus permitting a ready access of nourishment to all parts of the marrow. In a broad way it might be stated that the indication for bone transplantation was destruction of bone either by disease or trauma.

DR. ARPAD G. GERSTER said that Dr. Berg had presented the biological process and the theories of bone formation very well. He believed that Axhausen was right, but he was by no means as absolutely sure of it as the reader of the paper; fundamentally there was much of truth, however, in his work. He had seen most of Dr. Berg's cases as they had occurred in his clinic at Mount Sinai Hospital and had followed them with interest because this branch of surgery had been neglected in this country. The fact that bone had been transplanted into an infected wound and had grown taught that one need not have a superstitious fear of infection in these cases, but of course the infection must not be of the rapid and progressive form. Many great advances in the treatment of injuries to bone had come from this country, as for instance the treatment of compound fractures, Buck's extension, and the lateral extension apparatus. These inventions were the result of opportunities furnished by the Civil War. In bone transplantation there was another opportunity to show what could be done.

DR. DELANCY CARTER said that his experience with bone transplantation did not coincide with that of Dr. Berg. He had had the opportunity of transplanting bone into soft tissue and he thought this offered a better opportunity to judge of the correctness of the theory. He had reconstructed a nose by transplanting a portion of bone tissue from the ninth rib, using hard compact bone without the periosteum. He inserted the bone graft under the nasal periosteum and it had not been absorbed, even though it had had no periosteum itself. He had done a bone transplantation in fifteen cases and had had bad results in only one instance. In this case he used bone from a patient who had just been operated upon. He also cited a case where he did a plastic operation in order to replace paraffin in a patient who had been operated on twice before. He used three pieces of bone for the sides and bridge of the nose and obtained good results.

DR. FRED H. ALBEE said that his experience with bone transplantation embraced 42 cases, the largest number of these being Pott's disease. He imbedded the bone graft into a bed of bone. He thought that lack of function was responsible for a great deal of the absorption that took place. He had done some experimenting on animals and had found that bone devoid of periosteum could be transplanted and live. It made a great difference, how-

ever, whether it was transplanted into a bed of bone or into soft tissue; the results were much better when it was transplanted into a bone bed. His grafts thickened.

Dr. BERG said that Dr. Carter had said that he transplanted bone into soft tissue and it did not become soft; this was because it became encapsulated and penetrated by blood-vessels, but morphologically it was dead bone. It might remain without being absorbed, but it was not a part of the living structure but merely a foreign body. As regarded the difference of density being accounted for by immobility, as he had shown in his a-ray plates, density increased at the periosteal layer while the bone was being replaced. Bone in soft tissue might remain for a time but it would not stay permanently.

The Results of Renal Decapsulation for Bright's Disease.—Dr. SAMUEL LLOYD read this paper. (See page 1030.)

Dr. ARTHUR F. CHACE said that, now that the first burst of enthusiasm over the operation of decapsulation for chronic Bright's disease had died out, they were in a position to look at the subject fairly and he thought that Dr Lloyd's indicatinns for the operation were most reasonable. By careful tests he had found that the clinical symptoms were a very good guide as to the degree of kidney function.

Dr. CHARLES GILMORE KERLEY cited the case of a child four years of age who had acute nephritis. She had been tapped on several occasions. After a third severe exacerbation of the trouble she was operated upon. At the time she was thoroughly water-logged. Immediately after the operation the kidneys began to act and the way in which the water was disposed of was remarkable. She lost eight pounds in a week and by the end of four weeks the condition of the kidneys was approaching normal when the child was taken with colitis and died.

Dr. Samuel Lloyd said that they quite frequently saw as remarkable results as those that Dr. Kerley had just related. He cited the case of a boy who was so disfigured by nephritis that he did not look like a human being. After decapsulation he lived for four years; then a second operation became necessary, but he did not survive this. They could not depend on a progressive and continuous improvement in these cases after operation. Often there would be relapse after relapse. The most careful medical, dietetic, and hygienic attention was needed. The cure did not come quickly, usually not until about three years after the operation.

Report of a Case of Amputation of Thigh, Upper Third, for Gangrene, Complicated by Aneurysm of the Femoral and Popliteal Arteries, with Presentation of the Patient, Aged 70 Years.—Dr. JOHN H. BRANTH reported this case. He said that on January 5, 1911, when called into consultation to see the patient, he found the left leg and foot cold and the pulsation in the leg not discernible. There was a faint bluish coloration on the second and third toe. The pain was severe, radial pulse rapid and intermittent, and the temperature 101° F. A diagnosis was made of occlusion of the vessels approaching gangrene. Frost bite was thought of and the patient admitted having played cards in a summer cottage where he chilled his feet and then immersed the foot in a vessel of hot water. The sudden change of temperature from below freezing to 120° F. was too much and coagulation of the blood in the vessels followed. Had he rubbed his limb with snow or cold water no injury would have resulted. Dr. Branth cited a case from the literature showing how in the Arctic region an Esquimau with a leg frozen until it was apparently lifeless was treated. He was placed in a snow house with the temperature 20° below zero and the leg bathed in ice cold water for two hours, and then enveloped in furs for three or four hours; friction with snow and then with the feathered side of bird skin was used, alternated with wrapping the limb with furs for nearly twenty-four hours, together with a gradually raising the temperature of the snow house. On the third day, he was walking and had only a small frost bite on his toes. As it was too late for such treatment Dr. Branth's patient was stimulated and given opiates sufficient to control pain and they awaited Nature's signal to make out the line between the living and dead tissue. This line was not precisely demonstrated. The entire foot became black, and also the tibial region and the peroneal side of the leg. The soft tissues near the tibia and fibula were liquefying. The proximity of the knee joint, which if inflamed would end in a fatal result, suggested amputation of the thigh. Femoral myelitis and aneurysm of the femoral and popliteal arteries were not suspected and on finding these conditions a second amputation several inches higher had to be made with the purpose of getting above the infected marrow. A coagulated blood cast of about five inches in length was removed from the femoral artery. The femoral aneurysm was the size of a hen's egg and contained a clot like brown putty, while the aneurysm of the popliteal artery was fusiform; each had a channel for the blood current. The amputated limb was black, withered in the foot, and the muscular tissue was putrid and of gelatinous consistency. After the operation the patient suffered from shock, which was met by the usual remedies and by the end of a week he was on full diet. He was operated upon on February 20 and on March 5, when the dressings were removed, the wound was dry, aseptic, and without even a stitch abscess. These results spoke well for the asepsis during the operation but were due also to the cooling of the saw by a stream of water so that the heat of friction could not injure the bone. The wound was flushed by a pitcher of hot water to remove bone dust and any loose particles before stitching the flaps together. At the first dressing two drainage tubes and one-half the stitches were removed and three days later the remaining stitches and drainage tubes were taken out. The stump could be moved without pain. In some instances there were painful spasms of the stump after this operation. The writer thought this was due to neuroma caused by a blood clot around the nerve's end; this blood clot organized into connective and scar tissue and by contractions caused pain and spasm. In this patient the small arteries of the nerve sheath were ligated about an inch above the cut end of the sciatic nerve.

Dr. WILLIAM STEVENS said that he had watched the progress of this case with interest. He thought that the employment of the hot water to cleanse the surface of the wound after the arteries were ligated was a very important factor in preventing the appearance of pus. The marrow of the bone above the line of amputation was infected and this was cleaned out, relying on the matrix to reproduce it. This reproduction of the marrow would take place just as when two long bones were placed in apposition and a marrow was formed by absorption. Dr. Branth had been very careful and punctilious and after looking over the records of similar cases he thought that this was a remarkably good result.

Dr. J. MILTON MABBOTT said that within the last two weeks he had seen a Civil War veteran who still suffered from spasms of the stump and he was glad there was a way of leaving a stump so that this disagreeable effect of amputation might be avoided.

Dr. Branth said that the termination of the stump was a factor in causing spasm. The muscles and nerves must not be brought too far forward or too far back as that made a conical stump. The action of the hot water was partially to congeal the lymph which glued together the well fitted opposing flaps; this promoted immediate union.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

GESAMMELTE WERKE VON ROBERT KOCH. Vol. I. By Prof. Dr. G. GAFFKY, Prof. Dr. E. PFUHL and Prof. Dr. J. SCHWALBE. 700 pages; illustrated; paper; price 40 M. Georg Thieme, Publisher, Leipzig.

GESAMMELTE WERKE VON ROBERT KOCH. Vol. 2. Part I. By Prof. Dr. G. GAFFKY, Prof. Dr. E. PFUHL and Prof. Dr. J. SCHWALBE. 680 pages. Part II, 530 pages; illustrated; paper; price 40 M. Georg Thieme, Publisher, Leipzig.

A COMPEND OF HUMAN PHYSIOLOGY. By ALBERT P. BRUBAKER, A.M., M.D. 248 pages; illustrated; cloth; price $1.25 net. P. Blakiston's Son & Co., Publishers, Philadelphia.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE. Vol. V, No. 5. 132 pages; paper; illustrated; price 7 shillings and sixpence net. Longmans, Green & Co., Publishers, London, New York, Calcutta, Bombay.

BRONCHIAL ASTHMA. ITS PATHOLOGY AND TREATMENT. By J. B. BERKART, M.D. Revised and Abridged Third Edition. 150 pages; illustrated; cloth; price $2.00 net. Oxford University Press, Publishers, London, Edinburgh, New York, Toronto and Melbourne.

REPORT RELATING TO THE REGISTRATION OF BIRTHS, MARRIAGES AND DEATHS IN THE PROVINCE OF ONTARIO FOR THE YEAR ENDING 31ST DECEMBER, 1910 (Being the 41st Annual Report). Printed by order of the Legislative Assembly of Ontario. 281 pages; paper.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Illinois State Board of Health Physicians' Examination.

January 17-19, 1912.

ANATOMY.

1. Give the articulations of the inferior turbinate bone.
2. Where are the medulla oblongata, the pons Varolii and the cerebellum located, and how are they separated from the cerebral hemispheres?
3. Name the nerves that supply the muscles of the forearm and hand.
4. Where does the internal carotid artery commence? Where does it terminate and into what does it divide?
5. In tapping the pericardium, where should the puncture be made in order to avoid the pleura?
6. What bones form the articular surface of the knee-joint? Name the ligaments of the knee-joint.
7. Name the tunics, or coats, of the eye, from without inward; also the refracting media, or humors, of the eye.
8. Name the branches of (*a*) the ascending aorta; (*b*) arch of the aorta.
9. Give origin, insertion, action and nerve supply of the brachialis anticus muscle.
10. Where does the right lymphatic duct empty its contents? What prevents regurgitation of blood into these ducts?

PHYSIOLOGY.

1. Name the structures entering into the formation of a joint. What is meant by diarthrosis, amphiarthrosis, and synarthrosis? Give example of each.
2. What is meant by Wallerian degeneration?
3. State the estimated quantity of the secretion of the following body juices and fluids in twenty-four hours: saliva, gastric juice, pancreatic juice, bile, and urine. State chemical reaction of each.
4. State the various changes which a fat and carbohydrate food undergoes after being taken into the mouth until reaching the circulation. Where do they enter the circulation?
5. State the rate of respiration per minute in a child one year old. Give the vital capacity of the adult lung.
6. Define eupnea, hyperpnea, apnea, dyspnea and asphyxia.
7. Name and describe the three orders of levers found in the human body. Give example of each.

NEUROLOGY.

1. Define pachymeningitis, leptomeningitis and syringomyelia.
2. Give diagnostic difference between catalepsy and epilepsy.
3. Give diagnostic difference between paralysis agitans and locomotor ataxia.

CHEMISTRY.

1. What important compound does carbon form with nitrogen and oxygen? Give formula of compound.
2. Give the formula of chlorate, bromate and iodide of sodium.
3. What do the following symbols represent: NH_3, NH_4Cl, N_2O, $NaHSO_4$?
4. Name the principal oxygen derivatives of the hydrocarbons.
5. How would you proceed to examine substances for arsenic?

ETIOLOGY AND HYGIENE.

1. What is the etiology of bronchopneumonia?
2. Give the etiology of chronic endocarditis.
3. What is the etiology of diabetes insipidus?
4. How may milk become a factor in the causation of disease or become a disease carrier? What means would you recommend to prevent the transmission of disease by milk?
5. What hygienic measures would you recommend to prevent or diminish the severity of cholera infantum?

MATERIA MEDICA AND THERAPEUTICS.

1. Name several of the solvents commonly used in the preparation of drugs, and give advantage of each. What are the objections, if any, to mixing alcoholic with aqueous solutions? Give examples.
2. Give names and general physiological actions of one or more of the convulsant series of drugs, with dose and use.
3. Name five alkaloids. What are some advantages of the employment of alkaloids? Give doses of three and the action and use of one.
4. Give dose, action, and use (local and internal) of atropin sulph. Why is atropin combined with morphine in hypodermic tablets?
5. Give classification, action, dose, dangers, and indications for use of pilocarpin.
6. Give physiological action, contraindications, dose, and use of preparations of thyroid gland.
7. Give dose, action, uses, and dangers of phenyl salicylate.
8. Name two general anesthetics. Give action, uses, and dangers of one of them.
9. Give the action, dose, dangers, uses, and contraindications of digitalis.
10. Give the action and use of one of the preparations of calcium used in medicine.

PATHOLOGY.

1. Give the pathology of ophthalmia neonatorum.
2. Define cyanosis, and give the pathological cause.
3. What is an atheromatous degeneration? Give pathology.
4. What are the pathological changes in a chronic enteritis?
5. Describe metastatic abscess formation.

BACTERIOLOGY.

1. Give methods of staining gonococci. Describe their appearance.
2. What is tuberculin? Describe the general reaction following the use of tuberculin.
3. What are the bacterial findings in puerperal septicemia?
4. Name and describe the microorganism of Asiatic cholera.
5. What microorganisms are most frequently related etiologically to the development of surgical septicemia?

PRACTICE OF MEDICINE.

1. Given a moderate regurgitation at the aortic orifice of two years' duration, this being the only valvular lesion present, describe the necessary concurrent physical signs and give the treatment.
2. Differentiate between reflex, gastric, and cerebral vomiting, and outline the treatment of gastric vomiting.
3. Name the principal complications of diabetes, and give the treatment of each.
4. Differentiate encephalic tumor from abscess of the brain.
5. Describe (a) circulatory, (b) urinary findings in a case of chronic contracting nephritis, and give prognosis and dietetic management.
6. Give the symptoms and treatment of epidemic influenza.
7. Distinguish cystitis from pyelitis, and give treatment of the latter.
8. What acute infections are liable to cause inflammation of the endocardium? How would you treat one of them?
9. Give the diagnosis of tuberculous cystitis, the treatment and prognosis.
10. What diseases are usually associated with the following: Corrigan pulse, hematemesis, hemoptysis, jaundice, dropsy of lower extremities, crepitant râles, high blood pressure, increased frequency of pulse without fever, cyanosis, vesicular breathing. (Name the disease or diseases separately for each of the above symptoms or conditions.)

OBSTETRICS.

1. What changes occur in the uterine appendages during pregnancy?
2. What are the probable signs of multiple pregnancy?
3. What are the symptoms of polyhydramnios?
4. How are abortions usually classified? What are the symptoms of inevitable abortion?
5. Discuss concealed hemorrhage.
6. Outline treatment of puerperal eclampsia.
7. Discuss the diagnosis of presentations.
8. Give treatment in case of prolapsed cord.
9. What are the symptoms of acute inversion of the uterus?
10. Discuss the methods of performing version.

SURGERY.

1. Name the surgical diseases of the mammary gland and outline treatment of the same.

2. Make a diagram of the regional anatomy of the abdomen, and name the vital organs located in the epigastric region.
3. Classify wounds, and describe the variety most commonly infected, and give manner of infection.
4. Outline the management of a case of erysipelas.
5. Give symptoms and diagnosis of cerebral concussion.
6. Describe four varieties of gastric ulcers. Give occurrence of each.
7. Give indications for aspiration of urinary bladder, and describe the operation.
8. Give the pathology of gummata, and outline surgery of same.
9. Classify the different varieties of ankylosis, and give pathology of one variety.
10. Name the congenital deformities of the spine.

PHYSICAL DIAGNOSIS.

1. Describe in detail an examination of the urinary bladder.
2. What are the physical signs of incipient pulmonary tuberculosis?
3. Differentiate regurgitation at the aortic valve and at the mitral valve.
4. What are the signs by which one recognizes fluid in the peritoneal cavity?
5. Enumerate the signs of obstruction of the portal vein.
6. What are the physical signs of lobar pneumonia?

OPHTHALMOLOGY AND OTOLOGY.

1. Give the time of appearance and diagnosis of presbyopia ophthalmia.
2. Discuss the etiology and sequelæ of otitis media.

PEDIATRICS.

1. Give symptomatology and diagnosis of marasmus.
2. What is modified milk? Give schedule for feeding from birth.

GYNECOLOGY.

1. Give the causes, physical signs and treatment of pelvic peritonitis.
2. Give the diagnosis, prognosis, and treatment of uterine fibroids.
3. Name the varieties of ovarian cysts and describe each.
4. Which route is to be selected in the operation of cystotomy in the female? Give the technique of operation.
5. Describe the operation of trachelorrhaphy.
6. What is vaginismus? Give etiology and treatment.

LARYNOLOGY.

1. Describe method of intubation of the larynx.

RHINOLOGY.

1. Mention two varieties of nasal polypi. Give symptoms and treatment.

MEDICAL JURISPRUDENCE.

1. What are the most common accidental forms of death in the new born.
2. Differentiate between burns inflicted during life and those inflicted after death.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

ILLINOIS STATE BOARD OF HEALTH PHYSICIANS' EXAMINATION.

January 17-19, 1912.

ANATOMY.

1. The *inferior turbinated bone articulates with* the ethmoid, superior maxillary, lacrymal, and palate bones.
2. The *medulla* extends from the foramen magnum to the lower border of the pons varolii.
The *pons varolii* is at the base of the brain, between the medulla and crura cerebri; in front of the cerebellum.
The *cerebellum* is behind the pons and medulla and below the hinder portion of the cerebral hemispheres.
All these structures are in the posterior cranial fossa, and they are separated from the cerebral hemispheres (which are above them) by the tentorium cerebelli.
3. The *nerves which supply the muscles of the forearm and hand* are: The median, ulnar, musculospiral, and posterior interosseous.
4. The *internal carotid artery commences* at the bifurcation of the common carotid, opposite the upper border of the thyroid cartilage; it *terminates* in the middle fossa of the cranium, near the beginning of the Sylvian fissure; it *divides into* the middle cerebral and anterior cerebral arteries.
5. In *tapping the pericardium* the puncture should be made in the fifth or sixth left intercostal space, near to the edge of the sternum. If the pericardial sac is much distended the puncture may safely be made one inch external to the border of the sternum; this will be external to the internal mammary vessels. In both cases the pleura will be avoided.
6. The *articular surface of the knee joint* is formed by the femur, tibia, and patella. The *ligaments* are: Capsular, anterior, posterior, internal lateral, two external lateral, anterior or external crucial, posterior or internal crucial, transverse, coronary, and two semilunar fibrocartilages.
7. The *tunics or coats of the eye*, from without inward, are: (1) The cornea and sclerotic; (2) choroid, ciliary body, and iris; and (3) the retina.
The *refracting media* are: The aqueous humor, the crystalline lens, and the vitreous body.
8. *Branches of the ascending aorta:* Right coronary and left coronary arteries.
Branches of the arch of the aorta: Innominate, left common carotid, and left subclavian arteries.
9. BRACHIALIS ANTICUS. *Origin:* Lower two-thirds of anterior surface of shaft of humerus, and from intermuscular septa. *Insertion:* Inferior surface of coronoid process and adjacent surface of shaft of ulna, and into anterior ligament of elbow joint. *Action:* Flexor of forearm. *Nerve supply:* Musculospiral and musculocutaneous.
10. The right lymphatic duct empties its contents into the right subclavian vein at its angle of junction with the right internal jugular vein. Regurgitation of blood into the duct is prevented by two semilunar valves which guard its orifice.

PHYSIOLOGY.

1. *Structures entering into the formation of a joint:* The articular ends of two or more bones, cartilage, fibrocartilage, ligament, and synovial membrane.
Diarthrosis is a freely movable joint, as the knee.
Amphiarthrosis is a slightly movable joint, as the inferior tibio-fibular articulation.
Synarthrosis is an immovable joint, as that between the sphenoid and vomer.
2. *Wallerian degeneration:* "When a nerve is divided the first result is a loss of its function. Inasmuch as each nerve-fiber develops from a cell which later nourishes it, if the connection between the two is severed the nerve-fiber undergoes Wallerian degeneration, and in the case of a nerve which is made up of nerve-fibers the whole nerve undergoes this change. This degeneration consists, in the case of medullated nerves, in the death of the axis-cylinder, the breaking up of the medullary sheath into drops of myelin, which are later absorbed, and the multiplication of the nuclei of the primitive sheath. In non-medullated nerves the only result is the death of the axis-cylinder. Degeneration begins very soon after the section—within a day or two—and throughout the entire severed portion of the nerve at the same time. Thus the course of a nerve, or a collection of nerves, may be traced throughout its entire extent. These changes are believed to be due to the severance of the nerve from its trophic center. If an anterior root of a spinal nerve is divided, the distal end, being separated from the gray matter of the cord, which is its center of nutrition, undergoes degeneration, while the end which remains connected with the cord retains its integrity. If a posterior root is divided between the cord and the ganglion the degeneration takes place between the cord and the ganglion; while if divided below the ganglion the degeneration takes place in that portion separated from the ganglion, showing that the ganglion is the nutritive center for the posterior root."—(Raymond's *Physiology.*)
3.

	CHEMICAL REACTION.	AMOUNT SECRETED IN 24 HOURS.
Saliva	Alkaline.	About 2½ pounds.
Gastric juice	Acid.	About 10 or 12 pounds.
Pancreatic juice	Alkaline.	About 1½ pounds.
Bile	Alkaline.	About 2½ pounds.
Urine	Acid.	About 40 to 50 ounces.

4. *Fats* are not digested in the mouth or stomach; in the small intestine they are acted upon by the steapsin of the pancreatic juice and by the bile. These two agents cause the fats to be emulsified and saponified. The fats are absorbed by the villi, and are conveyed to the circulation by means of the thoracic duct, which enters the venous circulation at the junction of the left subclavian and internal jugular veins.

Carbohydrates. The saliva (by its ptyalin) changes starches into dextrin and sugar; the stomach does not aid in the digestion of carbohydrates; in the small intestine the amylopsin of the pancreatic juice changes starches into dextrins and sugar, and the invertin of the succus entericus changes cane sugar into invert sugar. Carbohydrates are absorbed in the small intestine and converted by the portal vein to the liver, and thence by the hepatic vein to the ascending vena cava.

5. A child one year old respires about thirty times a minute. The vital capacity of the adult lung is about 230 cubic inches.

6. *Eupnea* is the condition in which respiratory action is easy or normal. *Hyperpnea* means exaggerated respiratory action. *Apnea* means cessation of respiratory action. *Dyspnea* means difficulty in breathing. *Asphyxia* is unconsciousness due to interference with the oxygenation of the blood.

7. Levers of the *first order* have the fulcrum between the weight or resistance and the power or moving force; the skull, in its movements backward and forward on the atlas, is an example. Levers of the *second order* have the weight between the fulcrum and the power; as in depression of the lower jaw. Levers of the *third order* have the power between the fulcrum and the weight; as in flexion of the forearm.

NEUROLOGY.

1. *Pachymeningitis* is inflammation of the dura mater. *Leptomeningitis* is inflammation of the arachnoid and pia mater. *Syringomyelia* is a condition characterized by the presence of cavities in the substance of the spinal cord.

2. In *catalepsy* there is loss of will, muscular rigidity, generally loss of consciousness, and it is often associated with hysteria.

Epilepsy is diagnosed by the aura, the sudden onset, the cry, the sudden loss of consciousness, the tonic convulsion, the biting of the tongue, the dilated pupils, and the urinary incontinence. In *hysteria* the patients do not generally hurt themselves.

CHEMISTRY.

1. Urea; CON_2H_4.

2. Sodium chlorate, $NaClO_3$; sodium bromate, $NaBrO_3$; sodium iodide, NaI.

3. NH_3, ammonia; NH_4Cl, ammonium chloride; N_2O, nitrous monoxide; $NaHSO_4$, monosodic sulphate.

4. Alcohols, aldehydes, acids, ethers, ketones.

5. *Test for arsenic:* Reinsch's test is as follows: To the suspected fluid add a little pure HCl; suspend in the fluid a small strip of bright copper foil, and boil. If a deposit forms on the copper, remove the copper, wash it with pure water, dry on filter paper, but be careful not to rub off the deposit. Coil up the copper, and put it into a clean dry glass tube, open at both ends, apply heat at the part where the copper is. If arsenic is present there will appear in the cold part of the tube a mirror, which will be found on microscopical examination to consist of octahedral crystals of arsenic trioxide.

ETIOLOGY AND HYGIENE.

4. The milk may come from a diseased cow; it may become contaminated by the milker, the container, the surroundings, the water used to wash the cans or to adulterate the milk; or it may become contaminated at the dealer's or purchaser's house by being left uncovered, exposed to flies, etc., or by not being kept in a cool place. The only way to prevent the transmission of disease by milk is to insist on a thorough inspection of all dairies and sources of milk supply, and to educate the public in the care of milk between the time of its purchase and its consumption. The inspection should include: the color, reaction, specific gravity, sediment, taste, odor, acidity, total quantity of solids and of water; the percentage of cream, fats, lactose, casein and ash; the presence or absence of preservatives, coloring matter, added solids, dilution, pathogenic microorganism, dirt or other foreign matter. There should also be thorough investigation as to its source, the cows and their environment, the method employed in caring for, milking, storing, and transporting the milk.

MATERIA MEDICA AND THERAPEUTICS.

1. *Solvents used in pharmacy:* Water, alcohol, glycerin, ether, chloroform, benzine, carbon disulphide, oils, and acids. *Alcohol:* Solutions in alcohol will keep almost indefinitely; gums, albumins, and starch are insoluble in alcohol. *Glycerin:* If concentrated, glycerin is antiseptic. *Ether* is a good solvent for resins, fats, oils, and some alkaloids and neutral principles. *Chloroform* is not inflammable. *Carbon disulphide* is a good solvent for rubber and phosphorus. *Oils* are used in making liniments.

2. *Strychnine* is a convulsant. *Action:* Strychnine is a bitter tonic, stimulates appetite, secretion, and digestion, increases peristalsis, stimulates the vasomotor centers, and so raises arterial tension; it stimulates both accelerator and inhibitory nerves of the heart. All the functions of the spinal cord are exalted by strychnine, reflex, motor, vasomotor, and sensory. Large doses cause dilated pupils, irregular and jerky respiration, increased reflexes. *Therapeutic uses.* For indigestion, intestinal torpor, heart disease, pneumonia, amenorrhea, dysmenorrhea, paralysis, impotence, and as a cardiac and respiratory stimulant. *Dose:* Strychnine sulphate, one-sixty-fourth of a grain; strychnine nitrate, one-sixty-fourth of a grain.

3. *Five alkaloids:* Quinine, atropine, aconitine, cocaine, and strychnine. *The alleged advantages of the employment of alkaloids* are: Prompt action, accurate dosage, no inert or foreign matter is given which may mask the action of the drug, and there are no nauseating doses for the patient to take. *Doses of three:* Aconitine, gr. 1/400; atropine sulphate, gr. 1/100; morphine sulphate, gr. 1/6. For action and use of strychnine see QUESTION 2.

4. ATROPINE: *Dose,* gr. 1/100.

Action: Anodyne, mydriatic, inhibits secretions, depressant of terminations of nerves, accelerates the heart beat, causes rise in blood pressure, but toxic doses cause the blood pressure to fall, stimulates the respiratory center, but large doses depress the same; it may cause vertigo, restlessness, excitement, delirium, or mania.

Therapeutic indications: For the relief of pain, to dilate the pupil, to check secretions, for diarrhea, for asthma, for shock and collapse, for colic of all kinds, for delirium, for epilepsy, chorea and migraine, for paralysis, for cough, in constipation, in chorea, spermatorrhea, or cystitis.

Atropine is often combined with morphine when the latter is used, for the following reasons: (1) To prevent nausea and insomnia; (2) to intensify the effect of the morphine, and so a smaller dose may suffice; (3) to neutralize the effect on the pupils.

5. PILOCARPINE is *classified* as a diaphoretic. *Action:* It causes increase of saliva and of perspiration; increased peristalsis; it increases and then diminishes blood pressure and heart action; it causes the pupil to contract and depresses the nervous system. *Dose:* gr. 1/5 of the hydrochloride. *Dangers.* Marked cardiac and respiratory depression, nausea, vomiting, and collapse. *Indications for use:* Bright's disease, uremia, eclampsia, pleural effusion, dropsy, and whenever prompt diaphoresis is required.

6. THYROID GLAND. *Action:* "It is a powerful vasomotor dilator, causing flushing of the cutaneous surface; large doses are apt to produce loss of appetite and diarrhea; it stimulates the cerebrum, and, given to excess, produces headache, restlessness, insomnia, palpitations, hot flushes, sweating, tremors, and even convulsions; it is excreted by the kidneys, and the quantity of urine is uniformly increased by it; it induces a greatly increased oxidation in the system. *Uses:* Myxedema; goiter (especially the hyperplastic follicular variety); sporadic cretinism; arteriosclerosis; delayed menstruation."—(Wilcox's *Materia Medica.*) *Dose:* 4 grains. *Contraindications:* Diabetes mellitus and in great emaciation.

7. PHENYL SALICYLATE. *Dose:* 7½ grains. *Action:* antiseptic, germicidal, anodyne, and antipyretic; it combines, in most respects, the actions of phenol and salicylic acid. *Uses:* As a disinfectant, in inflammation of the mouth and pharynx, in cystitis, as an intestinal antiseptic in typhoid fever, in muscular rheumatism, in intestinal indigestion and fermentation, in cholera. *Dangers:* In the small intestine it is decomposed into salicylic acid and carbolic acid, and symptoms of carbolic acid poisoning may develop.

9. DIGITALIS. *Physiological action:* It is a gastrointestinal irritant, it slows the rate of the heart, prolongs diastole, increases the force of the heart, it contracts the blood-vessels, and causes a rise in blood pressure, it also acts as a diuretic. *Therapeutic use:* Digitalis is indicated in diseases of the heart: (1) when the heart action is rapid and feeble, with low arterial tension; (2) in mitral lesions when compensation has begun to fail; (3) in nonvalvular cardiac affections; (4) in irritable heart, due to nerve exhaustion. Digitalis is *contraindicated* in diseases of the heart: (1) in aortic lesions when uncombined with mitral lesions; (2) when the heart action is strong, and arterial tension high. Digitalis is also a diuretic; and it is also used in some forms of nephritis, exophthalmic goiter, pneumonia, chronic bronchitis, etc. *Dangers: Overdose or constant use* will cause irregularity of the heart, headache, vomiting; and hobbling dicrotic pulse, particularly when the patient changes from the recumbent to a sitting posture. *Dose.* Of the tincture, 15 minims.

10. CALCIUM PHOSPHATE. *Action:* It is supposed to

build up the solid tissues of the body, and to give them proper consistence and solidity. *Uses.* It is given in rickets, tuberculosis, scrofula, molluscs fibrosum, anemia, syphilis, and neurasthenia.

PATHOLOGY.

2. *Cyanosis* is a bluish discoloration of the skin due to non-oxidation of the blood. It is caused by local or general circulatory disease; heart disease, emphysema, pneumonia, and asthma.

BACTERIOLOGY.

1. The *Gonococcus* is a diplococcus with a special predilection for the mucous membrane of the urethra and vagina. It is sometimes found on the conjunctiva. The appearance is that of two coffee beans; the gonococcus is found in the pus cells, stains with ordinary aniline dyes, but not by Gram's method. It is aerobic, and can be cultivated on human blood serum; it will not grow on gelatin, agar, bouillon, or potato. It was discovered by Neisser.

To demonstrate *gonococci:* On a cover-glass make a smear with the discharge as thin as possible, and let it dry in the air; cover it with a freshly made solution of anilin-oil-gentian-violet for one or two minutes; wash it in distilled water; leave it in Gram's solution for two minutes; wash it in 95 per cent. alcohol until decolorized; wash it in distilled water; counterstain with a dilute carbolfuchsin without heat, or with a saturated aqueous solution of Bismark brown; wash in distilled water, dry with filter paper, mount, and examine with an oil-immersion lens. The gonococci will appear as *diplococci within the leucocytes*, which have been *decolorized by Gram's stain*, and have taken the counterstain.

2. *Tuberculin* is a glycerin extract of cultures of the bacillus of tuberculosis. It is used as a means of diagnosis and treatment of tuberculosis. For the *reaction* see French's "Practice of Medicine" (1910), page 391.

5. *Streptococcus pyogenes, pneumococcus, Staphylococcus pyogenes*, and colon bacillus.

2. PRACTICE OF MEDICINE.

CEREBRAL VOMITING.	GASTRIC VOMITING.
Little or no nausea, vomiting continues after stomach is emptied.	Nausea relieved by vomiting, returns when food is taken.
No tenderness on pressure over the liver or stomach.	Liver and stomach are tender, pressure produces inclination to vomit.
Pulse infrequent and hard.	Pulse frequent and weak.
Tongue clean, breath sweet, conjunctivæ normal or injected, headache primary.	Tongue furred, breath offensive, conjunctivæ often yellowish, headache secondary as to time.
Constipation generally obstinate.	Griping abdominal pain, diarrhea and clay-colored stools.
No salivation	Increased salivation.

(Potter.)

Reflex vomiting is found in pregnancy, uterine or ovarian disease, worms, irritation of the fauces.

4.

TUMOR OF BRAIN.	ABSCESS OF BRAIN.
1. No primary focus of infection but often history of syphilis or malignant disease of other organs.	1. Suppurating area in ear, nose, pharynx, scalp, or lung abscess.
2. Very slow development.	2. More rapid.
3. More definite focal symptoms.	3. Focal symptoms often present, but not so definitely localized as in tumor.
4. No rigors or septic symptoms.	4. Often begins with chills, septic symptoms often continue.
5. Temperature normal or slightly and irregularly elevated.	5. Temperature subnormal, other times higher—pus temperature.
6. Pulse slow.	6. Not slow as a rule.
7. Constant headache.	7. Not a constant or prominent symptom.
8. Projectile vomiting frequently present.	8. Not often; vomiting, if present, more frequent and not projectile.
9. General symptoms of pressure progressive.	9. When present they vary greatly in intensity.
10. Choked disc constant.	10. Not constant.

(Eisendrath's *Surgical Diagnosis.*)

10. *Corrigan pulse* is usually associated with aortic regurgitation; *hematemesis*, with gastric ulcer or carcinoma, leukemia, splenomegaly, pernicious malarial fever, yellow fever, scurvy, chronic heart disease, and corrosive poisoning; *jaundice*, with yellow fever, Weil's disease, acute yellow atrophy of liver, various poisons, gastroduodenitis, and catarrh, gallstones, or parasites in the bile ducts; *dropsy of lower extremities*, with cardiac dropsy, hepatic cirrhosis, abdominal tumors, or enlarged viscera; *crepitant rales*, with lobar pneumonia and hemorrhagic infarction of lung; *high blood pressure*, with chronic intestinal nephritis, gout, arteriosclerosis, uremia, and lead poisoning; *increased frequency of pulse without fever*, with exophthalmic goiter, endocarditis with loss of compensation, acute endocarditis, and pericarditis; *cyanosis*, with congenital heart disease, asthma, emphysema, stenosis of or foreign body in glottis, trachea or bronchi, croup, pneumonia, bronchopneumonia, and pleurisy with effusion; *vesicular breathing*, with consolidated or congested lung, and in many cases of dyspnea.

SURGERY.

2. In the *epigastric region* are: Part of stomach, liver, gall-bladder, pancreas, duodenum, suprarenal capsules, and the kidneys.

7. Aspiration of the urinary bladder is indicated in retention of urine. Suprapubic puncture is performed as follows: "Having outlined the distended bladder by percussion—a curved cannula and trocar (which are better than the straight) are taken in the operator's right hand, with the convexity upward, and so held, with the index-finger upon the shaft of the instrument, that the depth to which it may enter the bladder is fixed in advance. The bladder is steadied by the surgeon's left thumb and index placed on each side of the median line. The instrument is thrust sharply but gently into the bladder, entering in the median line just above the symphysis pubis, and directed backward and downward—piercing skin, superficial fascia, passing between the inner borders of the recti and pyramidales (or through their muscular substance), prevesical space, anterior bladder-wall, and into the bladder. The trocar is then withdrawn and the cannula left *in situ* until the urine has come away, chiefly of its own accord, and partly aided by gentle pressure. Upon withdrawal of the instrument the opening is at once closed by sterilized cotton and collodion." (Bickham's *Operatic Surgery.*)

PHYSICAL DIAGNOSIS.

2. The early manifestations of pulmonary tuberculosis are: (1) *Physical signs:* Deficient chest expansion, the phthisical chest, slight dullness or impaired resonance over one apex, fine moist râles at end of inspiration, expiration prolonged or high pitched, breathing interrupted. (2) *Symptoms:* General weakness, lassitude, dyspnea on exertion, pallor, anorexia, loss of weight, slight fever, and night sweats, hemoptysis.

3.

AORTIC DISEASE.	MITRAL DISEASE.
Symptoms are mainly due to anemia, viz.:	Symptoms are mainly due to venous congestion, viz.:
1. Pallor.	1. Cyanosis.
2. Throbbing of the carotids.	2. May get pulsation in the veins of the neck.
3. Attacks of an "angina pectoris" type of pain.	3. Sudden attacks of severe dyspnea—actual acute pain is rare.
4. Breathlessness on slight exertion.	4. Breathlessness, but often present without exertion.
5. Nervous symptoms are prominent, owing to cerebral anemia. Syncopal attacks are also common.	5. Pulmonary symptoms are most prominent, *i.e.* cough in the morning, chronic bronchitis, hemoptysis, dilated right side of heart, and later symptoms due to tricuspid leakage.
7. The *left ventricle* is usually much hypertrophied.	7. The *left auricle* is somewhat hypertrophied, but the main hypertrophy is that of the *right ventricle.*

—(From Wheeler and Jack's *Handbook.*)

OPHTHALMOLOGY AND OTOLOGY.

1. *Presbyopia* generally appears between the fortieth and forty-fifth years. "The presbyope is compelled to hold reading, writing, sewing, and other forms of near work farther away than the usual distance, making such efforts

uncomfortable. With this recession of the near point beyond the usual situation, the print becomes pale and indistinct, and fine type can be read only with great difficulty. The patient is apt to use strong illumination. This produces contraction of the pupil, and thus improves the definition by diminishing the circles of diffusion. If the condition be uncorrected he suffers from asthenopic symptoms, especially pain, fatigue, lacrymation, dimness of vision, and irritation of the lids, all of these symptoms being more marked in the evening with artificial illumination. Presbyopia has no effect upon distant vision."—(May's *Diseases of the Eye.*)

2. *Otitis media* (inflammation of the middle ear, tympanum, or drum cavity) is divided into four clinical forms, viz., acute catarrhal, chronic catarrhal, acute purulent, and chronic purulent otitis media.

Acute catarrhal otitis media is frequently caused by acute coryza and the infectious fevers. There is a painless obstructed sensation in one or both ears, impairment of hearing, and tinnitus. The inflammation causes closure of the eustachian tube.

Acute purulent otitis media: Acute catarrhal otitis media, instead of undergoing resolution, may pass into acute purulent otitis media (especially in exanthemata) from the passage of pathogenic germs from the nasopharynx into the middle ear. The pain will become more intense, the hearing dull, tinnitus will become louder and more distressing, and fever usually sets in.

Chronic purulent otitis media is due to the permanent lodgment of staphylococci in the acutely inflamed middle ear. This unfortunate result is usually brought about by improper—*i.e.* excessive—treatment of acute otitis media, generally by the patient, but sometimes, regrettably, by the physician.

Chronic catarrhal otitis media results from acute catarrhal otitis media that has failed to undergo resolution. Nasopharyngeal catarrh is usually associated with this condition. The onset is gradual, and is characterized by repeated attacks of the acute form, each one increasing in severity. As the symptoms of tinnitus and deafness increase there may be attacks of ear vertigo of tympanic origin. These may be mistaken for neurasthenia, epilepsy, apoplexy, etc. Early in the case there are contraction of the tensor tympani, retraction of the chain of auditory ossicles, and consequent impaction of the stapes in the oval window. *Complications* are inflammation of the mastoid cells, caries and necrosis, phlebitis, meningitis, and brain abscess.—(From Gould and Pyle's *Cyclopedia of Medicine and Surgery.*)

PEDIATRICS.

1. MARASMUS may be congenital, due to poverty or artificial feeding, overcrowding. *Symptoms:* Loss of weight, an old look, wrinkled skin, legs like drum sticks, prominent abdomen, hollow temples, shrunken fontanels, large eyes, sharp features, anemia, hemic murmur, edema, vomiting, loss of appetite. *Diagnosis* depends on symptoms, but it may be difficult to differentiate it from malnutrition.—(From Holt.)

2. *Modified milk* is cow's (or other) milk in which the proportion of the ingredients has been changed so that the milk may resemble mother's milk as much as possible.

GYNECOLOGY.

1. ACUTE PELVIC PERITONITIS. *Etiology:* Infection. *Symptoms:* Intense and diffuse abdominal pain, tenderness, and distention; vomiting, constipation, elevation of the temperature (103°-104° F.), small, hard, rapid, and wiry pulse (120-140), and increased respiration (30-40) of a painful character are also present. The dorsal decubitus with the legs and thighs drawn up is assumed. The duration is from six to nine days and the prognosis is unfavorable. *The treatment* consists in rest in bed, the administration of opium or one of its alkaloids, and the application of hot or cold fomentations or turpentine stupes to the abdomen. If the affection is due to septic infection a saturated solution of magnesium sulphate should be given. If suppuration has occurred abdominal section should be performed with irrigation of the peritoneal cavity with normal salt solution (temperature 105°-110° F.) and the introduction of drainage.—(Gould and Pyle's *Pocket Cyclopedia.*)

2. UTERINE FIBROIDS are very common. "They are benign, but are harmful on account of the disturbance produced by them when enlarged, and also on account of the various degenerations which they are likely to undergo. Menorrhagia, metrorrhagia, and pain are the common symptoms of the growths, although in patients with large intestinal and subserous fibroids hemorrhage may be absent. In cases of the submucous tumors (fibroid polypi) bleeding may be extreme. The tumors are usually of slow growth, but sometimes they increase very rapidly in size, causing serious pressure symptoms. The diagnosis is sometimes very difficult and always impossible without physical examination. Uterine fibroma may coexist with pregnancy.

The treatment consists in removal. In cases of subserous fibroid the snare may be used when it is pediculated, and when sessile the capsule may be cut and the growth enucleated. In the subserous and interstitial variety if the patient can be kept under observation and the tumor is small operation should be postponed; otherwise a choice should be made between removal of the uterine appendages, ligation of the uterine arteries through the vagina, myomectomy, and hysteromyomectomy."—(Gould and Pyle.)

4. The *vaginal route* is to be selected in the operation of cystotomy in the female. "The patient is preferably in Sims' position, with the anterior vaginal wall exposed by Sims' speculum. A large sound is introduced through the urethra and its point pressed against the vesical mucosa in the middle of the long axis of the vesicovaginal septum. An incision is now made upon the sound through the septum with the knife or scissors. The point of the sound will then pass through into the vagina. The opening thus made is enlarged so as to extend one inch in the median line of the long axis of the vesicovaginal septum. Its upper end will be about one-half inch from the anterior wall of the cervix uteri, and its lower end the same distance from the neck of the bladder. The margins of the vesical and vaginal mucosa are then united by fine interrupted catgut sutures."—(Dudley's *Diseases of Women.*)

6. *Vaginismus* is a condition of painful and spasmodic contraction of the vaginal orifice, which renders coitus either painful or altogether impossible. The slightest touch causes painful spasms, and examination may be impossible without an anesthetic. Its *causes* are irritable hymen, ulcer, or fissure anywhere in the immediate vicinity, urethral caruncle, caruncular myrtiformes, a long perineum with vaginal orifice placed too anteriorly. The *treatment* consists in removing the cause when possible, tonics and general constitutional treatment, dilatation of the vaginal orifice; local application of a 5 per cent. solution of cocaine will relieve the hyperesthesia and allow coitus. The condition is sometimes incurable.

RHINOLOGY.

1. NASAL POLYPI. These are of two different origins: (1) Inflammatory, and (2) neoplastic.

(1) *Mucous polypi* are merely edematous granulations hanging from the surface of a diseased ethmoid bone, which is affected by rarefying osteitis or caries. They occur in young adults, and cause nasal obstruction, often bilateral. Grow from the middle and superior turbinate bones. They frequently undergo cystic degeneration from the development of cysts in the glands of the mucous membrane covering them.

Treatment: (*a*) Removal by wire snare under cocaine; (*b*) usually a thorough erasion of the lateral mass of the ethmoid or the opening of a suppurating sinus is required, so as to remove the diseased bone.

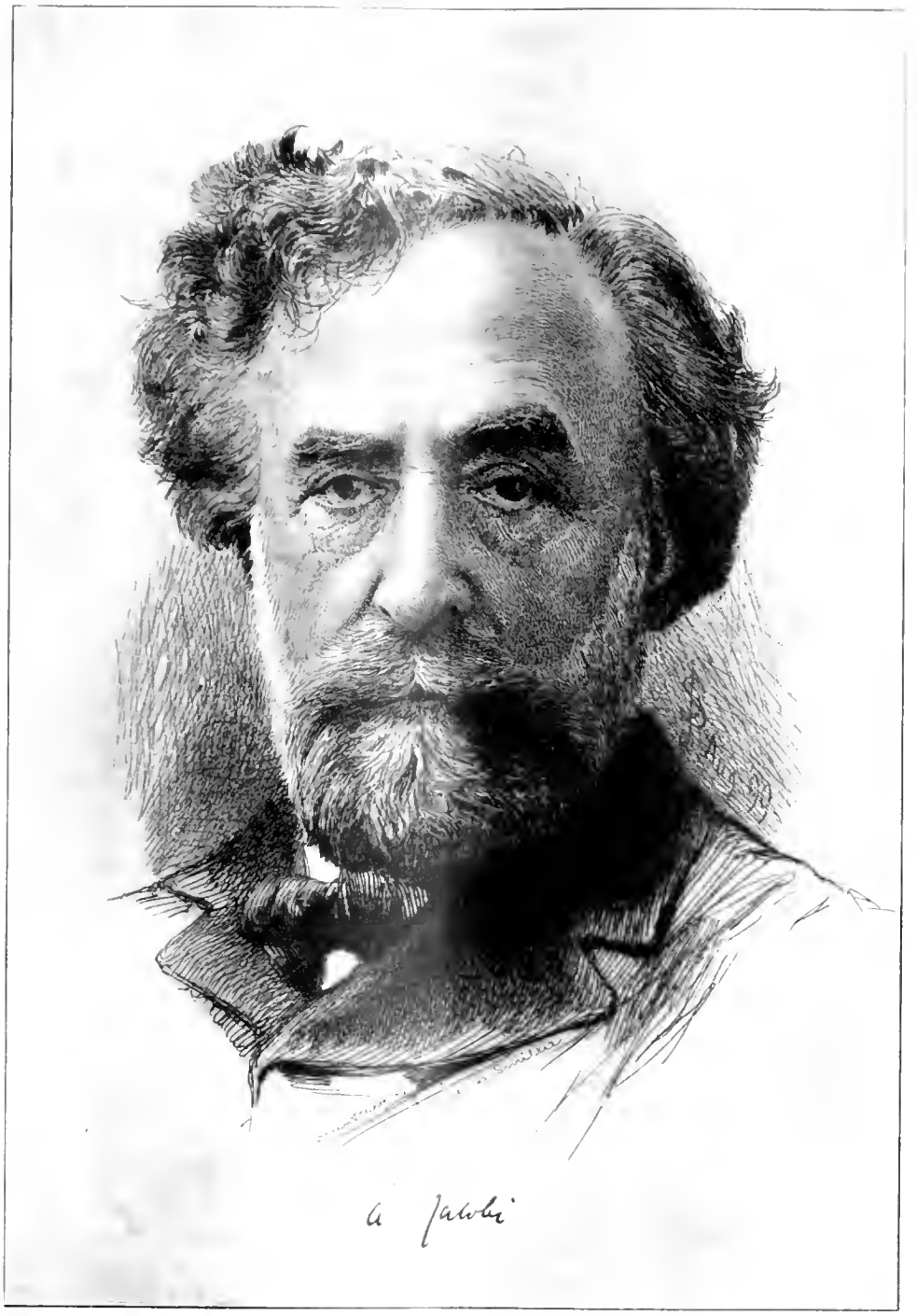
(2) *Fibrous and sarcomatous polypi:* Consist in all gradations between fibromata and sarcomata, usually beginning as the former and ending as the latter. Occur in children and adolescents most commonly. Grow from the base of the skull and occupy the nasopharynx. Cause nasal obstruction with sanious discharge. *Pressure signs* may be: (1) Pushing down the velum palati and causing asphyxia; (2) expanding the nasal cavities and producing a widening of the nasal bridge; (3) pressing the eyeballs outward; (4) extending into the base of the brain. *When they are malignant* secondary growth may occur in the lymph glands of the neck. In these cases the primary growth is probably a lymphosarcoma of the pharyngeal tonsils.

Treatment is only possible in the early stages. (1) Removal by a snare through the anterior nares; (2) removal through the mouth after splitting the soft palate; (3) removal from the face after turning up the soft parts and enlarging the anterior nares by temporary displacement of the maxillæ.—(Grove's *Synopsis of Surgery.*)

MEDICAL JURISPRUDENCE.

1. *Accidental forms of death in the new-born* include: Asphyxia, hemorrhage, atelectasis, convulsions, malnutrition, malformations, neglect.

2. In *burns* produced *before death:* There is usually a blister, with a bright, red base, and containing a serous fluid, which is albuminous; occasionally there will be no blister if there has been excessive shock; also, there will be a red line of demarcation between the injured and the uninjured parts, and this, being a vital process, is only developed during life. In *burns* produced *after death* there is no true blister, no red base, and gas only is present in place of the serous fluid.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THE BEST MEANS OF COMBATING INFANT MORTALITY.*

By ABRAHAM JACOBI, M.D.,

NEW YORK,

PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION.

My principal duty and intense pleasure is to tender my thanks to the House of Delegates which selected me for the highest honor in the gift of the medical profession of America, and to my colleagues of all the fifty States who were good enough to approve of its choice. Nor am I under less obligation for their attendance on this occasion to such citizens, men and women, as by their presence here exhibit their interest in things medical and socio-political.

My everlasting gratitude is due for the mode in which this great honor was conferred upon me. Being duly aware of the small measure of my merits, I was overjoyed to have reason to believe that I owed my election to my lack of efforts to secure it. My democratic training and the gentlemanly nature of thirty-five thousand members of the American Medical Association, like the principled citizens of all parties, resent electioneering importunities and abhor the humiliation and demoralization caused by gesticulating and shouting candidates for office and honor. I have the confidence that if there be any in this or any other cultured assembly who is looking for the highest office for the sake of power and preferment only, he will be deservedly disappointed. Whoever *sets out* to be the first, let him be the last. There is only one thing that is and must forever remain first—that is the medical profession of America, as represented in this American Medical Association, and its object, which in all its aims is only one and indivisible. That one and inseparable object is to promote the art and science of medicine, to unite into one compact organization the medical profession of the United States for the purpose of fostering the growth and the diffusion of medical knowledge, of promoting friendly intercourse among American physicians, of safeguarding the material interests of the medical profession, of elevating the standard of medical education, of securing the enactment and enforcement of just medical laws, of enlightening and directing public opinion in regard to the broad problems of hygiene, and of representing to the world the practical accomplishments of scientific medicine.

With all this, my professional friends are conversant. I want to impress it, however, upon our guests, lay friends both present and absent, for I want them to understand from the very wording of the constitution of the American Medical Association that their interests and ours are closely related.

In order to be powerful and influential, you must not only be wise but numerous. In last year's official report you were told that it was not prudent to increase our number. In fact, you are 35,000, and the largest medical association of the world. But please remember that yours is also the largest country of the world. There are 100,000 medical men besides us, with the same rights to enter and the same duties to perform. We have been told that reasons of finance are amongst those which should restrict our number. I appeal to you and to those 100,000 outside. A big bank account appeals to our treasury, but glittering gold alone never saved a country nor a soul. If you have money, it is yours to spend as you have made it. See to it that your House of Delegates spends it in increasing, and consolidating, and strengthening your Association. Our colleagues in the vast country want to be invited; then they will come in. They must learn what we are, and where their interests are—and the interests of the public—from better sources than the hordes of irregular manufacturers and the "freedomers" whose bitter attacks convey what knowledge many millions are permitted to have of the American Medical Association. Let the people understand the meaning of the American Medical Association and its doctors through *our* doings, and not through the scurrilous lies of our and the people's enemies. My hope is for an annual increase of thousands of members. Multiply and be fertile. Stand still awhile, and you invite decline.

It is by vast numbers only that our profession will ever attain its legitimate influence in politics and in society, and such beneficent power as Socrates, Descartes, Kant, and Gladstone claimed for it. The proclamation of a great principle may impress many philosophic minds, but its realization demands the labor of the enlightened democratic masses. That is why from this exalted position of mine I beg to contribute a share to the discussion of a subject which has enjoyed an important place in the best brains and the warmest hearts of our enlightened and philanthropic era. I allude to the great mortality of the infant, and the numerous efforts to combat it. You are acquainted with them all. Many fair results have been accomplished, to add to them is my ambition. Infants must not be born merely to be sick or to die.

The Committee for the Reduction of Infant Mortality of the New York Milk Committee has made an arrangement with the Russell Sage Foundation which will furnish a nurse who will look after a thousand pregnant women, with a view to enable them to bear infants with *improved resistance*. The mother will be provided for in case she is overworked. Which one of the poor is not overworked?

According to the Milk Committee, and other au-

*President's address before the American Medical Association, at the Sixty-third Annual Session, at Atlantic City, June, 1912.

thorities, 17 per cent. of infant deaths are caused by congenital troubles. One-third of all of them occur before the first month has passed. Two great remedies are recommended. One is that no midwife be allowed to handle any of these cases; the other is that after confinement rest be provided for the mothers, and that the children be referred to milk stations. Now, there is no worthier organization than that committee. What it sets out to do, it performs, but it cannot help being restricted to charity so long as one-half of us is condemned to ask and take it, and the other obliged to give and teach. The latter is probably the most valuable performance of the committee. As its activities, like those of its kind all over the country, are meant to be thoroughly altruistic, it is entitled both to praise and to criticism. I hope it will appreciate the former and mind the latter.

Look at that program: first, no midwife for any of the thousand mothers. You ask, "but who?" Second, the Milk Station for the child because the charitable people want rest provided for the mothers, *at the expense of the baby*. If that is a good program for one thousand women and one thousand babies, if that be the best that can be invented or discovered for the one thousand lucky enough to fall into the hands of charity, what is to be done with, or for, or against those millions beyond the reach of the Sage Foundation? But you suggest, these one thousand mothers and babies are to serve as object-lessons only, to be imitated by the millions. The least, then, we must hope and work for, is that the millions of women to be confined and the millions of babies to be born now and in the future, should participate in the same benefaction which is promised a few. The universal object is to save and raise babies. My program is different, inasmuch as it suggests additions and changes.

If 17 per cent. of infant deaths are caused by congenital troubles, study these congenital troubles and obviate them. The baby's life and pathology begin nine months before its birth.

If one-third occur in the first month, study and combat that first month, and the indications arriving during and after labor.

Your dealings are not with children but with infants; not with infants only but with the new-born that is just terminating its embryonal and fetal evolution and expects to be treated like a new-born human animal and not like a calf.

No midwife is to handle the case; indeed no midwife *will* handle any of your cases, for you have none, with rare exceptions. It is proper attendance, however, which society owes to the women and the newly born, as a duty to them and to itself. They are valuable assets, both of them. Unless *that* be granted, no discussion is competent.

In one of the programs to relieve the coming child and the struggling mother, I read the demands of absolute rest for at least four weeks before and six to eight weeks after confinement; nursing and feeding, both gratuitous when required; and hospitals for the illegitimate and—when needed—the legitimate confinements.

By the Milk Committee, satisfactory *rest* is wanted for the mother. That means that she did not have it in time, before or after the baby came. If rest means a long rest in bed, and milk station and no breast-feeding, you deprive her of her woman's privilege and most important office in life after child-bearing, and of the facility of getting well radically and physiologically. For without nursing the breast is liable to become atrophic and the uterus subinvoluted. And the infant? Well, the infant, to give "rest" to the mother, is deposited on the altar of a milk station.

I shall be as brief as possible, for I do not believe that the speaker should have all the fun at the expense of his audience. On the other hand, I want to say my own things in my own way—perhaps taught by Jonathan Swift, who preferred to express his opinions "for the amelioration of his hearers, more than for their entertainment."

What the *world* wants is healthy babies. What the *baby* wants is full health and weight; that means a competent mother, sufficiently fed to have a quiet night, free from excessive labor through the day, exempt from a local curable disease that may interfere with the development of the child within her and likely to undermine her well-being, her nursing qualities, and future pelvic and general health. What the *mother* wants is what she has a right to expect, as a reward for the service she renders to mankind in the shape of a healthy child: a place as healthy as the best hospital without disrupting the family. Modern society is built up on the family, the crude teachings of anarchical and a few early socialistic doctrines notwithstanding. No woman will consent to being taken to a hospital unless desperate need compels her to go. To tell a woman she may die unless she go is a cruel sentence. Society is beginning, however, to appreciate that it owes human beings a human dwelling-place, with air enough to breathe in. If you build houses unfit to breathe in, you steal air which is common property. What *society* wants is men and women citizens. But in order to be able to rely on their cooperative functions, it must see to it that in its book of ethics the term of charity is supplanted by responsibility. It is useless to call that socialism or communism. It is the substratum of every religion and every humanistic philosophy. I like to abrogate the term socialism and its alleged dangers, but only by abolishing the social causes engendering them.

Poets have told mankind that once, in the best olden times, the world was a garden, and they want it to become so again; statesmen—not politicians—have exerted themselves to disseminate prosperity and affluence; great physicians have looked for means to ward off disease and prolong an enjoyable life; jurists have endeavored to make the globe habitable by locking up or killing criminals, or the hopeless and dangerous insane. They all deal with those who are alive and, justly or wrongly, in possession of the surface of the earth. We are expected to deal with the present only, and to fight the evils which seem to be uncontrollable now and in the near future. Is there no way to prevent those who are born into this world from becoming sickly both physically and mentally? It seems almost impossible as long as the riches provided by this world are accessible to a part of the living only. The resources for prevention or cure are inaccessible to many—sometimes even to a majority. That is why it has become an indispensable suggestion that only a certain number of babies should be born into the world. As long as not infrequently even the well-to-do limit the number of their offspring, the advice to the poor—or those to whom the raising of a large family is worse than merely difficult—to limit the number of children, even the healthy ones, is perhaps more than merely excusable.

I often hear that an American family has had ten children, but only three or four survived. Before the former succumbed they were a source of expense, poverty, and morbidity to the few survivors. For the interest of the latter and the health of the community at large, they had better not have been born.

Theoretically and practically the addition of unhealthy, sickly, sick, and contagious children is a misfortune to the newcomer, to his parents, and to society. Therefore a clean bill of health should precede matrimony. The clergymen who refuse to marry couples without it are good citizens, and the health departments are bound to see to it that contagious, mainly sexual, diseases should be reported, watched, and cured. Nor is this all: Hereditary influences propagate epilepsy, idiocy, cretinism. Such persons must not be permitted to propagate their ailments.

Now we build asylums for the diseased, neuropathics, and drunkards; nurseries and schools for epileptics, cretins, and idiots; sanatoria for incipient tuberculosis, and refuges—still too few—for the dying consumptives, withal conscious of the fact that our only hope of finally exterminating tuberculosis lies in the perfect but comfortable isolation of hopelessly advanced cases. Surely we try to cure and to prevent. Do we not begin at the wrong end? Consumptives, and epileptics, and semi-idiots are permitted to propagate their own curse, both what is called legitimately and illegitimately. Human society should have pity on itself and its future. The propagation of its degenerate, and imbecile, and criminal should be prevented. We have no positive laws yet for the syphilitic and gonorrheic who ruin a woman's life, deteriorate her offspring—if she have any—and impair the human race. We have come to this: that half of us are obliged to watch, and nurse, and support the other half, most of whom should never have been born. In morals and in money the degenerate are an expensive detriment. The only protection for the nation, for mankind, is to assure a healthy, uncontaminated progeny. Strict laws are required to accomplish that; such laws as will be hated by the epileptic, the consumptive, the syphilitic, and the vicious. No law ever suited the degenerates against whom it was passed, and it is unfortunate that while disease and incompetency and vice are to a high degree hereditary and contagious, moral health and virtue are not so to the same degree. Now those for whom the responsibility of the State does not exist are exactly those who are most entitled to it—the newly born.

Altogether, babies have a strenuous time of it, not only after birth. Heredity, degeneracy, or incompetency is often caused by social influences. Financial temptations or necessity make women select not the strong and healthy men, but the old and rich. Their children are having less and less vigorous offspring. Rich and profligate boys spend their sexual powers on prostitutes and save little for possible babies. The lack of children in American families is not always due to voluntary abstinence. Thus the future of the American population has to rely on the offspring of the immigrants, and the American type of the next century will not be much influenced by those whose ancestors came on the Mayflower. Modern industry reduces the vigor and vitality of men, and woman and child labor exhausts the mothers and fathers of the future and present generations. Millions of men are prevented from contracting a marriage by pecuniary want and the impossibility of satisfying their sexual hunger except with prostitutes. That is true not only with regard to factory hands, clerks, and employees generally, but to the picked men of the people. Army and navy, the millions of soldiers and marines of all the nations of the globe, whom we are urged by our self-styled leaders to imitate, withdraw the vigorous men from natural modes of living, labor, and propagation, and prevent them from marrying in time; and wars, the cynosures of our coarse politicians who take the places that should be filled by statesmen, kill and cripple and deteriorate the best muscle of the land and tempt them into perdition. Only the "weaklings" are left—and their offspring! It is sad to contemplate the short-sightedness of our loud-mouthed leaders and their heelers, and of the people who elect them to rule over us.

The history of the newly born is pictured on their bodies. Pinard weighed numerous new-born babies. Those born in poverty were 10 per cent. less in weight than the others. Many were premature, their mothers injured and sick afterward, and without milk. Of that class, from three to four times as many die when at home as when in a well-regulated and well-fed hospital. Their subinvoluted uteri and parametritides are very common occurrences and are the sources of lifelong invalidism and treatment. Those few are fortunate who need not complain like the woman healed by Jesus, who had suffered all her life from her illness and from the physicians. I see many such. Those are not so fortunate who are treated according to the last magazines' academic discussions which demand an early day for getting up. A woman of the million, permitted or ordered out of bed to work, is the pivot of her poor household or her small farm or shop, or the live part of her lifeless factory machine. She is not like one of your first class paying hospital appendicitis cases that may safely be ordered out of bed for a half hour or a few hours daily, and will not be harmed thereby. This one will continue to convalesce when she returns home. But the woman of the middle class or the poor who is told or permitted to rise early from an appendical wound, a uterine wound, or after confinement will add to her endometritis, her phlegmon, and her adhesions. That is why even apparently simple questions of medicine will never be answered without the consideration of social questions, and medicine must more and more become the guide in the solution of social problems.

A decided physical inferiority at birth is a common occurrence. Ballantyne experienced in the Fulham Infirmary as high a percentage as 21.9. They are called unfit, when born of overworked, underfed, and neglected women. Their number is much smaller and very trifling when their mothers, when poor, are looked after long before the uterine life is terminated or when circumstances, financial or sanitary, are more favorable.

Many premature, feeble, thin babies of unpromising weight may be saved when there is ample care, such as a midwife will more readily give than a doctor. If that be absent, the baby's life is endangered. We have often been told that many of the new-born do not deserve saving for they are puny and not promising. Is salvation worth while? Who can tell, unless you try? But thus far it has been only chickens, lambs, and elephant babies that have been judged by the pound. Kant, Goethe, Helmholtz were puny waifs, whose lives were de-

spared of. But they have furnished elements of culture to the world of which we might have been deprived if they had been without the midwife's care and close attention. Lucetus is said to have been 5½ inches long. He died when 80 years old. He wrote eighty books, not many of them poor. That is an achievement, though not always pardonable and rarely laudable. There are more men 80 years old, but they are not all guilty of writing eighty books.

Hard labor up to confinement interferes with the life or the health of the fetus and new-born. The least that should be done for the mother is a reduction of working hours during pregnancy, and protracted rest after confinement. The women's worst occupation is that with metals, mainly lead. Their percentage of premature births and miscarriages was 53.6; while those with other work furnished another not quite so, but sufficiently formidable number, viz., 17.2. Lead, mercury, phosphorus, copper, iodine, aniline, and nicotine, have been found in the amniotic liquor and in the fetal organism.* The indication is clean; less work, less hours, no directly insanitary occupation, at least several months absolute rest after confinement. The result will be hardier and heavier, and more resistant babies.†

When the baby is born it wants many things, amongst others air and food—mostly food.

Maternal milk is the only safe nutriment. Its quality is not much influenced by emotions, cares, worries; occasionally, only, by medicines taken by the mother or rarely by her average food. Its quality is only temporarily altered by menstruation, which never causes a change that justifies the interposition of artificial feeding. The daily quantity is rarely less than a quart. Maternal affection, the wish to nurse, the act of sucking increases the quantity. There is no such thing as absolute absence of milk secretion. Essential alterations in the articles consumed by the nursing woman are not demanded. As her appetite is mostly increased, she is entitled to so much more than her average consumption as is required by the one or two pounds needed by her baby. She may eat and drink what she digests and was used to; she may perform her duties, attend to her labors—even some factory work—and fill her time as her station in life suggests. There is no reason why she should not spend time in shopping, concerts, theaters, lectures, and parties, except the dog parties reminding you of 1790 in France—even suffrage parades—provided she will not forget that she has a baby at home to welcome and feed. The checking of babies, with or without baby carriages, by department stores, is a convenient innovation, which improves the chances of babies, women, and merchants alike. Elections are no longer so exciting, dangerous, or murderous as they were in our large cities as late as twenty or thirty years ago—so there is no objection to woman suffrage, whether it be considered a plaything, a civic duty, or a disease. Even so, there is no danger, for infectious diseases in the mother are no contraindication to nursing, unless it be a smallpox case in an antivaccinationist; for not injurious bacteria but beneficent antibodies pass into the milk and improve the baby's power of resistance. All of these considerations prove the dangerous tendency of those of our colleagues who in their mistaken subserviency to the ignorant suggestions of fashionable and lazy ladyships fall in with their and the dairymen's teaching that cows are their proper God-sent substitutes. These accommodating colleagues of ours are, through short-sighted complacency, enemies of the race.

The mother's milk has certain protective properties not possessed by any artificial food or the milk of another animal. Experiments have proved that the latter may propagate the artificial immunity toward certain vegetable poisons—the ricin and abrin; and a wet nurse may immunize her nursling by being herself immunized through diphtheria antitoxin. So the mother who was ever thoroughly infected with scarlatina or measles will, at least for the time she is nursing her baby, protect the latter against those infections.* The infected milk of an animal will not have that effect; immunity is secured only by the milk of the same—that is, the human animal—which proves that we are superior to our animal brethren and sisters, unfortunately, only so long as we are young. Many of us when we lose our infancy lose our superiority.

The attentive doctor and the diligent midwife know that our women, poor and rich, suffer from no organic mammary degeneration. Large and small breasts can be educated into competent milkers. They can be roused into action after days and weeks of comparative inactivity, and into renewed efficiency after a recess of one or more weeks. It is quite well known, what I alluded to, that the very sucking of the baby is the best educator of the breast. That is why for the hundreds of thousands of mothers the doctor should be the oracle; the midwife of the people, with her future education and her diligence, the trainer. Both should remember, or rather, learn, that a better milk supply is guaranteed by not improperly and untimely straining the breasts' function. You do not milk a cow every two hours. A healthy new-born baby should never have the breast more than once every three hours: after the third month, he must get along with five meals in twenty-four hours, and will turn out a baby worth having.

Milk contains substances organic chemistry never discovered or measured. They are the *ferments* which circulate in the blood. Some aid in the digestion of albumin; others, of fat and starch. Besides, there are defenders in it of the circulating blood; the *alexins* (Hans Buchner) destroy bacteria; agglutinins immobilize bacteria by bunching them; antitoxins formed in the infected vigorous animal destroy the poisonous toxins of the bacteria. When they are not sufficient—for instance, in bad cases of diphtheria—we inject antitoxins formed in the blood-serum of another animal—for instance, of horses. Any mother that ever had a mild or bad case of diphtheria—or, for that matter, a certain other infectious blood disease—accumulates some antitoxins in her blood and tissues, and in her future milk, and thus protects both it and her nursling. It is possible that so long as the infant is at the breast it is for that very reason less liable to take diphtheria. The fact is that few babies of the first half year become diphtheritic. That is the period of nursing at its mother's breast—its mother's or another human female's, not, however, that of another animal. It is not chemistry alone, but also biology, which distinguishes the milk of their organic producers. Old Doctor Heim was told by a so-called "noble" mother: "I keep an ass for my

*Bluhm: In Weyl's Manual of Hygiene, vol. viii.

†Furth, Henriette: Die Mutterschaffs-Versicherung, 1911.

*Fifty years ago I could refer only to anatomical reasons which secured the very young against diphtheria.

baby. Ass's milk is as good for my baby as my own would be, is it not?" "Yes, yes," said the old man, "just as good for young asses."

Boek found that of infants who died of intestinal diseases, 61.4 per cent. had been fed on ill urs; 24.3 per cent. on cow's milk; 15.8 per cent. on a mixture of breast milk and cow's milk, and 1.4 per cent. on breast milk.

During the siege of Paris (1870-71) the women were compelled to nurse their own babes on account of the absence of cow's milk. Then infant mortality under a year fell from 53 to 7 per cent. During the cotton crisis of 1860 there was a famine. Men and women starved, and on account of no money for artificial food, the women nursed their babies. One-half of their mortality disappeared. In the poor forest districts of the Westerwald the bottle-fed babies had a mortality of 20 per cent.; the breast-fed babies, one of 8 per cent.

In Berlin half of the babies were breast fed in 1890; in 1909, only one-third of them. At the same time another German town, Barmen, nursed four-fifths of its babies, in one year 90 per cent. Of 575 starving and neglected women in a Berlin institution 83.3 per cent. could nurse their infants; why? they were better fed than before, and gave up only when the Moloch of industry reclaimed them as victims. After these poor babies had enjoyed the privileges of some of the rich—viz., health and life—they were sacrificed again on the altar of anti-social circumstances. For during the first year of life, of 1,000 breast-fed babies 70 have died; of the artificially fed, 270 up to 430. They have been counted by the statisticians, by the parents, and by the undertakers.

Wittingly or unwittingly, surely not meaning it as a grotesque joke, the Nestlé Food Company has a picture on the cover of their latest circular. It represents a woman with immense wings—I imagine angels look that way—flying off with two infants to unknown parts.

The mortality of babies below 1 year has been found—not estimated—to be, for the exclusively breast-fed, 6.98; for those brought up on a mixture of breast-milk and artificial food, 9.87; for those fed artificially, 19.75. That means that somebody or something is to be held responsible for the deaths of thirteen babies who should live in good health and with good prospects. Babies turned out to milk stations because their mothers must be told to "rest" belong to that class. It is true, not every baby can be nursed, but the exceptions are scarce. One was born of a mother who died of sepsis carried in part by a dirty midwife or by an infected or ignorant doctor. That is true, statistically, even now that other doctors boast of their asepsis. My own past life does not class me among these others, as I may plead guilty, and no one has a right to blame me for exaggerations. I am, or have been, in the same boat with some of you. Of the five hundred tracheotomies I performed before the Listerian era, of a thousand I assisted in, of thousands of cases of scarlatina, measles, erysipelas during epidemics, and even hospital gangrene during war times—too many occurred while soap and water existed without being used at the proper time and in the proper places. We did not know better, but you do. Every case of death of sepsis in the mother should burn hell into the conscience of whoever permits it nowadays; every case of death from lack of breast-milk should cause a trial for homicide against a doctor or midwife, or mother. For the latter, it is true, there are, if not excuses, many explanations. Some mothers must get up after three days to do washing and scrubbing, and do it without a sufficient quantity of food—starving women make no milk—must make a scanty living in the factory, or in a small business; others go to afternoon teas and bridge parties, or have been taught by their fashionable doctors who agree with them in their suggestions that modern science has proven that a woman's udder may be replaced by a cow's bosom, that a milk laboratory's clerk will furnish printed mathematical schedules for the modification or alteration or substitution of food adapted for every month of an orderly Fifth Avenue infant.

But after all, truth will crop out. There is rarely a woman who cannot nurse her infant.

Ignorance can be learned from and taught by doctors, by midwives, by nurses, but wisdom also. As half of our babies, in all countries, are born under the supervision of midwives, it is these who, when their education is no longer so hopelessly neglected as in our country, in their more intimate contact with the people can exert the widest influence. They will best overcome the prejudice which derives from the well-clad people the notion that breast-feeding is no longer fashionable; they will prepare the nipples, teach cleanliness and antisepsis such as they have been taught in the schools of the—I hope—near future. Edith Peiper reports an increase within five years of from 55.7 to 72.5 per cent. of women who gave exclusively breast-milk to their babies in a public institution.

In a large midwifery school of Germany (Stuttgart), the percentage of women who nursed their babies increased from year to year under proper treatment and teaching. Of one hundred women, only 22 to 25 per cent. gave their babies breast-milk to the exclusion of other foods before 1884. Exclusive breast-milk feeding was furnished by 41.1 per cent. in 1884; 61.4 in 1887; 84.3 in 1888; 100 in 1902; 99.5 in 1903. All of these women were poor or in very moderate circumstances, but they were looked after and fed before confinement and after. It takes missionary work to accomplish results of that nature.

In our country, it is calves that are looked after by our Government. The babies have no votes yet. They will wait.

I must give you a few more figures though I may bore you. I have more sympathy with the world's baby than even with you. I want every incredulous Thomas to leave this place convinced that every baby has not only the right to suckle its mother but the facility.

Dietrichs reports the mortality statistics of 628 infants of the poorest married women of Cologne. Of 100 children born alive, three of those who were nursed for nine months or more died before the end of their first year; of those nursed from three to nine months, twelve; less than three months, thirty-five; of those who were fed artificially, forty-seven. Forty-seven out of 100 born alive, in one year.

Perhaps a report by Prinzing is equally convincing in connection with the mortality of other than intestinal diseases. During the years 1895 and 1896, the mortality of Berlin babies under one year, when breast-fed, was 7.09; when fed artificially, 38.6. Of 1,000 babies, congenital debility killed fourteen of the breast-fed; 43.6 of those raised artificially.

	Breast-Fed	Artificially Fed*
Gastroenteritis killed.....	12.2	171.10
Atrophy and marasmus.....	2.0	24.0
Convulsions	11.10	42.0
Bronchitis and pneumonia.....	5.6	39.6
Pertussis and diphtheria.....	8.3	19.3
Other diseases.....	17.2	46.4

*Alfred von Lindheim, Saluti juventutis, 1908.

The illegitimate infants fared much better than the legitimate ones. That sounds paradoxical, but the mothers of the former, when controlled by the authorities, are obliged to nurse their babies; the latter are the babies of the mothers who return to domestic and factory work, and are exposed to neglect and early and improper artificial feeding, mostly by strangers. Among living infants of the second year, the proportion is reversed, for obvious reasons. The lessons to be derived from these facts are intelligible. A social improvement of the mothers, but that only, will add to the chances of the infant population.

In the *Berliner klinische Wochenschrift* (No. 28, 1911), Professor Franz publishes the report of the gynecological divisions of the Charité. One hundred per cent. of his puerperal women nursed their babies. Dr. Kahn accomplished mostly the same results.

It is true that private practice does not reach the same number. Among the well-to-do, with better surroundings, better food, more rest, but greater indolence, less sense of responsibility; and more accommodating doctors to amuse them, and with more money with which to buy inferior food, the percentage of nursing women is smaller. Their daughters will know better, provided the doctors—we and our successors—will teach them.

G. Dufort reports on conditions prevalent in four districts of Belgium. Women objected to nursing, with a mortality of from 153 to 252 per one thousand, in the first year. Then the Government and a private organization took measures to improve the percentage of breast-feeding women. Not all governments mix up with such things; some are not on the job; some are on the stump. This percentage increased in certain localities where it was lowest, within two years, from 4.3 per cent., to 17.02. That increase was due to the midwives who were taught by premiums, by the practitioners, and by clergymen. You see doctors and priests are still good for something. In other districts the percentage of breast-feeding was 56.6 per cent. in 1907; in the first half of 1908, 57.1 per cent.; in the second half of 1909, it was 74.12 per cent. That means an increase obtained by the country midwives in two years of 17.6 per cent. More, there were midwives who could report 94.0 per cent. in the first half of 1908, and at the end of 1909, 100 per cent.

The same midwives made it their business to extend the duration of breast-feeding about the same time. In 1907, there were fifty-seven babies who did not receive the breast through their first half year exclusively; this number was reduced to forty-eight at the end of 1909. Of these infants who were kept at the breast exclusively through six months, 64.7 per cent. extended this time to nine months; 75.4 per cent. in 1909. The author again and again refers to the powerful influence the midwives—after having been instructed—exerted among the population the women and the babies.*

*Dr. A. Balestre and Dr. M. d'Oelsnitz (Bericht über den III. Internationale Congress für Säuglingsfürsorge, Berlin, Sept. 11-15, 1911, p. 780) express their satisfaction with the results of the Infant Protective Society of Nice, which was founded twenty-five years previously, mainly for the encouragement of maternal breast-feeding.

What, after all, *is* a midwife, whose presence at or attendance on a confinement case, according to my esteemed Milk Committee, must be shunned? An editorial of the *Boston Medical and Surgical Journal*,* has it all. That cautious and elegant magazine gives the following definition: "The midwife may be defined as a person attempting to practice obstetrics without complete or even adequate medical education. The tolerance of such persons is an anomaly in an enlightened civilization. The midwife is a relic of medievalism, unhappily extant in the Old World, but whose persistence in our own community should not be encouraged by any form of recognition."

Meanwhile, Holland, Belgium, France, and Italy require a two years' course of schooling for their midwives; Norway, Sweden, and Denmark, one year. Germany has had its midwifery schools, mostly attached to university hospitals, for more than a century. Many countries subsidize their midwives, who live and practise in sparsely settled districts. Great Britain† established in 1902 its Central Midwives Board, to supervise and control midwives for the specified purpose of preventing the death of women in childbirth, infant mortality, blindness, and physical degeneration.

There are in England and Wales 17,790 trained and untrained midwives—too many yet of the latter class. The British Empire's 108 midwifery schools—including four in the East Indies and one in Hong Kong—have not yet afforded sufficient facilities. But the *British Medical Journal* emphasizes the fact that even in the old type of midwives there is a great improvement in cleanliness and obedience to rules, one of which is the calling in of medical aid in cases with a purulent discharge.

And we? Fifty per cent. of all the births in the United States are attended by non-medical midwives—in New York, 42; Buffalo, 50; St. Louis, 75; Chicago, 86. The patients so attended are negroes, aliens, and natives born of aliens; that means one-half of our population; that means those who during the disappearance—voluntary, wanton, or not—of the original stock and by additional immigration and multiplication will form what within two generations will be the type of the two hundred millions of Americans then living. And where are our midwives? Where are the 108 schools which little Great Britain deems—on account of their scant number—insufficient for her urgent needs? Where are the American safeguards of our fetuses and new-born? When our experienced and far-seeing president of Bellevue and Allied Hospitals established a small school of midwifery, he was applauded for his exceptional foresight and altruism. We think nowadays that the ocean is only a short bridge; but the experiences of Europe, established on a solid and constant foundation do not travel on it. That is the way of indolence by which we negligently murder our forests, lay dry our river beds, cause our freshets, and kill or cripple our newly born. I wonder in which other country we could be expected to accept what I lately read, that people cannot receive obstetrical service under the midwife, "no matter how well trained for her vocation;"—I ask why not?—or agree with a well-meaning author who sympathetically cries out: "Professors are teaching midwives, so medical students are deprived of their professors' time;" or throw up our hands when Stokel tells us that it is "a curious

*Feb. 23, 1911.

†*Brit. Med. Jour.* Dec. 17, 1910.

fact that even among people of refinement the older and dirtier the midwife, the greater seemed the confidence placed in her ability and judgment." That is as sound, perhaps, or not, as when the great English opsonin scientist publicly arraigns habitual bathing for its dangerous effect in admitting microbes through the clean skin—a desirable bedfellow, he!—or when Knott* tells us of "Lady Lawson, who died at the age of 116, never practised ablution of any kind, or hardly in any degree, because, as she averred, those persons who washed themselves were always taking cold or laying the foundation of some dreadful disorder," or the occasional preference given to an old doctor not though but because he is habitually intoxicated. There is still another line of mistaken altruism: Fenwick fears lest a midwife, scantily trained, compete with physicians. I should say, if she succeeds, it serves him right unless he owns a superior training. A pretty good doctor will not do for you or your wives or cases, any more than a pretty good egg for your breakfast.

Is there anybody here who remembers that when fifty years ago the question of the licensing of midwives was brought up before the Medical Society of the County of New York, it was voted down with all con except one pro? Ask our New York doctors at present. We know better now and feel better about it. For we feel like citizens at present. We have also been told that all countries have found "the practice of midwives unsatisfactory." That is not so. The fact is that the other countries maintain that they know their own business and constantly add to the facilities and education of midwives as we do those of doctors. Some assert also that the attendant upon a midwifery case must either be a trained obstetrician or a subordinate "like our excellent trained obstetrical nurse." "The obstetricians are the final authority to set the standard. They alone can properly educate the medical profession, the legislators, and the public." Who educated *them*, if you please, if not the professional schools, and they themselves as best they could afterward? The midwives are not even mentioned as worthy to be educated. Do our obstetricians demand all the obstetrical practice? I am prepared to bid a hearty welcome to my friend the evening-dress obstetrician—who charges $200 or $300 or $500 a job—to the confinement where the man earns $10 or $15 a week, or the woman 7 cents a dozen and the children nothing, unless they sell newspapers.

In spite of English complaints concerning the insufficiency of midwifery attendance, the reports are very promising. In 1910 there were 321 midwives in Liverpool, 198 in Birmingham, 159 in Manchester. In Liverpool, the average number of cases per midwife was seventy—one had 500 cases. Of all the births in the towns midwives attended in Liverpool, 71.9 per cent.; in Birmingham, 63.2 per cent.; in Manchester, 57.2 per cent. Still births attended by midwives were 391 in Liverpool, 212 in Birmingham, 279 in Manchester. Their honest discipline is exhibited in the following figures: Medical assistance was called for 1,015 cases in Liverpool, 674 in Birmingham, and 2,279 in Manchester. The indications for such calls, under the universal rules, are high temperatures, abortion, laceration, illness of the patient, imperfect removal of the placenta, puffiness, convulsions, large varicose veins, sores on genitalia, malposition, trauma, hemorrhage, venereal diseases.

*Medical Record, Dec. 3, 1910.

This very day the system under which they work in our country is an absolute lack of system, slovenly and shiftless—no instruction is offered, no examination demanded, no supervision enforced, and the babies swell the universal mortality.

What is it that a midwife should be taught? Common sense and the experience of other countries should tell us, for we have none. I mean experience. We are only told by our omniscient colleagues that she is dirty, ignorant, untrained, superstitious, septic, the cause of invalidism, degeneracy, and blindness. That is a list of statements exhibiting more temper than knowledge. For, indeed, in thirty-three of the fifty States and territories there is no law restraining the practice of midwifery or what is so called. In three there is no restriction whatsoever. In thirteen there is no provision for training, but there are, curiously enough, laws requiring examination and licensure. What is it, after all, that every one of our States—indeed, after a while, the Federal government—should demand on the part of a midwife who is to be the obstetric guide of fifty millions of Americans? In my opinion she must have as moral a character as you expect and officially demand in a male or female student of medicine or man generally—and, for that matter, of any American outside a penitentiary; a good common school education without Latin and Greek; a fair health so as to endure the hard work she means to undergo in future; a reputation for love of work and conscientiousness; and such knowledge of popular physiology and anatomy as the program of our future midwifery schools will designate. What they must surely teach, like the English schools, are four topics—*the care of expectant women, the conduct of normal labor, the care of babies immediately after birth, the simple principles of artificial feeding, if that become unavoidable*—and the diagnosis of abnormalities, so as to advise the calling in of medical skill. As there are many, I shall spend a few minutes on their consideration.

The fact is, that of one hundred deaths under a year, 2.2 occur by injuries during birth, ten on the first day of life, twenty-five during the first two weeks, thirty-four during the first four weeks. Most of them should be saved through perfected knowledge and art, more skilful attendance than half our population enjoys, and greater acquaintance with the dangers of the newly born. You notice that a large number die from other than the usual causes, viz., indigestion, and you are startled by the fact that one-third of all the deaths occur within the first month.

There are a number of diseases and accidents of the new-born which are as amenable to the care of the midwife as to that of the doctor. Much of what the doctor can do the midwife *cannot* accomplish. But her domain is vast. I shall mention a few of those which belong to it.

A calamity never prevented by one of us, possibly, however, by an attentive and painstaking nurse or midwife, is death by suffocation. There were in England and Wales during ten years, 10,000 overlain infants; in 1900, 1,774; in Liverpool, out of 960 inquests there were 143 on babies that had died of suffocation from the same causes, by accident or malice; in London in 1900, 615; in 1901, 511; in 1902, 588. In London they had annually 8,000 official inquests, one out of fourteen of which were on overlain infants.

A serious complication of labor is *asphyxia*. It may be caused by the mother or by the fetus. Dis-

orders of placental circulation, mostly toward the end of labor, early loss of amniotic fluid, respiratory and cardiac disorders, disruption of the placenta, compression of the cord, and cerebral pressure can mostly be prevented or moderated by appropriate aid. Asphyxiated babies may die, however, within an hour, or the first few days. Those who do not so die are apt to be worse off. They are very liable to become paralytic, idiotic, or epileptic. Little shares the opinion, the contrary assertions of others notwithstanding, that a large percentage of cases of spastic encephalitis ("Little's disease") is produced by congenital asphyxia. Hundreds of times, both in obstetrical and pediatric practice, have I, when looking for etiological factors, received the uniform answer that the baby did not cry for some time after birth, and that the attendant had to work over it minutes, or even hours. Asphyxia must not be tolerated. A few moments' delay adds to the danger which may be averted by knowledge and skill. Losing a baby is a loss and bereavement; crippling it for life is worse. Accidents of that kind can be avoided by much less than the profound knowledge of medical experts, few of whom will ever deign to attend a mere case of common confinement. The statements on a certificate that the new-born is a still birth, means a statistical fact, not an explanation, still less an excuse.

Atelectasis is more apt to be relieved, and death from it more readily prevented by a midwife than by one of us, no matter by what it is caused. Soft cartilages in the premature, feeble muscles, defective nerve centers and lungs, but mainly hepatization, early pleural effusion, struma and compression of the brain are the usual causes. Frequent changes of position, warm and cold baths, shaking, forced inspiration, occasional closure of mouth and nose, so as to fill the medulla oblongata with an extra momentary dose of irritating carbon dioxide, an interrupted momentary Faradic stimulation, and all the procedures demanded in asphyxia are advisable in atelectasis. A midwife should and can master all or most of these measures, as well as a doctor. The former is more efficient because she mostly uses more diligence and can spend more time than most of us.

The *mouth* of the newly born is exposed to injury resulting from the antediluvian tendency of not leaving well enough alone. The habit of washing and rubbing the oral cavity of the newly born, even by clean fingers and rags, hurts the very thin mucous membrane covering the posterior part of the alveoli, and the punctuated epithelial accumulations on both sides of the raphe. Doctors and nurses and midwives who do not know how to omit interference are dangerous. For the forcible removal of the epithelium leads to invasion of cocci and bacilli, and the mycelium of muguet. The latter, though easily cured by a strong solution of borax in glycerin, need not occur in the baby's mouth, for its habitat in the vagina of the mother is quite accessible, both in a private home and in obstetrical wards and in foundling institutions. A consecutive invasion of the stomach and intestines, of blood-vessels and lymph ducts, even of the kidneys and nerve-centers, may easily be avoided by a person who has been taught to prevent and to cure.

The observing obstetrician or pediatrist or midwife has an opportunity to notice all sorts of microbic infections, such as tetanus, hemorrhages, and the intense forms of syphilis. Its worst form is the pemphigus of the soles of the feet, which must be recognized within a few days. The midwife is the readiest to make the diagnosis, and to recognize the necessity of treatment. That does not mean her treatment, just as little as she will undertake the treatment of melena, sclerema, jaundice, sepsis, dermatoses, erysipelas, traumata, or umbilical defects or diseases.

Some of the septic diseases of the newly born for the cure of which the doctor is always too late, or incompetent, are those which go by the name of Buhl, of Winckel, etc. They develop before any symptom is perceptible. The poisons which cause them are probably multiple and connected with the rapid metabolism occurring during, and immediately after, labor. Many cases look like acute atrophy of the liver, or pernicious vomiting; or the main symptom is fatty degeneration, or hemorrhage, or intense jaundice. Overdoses of chloroform in predisposed women have been accused. Intense asphyxia I have seen coupled with or causing it. There are many such cases which can be prevented by appropriate and instant aid, such as I plead for. Many, I believe, will be cured by vaccine therapy, provided it can be employed in time. That is possible only when the indication for it is suggested or only suspected by a person who is on the spot and better taught than a common neighbor or nurse.

Constipation of the newly born should be recognized by the midwife. What I described nearly half a century ago as congenital constipation is the result of an excessive length of the sigmoid flexure. When the continuance for one or two days suggests it enemata should empty the bowels. Unless that be done, moderate and later on serious costiveness is an accompaniment of the dilatation of the descending colon, and autointoxication. "Hirschsprung's disease" is rarely a fully developed congenital dilatation. If a midwife be too alert she may be guilty of preventing an operative interference. I was one of the alert midwives. None of my cases ever terminated on an operating table.

Ophthalmia is the source, not only of blindness, but of death through general septicopyemia under the general symptoms of multiple abscesses and arthritis. A series of cases I, like others, have observed of vulvovaginitis, endometritis, and peritonitis. The endometritis is always of long duration, and may for anatomical reasons relapse indefinitely for many months and years, and often gives rise to contagious dissemination in families, in hospital and asylum wards, by careless nurses and by gregarious bathing.

The tissues of the newly born contain more water than those of the adult; the difference amounts to 10 per cent. Loss of water is badly tolerated, while large quantities are eliminated at once through the lungs, kidneys, and skin, and some through the intestines. Without a proper supply, the tissues deteriorate, and the physiological equilibrium is lost. That was always so—the newly born *is* conservative—and was considered normal. The baby had to be satisfied with reading in every textbook—even in the old ones from which some new ones are compiled—that he has to please the attending oracles by giving up 10 or 20 per cent. of his weight within a week or two. However, as the mother has but little milk during the first days, the least the baby should have a right to expect is water—at least teleology ordains it so—the more so as the first mammary secretion means colostrum,

which contains three or four times as much protein as the milk of later weeks—that means 3 or 4 per cent. That is mainly so—even still more so—when the baby is premature and endowed with less vitality than when born at full term. Neither you nor I shall undertake to change that, but the danger connected with it requires correction, and if artificial feeding be resorted to at all the food should be amply diluted. There is another reason for so doing. *Uric acid sediments* and renal stones are comparatively frequent in small infants. They are caused by the uric acid infarctions which, as a speedy result of the rapidly changing metabolism, are found in the diapers on and after the second day of life. Besides forming gravel and calculi, they give rise to occasional attacks of colic, to small hemorrhages, and frequent cases of nephritis, with, or mostly without, pyelitis. Neither I nor my pupils and friends have seen so many stones and inflammations since, for the last forty years, we made it our rule to feed the newly born on plenty of water. It is also demanded for the purpose of rendering the chemical and physical condition of cow's milk casein more digestible. As long as a human baby is not permitted to live on its mother, that fact is important to consider. Artificial feeding during the first days and weeks should furnish more than 75 or 85 per cent. of water, which is normal even for the adult. Altogether, our infants and children are not supplied with water in sufficient quantity at any time. In our era of equality for all sexes and colors, we should recognize the rights of all ages. When you are hungry, you want to eat; when thirsty, you drink. The baby wants its equal rights. But no matter whether it is hungry or thirsty, it is condemned to receive the same food to quench both its hunger and its thirst. When it cries with hunger, it justly receives food from the bottle or breast; when it cries with thirst, it is given the same food from the same bottle—not mere water. I have often felt like presenting a bill to the Legislature or to the professional philanthropist, enforcing, when father, mother, and physician are thirsty, beefsteak and potatoes. A German pediatrist improves the method of giving water by giving the new-born tea and saccharin. What tea is, I do not know; what saccharin is, we do know. It is found to be a poison. That should not have been, however, the reason why our magnanimous Agriculture and Treasury Departments twice postponed the execution of the law which forbids its indiscriminate sale by the manufacturers of foods.

Midwives are more fortunate than we doctors. They need not know so much as a few taskmasters ask of them—for instance, two German professors, Salge and Siegert, who are so interested in the babies as to insist upon midwives being examined on the intricate problems of metabolism. I fear, after having been a midwife sixty years ago and since, I could not pass to-day. Then, midwives need not know all the mixtures and mathematical formulas concocted by twenty of my pediatrist friends, each one of whom is sure that the other nineteen are quite wrong. Nor need they be acquainted with the fifty artificial foods which were recommended in Germany—that haven of great learning, profound research, irregular practice, advertising, patent medicines and foods—by the *Deutsche medizinische Wochenschrift* a short time ago, and again rejected in the very same year.

The teaching of midwives is not so difficult as our medical profession imagines it to be. We are defective ourselves, for there is a fact which seems to be agreed on by our college teachers, viz., that our young doctors are incompetent to conduct a normal or abnormal labor. As that is so, we, the practitioners, should try to learn some lessons by theory but more by practice. Their incompetence is the result of the insufficiency of our medical school instruction, which is acknowledged to have been scanty in spite of our four years' medical courses. The schools furnish neither systematic obstetricians nor competent general practitioners. I shall not be hard on them, however, for I was a teacher myself. That is why the number of septic infections and of still-births is liable to be large in their practice. If that occur in the green tree—viz., among the men and women with medical diplomas—what can we expect from the untutored?

We speak against midwives and their detrimental doings, and their unreliability. Teach them their duties, which are not many; furnish bedside instruction—which even for a hundred thousand physicians is scanty or none—so that they will learn the manual care of labor; let them be taught not to use medicines, not to operate, not to try, except in certain cases, even to remedy wrong fetal positions; teach them the use of soap and water, and antiseptics; enforce by law and custom the frequent change of their own clothing; forbid the simultaneous attendance on two or more cases; see that she does not attend a labor case as long as in her family or immediate neighborhood there is a case of contagious disease, and she will cause or disseminate no puerperal sepsis. She must be examined and licensed and protected, like you and me.

Registration alone, however, will not do. Nor will our complaints do. Our responsibility does not cease when we decline it. Our duty does not end by sending and collecting a bill for an individual medical service. A death not prevented, a life not saved, is a blot on our escutcheon. The people want more. We are not yet—as the British government proposes—official state employees of the people. If there were not an excess of individualism among us, the attempt to force socialistic coercion on the profession of England would not have been made. Not yet.

Less than a year ago, the New York Academy of Medicine passed, among others, the following resolution:

"Whereas, some of the results of obstetrical malpractice are unnecessary blindness, mental and physical degeneracy, and death of infants, and unnecessary suffering, invalidism, and death of mothers; and wheras both doctors and nurses in this country are given instruction in the treatment and care of child-bearing women and new-born infants, there is no existing provision for the adequate training of women who take into their keeping the lives and future well-being of this large number of both mothers and infants, be it resolved that the Section of Obstetrics and Gynecology of the New York Academy of Medicine recommends that measures be taken in this State to secure State legislation which shall provide for the training, registration, licensure, supervision, regulation, and control of women engaged in the practice of midwifery."

It is useless to attempt a comparison of a midwife with a medical man. They must be considered individually. The ignorant doctor in obstetrical

work is the inferior of a well-informed midwife, and *vice versa*. I remember only two cases of sudden death caused by atmospheric air entering a large uterine vein—in both instances resulting from the nozzle of a fountain syringe introduced into the uterus before the air had all been expelled. In both cases it was a colleague that did it. That does not prove that we doctors do not know how to clean a uterus without pumping air into a vein but I know of no midwife that could have done worse. Still, ignorance, like sinfulness, makes all mankind kin. The greater number of annual labor cases in the United States—more than a million—are attended by midwives, or alleged midwives. As long as these cases are uncomplicated, the presence of a bright trained woman should be, and is, welcome. She must have learned to distinguish the position of the fetus, and know when to call a doctor, how to do, in his absence, a version in cases of emergency; how to attend the eyes, hemorrhages depending on incomplete uterine contraction or from injuries—one of which is tearing off of the placenta, and how to recognize eclampsia, inversion of the uterus, the presence of a mechanical obstacle like fibroma or a contracted pelvis. She must know how to deal with asphyxia. More than anything, she must have been taught to appreciate two things: first, how to keep absolutely clean—that means to disinfect herself and her hands and tools; second—and therein lies a secret of success—not to leave the woman. That is, more than you or I do, or usually did.

The results of midwife practice do not always compare unfavorably with those of our professional brethren. Of 116 cases of ophthalmia neonatorum which were treated in the Massachusetts Eye and Ear Infirmary in one year, 114 were in infants attended by physicians and 2 by midwives; of 33 cases treated in the New York Eye and Ear Infirmary in one winter, 22 occurred in the practice of physicians and 11 in that of midwives. Of the 11 midwives three had used nitrate of silver; of the 22 doctors, only one. According to these reports, if it were wise and proper to generalize the doctors should be replaced by midwives.

In a period of 6 years, 1905-1910, the city of Manchester has the following to say about puerperal fever and recoveries and deaths following them in the practice of midwives and of doctors. In cases of puerperal fever in the practice of midwives, there were 210, with 41 deaths; in the practice of doctors, 275 with 80 deaths; in the cases attended by midwives and doctors, 100 with 26 deaths.

Nor are midwives' cases, those reported in 1910, inferior in results; 45 puerperal fevers were treated at home, with a mortality of 10 or 22.2 per cent.; in Monsell Hospital, 66 cases with 16 deaths or 24.2 per cent.; in other institutions, 20 cases with 5 deaths or 25 per cent.

Now, my friends, you have been kind to me and patient as hundreds of times before. That is why I shall now finish in a minute with a few conclusions for those who with me are convinced that healthy women and living vigorous infants are the best possessions of this nation. They need not be conquered with treasures and cannon and corpses of countless men; they need conservation only. What I want is that a pregnant woman should be in a condition to carry her fetus to its legitimate end in health and vigor, and able to nurse her infant. Every text-book talks to us of the *inability* of women to do so, and indicates formulæ and trade-shops and factories from which to graduate toothless young Americans. One hundred per cent. of our women, however, can be made to nurse, even the so-called "flower of fashion" of the land. From two to three times as many babies will live when breast-fed compared with the number of those who are raised on any artificial food without exception. By breast-feeding you will save 100,000 babies that now die or become invalids, from no other cause but unnatural feeding.

Dangers which now attend the process of parturition in more than one-half of the women of this country must be modified, relieved, or removed by the presence of a person instructed and trained by practice to conduct a normal labor and, when needed, to call timely aid. We want, for the benefit of the women of the country who need midwives 200 midwifery schools after English or German patterns. You are welcome to do even better. But make a beginning. We are all in debt to the country, so let us pay it. Let no legislation of any State pass without a bill or law construed in intelligible language to safeguard the newcomers and their mothers.

A town without an ample supply of good doctors and midwives and a village without one or two competent and responsible and licensed midwives, are like a tenement house without a fire-escape or a *Titanic* without life-boats.

19 East Forty-seventh Street.

HELIOTHERAPY IN SURGICAL TUBERCULOSIS.

By GERTRUDE AUSTIN,

PARIS, FRANCE.

FORMERLY HOME-SISTER AT THE CHILDREN'S HOSPITAL, GREAT ORMOND STREET, LONDON.

"La fleur humaine est, de toutes les fleurs, celle qui a le plus besoin de soleil."—Michelet.

That it should be possible to expose little children for hours daily without clothing of any kind to the sun's rays in midwinter at an altitude of 5,000 feet in the mountains, sounds quite incredible; and yet this is what is being systematically done, and with the most brilliant results, in cases of surgical tuberculosis at Leysin, Switzerland. Who would have dreamed that these frail and diseased little bodies could develop such an extraordinary degree of endurance after only a few weeks of acclimatization?

Accounts of this new treatment had reached me from different quarters, and as I am specially interested in children's diseases, and particularly in that awful scourge tuberculosis, which ravages so many homes and is the nightmare of all parents, I decided to visit Leysin, to see with my own eyes the details of the method, how it is applied, and what results it gives. From this trip I have come back an enthusiastic convert to Dr. Rollier's ideas, and feel sure that the subject is one of immense practical interest to the general public, and well worth their most serious consideration. In how many homes, alas! are little children lying ill and suffering from this terrible disease! Mothers will certainly be thankful to learn that a new era has finally dawned, and that the hitherto lamentable results obtained in this branch of surgery will soon be a thing of the past.

I reached Leysin one glorious morning early in January. Leaving the Rhône Valley below shivering in the chilly, gray clouds that clung tenaciously to the pine trees on the mountain sides, the tiny cog-train crept steadily up the steep grade. Little

Fig. 1.—Leysin village and valley, and mountains beyond.

by little the enveloping mist became less dense, and light from above began to break through in patches; finally we emerged entirely from the gloom and found ourselves transplanted into another world. Everything about us lay buried beneath a thick mantle of spotless snow, which glistened and sparkled in the dazzling sunshine, while above us the intense blue of the cloudless sky formed a marvelous contrast to the frost-bound landscape. The penetrating chill of the valley had vanished entirely, and was replaced by the pleasant warmth of the dry, still mountain air. On every side towered the su-

Fig. 2.—"Le Chalet."

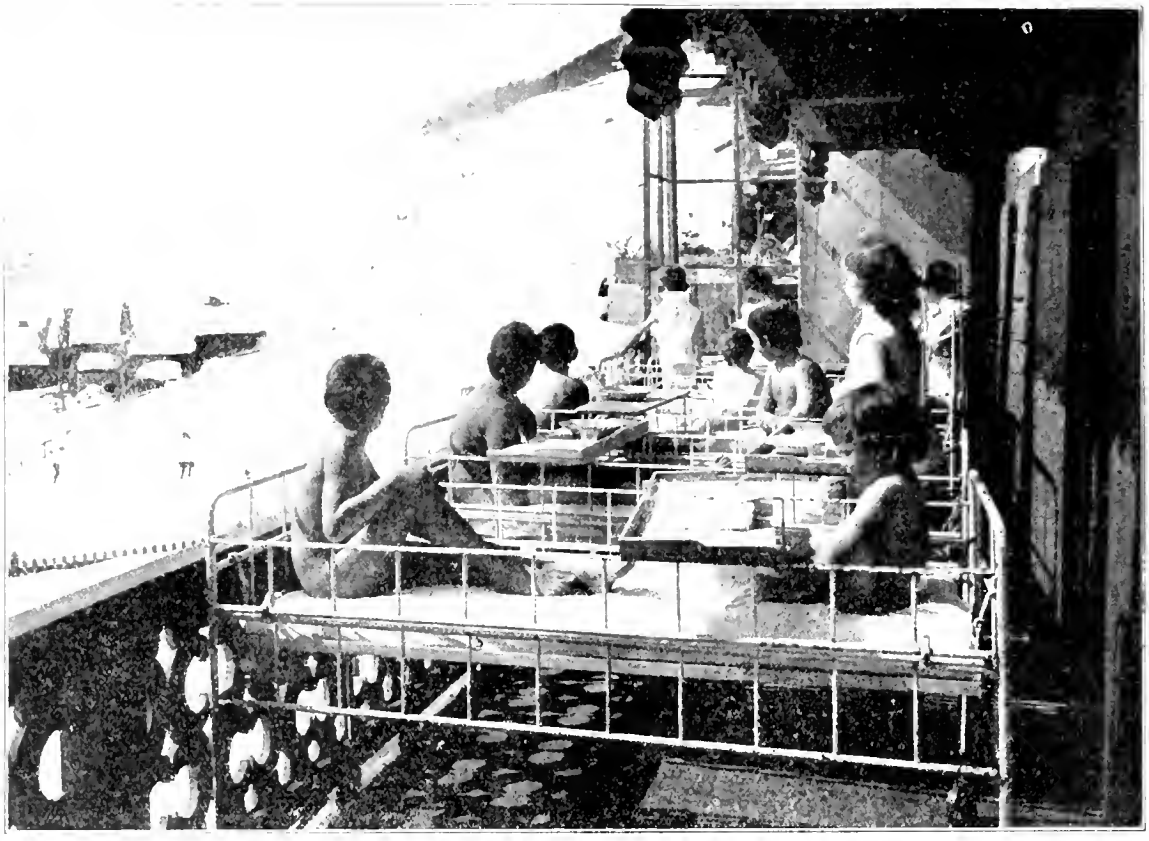

Fig. 3.—Heliotherapy in midwinter at an altitude of 5,000 ft.

perb Valaisan Alps, the nearer ridges protecting from every breath of wind the little, high lateral valley into which we were entering. Below us stretched the upper surface of the white, billowy expanse of mist through which we had risen, shutting out entirely from view the world beneath, which we had left scarcely two hours before. Such a dramatic transformation scene I had never witnessed. Could fairyland itself be more exquisitely beautiful than this?

As soon as possible after my arrival I called on Dr. Rollier at his clinic "Les Frênes," one of the

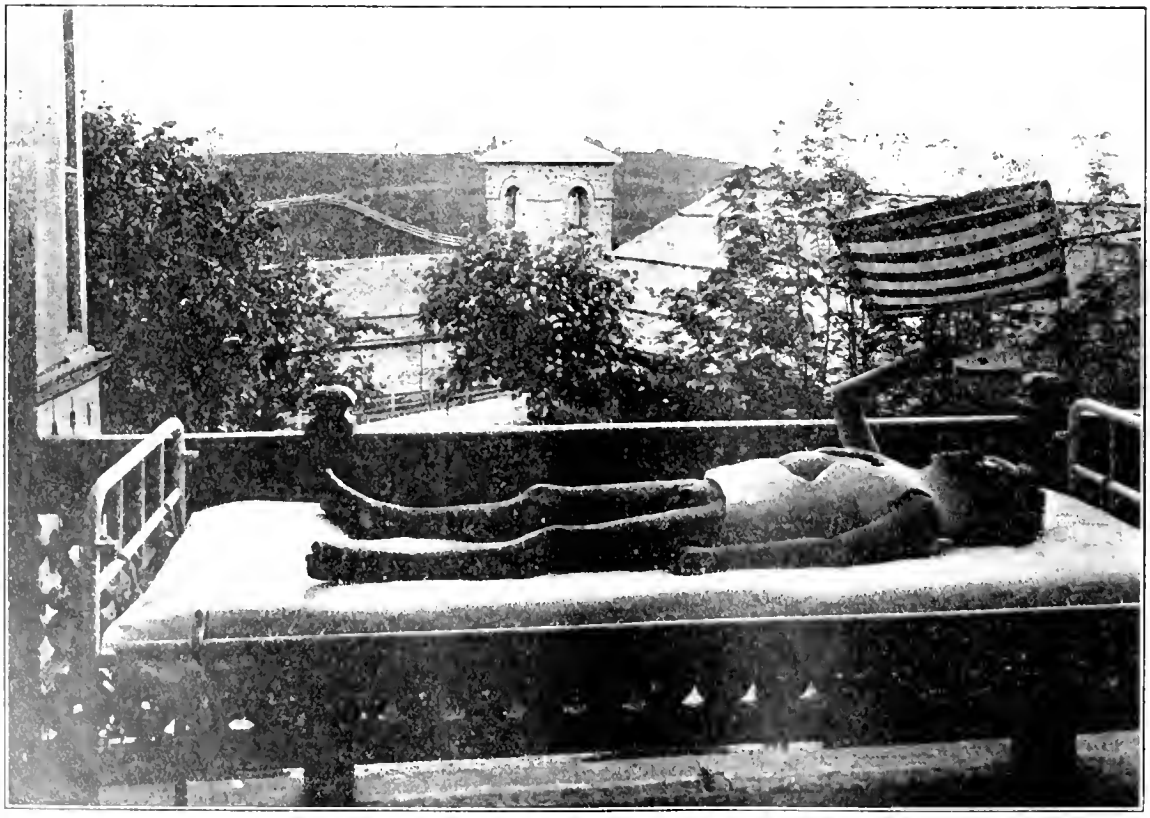

Fig. 4.—Pott's disease of the spine.

two in which adult patients are received, and [illegible] him of my errand. I shall never forget his kindness and courtesy. During my stay at Leysin he allowed me to study his cases, explained anything I wanted to know, and supplied me with his

Fig. 5.—Child X. Y., 4 years old. Pott's disease, with pronounced gibbosity.

publications on heliotherapy. Precious as his time is he gave me of it ungrudgingly, and I soon realized that the eight years he has devoted to the study

Fig. 6.—Same child as in Fig. 5, with first wardrobe [illegible]

of this question have been spent in the advancement of science and the good of humanity rather than in promoting his personal material interests. His results are now beginning to be known all over Europe, and by publishing them to the world he hopes to make converts to his method and persuade other men to open clinics in high altitudes so that children of all countries may benefit by his experience and enjoy the advantages until now confined to the favored few whom he can take in at Leysin, where unfortunately he has only 350 beds at his disposal. He is always ready to explain his treatment to competent visitors, and certainly every student of this all-important question may expect the same cordial welcome at his hands that was extended to me.

My first visit to the children is an event that I am not likely to forget. It was with no little difficulty that I walked from my hotel down the steep, winding road that leads to "Le Chalet," as every one in Leysin calls this diminutive hospital. The sun had not yet appeared above the mountain tops to soften the frozen snow, and progression was difficult, not to say dangerous. The clinic is a picturesque, wooden construction, a regular Swiss chalet, faces due south, and stands in a small garden which in summer-time is no doubt green and gay with flowers, but which on this cold January morning was carpeted like everything else with pure

Fig. 7.—Same child as in Fig. 6, one year later.

white snow. I had planned to arrive betimes, for I wished to see the exodus of the children from the wards to the galleries. But as I stood upon the doorstep waiting for admission the sun rose above the mountain-tops, and already there were sounds of merry laughter in the frosty morning air. Happy voices were féting the beneficent rays whose healing powers even the little ones appear to understand. They love this sunshine, which gives them health and takes away their pain, and it is they themselves, when able to do so, who, the moment the word is given, push down the bedclothes, and pull up and over their heads the nightdress that is obligatory at other times.

When I was taken by the matron out onto the first gallery, my surprise knew no bounds. Who would have supposed that such dark-skinned, healthy-looking little bodies could be found in a hospital, and above all who would have expected to see tiny children on a winter's day in January, basking in the sunshine as naked as when they were born, except for the quaint little white calico hats which make such a startling contrast with their brown skin. Most of them are in a recumbent posi-

tion, some even lying face downwards, which does not seem to worry them at all; the more fortunate ones are able to sit up, roll about in bed and have a good time, while all are reveling in their warm sunbath. A few are not yet fully exposed, it is true, for they are newcomers and have not completed

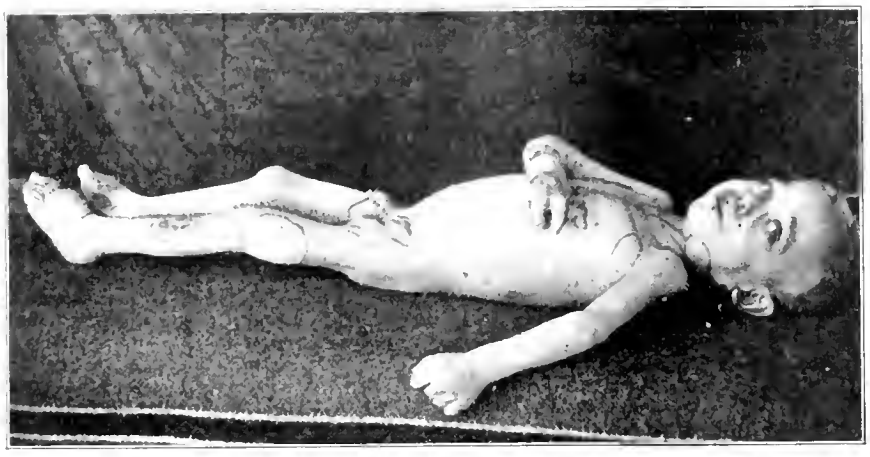

Fig. 8.—Child A. B., 4½ years old. Pulmonary tuberculosis, tracheobronchial lymph nodes, adenitis; 32 foci of osteitis and periostitis; very bad general condition and fever.

the necessary training which endows them with this extraordinary power of endurance. The latter have still the pale, weary faces which sickness gives, and it is easy to see that their sojourn at Leysin has been but a short one.

The morning lessons were just beginning, for the good doctor disapproves entirely of "no work and all play" for his little patients. Both from a moral and from a physical point of view he considers some mental occupation absolutely necessary; and while he allows no fatigue or overwork, he insists that all children old enough for regular education shall continue their studies, as he thinks there is an interdependent relation between the training of the mind and the development of the body. It is considered a privilege to take part in these lessons, for this means that the days of sickness and suffering are past and convalescence has begun. The teacher stands at the head of the beds lest the shadow of her body should interfere with the action of the curative rays. It was an interested and intent little audience she had on the morning of which I write. I think I can safely say that few people have seen classes of sick children doing their lessons perfectly naked in midwinter out-of-doors, all gay and happy, and looking far stronger and healthier than many of our city children who have no ailments whatever.

I returned again and again to the clinic to hear the childish prattle and watch the happy faces as the little patients pursued their studies or played with the toys that were strewn on every bed. They seemed to enjoy the excitement of seeing a visitor, and answered my questions or listened intently to the stories I had to tell of other children I had known. My thoughts flew back to these other children, lying in crowded wards in sunless cities as I had often seen them. I recalled their wasted frames, their wan faces puckered up with pain, and the tired, hopeless look in their weary eyes. What a contrast! My heart ached when I thought of the thousands who would benefit so wonderfully by this treatment, if they could but have it. And only 350 beds, half of which are given up to adult patients, who must also be thought of and provided for.

By surgical, as distinguished from medical, tuberculosis, is of course meant the forms that attack the joints, bones, lymph nodes, peritoneum, and genito-urinary organs, which until quite lately it was usual to treat by the knife, immobilization, and modifying injections. These were apt to leave the patient scarred or crippled, with stiff joints or shortened limbs; in some instances, even, amputation had to be performed. But now, when treated by this new heliotherapy process, operations become unnecessary, the sun's rays doing the work of the scalpel, but with one very important difference: the patients recover without disfigurement and leave the mountains with normal limbs and supple articulations. Dr. Rollier's *modus operandi* cannot perhaps be fully appreciated except by one who has gone through life handicapped after treatment by the old method, or by those who have had some dearly loved child, a victim to the disease, come back to them after operation more or less maimed for life. And only those who remember the former long months of immobility and the consequent weakness, depression, and wasting away of the muscles can realize the advantages enjoyed by the little folk at Leysin, their happy outdoor life and pleasant surroundings during a cure which of necessity is always a protracted one.

This new method consists in exposing the body of the patient to the sun's rays in open galleries com-

Fig. 9.—Child A. B. (shown in Fig. 8), one year later; complete recovery.

municating with the wards and facing due South. The actual seat of disease is uncovered for five minutes only, to begin with, as there must be no blistering or burning of the skin; the next day the region is treated for two periods of five minutes each,

separated by an interval of half an hour, and on the third day these exposures are lengthened to fifteen or twenty minutes. At each séance a larger area of skin is uncovered, so that by the end of a week or ten days (for each case needs individual

Fig. 10.—Dystrophic child with the physical signs of pretuberculosis: enlarged lymph nodes, gastrointestinal disturbance, skin eruption, weakness and fever. Condition on arrival.

study) the entire body, the head excepted, is lying nude in the sun. The head has to be protected for some time longer, to prevent congestion; but it too is also ultimately brought to tolerate the sunlight. The patients are wheeled out in their beds onto the galleries as soon as the sun appears in the morning, and lie there naked for hours under the influence of its healing rays, being only moved back into the house when the cool night air begins to make itself felt. The large windows of the comfortable steam-heated wards open down to the ground and are never closed, so that when the sun has disappeared behind the mountains the invigorating air continues the cure during the night hours. A carefully

Fig. 11.—Same child as in Fig. 10; condition one year later.

studied diet furthermore helps to build up and renovate the diseased bodies under treatment. No medicines are given; the stomach, enfeebled by sickness, has therefore only to digest the good, nourishing food supplied, and thus contribute without interference to the general amelioration of the patient's condition. According to the necessities of the case the invalid is partly or entirely immobilized until the actual disease is cured; and only then, and in cases where it is absolutely essential, is an apparatus

Fig. 12.—Boy, ten years of age; suppurated white swelling of the left ankle.

applied to correct deformities or straighten limbs.

In those cases where an apparatus cannot possibly be dispensed with an opening is cut as large as possible at the seat of the trouble, so that the sun's rays can continue their curative action on the diseased region all the time that the patient is in plaster. The doctor finds that he is thus able to prevent any wasting of the imprisoned tissues, such as always takes place when the body is immobilized for any length of time without this precaution. Thanks also to this method joints quickly recover their movements when the apparatus is taken off, and if somewhat stiff at first become quite limber after a few days of insolation and exercise. In Pott's disease the "window," as Dr. Rollier calls this opening, is cut in the front of the corset worn by these pa-

Fig. 13.—Same boy as in Fig. 12, eight months later; the joint is dry, manipulation no longer causes pain, and active and passive movements are free.

tients, support being necessary at the seat of the disorder; this aperture is extensive, laying bare a portion of the abdomen and of the thorax. The remainder of the body is uncovered and takes its daily sun-bath for as many hours as possible.

In all the surgical wards at Leysin the knife is held in far greater aversion than any apparatus; the latter is an absolute necessity in some cases, though its use is to be avoided whenever possible, whereas the former is considered to be almost always an agent of harm. When in spite of the insolation an abscess seems about to open, it is punctured and the pus drawn off, and it has rarely been necessary to repeat this more than two or three times in a given instance. When an abscess has already burst and is infected on arrival, it is scraped and the cavity disinfected and then exposed to the full light of the sun with its walls laid wide open, a small antiseptic dressing being applied at night. The few failures recorded have been in just such cases as these, where the abscess has been infected from without; and the doctor repeated to me over and over again, while speaking of his results, that he fears the open abscess more than any other complication with which he has to deal.

Under this treatment the patient's improvement is rapid: appetite increases, fever disappears, the natural functions become regular, the red blood corpuscles increase in number, the hemoglobin increases in quantity, and the children put on weight and become gay and happy. At the same time the local condition shows signs of amelioration: pain ceases entirely, and this is one of the earliest and most striking phenomena observed; unopened abscesses become absorbed; and swelling decreases and finally disappears. Thus slowly and surely the disease is led on to recovery.

The ultimate results obtained in the different forms of surgical tuberculosis are as follows: lymph nodes resume their normal size and leave no scar whatever, even if punctured, so long as they come to treatment before they open. Joint and bone lesions heal up without deformity, shortening or stiffness. Even lung trouble, which alas! often coexists with surgical tuberculous disorders, is cured if treated in time by this process of insolation and aëration. Finally, children deformed by rachitis become pictures of health and return to their homes in splendid condition if they follow this cure. Infected wounds, the result of accident, also heal very rapidly after cleansing and exposure to the sun's rays.

The following statistics will speak for themselves: Out of 309 cases of surgical tuberculosis treated by heliotherapy, in 284 (78 per cent.) recovery was obtained; in 48, improvement; in 21 the condition remained stationary, while 16 (4 per cent.) succumbed. These figures appear more remarkable still when we consider that in 132 cases there was open tuberculosis with secondary infection. The 61 cases of Pott's disease of the spine (19 with abscess and 10 with fistula and secondary infection) gave 45 recoveries, 10 improvements, 3 failures and 3 deaths. In coxalgia (closed form, with or without abscess) there were 32 recoveries, 5 improvements and no deaths; whereas in 22 cases with secondary infection there were only 12 recoveries, 4 improvements and 3 deaths. Closed tuberculosis of the pelvic bones also gave excellent results, 5 recoveries and 2 improvements in 7 cases; but with secondary infection the prognosis is distinctly bad: 1 recovery and 3 deaths in 5 cases. In visceral tuberculosis the results were again excellent: peritonitis and enteritis, 27 cases (5 with fistulæ) gave 17 recoveries, 3 improvements and 3 deaths; renal and visceral forms, 16 cases, with 12 recoveries and 2 improvements; genital forms, 6 cases, with recovery in all. No such results as these have ever yet been obtained in the treatment of surgical tuberculosis, and the only pity is that Dr. Rollier has not more room at his disposal for patients. He is obliged to refuse applicants every day.

What, then, is the nature of the action of heliotherapy in these cases? Sunlight, as is known, is composed of luminous rays (yellow, orange, green), heat rays (red), and chemical rays (blue, indigo, violet). These different colored rays, which make up the spectrum, each play a part in the process of healing, as well as the more recently discovered infra-red and ultra-violet ones, which are invisible to the naked eye. Some are analgesic, some have a tonic action, some penetrate deeply into the tissues, whilst the microbicidal properties of others destroy the bacteria which are the cause of the disease. The toxins are likewise influenced and modified by the sunlight, which has a marked action on nutrition. Thus a culture of bacilli covered with a red glass attenuates, and the germs begin to perish; but if the red glass is replaced by a violet one, the culture revives and resumes its virulence. Dr. Rollier does not attempt to concentrate any one ray in particular, as Finsen did, but uses diffuse white light just as it comes from the sun.

But in order to derive the maximum benefit it is a *sine quâ non* that patients be treated at a certain altitude. Experiment has shown that 25 or 30 per cent. of the sun's rays is absorbed by the atmospheric dust and moisture before they reach the level of the sea, whereas on the top of Mont Blanc (15,800 feet) only 6 per cent. of their efficacy is lost. Patients treated by heliotherapy at Nice, for instance, only become slightly browned; while those at Leysin get to be a rich walnut color. This superactivity of the pigment-cells of the epidermis plays an important rôle in the cure, and confers on the patient a remarkable power of resistance to disease. During an outbreak of chicken-pox among his children Dr. Rollier noticed that all those who were entirely naked and deeply pigmented escaped the contagion, while with children wearing an apparatus the eruption came out in its usual manner on any part of the body from which the sun's rays were shut out by the plaster, but was entirely absent on the tanned surfaces. In a general way experience has shown that cases that pigment intensely are always the ones that recover the most quickly and radically. Fair children and Venetian blonds pigment much less than dark ones, and are also much more exposed to tuberculosis than the latter. I saw one little fair-haired girl three years old, who in spite of constant and prolonged insolation had scarcely tanned at all; it had been found impossible to produce any pigmentation of her delicate white skin.

If such clinics as these could be built on the mountainsides in all countries, and the tuberculous children be transported there, we should by degrees be able to grapple with this horrible disease whose frequency is one of the greatest blots on our age. Our little ones would then grow up healthy men and women endowed with that greatest of all blessings, a perfectly sound constitution, and would be properly equipped to face the struggle for life which is ever becoming more difficult. Those countless chronic cases which now encumber the wards of city hospitals, and which come back over and over again with a new focus of disease, only to die at last exhausted by fever and suppuration, would no longer

be hopeless if treated in high altitudes and for a sufficient length of time. When these patients can one and all breathe the life-giving mountain air, and feel the sun's healing rays upon their skin, they will almost always be radically cured from the beginning, and thousands of lives will thus be saved for the countries where the steady depopulation that is going on has become the burning question of the day. We must study more carefully the statistics given by the health bureaux concerning infantile mortality in big cities if we would appreciate the absolute necessity of getting better results in the treatment of all kinds of tuberculosis in children. It is certain that if all the surgical forms of this disease could have the same enlightened care as that given to the little patients at Leysin, the ugly scars and crippled limbs so often seen, and which are such a sad hindrance in later life, would become a thing of the past, and children all the world over would be spared the endless misery and suffering which is, unfortunately, now so common that we have almost ceased to realize its enormity.

20 Rue Chaucrin.

THE RELATION OF THE CLINICAL PROFESSOR TO THE HOSPITAL, THE COMMUNITY, THE MEDICAL SCHOOL AND THE PROFESSION.*

BY JAMES BUDLEY MORGAN, A.B., M.D.,

WASHINGTON, D. C.

[ASSISTANT PHYSICIAN GARFIELD MEMORIAL HOSPITAL]

THERE is a general unrest in the medical world, extending somewhat to the administration boards of the hospitals, as to what position the clinician should occupy in reference to the hospital, the community, the medical school, and the profession. According to Dr. D. L. Edsall,† "while the importance of the subject is easy to see, the fundamental reasons for its agitation are not so readily comprehended."

A physician or surgeon in whom the administration board of a hospital has confidence should be given the most generous, solid, and complete authority in all things which directly or indirectly have to do with the management of the sick. His associates and assistants should be either his appointees, or should receive his endorsement. To be fair to the hospital, whose reputation will reflect the standing of its visiting staff, the first and best efforts of the clinician should be given. As has been stated by noted clinicians and consultants: "There is no reason why the clinician should not practise, provided it does not interfere with his teaching, which should be paramount" (Dr. J. M. T. Finney); "he should practise, but only in consultation, and never to occupy more than half his time, the other half to be given to the hospital" (Drs. W. W. Keen and R. C. Cabot).

As a teacher of medicine, the hospital and its sick are benefited by having the advice of one who is well equipped in his branch, and who is wide-awake and enthusiastic in all that appertains to the progress and advancement of medicine, and whose hypotheses, teachings, and results are constantly under the scrutiny of his associates, his assistants, and a class of eager students; "such a clinician will spread the reputation of the college" (Dr. N. S. Davis). To attain this acme at which a chief aims, the administration board should aid by giving all laboratory facilities and ample and intelligent nursing of his patients. As to the equipping and the maintenance of the laboratories in a hospital, where much teaching is done, there are many who insist that the medical school should bear a good part of the expense.

The securing and segregating of interesting and instructive cases for the students is one of the chief and most important duties of the assistants and associates, and they can be much aided by the students of the third and fourth year classes, who should attend regularly the dispensary service of the hospital and call to the associate's attention any item in the history of the case, or any feature in the appearance and actions of the patient which might seem unusual. A large dispensary service in connection with every hospital and medical school should be encouraged; it is an absolute necessity in forming a nucleus from which most valuable experience is given to the student, where he sees and examines first-hand a variety of simple and of grave cases, which in no other way could be gained except in long years of practice. The dispensary should furnish many ward cases, and much clinical material for the amphitheater; the laboratories are then called upon for reports before the professor sums up a complete and comprehensive clinical lecture on the case. "There is a general unanimity of the Committee of One Hundred on the Standard Curriculum for Medical Colleges, in the belief that in clinical lectures actual patients should furnish the text. We all realize that the medical school which actually does well all it claims in its catalogue is very uncommon" (Report of the Committee of One Hundred, American Medical Association).

Some, but not frequent opposition has been raised to the use of ward cases for teaching purposes. In the experience of the writer this repugnance or opposition of the patient to be used before a medical class is easily overcome if the situation is intelligently explained to the patient and a mien of coercion or authority is never used. Most of the sick rather seek a presentation of their case, knowing they will be benefited thereby; and others who would raise an objection, refrain if they are made to know that by having their illness especially studied and discussed they can be of help to others who may likewise suffer. It is extraordinary what community of interests the sick in a ward will have and how much they will put up with, in the way of noise and inconvenience and disagreeable sights and odors, if they are convinced that all are working to help suffering humanity about them; thus "one touch of nature makes the whole world kin."

Few outside of the medical profession realize the tremendous outlay of time, money, and endurance that is required from this generation of practitioners, if they are really to be in the front rank of their profession. Outside of the honor that one has from being a clinical professor, the time spent in the preparation for clinics and in attention to the sick poor, is shamefully remunerated at the present time by most medical schools, hospitals, and municipalities. It is expected, and now being demanded by some leading medical schools, that their professors in the practical departments, such as of medicine, surgery, and obstetrics, should bestow all their time and efforts on the hospital and the clinics; some schools not so radical would allow consultation work under certain conditions. A well-known

*Read before the Medical Society of the District of Columbia, April 17, 1912.

†*Boston M. & S. Journ.*, Feb. 29, 1912.

educator says a clinical professor should be a strict consultant and should very seldom see out-of-town patients, "as these consume a great deal of time" (Dr. George Blumer). Another holds that "on general principles, the Professor of Clinical Medicine should do only a consulting practice. In an ideally conducted institution, I don't see how he could do more and attend to his duties of teaching and study" (Dr. W. S. Thayer). "However, just *how* he practises is not the important thing; the important thing is that his teaching should have first call on his services, and practice should not encroach upon his teaching time. His time in teaching and in hospital work connected with his teaching, should not occupy less than half his time" (Dr. Henry A. Christian). "He should see patients by appointment and with strict limitations" (Dr. Beverley Robinson). It can easily be seen there are several sides to this arrangement, and some serious reasons why, perhaps, the broad contemplation of one's mind may be somewhat biased or warped by confining the efforts of a scientific and progressive medical man to the wards of a hospital. "To be a thorough clinician" (Dr. Frank Martin) and "in touch with every aspect of practice" (Dr. H. A. Hare) some from our oldest and largest universities believe that a clinical professor should practise, "otherwise the professor would be a pedagogue, and his work academic; and moreover he should practice if he wants to be free and alert in the care and solution of problems of the practitioner" (Dr. J. H. Musser).

Some strongly contend that the fame and usefulness of a medical school will be greater by having its professors practise in the community and consult with their professional brethren (Dr. Charles L. Green); are there not a great many practical and scientific points that the profession at large are capable of giving to the consultants? And finally, as the main purpose of all study of medicine is to make good doctors, in the widest sense, are we sure that the clinical professor, if his usefulness to the community is abridged, is the best to prepare the future practitioner for the public? "If students are to be taught how to care for the sick in their own homes and in general practice, a part of the instruction should be given by men who have experience acquired outside of hospitals" (Dr. William Fitch Cheney).

How is the clinical professor to "gain the experience and knowledge of the management of people except in private practice?" (Dr. J. C. Wilson). "A hospital experience alone could never make a physician a great clinician, as patients do not go to hospitals in this country, until they are in the superlative degree of their lesions, differing materially from the clinical hospitals of Europe in this particular" (Dr. J. B. Murphy). The last two objections could be very easily removed by appointing only those to clinical professorships who have had for a considerable time "the responsibility of managing patients in private practice" (Dr. F. Forchheimer).

"Great usefulness as a teacher may go together with great skill as a practitioner, but one does not imply the other. In Great Britain and America, until recently, there was no distinctive career for the clinician except as a practitioner. In Germany, which may be said to educate the world more largely than any other country, in medicine, and this is more true in clinical branches than in the non-clinical, contrary to the impression of many, the pathway to progress in clinical work is made definite and we can judge of its success by the lasting good results accomplished" (Dr. D. L. Edsall). There the clinical professor, in his wards and in his service, is as much a *head* as the admiral of his fleet in battle array. The confidence, honor, and obedience which he inspires follow as natural consequences of the training, zeal, and resourcefulness which the clinical professor shows on all occasions. His comfortable salary is augmented by the students that walk his wards, and by the demand for consultation that is made upon him from his preeminence as a clinical professor.

Time was when the medical student gained an actual knowledge of the appearance and treatment of diseases by visiting the sick with the professor, as he made his rounds of the city in his one-horse chaise; then it was that one or two courses of lectures of six months each was the standard, and the writer does not refer to those times to disparage, but simply to emulate those magnificent types of men who, with so few known facts, by close observation and logical deduction treated intelligently and successfully so many diseases. To-day is different; we no longer delve in the inexplicable, but many puzzling and serious maladies are made clear and simple from having the hospitals, the laboratories, and the teachers. A medical school without a hospital is a misnomer, and "ultimately every hospital forming part of a medical school should be endowed" (Dr. Lewellys F. Barker). "To keep a hospital up to the highest standard of efficiency, from a scientific standpoint, the hospital should be connected with a teaching institution. The more openly and candidly the work of the hospital is carried on before the public, the greater the benefit to the profession and the community. When medicine was empirical, it was a dangerous thing to give it publicity, but the more the public know of scientific medicine the greater advantages they receive from it and the greater respect they have for it" (Dr. J. B. Murphy).

Some clinical professors do consultant work and have limited office hours, never attending patients routinely outside. It may be said that it is the consensus of opinion of a very large number of the leading clinicians in the United States that the clinical professor—much more if he be also academic—should not practise (do a family practice), but his spare time from teaching and research should be given to consultation; however, "if he is a recognized teacher, and is seen to be obtaining results in his teaching, the matter of practice should be left to his own judgment" (Dr. N. P. Colwell). "No man should accept or hold a professorship in a clinical branch unless he can give the greater part of his time to his teaching" (Dr. V. C. Vaughan). "Even consultation must be *limited*, so that it will not interfere with his chief obligation, that of a teacher. If his services as clinical professor are of any value he must spend at least one-half his time (4 to 6 hours daily) in a study of the material (patients, laboratory, etc.) and in class work. He cannot do this and serve a family practice" (Dr. Frank Billings). "It is doubtful if a practitioner in the broad sense can have a place as clinical professor in the best medical schools" (Dr. Lewellys F. Barker). "In general it would not be well for the Professor of Medicine or Surgery to do a family or general practice, because this necessarily makes demands on his time, which cannot be anticipated. He must be ready to go when sent

for" (Dr. Henry A. Christian). Therefore his private practice must be for "consultations only" (Dr. W. Gilman Thompson).

The question is immediately raised, who is going to reimburse the clinician for the abandonment of a rich clientele? It might be said right here that there are two principal problems which face the medical schools in any very radical change for the present:—first, the difficulty of securing sufficient highly trained, skilled men; and, second, the lack of funds.

The foundation of this paper has been based upon answers to four questions which were sent to over thirty leading professors in medical schools and hospitals, and the following table is a digest of the opinion of each:

SUMMARY OF REPLIES.

Questions.	Affirmative	Doubtful	Negative
1st. Should a clinical professor of medicine or surgery practise medicine.....	9	4	16
2nd. Should he practise only as a consultant..	15	5	6
3rd. Should he have office hours to see patients	23	2	0
4th. Should he attend pay patients in the hospital (where he gives his clinical lectures).....	21	4	1

Non-committal or doubtful, 3.

919 McPherson Square.

THE THERMO-HYDROPATHIC TREATMENT OF TYPHOID FEVER AND OTHER INFLAMMATORY CONDITIONS.

By E. S. GOODHUE, A.M., M.D.,

HOLUALOA, HAWAII.

The use of cold water baths for high temperatures in typhoid fever has undoubtedly been beneficial in a large number of cases in which such baths have been wisely and conscientiously administered, but in a few instances, at least, the results have not been satisfactory, and with most of our country practitioners the routine administration of cold baths has been entirely out of the question.

So far as I have been able to determine, in states like Illinois, Indiana, California, and Massachusetts, outside of large cities, only about 1 per cent. of cases have been subjected to the cold tub-bath treatment, and from scattered reports furnished by Southern states I find the ratio is even less. In places without well-equipped hospitals, the difficulty in administering a tub-bath is an objection to its use, no doubt, but reports show that in nearly every locality and in the practice of nearly every physician there was a time when the tub-bath was used in typhoid fever; some way was arranged by which the bath could be given, because it was considered almost a *sine qua non* in the treatment of typhoid fever with high temperatures.

In all new therapeutic ventures or measures, there is upon their recommendation by reputable men a general tendency toward their adoption by the profession at large and a trial is made by every practitioner. Even if the measure be of undoubted value, there are failures in its application, and, owing to maladministration, ineffective procedure, unintelligent observation, or partial record, some will condemn what afterwards is found to be valuable. There was a very long and doubtful stage of experimentation with diphtheria antitoxin. Many were convinced that this great therapeutic resource was a failure and did not either ameliorate or prevent diphtheria, yet in the end the value of the serum came to its high place. No one dares to question its efficacy now. The tub-bath treatment had its period of enthusiasm, and then of defervescence, but no general reaction. For some good reason it has gradually lost favor, and in several large hospitals is not made use of even in high typhoid temperatures. Had results proved that cold baths were an unqualified benefit in the hyperpyrexias of typhoid fever in a majority of cases, the treatment would have become general; it would have forced itself upon a profession in duty bound to accept all real therapeutic measures, even though offering difficulties in their administration; but cold baths have not justified the early promise.

Besides the disagreeable subjective effects of the cold bath, chilliness, and an almost unconquerable dread of the first shock, there have been in a large series of cases, results not at all favorable to the treatment; congestive and hypostatic effects, even collapse, all of which carefully observed and recorded, have forced the profession very generally to abandon the treatment and substitute cold sponge baths and local applications of cold either by irrigation or cold packs. In a series of some 300 cases of typhoid fever, some of them in hospital, some in private practice, I have found my mortality rate lower and convalescence more rapid in those cases where cold tub-baths were not administered, and I have given them up entirely in hospital practice and out of it.*

The limited local action of high degrees of cold or heat is practically the same, and both have been used to great advantage in various forms and for many different conditions of disease. Each produces a sudden contraction of the arterioles, followed (over limited surfaces) by dilatation and hyperemia, but where the application is general as by submersion in cold water, there may not be the secondary result, the dilatation and hyperemia; the patient may remain chilly, his skin pale, his fingers and toes purple, resulting in possible collapse. This is often seen in conditions of health in weak persons, children, and infants; many persons are constitutionally unable to "react" after a cold bath, and suffer therefrom. For such persons to persist in "hardening" themselves is often disastrous not only to comfort but to health, and I have seen the subsequent depression and lowering of vital force give rise to serious consequences. "Colds," bronchitis, pneumonia, have followed, because the usual resistance to germ invasion is removed and can no longer stand to safeguard the organism. I have on record a patient who went into a cold bath (bathing pool), a strong healthy man, remaining there for two hours, to come out in a state of collapse, go to bed, and not get up until convalescence from a severe bilateral lobar pneumonia. After studying the action of cold or heat upon normal tissues, on surface areas by means of water and ice bags, packs, tubbing, douches and injections I tried it in disease, particularly inflammatory conditions, where almost since the beginning of time it may have been recommended, finding that the initial effects of extreme cold and heat are identical, but in long continued applications of cold, the vitality of tissues is so affected that injury is done. An exception to this is found in applications of ice to the head whenever brain conditions indicate their use. This is because the thick intervening bony structures prevent any permanent alteration in the soft tissues beneath.

The remedial effects of heat have long been rec-

*Some Notes on the Recent Typhoid Fever Outbreak in Kona, Hawaii.—*Journal of the American Medical Association.*

ognized not only by the profession but by laymen. So we have the hot-water bag, poultices, fomentations, stupes, hot douches, injections, and enemas, and latterly the application of hot pastes and earths, the efficacy of which is due entirely to the heat they retain and convey. Any physician who refuses to recognize the value of these applications for local inflammations, has failed to observe that they certainly relieve pain, soothe the patient and, in the end, hasten recovery. Their value lies in the heat they conserve. Cloths dipped in hot water are not as good because they must be removed often, and do not supply the continuous, equable heat. For various local pains, neuritis, neuralgia, myalgia, the hot-water bag has long served, but all these means are inadequate, and mechanically inefficient. So with rectal enemata of hot water for the tenesmus of proctitis or dysentery, relieving a most distressful symptom; and douches for uterine and ovarian irritation and pain; but they are all clumsy, do not adequately supply heat to the part that needs it, and, as carried out, are only in a measure palliative, rarely curative.

For several thousands of years the Japanese have been in the habit of taking *hot* baths—not warm ones. They get into a tub of hot water, from 108° F. to 110° F. over a slow fire and are literally parboiled. Here they stay from 20 to 30 minutes, then step out and simply dry themselves without towel friction. Indeed, it is not necessary, for their skins glow, and they seem immune to subjective sensations of cold, often going about naked or in their loose kimonos without "catching cold." They are a healthy, muscularly well-developed people, free from skin diseases as a rule, and resistant to infections from without."

Bathing in warm water, that is, water at a temperature of from 90° F. to 102° F., does not have the same good effects. Such immersion seems to increase a susceptibility to "colds," and on getting out of the bath, one is apt to feel chilly if the temperature of the air is below 80° F. Indeed, I believe such baths are enervating and not better than cold ones, which leave the bather chilly. But a bath in water at a temperature of 110° F. to 115° F. has an entirely different effect. At first there is a decided shock to the body something like that caused by getting into cold water, the breath is driven out of the lungs with some involuntary exclamation, the heart beats faster, but almost instantly this passes off, a sense of warmth and extreme comfort supervenes, and the whole surface of the body flushes, remaining for some time hyperemic. A person soon becomes accustomed to these baths, and loses all dread of the first shock which is not disagreeable like that coming from sudden applications of cold to the body surface; but for those who cannot at once get into hot water, it is well to begin at a temperature of 105° F., then to turn on hot water and gradually run up to the required temperature. This can be done without any inconvenience; in fact, one hardly realizes that the temperature of the water is rising until it reaches 115° F.

A stay of ten to twenty minutes is generally sufficient; sometimes in health five minutes will do; it depends, of course, upon the requirement. I have found myself able to stay half an hour in water 110° F. by increasing from 100° F. to this temperature, and for a few minutes in water at a temperature of 118° F. At the latter temperature the pulse rate increased from 72 to 85 for three minutes, falling slowly to normal. The respirations increased four or five above normal for about the same length of time. Baths in water from 108° F. to 110° F., for a period of ten to fifteen minutes leave one feeling comfortable, stimulated, and without visible perspiration. Over that temperature and for longer periods, there is apt to be perspiration, which makes it necessary to use friction afterwards, and some precaution as to change of temperature. In taking "cold," during the coryza and sneezing period, in the beginning of bronchitis, pharyngitis, myalgias ("aching all over"), I have found the hot bath almost abortive. A stay in water at a temperature of 105° F. for ten minutes, then getting into bed taking a laxative and a diuretic are sufficient to abort these conditions. A neuritis or neuralgia, a painful "stiff neck," are relieved quickly, and in many cases with the attendant anti-rheumatic treatment.

I have found the baths efficacious in lumbago, sciatica and tonsillitis. In glandular involvements with enlarged glands of the groin, axilla, and neck, the baths are beneficial, producing an immediate softening by elimination and absorption and stimulation of the lymphatics generally. Of course in severe tonsillitis, pharyngitis, and laryngitis, hot local applications, preferably hot packs, are valuable. Local infections of the hands or feet I treat by placing in very hot boracic acid solutions, but where there is general infection or in localities not easily treated in this way the hot tub-bath is efficacious. The tense and painful tissues are relieved in most cases. In acute nephritis following infectious diseases, I have had most satisfactory results, relieving the condition in a few days. I have just had under treatment a girl aged 14 years with severe nephritis as secondary to measles. In this patient there was general anasarca, great distention of the abdomen, and swelling of the face, with excessive albumin in the urine. Hot baths were administered daily for one week, with the gradual disappearance of the anasarca and albuminuria. Of course other measures were used to combat the condition; regular doses of digitalis, mild salines, and attention to the diet. But the course of the disease seemed determined largely by the baths.

One of the conditions in which hot baths are particularly valuable is in premenstrual affections: amenorrhea, malaise, backache, or any of the distressing symptoms due to disturbed circulation at this period. Half an hour in the tub with the water at a temperature of 108° F. will afford great relief. In hemorrhagic conditions, however, the hot bath is contraindicated. In uterine and ovarian affections the beneficial action of heat is well recognized, and equally so, I think, the unsatisfactory results of ordinary douching, when a little spray of water is for a moment thrown against the mouth or neck

The following is a letter from S. Kitasato of Tokio in which he tells exactly how the Japanese take their hot baths:

"Dear Doctor

"You speak about the Japanese hot baths. The average temperature is from 108° F. to 115° F. The private bath-tub is made of wood, having the dimension of 3 by 4 by 4 feet. They first submerge their bodies as long as they wish (usually for a few minutes), and then get out of it and wash their bodies thoroughly until they wish again to enter the hot water. Thus they get into the bathtub three or four times before they finish their baths. The total length of time for each bath varies with the individual, but average Japanese men take one-half to one hour, while women will take sometimes two hours. They take these baths every day, of course, without exception. The value of such baths for the maintenance of health and cleanliness is great.

Very sincerely,

S. KITASATO"

of the uterus. The ovaries get no benefit at all, and almost all the good that results is the washing out of the secretions. I have devised a tubular vaginal douche made of aluminum, six inches long, two inches in diameter, perforated along the body, and open at the distal end, for vaginal insertion while the patient is in the tub. This tube distends the walls of the vagina and allows the hot water to remain in the canal as long as needed, until all the vaginal tissues feel the effects of the high temperature. In adhesions, endometritis, vaginitis, neuromata, and hyperesthesia I know of nothing so efficacious. The endometritis is relieved by continued treatment, the vaginitis responds readily, reflex neuroses are helped probably through vasomotor action, and hyperesthesia disappears. I have also a rectal tube for similar treatment of the rectum in inflammatory conditions, proctitis, fissure, and particularly the tenesmus of dysentery where the action of the heat is certain.

Professor Berne has recommended hot baths in whooping-cough. He calls a bath hot at 90° F. "It induces sleep, soothes the nervous system, and diminishes the paroxysms. The skin of children with whooping cough is usually pale and cool, indicating a contraction of the vessels of the skin, and the hot bath counteracts this, relieves the internal organs, and promotes the elimination of toxins." With a knowledge of the action of the hot bath upon normal as well as pathological tissues, we can understand how valuable it must be in diseases due to severe infections, with local inflammatory foci, rise of temperature, nervous disturbances, and subsequent toxic complications. In pneumonia we have an involvement of the lungs; in pleurisy, of the pleura; in diphtheria, of the throat, nose, etc.; in typhoid fever, of the intestinal mucosa; in nephritis, of the kidney, and so on. Treating these diseases according to our knowledge of their pathology, with vigilance and the proper use of the right therapeutic measures, we may well rely on the use of the hot bath as a valuable adjuvant, for the careful administration of these thermic immersions will give all the good effects of cold baths, without any of the disadvantages and dangers of the latter. In typhoid fever the temperature is reduced, nervous symptoms, such as insomnia, restlessness, and delirium, are relieved, and the patient *feels* better not only while in the bath but afterwards. The only contraindication is actual hemorrhage. Strange to say, intestinal disturbances, bourborygmis, and meteorism are relieved by the bath, and the liability to complications is reduced. In uremia, suppression of urine, and other toxic symptoms, the hot bath is particularly indicated, and its action upon the nervous centers is well recognized in the convulsions of children due to whatever exciting cause.

Later it is my intention to report a series of cases of typhoid fever in which hot baths were used not only by myself, but by a large number of physicians in this country, Mexico, Japan, and Canada.

Virulence and Toxicity of the Cholera Vibrio from Various Sources.—Ravenna after testing the virulence of the cholera vibrio taken from convalescents, from patients severely sick, and from carriers, has concluded that the source from which the vibrios come does not influence the grade of their virulence. But as to the grade of toxic action of the endotoxins or nucleoproteids, there is a very different action of the cholera vibrios according as they come from sick persons, convalescents, or carriers.—*Pathologica.*

THE SIGNIFICANCE OF THE RATIO OF FREE HYDROCHLORIC ACID TO THE TOTAL ACIDITY IN DETERMINING IMPAIRED MOTILITY OF THE STOMACH.

By A. E. AUSTIN, M.D.,

BOSTON, MASS.

PHYSICIAN TO MOUNT SINAI HOSPITAL AND BERKELEY INFIRMARY.

When to an inquiring, prospective passenger a train is reported late, it has little value for him unless he knows how late the train may be; so when we say that the motility of a stomach is delayed, this statement has but little value for the physician unless he can learn to what exent this retardation may exist. The patient will tell you that he can "taste" certain pungent articles of food like onions or Roquefort cheese for hours after they are eaten, a proof that fragments of them still remain in the stomach, yet a thorough washing of the fasting stomach fails to bring to light any food residue. To the presence of food residue in the stomach twelve hours after the evening meal we attribute the most importance since it is almost diagnostic of a narrowed pylorus, but the absence of food does not by any means exclude the possibility of impaired motility of a minor degree. What means are we to employ then to reach some accuracy as to the detection and measurement of the lesser stages of this condition? First, we have the Riegel meal to be removed seven hours after it is eaten, or rather the meager remains of it by lavage, for the normal stomach ought to be empty; if it is, the process is one easily carried out. But if the departure of the food from the stomach is delayed, the fragments of undigested meat plug the eyes of the stomach tube and often only by its removal can the obstruction be removed. This act is often interpreted by the patient as a failure in skill on the part of the physician and an effort to again insert the tube is met by a stubborn refusal on the part of the patient.

Then we have the relation of the solid to the liquid portion of the removed gastric contents after the test breakfast, a method on which Strauss laid great stress, believing it to be as simple as the reading of a thermometer. If the contents are allowed to remain in a measuring cylinder two hours and, if the solid portion is more than one-half of the total, there is impaired motility; if it is less than one-half of the total hypersecretion is present. Zweig modified this method by the use of the centrifuge. One-fifth to one-third solid contents indicates a hypersecretion while over one-half solid contents indicates impaired motility. Elsner washes out the stomach, allows the washings to stand twenty-four hours, and takes into account only the total solid contents without reference to the ratio of solid to fluid contents. The fallacy in all these processes is that one never knows with the tube alone whether he has all of the solid portion of the test meal in the stomach or not, since this fraction flows out with much more difficulty than the liquid. An excellent illustration of this can be seen in the mistaken idea, long prevalent, that in achylia gastrica because the tube could evacuate only a few cubic centimeters, a hastened motility existed; the fact is that if the achylic stomach is washed out, the usual amount of solid material will be found; in other words, there is a suppression or diminution of the gastric juice as a whole and not only the acid and ferments. Again the mastication of the food

makes a great difference in the volume of the solid residue of the removed gastric contents. Insufficiently masticated food always increases the non-liquid portion. If, as Cabot says, many a toothless individual is possessed of an excellent digestion it must be due to some dispensation of Providence, for the fragments in the removed meal compare with the ordinary finely triturated residue of a well masticated meal as paving stones do to raisin seeds. Again, it is often noticed that gastric contents, containing much mucus, settle with great difficulty even with the centrifuge and must have a significant part in rendering the solid portion much larger than it would otherwise be.

Now comes the third method which has been rejected by the builders but may still have some of the qualities of a corner stone. Riegel first called attention to the wide variation in the values of the free hydrochloric acid and the total acidity of the gastric contents when the second factor was increased and deduced this principle; when the hydrochloric factor is very small in proportion to the total acidity, it is evidence that there exists an impairment of the motility of the stomach since the longer the food remains in contact with the gastric juice the more of the acid will be bound by the protein and the less will appear free; as a corollary to this rule, however, there must be little or no organic acids. This does not necessarily mean that there is a narrowing of the pylorus, for many stomachs may possess motor insufficiency due to atony without showing residue in the morning washing. Lefmann agrees with this statement only to the extent that an increased total acidity often but not always means an impaired motility, yet the same author in the interpretations of the examinations of his published cases lays great stress on this relation.

In order to utilize this ratio what must we exclude? First the so-called hyperchlorhydria, for, if the stomach can secrete a gastric juice whose acid content may vary from day to day, we have absolutely nothing on which to base our inferences. But Bickel says that the gastric juice always contains the same percentage of hydrochloric acid and that the variations which we find chemically are dependent largely on the total amount of juice secreted and the rapidity with which the digested food leaves the stomach; in other words, that we may have an increase, a diminution, or an absence of gastric juice, but never a variation in its composition. This view, too, seems to be borne out by Lefmann's work in which six examinations of the gastric contents of a sufferer from gastric atony extending over a period of ten months showed a free hydrochloric acid varying from 40 to a deficit of 40, yet the total acidity never varied 5 points. It will be easily recognized how difficult it is to establish a ratio between a factor which is fixed, like the protein of the test breakfast able to neutralize a definite amount of acid, and a varying factor such as the amount of gastric juice secreted. But, if we consider in all cases of increased secretion that the impaired motility is primary (which is probably nearer the truth since practically all observers are agreed that both conditions generally exist together) we shall be able to say with truth that a conjoined free and total high acidity mean impaired motility. If hypersecretion may exist alone as a purely nervous affection, then all conclusions which are based on its relation to motility are false and Mayo may well refer to it as "Laughing Water." I am fully convinced, nevertheless, that the condition is due not to the greater excitation of the gastric glands by the food, but to the more prolonged excitation, just as the hand may be passed over a hot stove without harm but its delay there will cause a burn. This does not exclude the nervous element, for we all know that the minor degrees of impairment of gastric motility are often wholly of nervous origin. The other horn of the dilemma in which with increased total acidity we have diminished free hydrochloric acid can be attributed only to a predominance of the impaired motor factor and a lessened secretory function, while the main factor in both is the increased acidity. Without prejudgment with reference to the value of inferences drawn from this relation of free to total acidity, I have endeavored to satisfy myself as to its efficacy by the following simple course of investigation on patients at both the clinics in which I am interested as well as on private patients. At night a meal of meat, bread, and potato was taken together with a rice pudding containing raisins. Nothing else was taken before bedtime, and the next morning at nine o'clock and sometimes a trifle later the stomach was washed out thoroughly and there was given the usual test breakfast which was allowed to remain one hour. Then the free acid was determined both by Congo papers and Gunzburg's reagent and the total acidity by phenolphthalein. In the fasting stomach the first washing (a half-liter) was kept apart from the subsequent washings and was usually found to contain the major part of the residue, if any was present, and by its small volume greatly facilitated the subsequent sedimentation and centrifugation for microscopic examination when by gross appearances the nature of the residue could not be determined at a glance, as of course was not true of the raisin seeds. In this way there were studied 15 cases, of which I wish to consider two more at length than the others because both came to operation.

Case I.—B. M. was a married woman, 34 years of age, whose father had had "stomach trouble" all his life and at 60 years had died in an acute attack of the same difficulty. She was rather sickly until she was 12 years old, and was in a fair state of health until she was 18 years old, when she had a sharp attack of pain in the pit of her stomach and vomited blood freely. The attack was called ulcer of the stomach and the patient remained in bed three months on an appropriate diet. Since then she has been nervous but in very good health until four months ago, when she had an acute attack of pain in the stomach just under the breast bone accompanied by vomiting; the pain extended through to the back and was relieved by vomiting. Since then the attacks have come every week, sometimes accompanied by vomiting and sometimes not. The attacks of pain have been less severe than the first, come on within half an hour after the food is taken and sometimes she has to leave the table before the meal is ended and relieve the pain by vomiting. She had had no children. Physical examination showed that the woman was well nourished with a tendency to obesity, and there was no evidence that she had suffered any in nutrition from the vomiting, if it were as frequent as she stated. Her color was excellent and showed no evidence of anemia. A tender spot was found in the epigastrium just below the ensiform cartilage and a little to the right of the median line. A tender spot was also found in the back to the left of the spinous process of the twelfth dorsal vertebra. This latter point was not so well defined as the point in front, for some tenderness

could be elicited above this point in the same general line, that is along the left border of the spinal column.

The lower border of the stomach was well above the navel and there was no enlargement to the right of the median line. The feces showed no blood pigment on a meat-free diet, and the stasis test 14 hours after the meal showed a few rice grains and meat fibers; the first washing gave a marked reaction for hydrochloric acid. The urine contained a trace of albumin but no casts. After the test breakfast there were withdrawn 150 cubic centimeters of contents well digested with 20 per cent. residue whose hydrochloric acid figure was 70 and total acidity 90. No blood was found. Based on the history and the symptoms the probabilities that an old ulcer existed though no enlargement of the stomach was found were so strong that the patient was operated upon by Drs. Ehrenfried and Boothby, who found some thickening at the pylorus but no evidence of scar tissue anywhere, and in all other respects the organs normal.

The preceding is an instance of the combination of hypersecretion and pyloric spasm with undoubted impaired motility in which those who follow the Rochester teaching too closely will have an opportunity to be disabused of their opinion that this condition always is based upon organic disease of the stomach in distinction to functional.

Case II.—M. M., female, single, cook, 35 years of age, has had "stomach trouble" for seven years. As a child and in early youth was a sufferer from bone tuberculosis and spent many months in bed and on frames to stay the ravages of the disease, which ceased 15 years ago. She has had a burning sensation in the stomach which sometimes rises in her throat with eructations of extremely acid tasting fluid. This may increase until she has an intense pain extending to her shoulder blades. It often reaches an acme when she begins to vomit and may vomit everything for three to five days. These attacks come with considerable regularity in the fall and spring, and are relieved by food or alkalies, but even if food is taken the attacks usually recur in twenty minutes. Rarely they occur at night accompanied by the sensation of intense hunger (*Heisshunger*).

There has never been any headache with the attacks nor blood in the vomitus. Physical examination showed an anemic looking individual whose hemoglobin was 90 per cent. (Tallquist). The gums were colorless but there was no sign of jaundice or cachexia other than the pallor. The lower border of the stomach when inflated with carbon dioxide was two fingers above the navel and extended well to the right of the median line. The kyphosis was so marked, however, that the position of all the organs was distorted, the lower liver dullness being found two fingers' breadth above the costal border in the right mammary line. There was a localized area of tenderness in the epigastrium but none in the back. Halfway between the navel and the xyphoid and to the right of the median line there were some small disseminated masses the size of a pea which were either in or just below the abdominal wall. The fasting stomach contained 30 c.c. of bile-stained contents with a strong HCl reaction but no food fragments either macroscopic or microscopic could be washed out. Nor was any blood (guaiac) found in this or the stool on a meat-free diet. After the test breakfast, free HCl, 46; total acidity 70. A reaction for blood was given by this contents but not more than is often produced by the introduction of the tube. The patient was operated upon by Drs. Tenney and A. J. Hamilton who found the scar of an old saddle ulcer which did not involve the pylorus and performed a posterior gastrojejunostomy with complete relief.

From the consideration of these two cases we will see that the first with microscopic residue and probable gastric insufficiency which was due to myasthenia since no pyloric obstruction was found at operation, had an HCl content which was 79 per cent. of the total acidity and that the second which showed no retention though an old ulcer existed had HCl which was only 65 per cent. of its total acid. Another feature of the chronic gastric ulcer was the persistent presence of bile both in the gastric juice withdrawn from the fasting stomach and in the washings of the same though the washing was repeated several times. Until the operation my interpretation was that the ulcer scar involved the pylorus by which complete closure of the orifice was impossible. This allowed the duodenal contents to freely enter the stomach though there was an absence of stasis. For the other cases an artificial division has been chosen which, perhaps, could not be verified if a larger number had been included. These are cases in which macroscopic or microscopic residue is found in the washings of the fasting stomach twelve hours after the evening meal. This individual has been regarded as the victim of delayed motility or insufficiency of the stomach without necessarily a narrowing of the pylorus which produces a residue under the same conditions much more extensive in amount. I am assured that we shall be led into error as I have been, if we regard every microscopic residue of food at even this length of time after a meal as meaning gastric stasis and this word is used possibly without justification as synonymous with pyloric narrowing. The cases with the results of this test are as follows:

Case III.—C. B. No residue in fasting stomach; gastric contents, 120 c.c., 20 per cent. solid, HCl, 45, and total acidity, 60.

Case IV.—Succussion at navel, extends to right of median line; residue in fasting contents (starch grains), marked HCl reaction in wash water. G. C., at 45 minutes, 120 c.c., 25 per cent. solid; HCl, 68; T. A., 148.

Case V.—M. L. No food fragments, marked HCl reaction of wash water; HCl, 51; T. A. 70.

Case VI.—C. D. No residue and no HCl reaction of wash water; G. C.: 240 c.c. 50 per cent. solid (gravity); HCl, 34; T. A., 71.

Case VII.—A. H. Lower border of stomach 2½ centimeters below the navel at which there is succussion. No food residue but marked HCl reaction of washings; HCl, 40, T. A., 69.

Case VIII.—F. V. Residue both macroscopic and microscopic; marked HCl reaction of wash water; lower border of stomach at navel with succussion at the same point; HCl, 45, and T. A., 68.

Case IX.—E. W. No residue, but marked HCl reaction of wash water. HCl 19, T. A., 55, after test breakfast.

Case X.—R. K. No succussion and no enlargement of the stomach by percussion; microscopic residue. G. C.: 20 per cent. solid, HCl, 56, and T. A., 77. No lactic acid.

Case XI.—Succussion extends to navel. No macroscopic or microscopic food remnants. HCl, 40; T. A., 70.

Case XII.—D. L. Prolapsed stomach, no residue. G. C.: HCl, 20, and T. A., 58.

Case XIII.—J. F. Succussion at navel. Fasting, 240 c.c. withdrawn containing numerous food fragments. G. C.: HCl, 40 and T. A., 81. This case was on the border line and it has not yet been determined whether it is a marked insufficiency or a true stasis due to pyloric narrowing.

Case XIV. B. R. No food fragments, wash water freely bile stained. G. C.: HCl, 18, and T. A., 58.

Case XV.—H. B. No food fragments and the skiagraph showed a very small (puerile) stomach. G. C.: HCl, 51; T. A., 81.

Now we find upon looking over these results that wherever macroscopic or microscopic food residue has been found in the fasting stomach, the total acidity after the test breakfast has been over 60, the usual upper limit for a normal digestion. Hence, if we reject all those without food residue whose total acidity is below 60, we have a basis of comparison for the remaining cases. While increased acidity of gastric contents, due to hydrochloric acid, does not invariably accompany impaired motility of the stomach, yet Schütz and also Lefmann regard the delay of food in the stomach as responsible for the excitation of a much larger flow of gastric juice than otherwise occurs in a normal digestion. Furthermore regarding 60 per cent. as a dividing line between the residue containing and the non-residue containing stomachs, we find that, of the five former, four have more than that amount of free acid as compared with the total acidity, while of the seven latter, three have more than 60 per cent. and four less. Of course I appreciate that many of those not showing even microscopic residue at twelve hours may have done so at eight or ten hours when the normal stomach should be empty but in an out-patient clinic, it is very difficult to control patients with accuracy enough to decide the condition at these varied periods after the test meal (meat and potato). It can be plainly seen that there is not distinction enough in these differences from which to deduce any conclusions; perhaps a larger amount of material might afford more definite conclusions. Let us now consider Schütz's rule which is that normally there are twenty points between the free hydrochloric acid and the total acidity after a test breakfast. If there is hypersecretion, the difference may be less, since in this case a large amount of hydrochloric acid is secreted without an opportunity for an intimate mingling of the albumin and the acid, while in impaired motility the difference is greater than twenty because the long delay of the food in the stomach causes a more complete binding of the acid by the food. It seems to me that there is an error here and the statements should be reversed, but I have written them as he gave them. Curiously enough the difference is almost exactly twenty in three instances in which residue was found, while only one of the non-residue containing class has anything approaching this difference, so that such a principle must have a great number of exceptions; of the other two cases in the former class the difference is much greater than twenty, which ought to put them in the hypersecretion group though residue is present; it is probable that the two groups are so closely associated that it will be difficult to separate them and we can only hope to determine which is primary—the lack of motility or the hypersecretion. Cohnheim and Dryfus have very ingeniously decided this matter experimentally by introducing a rubber ball through a fistula into the duodenum of a dog and by inflation producing a closure of the canal and preventing the discharge of digested food from the stomach; it was found that by thus delaying the emptying of the stomach the acidities rose much beyond what they otherwise had been normally.

How much the results of these experiments can be applied to human beings and whether a lack of propulsive force on the part of the stomach would produce the same effect as the partial closure of the pylorus still remains to be investigated.

Kreidl and Mueller have attempted to settle this question by the removal of the muscles of the stomach in dogs and have found in fact that there was a large increase in the acidity of the gastric contents: while Cohnheim states that in most respects the laws governing digestion in dogs are very similar to those in human beings so that while there may be no value in the ratio of free acid to total acidity in determining either pyloric narrowing or gastric insufficiency there may be significance in the increased acidity. In my own cases, comparing the average of the acidities in the residue-containing stomachs with the five non-residue containing ones which have the highest acidities, we find ninety-four in the former group and seventy-four in the latter, though there are exceptions in both classes in either direction. Lefmann has studied this question by lessening the motility of the stomach by an injection of morphine and has found that after such a procedure the total acidity was invariably higher, so that he draws the conclusion that in almost every case a high acidity may be clinically interpreted as indicating a lessened motility without a necessary obstruction at the pylorus. The free acid, however, varies very greatly and even when the acidity is high, we may have an absence of free acid but a high combined hydrochloric acid as determined by estimation of the deficit.

The practical inference from these facts is that alkalies and belladonna only relieve the symptoms in these high acidities and that we must direct our attention to the underlying cause, impaired motility, and employ the limited means in our power to hasten the emptying of the stomach. Small frequent meals, hydrotherapeutic measures, nux vomica, massage and possibly faradization, and postural treatment (lying on right side after meals), though I am inclined to think the latter two act more by suggestion, have aided me more in the treatment of gastric hyperacidity, not fermentative, than alkalies and agencies limiting secretion. As fats are known to delay the emptying of the stomach, oil should never be employed except in cases in which examination has shown a pyloric narrowing.

110 Marlborough Street.

Foreign Body Retained in the Nose for Fourteen Years: a Grain of Germinating Indian Corn.—H. J. Davis reports the case of a girl, aged 19, who had been attending hospitals on and off for rhinorrhea ever since she was aged 5. Originally she was taken to the casualty department, as "she had pushed a piece of maize up her nose instead of giving it to the canary, as she had been told to." Attempts had been made to extract the foreign body without avail. Rhinorrhea and purulent discharge followed, and the nasal bridge sank in, almost occluding the left nostril. The exhibitor saw her a few months ago and mistook the case for a sinusitis. Shadows were equal, etc. After using drops of H_2O_2 she had violent sneezing, and in blowing her nose the foreign body exhibited was expelled. It was flattened from side to side and germinating. The girl was now quite well and had ceased to attend the hospital.—*Proceedings of the Royal Society of Medicine.*

THE INFLUENCE OF SODIUM CHLORIDE UPON THE HYDROCHLORIC ACID OF THE GASTRIC JUICE.

BY SAMUEL FLOERSHEIM, M.D.

NEW YORK.

(FORMERLY GASTROENTEROLOGIST, GERMAN POLY-CLINIC)

STATEMENTS are current that sodium chloride instilled into the human economy acts as a factor in increasing the production of hydrochloric acid in the stomach. Abstinence from salt would therefore be followed by a material diminution of the hydrochloric acid in the gastric juice while imbibition of it would be followed by increased acidity. It is a generally accepted fact that the hydrochloric acid is derived from the chlorides in the blood circulating in the stomach mucosa. It need not necessarily be the sodium salt that is required, but it is the most serviceable, readily attainable, and easily transformed. If this assumption is correct we should have a method of treatment for increased or decreased HCl acidity of the gastric fluid which would commend itself for its simplicity, its adaptibility, and its cheapness.

Again, in excessive HCl acid, with or without excess of fluid secretion, the most potent, universal, cheap, and efficient remedy, sodium bicarbonate, is an excellent temporary measure. In a number of cases (without carefully searching for the etiology) a cure is effected. In administering the bicarbonate of soda as an antidote we, at the time time, according to the above statement, place within the affected area the exciting cause that is believed to bring on this very condition which we are attempting to cure or relieve.

For the past few months experiments have been undertaken to determine the influence upon the HCl of sodium chloride when taken in the stomach by mouth; in the rectum, by proctoclysis. From a number of patients, eight were taken for experimental purposes, four in whom the free HCl of the gastric contents registered persistently above 80 and four in whom the free HCl was observed to be constantly below 15°. In the hyperacid cases salt was omitted from the diet while in the hypoacids it was allowed to be taken by mouth and a number of times by proctoclysis. No other form of treatment was instituted and the usual mode of living was advised.

In the beginning of the experiments each patient was properly prepared for the ordeal. The usual Ewald test meal was given and routinely examined every fourth day. Five tests were made in each subject. It was constantly noted that in the excess HCl secretion there was no appreciable diminution of the acid content in the aggregate (variations with each test meal were observed); likewise in the low free acid cases there was no conclusive or sharp increase of free HCl secretion.

The reverse experiments were then undertaken, *i.e.* salt and salines in the cases of excess, and practical exclusion of them in the subacid cases. Again it was noted that the results obtained did not warrant the assertion that salt per os or saline proctoclysis was followed by increased acid secretion in the gastric juice.

In three of the hyperacids bicarbonate of sodium was administered for experimental purposes. In two of the cases the HCl became at each examination materially decreased, while in the other case there was no specific change noted. General states, neurasthenia, diabetes, lithemia, and other metabolic, arterial, or nerve conditions were neither considered nor treated.

It would seem, therefore, that the introduction of sodium chloride into the system has no special influence upon the production of hydrochloric acid by the stomach.

It may justly be argued that the number of cases taken is small, yet it should be considered that the experiments were made upon subjects taken at random from quite a number without being specifically selected which would otherwise probably give the unusual occurrence. My belief has always been that which has been brought out by these experiments, and in the treatment of deficiencies or excesses of HCl I do not advise a change from the usual in the salt element.

808 LEXINGTON AVENUE.

Congenital Rickets.—R. Labbé considers that there can be no doubt that children are born with evidences at birth of a rachitic process exactly similar to those seen in older children. The process has gone on in the uterus before birth, and malformations have resulted. It is very difficult to assign to this disease strict limits; there are other conditions that are difficult to differentiate; such are achondroplasia, periosteal diplasia, etc., which may be distinct diseases or simply types of the same disease. Mixed cases in which several of these conditions are combined are not rare. The etiology is still confused; the causes invoked are multiple; they are toxi-infections, heredosyphilis, and predispositions. Distinctions between rickets, achondroplasia, and periosteal diplasia are founded on pathological anatomy alone; the lesions are brought about by the same cause acting with greater or less virulence, intensity, and duration, and the effect depends on the resistance of the organism; they thus may produce very different lesions. New studies of uterine conditions and those begun at birth are needed in this line. —*Revue Mensuelle de Gynécologie, d'Obstetrique et de Pédiatrie.*

Treatment of Uterine Fibromata by Radium.—H. Cheron states that radium is of great value in the treatment of small pelviabdominal fibromata, especially when so deep seated that they cannot be reached by the *x*-rays. The first effect of the application is the arrest of hemorrhages and the moderation of the menstrual period. It also lessens pressure and pain by the decongestion that is produced in the uterus and in the tumor. A definite menopause will be established if the application be persisted in. At the same time the ovaries will not be caused to atrophy, and pregnancy will occur in cases in which the menopause is not produced. Contraindications are malignant degeneration of the tumor, severe hemorrhage with marked anemia which will require a rapid effect, and cases with dangerous compression or symptoms or torsion of the ureters. The application is made by placing the tube in the cervix reaching up to the isthmus, and using one which gives out the ultrapenetrating rays. It should be kept in place eight hours, and the application repeated every three or four days for twelve sittings, if it is desired to establish the menopause.—*Journal de Médecine de Paris.*

Conservative Treatment of Aneurysms and Hematomata.—C. Monod and J. Vanverts state that the surgical treatment of aneurysm includes extirpation, incision, or obliteration of the sac. For aneurysms of the neck and limbs the proportion of cures is 74 per cent. for ligature, 80 per cent. for incision, 90 per cent. for obliteration, and 89 per cent. for aneurysmorraphy. After careful consideration of the different methods of operation and their results the authors give the following conclusions: conservative operations are characterized by a considerable number of successes and an almost complete absence of gangrene; but recurrences and postoperative hemorrhages are somewhat frequent, due to insufficiently solid union of the vessel walls. The artery generally remains permeable immediately after the operation. After some days this permeability seems to disappear in a considerable number of cases; but this secondary thrombosis has few inconveniences, since the collateral circulation has been established before arterial obstruction became complete. Arterial lesions of traumatic origin are easier to treat than others because of the less friable condition of the arterial walls.—*Revue de Chirurgie.*

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THE PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION.

Of all the honors that have come to Abraham Jacobi none has been greater than that which signalizes his inauguration as President of the American Medical Association. A little over one year ago the MEDICAL RECORD proposed for this high office the name of one "who has ever by his teaching and his conspicuous example reflected credit upon the profession of medicine," and it now extends to Dr. Jacobi its best wishes for a successful administration.

The portrait of Jacobi, which appears as a supplement in this issue of the MEDICAL RECORD, will be prized by all who perceive in the life of the "grand old man" of the profession the ideal of the modern citizen and physician. Few men have ever enjoyed Jacobi's rare privilege of maintaining for fully two generations a position of leadership in public and scientific activities. Few men have ever been able to so thoroughly weld the culture of the Old World with the freedom of the New, or have so sturdily carried the torch of truth into the busy marts and assemblies of men. It is quite fitting that he who raised pediatrics to the dignity of a specialty in this country should in his presidential address plead for the conservation of infant life. An unceasing devotion to his chosen specialty has not deterred Jacobi from proclaiming the headship of the general practitioner whose interests, whose sympathies, and whose usefulness are not limited by the narrow boundaries of any specialty, and who, in spite of a busy career, must ever be ready to lend a hand in shaping the destinies of the state.

THE PRINCIPLES OF MEDICAL ETHICS.

THERE is a full report, on page 1112 of this issue, of the Principles of Medical Ethics as adopted last Tuesday by the House of Delegates on the recommendation of the Judicial Council of the American Medical Association. In comparing the revised principles with those adopted nine years ago at the New Orleans meeting, one notes in the former a vast improvement over the latter, chiefly in the elimination of unnecessary verbiage and obsolete inhibitions, and in the more definite statement of the fundamental principles of ethical professional conduct. Of particular interest is the fact that while fee-splitting is still regarded as an evil to be deplored, nevertheless the physician is permitted to give or receive a commission or divide a fee for medical advice or surgical treatment, provided "the patient or his next friend is fully informed as to the terms of the transaction." In other words, it is only secret fee-splitting that is condemned. Moreover, "the patient should be made to realize that a proper fee should be paid the family physician for the service he renders in determining the surgical or medical treatment suited to the condition, and in advising concerning those best qualified to render any special service that may be required by the patient." It would appear from this unequivocal statement that an honorable division of fees is not only condoned, but is even encouraged. Evidently a new element, that of medical economics, has been introduced into the Principles of Medical Ethics.

PHYSIOLOGICAL CYCLOTHYMIA

IN no department of practical medicine have there been so many and such radical changes in recent years as in psychiatry. The entire domain of this subject, in fact, has been almost revolutionized. In order to account for the well known periodicity of psychoses and psychoneuroses a fundamental substratum termed cyclothymia was first evolved, which counted as a form of psychopathy upon which a number of actual diseases are developed. Further study, however, tended to show that cyclothymia is in its essence perfectly physiological and only when transcending a certain limit does it imply actual psychic inferiority. In its physiological expression, we would expect to see a period of superior mental efficiency succeeded by one of diminished efficiency without much change in the emotional sphere. Many engaged in creative work would simply abandon their efforts until the creative impulses returned. Others would become depressed and worried at the apparent failure of their powers and a rest would be thrust upon them by their counsellors. Several other types of behavior readily suggest themselves. It by no means follows that this condition cannot be minimized. If a man while in his best working period does not apply himself too severely, and does take an occasional week end to himself, or vary his daily work with physical exercise or mental distractions of any kind, it often happens that the inefficient phase of the cycle seems to remain in abeyance. Under such circumstances the more or less prolonged summer vacation replaces the minus phase of the cycle.

A. Zweig in a digest of the progress of psychiatry in 1911 (*Berliner klinische Wochenschrift*, April 29) lays stress on the physiological nature of simple cyclothymia. The plus phase actually represents an excess of psychic health, and the reactionary phase must necessarily represent a deficit. He sees a sort of parallel between this condition and the rut of animals. Even anomalies of character and personality he would not regard as abnormal. In the plus phase these anomalies would be as marked as in the minus phase and each would be characteristic. In the former we should see the so-called eccentricities of genius, self-sufficiency, optimism, recklessness, and in the latter the opposite qualities.

TREATMENT OF THE TYPHOID CARRIER.

Despite all the claims that have been made in reference to the successful sterilization of typhoid germ carriers, there is good reason for the belief that many individuals supposed to be sterile remain a menace not only to others but to themselves as well. This persistence bears a definite relationship to the survival of living organisms in the gall-bladder; for the assertion that these may also persist in the spleen, lymph nodes, and bone marrow appears to be made chiefly on theoretical grounds.

To remove the intact gall-bladder of a carrier with the intention of doing away with the focus of disease is hardly a justifiable routine procedure, but every surgeon who operates on this viscus owes it to science to test the bile very carefully for Eberth's bacillus; and if the latter is present the subsequent treatment must be conducted with the accessory idea of so sterilizing the bile passages that the bile and feces may no longer harbor the organism.

Dehler, who has made a special study of the carrier problem (*Münchener medizinische Wochenschrift*, April 16), says he would not hesitate to extirpate the gall-bladder in the case of an employee who has charge of the food supplies of a large number of people, of a woman with a large family in which one or more deaths from typhoid had already occurred, and under other similar conditions. The operation should be followed by persistent hepatic duct drainage. The author by no means asserts that he would thus interfere until ordinary serotherapeutic resources had been thoroughly tested, but he is satisfied that such sterilization is not to be depended on. Nor would he interfere if repeated examinations of blood and urine had shown by delicate tests that bacilli were present in locations other than the bile and intestines.

A STANDARD OF FEEBLE-MINDEDNESS.

While the terms idiocy, imbecility, and feeble-mindedness have a fairly definite signification, there is no hard and fast dividing line between them. Still less is a sharply drawn distinction possible between the lower grades of normal mentality, and the lesser degrees of feeble-mindedness. This difficulty is keenly appreciated in the public schools where it becomes necessary to separate backward children from those who are normally bright. What is a fair measure of normal mentality, and how shall we determine practically just which ones are normal, and just what degree of mental development is present in the backward ones? Feeble-mindedness is a relative term, and is interpreted differently by different observers. Who are the feeble-minded, and how are they to be recognized?

W. C. Sullivan (*Lancet*, March 23, 1912) maintains with good reason, that the method of Binet and Simon comes nearest of any method so far suggested, to offering a solution of these questions. He quotes the report of the Royal Commission on the care and control of the feeble-minded, which defined feeble-mindedness as the mental state of "persons who may be capable of earning a living under favorable circumstances, but are incapable from mental defect existing from birth or from an early age (*a*) of competing on equal terms with their normal fellows, or (*b*) of managing themselves or their affairs with ordinary prudence." While this definition does not furnish any criterion of judgment, it has the merit of being founded on strictly empirical data. Sullivan concludes that the empirical test of the Commission must be developed more fully and precisely, so as to define feeble-mindedness by reference to an accepted standard of intelligence. Many besides Sullivan have come to this same conclusion, which is logical and sound, but not all have had the insight and skill in elaborating a standard of intelligence, which has attended the work of Binet and Simon.

The principle of this method is very simple. By extensive observations on French school children, the authors arranged a large number of mental tests in a series of groups, graduated according to their increasing difficulty so that each group corresponds to what the average child of a given age can do. For the most part, the tests are of such a nature as to make negligible the personal equation of the examiner. Thus each group of tests furnishes an index of the mental status of the normal child of a corresponding age. For several years, according to Sullivan, this method has been employed in certain primary schools of Paris, as a means for the detection and classification of mental deficiencies. Binet states that a mental development corresponding to twelve years is sufficient for the ordinary needs of an adult under present industrial conditions. Consequently a mental development of twelve years is the minimum normal for an adult. Below two years Binet places the idiots; between two and seven, the imbeciles, and between seven and twelve, the feeble-minded. We have thus an empirical method for recognizing feeble-mindedness and a standard of normal intelligence based on the average mentality of a certain age.

A special report to the New York Society for Prevention of Cruelty to Children, dated February 13, 1912, states that there are in the New York City schools about 10,000 feeble-minded children, and that nearly a third of these are the offspring of the immigrants who have come in the last ten years. Recent census statistics show that 30 per cent. of the feeble-minded children in the general population of the United States are the progeny of aliens or naturalized citizens. The last annual report (for the fiscal year 1911) of the Commissioner of Immigration for the Port of New York, emphasizes the fact that present facilities for inspection are entirely inadequate for the detection of feeble-mindedness in immigrants. Thus it is evident that immigration constitutes probably the largest single factor in the increase of feeble-mindedness in this country. To establish a practical and efficient inspection for this condition among immigrants would be to cut off a large source of the increase of mentally retarded individuals. Realizing the condition as it exists, and its vital relation to the general welfare, the medical officers at Ellis Island have instituted an effort to determine a standard of normal intelligence for the various races which send immigrants to the United States, somewhat after the fashion of the Binet-Simon system. As is necessary and desirable, this

effort is under the direction of men who have had special training and experience in the diagnosis of mental disorders. The Binet method is not applicable under the changed conditions and with the types which prevail among immigrants. But the same general principle is being followed. The investigation is being conducted only on illiterates, those who have attended school being rejected. The purpose in this is to determine the intellectual status of the average illiterate of each race, and to establish this as the minimum standard of normal mindedness. Obviously those who have attended school will rank well above this standard, but if the person being examined has mentality of the average illiterate of his own race, he should not be considered feeble-minded, for the purposes of alien admission.

This method provides a more or less arbitrary division between normal and retarded mental development. But if a satisfactory standard of illiterate normal mindedness can be determined, and suitable tests provided for each race, it will afford a just, quick, and fairly accurate means of detecting feeble-minded adults. To apply the method to children, a long and patient series of examinations will be necessary for the purpose of establishing a standard for different ages. Probably three groups below the age of fifteen will be sufficient, and this age can be taken as the adult minimum standard, although these figures may require modification to suit different races. The need and necessity for a means of detecting feeble-mindedness in immigrants is generally conceded. Every effort should be made to facilitate the development of some such procedure. This method promises to meet the need, and is to be commended.

The Midwife.

Somewhat out of the usual order of presidential orations is the earnest and eloquent plea for the babies made by Dr. Jacobi at the meeting of the American Medical Association this week. In this address, published together with a report of the proceedings of a great part of the session in this issue of the Medical Record, the speaker boldly combats what was until quite recently the prevailing opinion in the medical profession. It has been long and practically universally held that midwives are ignorant and dirty old women who should absolutely be forbidden to follow their dangerous calling, but Dr. Jacobi pertinently asks what the poor would do without them. With all the present overcrowding in the ranks of the profession there are not physicians enough in any of our large cities to attend to all the child-bearing women in the homes of the poor. If all women could be brought for delivery to lying-in hospitals the matter would be simple enough, and everything would speed along as easily and as pleasantly as at a husking-bee. But all women cannot or will not be confined in an institution; they must have some assistance, they cannot pay for the attendance of a trained physician, so to the midwife is their only recourse. The duty of the medical profession, as the orator makes clear, is not to suppress the midwife but to educate her. This is done in other countries to the manifest benefit of the nation, for many lives not only of productive women but of future citizens—maybe a Kent or a Helmholtz or a Jacobi—are thereby saved. Many other counsels for the reduction of infant mortality are to be found in this notable oration, but the one which we have picked out for comment is especially worthy of attention on the part of medical men and legislators in this land.

Salvarsan Therapy of Scarlatina.

To exhibit a drug like salvarsan by the intravenous route in scarlatina of ordinary severity would seem at first sight in every way unwarrantable save perhaps in an occasional fulminating case. The severer manifestations of this affection are commonly believed to be due to the ordinary streptococcus, a germ which has shown no tendency to yield to salvarsan, but a considerable disposition to yield to prophylactic vaccination. On the other hand the actual cause of the disease, which is often assumed to be a protozoan, is doubtless responsible for the occasional severity of the affection in particular years and localities, and evidently is able to show great fluctuations in virulency which can hardly be explained by the behavior of the streptococcus. In certain epidemics the mortality of the disease under the best symptomatic treatment may be very heavy, and we do not yet know whether antistreptococcus vaccinotherapy can affect the mortality favorably in such severe epidemics—which are fortunately by no means of common occurrence. It is rational therefore to have something of possible efficacy in reserve in such cases. At the recent meeting of the German Congress for Internal Medicine (*Deutsche medizinische Wochenschrift*, May 9) Klemperer reported on the intravenous use of salvarsan in an epidemic of scarlatina of such severity as to cause, despite the most approved management, a mortality of nearly 25 per cent. The mortality in the salvarsan series was about 8 per cent. In every case treated the injection was followed at once by a fall of temperature, a phenomenon never seen in any of the forms of sepsis, rheumatism, or tuberculosis. Hence there is a specific quality of drug action hereby suggested.

Organic Disease of the Eye from Solar Light.

It has been reported on numerous occasions that solar rays are able under certain conditions to cause partial blindness which may or may not be permanent. This has been noted especially as a result of watching solar eclipses with the naked eye. The common use of smoked glass in this connection is therefore much more than a mere matter of comfort. The damage appears to be effected when the disk of the sun first appears from behind the shadow. A central scotoma is the result and this may be merely transitory or permanent. At a recent meeting of the Berlin Medical Society (*Berliner klinische Wochenschrift*, May 6) Seeligsohn mentioned the cases of several persons who were more or less blinded in the recent solar eclipse which was visible in Berlin. In all but one of these the fundus was normal, so that the central scotoma had only a functional basis. In three subjects the acuteness of vision was considerably depressed. In all probability these patients will recover completely within a few weeks. It is very different with the solitary case mentioned in which the fundus showed structural alteration. The image of the emerging disk of the sun upon a retina already exposed for an hour, with no protection, had evidently left an

indelible impression in the middle of the foveal centrals where a small round yellow spot was visible, surrounded by an intensely hyperemic zone. Many individuals have so damaged their sight by this imprudence as to be unable to earn their living.

News of the Week.

Health of the Canal Zone.—The report of the Department of Sanitation for the month of March, 1912, places the total number of deaths from all causes among the employees of the Canal Commission at 30, of which 28 were due to disease and 8 to violence, making the annual average death rate for the month only 8.45, the lowest so far recorded for March. Among the white employees the rate was 2.75 and among the colored 7.90. The deaths from the principal diseases were as follows: Chronic nephritis, 3; dysentery, 2; lobar pneumonia, 3; measles, 2; tuberculosis, 0; typhoid fever, 1. One case of yellow fever from Guayaquil was taken from the steamship Chile at the Culebra Island quarantine station on March 2, and the patient died on March 4. With this exception no cases of yellow fever, smallpox or plague originated on or were brought to the Isthmus during the month.

Crocker Cancer Fund.—The final step in the organization of the Crocker Cancer Fund of Columbia University was taken by the trustees of the university on June 3 in the appointment of Prof. Francis Carter Wood to the position of director. Until arrangements are completed for the permanent housing of the working staff of the fund research will be continued as heretofore in the various laboratories of the College of Physicians and Surgeons.

Vital Statistics in France.—During 1911 there were in France 770,933 deaths and only 742,144 births, a preponderance of deaths over births of 34,869. Although the birth rate is said to be diminishing throughout Europe, the total number of births still exceeds the number of deaths in all countries except France.

Philadelphia Polyclinic.—Dr. Ralph Butler has been elected professor of diseases of the nose and throat in succession to Dr. Joseph S. Gibb, resigned.

Medical Society Enjoined.—Dr. Robert Kunitzer, visiting physician to Sydenham Hospital, New York, obtained a temporary injunction in the Supreme Court on May 27 restraining the New York County Medical Society from taking further action under a resolution of December 27, 1910, recommending that Dr. Kunitzer be expelled from membership. The society had planned to take action that evening, but was of course unable to do so under the injunction. The charges against Dr. Kunitzer are in connection with those against Dr. L. A. Ewald. In his petition Dr. Kunitzer stated that he was charged with complicity in altering records of Sydenham Hospital in regard to operations performed by Dr. Ewald, and asserted that he had never had a fair trial, that the society had refused to hear his witnesses, and that at the time of the falsification of the records he was in Switzerland. A motion to make the injunction permanent was argued before Justice Gerard in the Supreme Court on May 29, counsel for Dr. Kunitzer declaring that at the time when the report of the committee appointed to investigate the charges was received by the society six hundred members of the society were present, although the vote polled was 302 against Dr. Kunitzer and 32 for him, and that therefore the three quarters vote of members present necessary for expulsion was not cast. A permanent injunction would prevent any further action being taken on the report of this committee and would necessitate an entirely new trial.

Advance in Aviation.—The second international congress for the purpose of framing aviation laws which met recently in Paris adopted the following resolution: "In the event of a birth or a death occurring on an aircraft, the pilot must enter the event in a logbook and notify the authorities at the first place where he descends."

City Death Rate.—For the week ending May 23, the death rate in New York City was 14.83, a slight increase over the same week last year, when the rate was 14.75. For the previous fifteen consecutive weeks the 1912 rate had been lower than that for 1911, and the average for the entire twenty-one weeks is still considerably less, being 15.05 for 1912 and 16.93 for 1911. During the week there were 108 deaths from violence, 134 from pneumonia, 243 from pulmonary tuberculosis, 183 from heart disease, and 29 from diphtheria. There were 279 deaths under one year of age, 459 under five years of age, and 266 over sixty-five years. Deaths in institutions numbered 530 and in tenements 614.

Will Marry Healthy Only.—Two hundred clergymen in Chicago have approved of the suggestion of Dean Summers that a health certificate as well as a marriage license be demanded from those desiring to marry, and have passed a resolution urging pastors throughout the country to direct their energies toward influencing public opinion to endorse the plan.

Diplomas for Nurses.—At the commencement exercises of the Training School of the Jewish Hospital, Philadelphia, on May 30, diplomas were awarded to fourteen young women graduates.

Flower Hospital to Move.—At the annual commencement exercises of the New York Homeopathic Medical College and Flower Hospital, held on May 29, plans for the removal of the entire plant to a new site were discussed. In its fifty-two years of existence the hospital has outgrown its quarters on the Eastern Boulevard and it is hoped that money for a new structure on a site not far removed from the old one may soon be available. At the exercises twenty-five graduates received the degree of M.D., and on the previous evening nine young women received diplomas at the tenth annual commencement of the Flower Hospital School for Nurses. The annual banquet of the alumni of the medical college was held at the Hotel Astor on May 30.

Lightning Strikes Hospital.—During a severe storm in New York on May 30 the cornice on the roof of the Rockefeller Institute Hospital was struck by lightning. A section of the granite cornice was dislodged and a shower of bricks fell, but no other damage was done.

To Help Peru.—In answer to a request from the Peruvian Government, Dr. George Converse has been assigned by the Public Health and Marine-Hospital Service to take charge of the sanitary improvement work at Iquitoes, for which one million dollars has been appropriated. Dr. Converse has been given a two years leave of absence, and will shortly leave for South America.

New Cattle Serum.—Professor Wilhelm Grugel of the University of Rostock, Germany, has announced that he has discovered the bacillus causing foot and mouth disease in cattle, and has also been

able to prepare a serum immunizing cattle against the disease. The serum is preventive, not curative, and in a large number of experiments has proved very successful. Further investigation will determine the necessary strength of the serum and the length of time for which the immunity remains effective. It is said that the serum can be produced so cheaply as to make the cost of immunization only about seventy-five cents per animal treated.

Hospital Doctors Sued.—A resident of Patchogue, Long Island, has brought suit in Kings County, New York, against six physicians of St. Peter's Hospital, Brooklyn, for alleged malpractice, and demands $30,000 damages. The plaintiff claims that after being injured by a fall in November, 1910, he was taken to the hospital, where he was improperly treated and neglected. The defendants, who unite in denying the charges and in praying for an early trial, are Drs. Charles B. Gildersleeve, John D. Rushmore, Thomas Brennan, Francis H. Bermingham, William G. Siegel, and William J. Donahue.

Street Accidents.—Fifty-two persons were killed and 176 were seriously injured by vehicles in New York City during the past month. Of these automobiles killed 15 and injured 112, and trolley cars killed 10 and injured 30. On the highways of the State outside of New York City, 19 persons were killed and 178 injured during the same time.

New Course in Medicine.—The University of Kansas at Lawrence, Kan., is making plans for a post-graduate course in hygiene and preventive medicine to be given during the summer of 1913 and thereafter, to be open to physicians and seniors in the medical school, and to lead to the degree of Doctor of Public Health. During the present summer the course for health officers which was given last year will be repeated, beginning on June 10 and lasting one week.

Jailed for Selling Bad Meat.—Two butchers in Philadelphia were on May 28 sentenced to serve thirty days each in the county prison for selling tuberculous beef and were also fined $100 each and costs. Five other butchers in court on the same charge changed their pleas to guilty and were fined $500 each.

Would Oust Four Physicians.—The Medical Society of the County of New York has applied to the State Board of Medical Examiners for a revocation of the licenses of four physicians of New York City, on the ground that they have been convicted of crime in connection with their medical practice. Three of them are now serving sentences in the Federal prison at Atlanta, Georgia. They are Samuel E. Hyndham and Ferdinand Hartman, convicted on using the mails to defraud; John E. W. Thompson, sentenced to serve four years for depositing non-mailable matter in the mails for delivery; and Simeon B. Minden, who was convicted of violation of the trademark laws and pleaded guilty to receiving and selling cocaine which had been smuggled into the United States.

Gifts to Charities.—By the will of the late Joseph Hirsch of New York, the following institutions receive bequests of $500 each: Mt. Sinai Hospital, Montefiore Home, Hospital for Deformities and Joint Diseases, Beth Israel Hospital, German Hospital, and Sydenham Hospital. The National Jewish Hospital for Consumptives at Denver receives a bequest of $250.

The German Hospital and Dispensary of New York also receives the entire estate of the late George Piff, valued at about $10,500.

The Montefiore Home receives $1,000 and Mt. Sinai Hospital $2,500 by the will of the late Irving Bamberger.

Mt. Sinai Hospital also receives a bequest of $2,500 under the will of the late Mrs. Bella B. Heiden of New York.

National Association for the Study and Prevention of Tuberculosis.—At the session of this association held in Washington during the last week in May the following officers were elected: President, Mr. Homer Folks, New York; vice-presidents, Dr. Robert H. Babcock, Chicago, and Dr. Edward R. Baldwin, Saranac Lake, New York; secretary, Dr. Henry B. Jacobs, Baltimore; executive committee, Dr. William H. Baldwin, Washington; Dr. Charles H. Hatfield, Philadelphia; Dr. Frederick L. Hoffman, Newark; Dr. George M. Kober, Washington; Dr. S. A. Knopf, New York; Dr. W. R. Steiner, Hartford; and Dr. W. C. White, Pittsburg. Mr. Folks is the secretary of the New York Charities Aid Association and is the first layman to be chosen to head the national society.

Connecticut Homeopathic Medical Society.—The following officers were elected at the sixty-second annual meeting in Hartford on May 21: *President*, Dr. Henry M. Pollock, Norwich; *vice-president*, Dr. Royal E. S. Hayes, Waterbury; *treasurer*, Dr. Henry P. Sage, New Haven; *secretary*, Dr. Samuel Worcester, South Norwalk.

The Long Island College Hospital Alumni held their annual dinner at the Union League Club, Brooklyn, when Dr. Joseph J. O'Connell, the newly appointed health officer of the Port of New York and an alumnus of the college, told of the precautions being taken at Quarantine to prevent the admission of cholera

State Charities Aid Association.—In celebrating the fortieth anniversary of its existence, the association has issued a leaflet listing its accomplishments, either singly or in conjunction with other agencies. Among the more important of the seventy odd items enumerated are the following: First training school for nurses established at Bellevue Hospital; tenement house reform initiated; law enacted providing State care for all the insane; Craig colony for epileptics established; campaign for the prevention of tuberculosis begun, and enactment of laws defining the powers and duties of health officers and authorizing the establishment of general hospitals by cities, towns, and villages. It is hard to believe that these have all been accomplished within the last forty years.

Canadian Medical Association.—The forty-fifth annual meeting of this society will be held at Edmonton, Alberta, on August 10 to 14. The first day, Saturday, will be devoted to business, and the following Monday, Tuesday, and Wednesday to the scientific program. The railroads offer an excursion rate of one way fare plus twenty-five cents, and additional attractive excursions are being arranged.

New Medical Law.—The law passed recently by the Virginia State Legislature requires that within one year from its passage all licensed practitioners of medicine in the State shall reregister in the office of the county clerk. Circulars of information and copies of the law giving full particulars will be sent upon request to Dr. R. S. Martin, Secretary of the State Examining Board, Stuart, Va.

Connecticut State Medical Society.—At the one hundred and twentieth annual meeting, held re-

cently in New Haven, the following officers were elected: *President*, Dr. Edward T. Bradstreet, Meriden; *Vice-Presidents*, Dr. Frederick Gilnack, Rockville, and Dr. Alvin E. Barber; *Secretary*, Dr. Wilder Tileston, New Haven. It was voted to hold the semi-annual meeting in October at Willimantic and the next annual meeting at Hartford.

Texas State Association of County Secretaries.—The following officers were elected at a recent meeting: *President*, Dr. L. Thomas Dorbandt, San Antonio; *Vice-Presidents*, Dr. J. C. Calhoun, Henrietta, and Dr. R. H. Cochran, Coleman; *Secretary-Treasurer*, Dr. J. E. Robinson, Coleman.

Franklin District (Massachusetts) Medical Society.—At the annual meeting on May 14 the officers elected were: *President*, Dr. C. F. Canedy, Greenfield; *Vice-President*, Dr. J. E. Urquhart, Ashfield; *Secretary-Treasurer*, Dr. W. H. Clark, Greenfield.

Iowa State Society of Medical Women.—The fifteenth annual meeting was held in Burlington on May 6 and 7, the following officers being elected: *President*, Dr. Georgia Stewart, Des Moines; *Vice-Presidents*, Dr. Florence Sherbon, Colfax, and Dr. Julia Donohue, Burlington; *Secretary*, Dr. Clara Whitmore, Cedar Rapids; *Treasurer*, Dr. Grace Yerger, Waterloo.

Obituary Notes.—Dr. Samuel Johnson of Asbury Park, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1867, died at his home on May 24, aged 66 years.

Dr. Joseph Dwyer of Passaic, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1900, died in the Passaic General Hospital on May 28.

Dr. Howard Parker of Edgar, Ill., a graduate of the Kentucky School of Medicine, Louisville, in 1897, and a member of the Illinois State and Edgar County Medical Societies, died as the result of an accident on May 22, aged 38 years.

Dr. H. M. Sherman of Peoria, Ill., a graduate of the American Medical College of St. Louis in 1878, died at the Proctor Hospital, Peoria, of Bright's disease, on May 16.

Dr. James A. Mannon of Sherrard, Ill., a graduate of the University of Illinois, College of Medicine in 1894, died suddenly in Excelsior Springs, Mo., on May 12, aged 57 years.

Dr. Joshua Worley of Belle Plaine, Ia., a graduate of the Starling Medical College, Columbus, Ohio, in 1861, a member of the Iowa State and Benton County Medical Societies, and formerly president of the Belle Plaine School Board, died at his home on May 16, aged 78 years.

Dr. John Nicoll of Elizabeth, N. J., a graduate of the Yale University medical department in 1854, died at his home on May 22, aged 81 years.

Dr. James T. Burdick of Brooklyn, N. Y., a graduate of the Worcester, Mass., Medical College in 1853, and a veteran of the Civil War, having served as surgeon in the 147th New York Volunteers, died at his home on May 19, aged 80 years.

Dr. Frederick E. Rabe of New York, a graduate of the New York Homeopathic Medical College and Hospital in 1883, and a member of the New York Academy of Pathological Science, died at his home on May 21, aged 58 years.

Dr. Abraham Finegold of St. Mark's Hospital, New York, a graduate of the University and Bellevue Hospital Medical College in 1911, died on May 19 after a short illness of meningitis, aged 21 years.

Correspondence.

Our London Letter.

(From Our Regular Correspondent.)

TROPICAL DISEASES BUREAU—SANATORIUM PROVISION—CHILD STUDY CONFERENCE—INSURANCE PLEDGE—SCHOOL DIET—INCURABLES—OBITUARY.

London, May 17, 1912.

The Sleeping Sickness Bureau, which has done such excellent service, will be known from July 1 as the "Tropical Diseases Bureau." That is the official announcement of the Colonial Office at the head of a lengthy statement of the origin and work of the organization, which is to be expanded to an extent corresponding with its new title. You will remember that the bureau originated in the international conference in London on sleeping sickness (1907-8). When that failed to establish an international bureau to contend with the disease Lord Eligin, our Colonial Minister, set up one for Britain, the good work of which is known throughout the medical world. Its bulletin has seconded every research on trypanosome diseases, collected a library relating to them, and distributed information to inquirers. It has also initiated the despatch of several expeditions to Africa to investigate sleeping sickness. It has for some time been evident to the medical men engaged or interested in these expeditions that they are equally adapted and qualified for the study of all tropical diseases, and the Colonial Office deserves credit for the support it has hitherto given and to this decided advance. The new tropical bureau will deal with all exotic diseases prevalent in the tropics and subtropics, and will issue a Bulletin expanded with the extended work; an enlarged journal, in fact, carrying on the record of the progress of tropical medicine. The tropical diseases of animals are to be dealt with in a distinct publication, and that this department will be officially conducted we may judge from the fact that Sir J. Macfadyean and Mr. S. Stockman have joined the committee to represent veterinary science. The treasury has agreed to increase its contribution to the funds and the other governments will doubtless raise their subscriptions, so that the Tropical Diseases Bureau has a good prospect.

The Local Government Board has sent a circular to the authorities concerned with the sanatorium provision of the Insurance Act. They remark that in many areas there are some beds available in smallpox or other hospitals which might be utilized, and in most places some existing accommodation that could be adapted for a dispensary. As a first step in formulating any scheme it is suggested that the medical officer of health should be asked to submit a report on the means of treating tuberculosis in the district. When complete schemes will involve delay, interim schemes should be submitted and the outlines of a complete organization indicated.

The National Sanatorium Association has simultaneously held its annual meeting and the chairman was very optimistic because they had seen the Government adopting their views. They had been at work a very short time, but he considered they had made history and changed the face of the anti-consumption crusades. It would be found, too, that treatment by scientific methods was going to yield financial profit to the insurance scheme. The beds available at their Beninden Sanatorium had been increased to 105, they were always fully occupied,

and for their few private beds there were applicants to fill them for years to come. Of 280 patients in 1911 no fewer than 91 left with the disease arrested, and 137 much improved. Of those received in the first stages 93 per cent. had the disease arrested. He anticipated better results still if the dispensary system, which was progressing, should send them a larger proportion of patients at early stages.

We have had a three days' conference, held at the London University and organized by the Child Study Society. Naturally the ladies took their share in the discussion and some of them offered very severe criticisms on the education and management of children by parents and teachers. There were also papers on the medical aspects of the study. Dr. Kerr Love had a paper on the "Influence of Defects of Hearing," in which he argued that the acquisition of speech made this sense of the first educational importance. Absence or defect of hearing arrested mental progress so far that a deaf child of seven had a brain less than normal. Thought processes were, therefore, slower in the deaf. But where only the hand and eye, muscle and bone, and tendon and nerve were chiefly or entirely concerned the deaf were equal to those who heard. He concluded that young deaf children should begin language training at three; that the semi-deaf should attend special schools, from which the totally deaf should be excluded. Mr. Yearsley maintained that there was no connection between deafness and mental defect. He agreed, as did several subsequent speakers, that special provision was needed for the education of the deaf.

The sense of sight was the subject of another discussion started in a paper by Mr. Bishop Harman, who spoke of the difficulty of stimulating the other sense faculties of blind children. As regards myopia, he said the London County Council found it desirable to segregate shortsighted scholars, teaching by the blackboard necessary script and other things by oral instruction, bearing in mind that the eye of the child was immature and must not be strained. Dr. Edridge-Green wanted the society to study the ages at which each color sensation was developed.

The "Tuberculous Child" was the subject of a paper by Dr. Jane Walker, who regarded dispensaries and sanatoria as our first line of defence. The latter could provide education as well as treatment. Miss Broadbent and Dr. Hayes advocated open air teaching and gave information as to schools established for this, as well as for some in which house and garden classes were both established, a plan advised for normal children as well as for the tuberculous.

Dr. T. B. Hyslop read a paper on "Mental Hygiene in Relation to the Development of the Child." He would rejoice if children under six were excluded from school. It was not so much to knowledge as to habits that attention should be paid in the early years. Cleanliness, temperance in eating and drinking, everything comprised in hygiene should be taught. The common system forced the brain too much, and to tax the nation's brain to excess would lead to its decadence, of which he saw signs already. Sir Crichton Browne remarked that it was possible to dictate too much to teachers. Scientific tyranny would be resented as much as priestcraft. The doctors would give teachers better material to work upon whenever they could insist on better conditions in the earliest childhood. Dr. Mumford found want of sleep more often the cause of breakdown than pressure in school work. Miss Bathhurst, ex-inspector for the Education Board, would prohibit the three R's until after six years. A visitor from Massachusetts, Dr. Kirkpatrick, said to make a child learn certain things in a particular way, above all, to pass an examination in them, was bound to injure its mental health. He was supported by other speakers, but some said a child might be better in school than running about the streets. Dr. Alice Corthorn, while criticising mothers in some respects, declared that after all they were the greatest experts, and should be helped rather than hindered in their work, for no one else could do it as well.

The first meeting of the Advisory Committee to the National Health Insurance Joint Committee was addressed by the Chancellor of the Exchequer, who told them whatever their opinions the act was now the law of the land and everyone's duty to obey it. He admitted that it might have defects, and if such should be discovered they could be remedied. Whatever else might be altered he was sure two things would not, (a) compulsory contributions by employers and employed, with State subsidy; (b) general character of the benefits. He boasted that 13,000 officials of friendly societies had attended the gratuitous lectures he had organized to explain the complexities of his act. At his suggestion the committee divided into two sections, one dealing with contributions and accounts, which retired to another room, the other remaining with him to consider questions relating to medical aid. The Advisory Committee consists of 159 members, of whom 33 are medical men, while 67 represent the friendly societies and trade unions, 25 employers' associations, and the others local authorities, insurance commissioners, and insured persons. The medical men are thus outvoted by the interested parties, and the neutrals cannot hold the balance.

The new pledge proposed by the British Medical Association has been made prematurely public by the newspapers and is exciting various comments. Some cordially commend the determination shown to resist the attempt to extend contract practice on pauperizing terms; others declare that the adoption of something like a strike is unworthy of the profession. The collection of pledges still goes on and it is hoped the committee will be able on June 30 to give six months' notice, to expire on the date when the medical work under the Insurance Act is to begin. It is reported that the sum expended by the association on the campaign against the Insurance Act to the end of last year reached above £8,000 and much more must have been added this year.

The Lord Mayor, Sir T. B. Crosby, M.D., opened on Monday a conference at the Guildhall on diet in schools. Speaking, he said as a medical man, the food should be ample, simple, well cooked, and varied. Also the time for taking meals should be ample and the hours fixed and regular. These points were enforced by subsequent speakers, who added a few others equally obvious, and related their experiences. Dr. Dukes reprobated the monotony too common; Dr. R. Hutchinson the tuckshop and sweets with meals. Dr. Shelley said children should be taught mastication, which was better than the tooth brush. One head master said hygiene had been taught at his school over twenty years. Another objected to coddling boys as to food. In his school days the present diet would have been regarded as unheard-of luxury, but his fellows were fairly healthy.

The British Home and Hospital for Incurables had a cheerful report to submit to the annual meeting. More money had been received than in any previous year and a hope was held out of laying the foundation stone of the new wing during the summer. The pensioners on the books numbered 375. The home had been full throughout the year. Towards the £30,000 needed for the new wing and increasing the pension fund, £17,250 had been promised, including a gift of £2,000 from the president (Lord Strathcona) and £5,000 from Mr. Mullins for five beds in the new wing.

Surgeon-Major Frank Powell, M.B., an Indian Mutiny veteran in the Bengal Medical Service, died on May 9 at Redhill, aged 82.

Major T. E. Stuart, who died on the 28th ult. at the age of 48, had served as a civil surgeon in the South African War and received the medal with four clasps. He afterward settled at Leamington.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

THE WOMAN'S CONGRESS — LARYNGOSCOPY — MESOTHORIUM AND ITS THERAPEUTIC USES.

BERLIN, April 15, 1912.

THE Congress of Women attracted considerable attention during its recent meeting in this city, and the exposition of the work accomplished by women in the home and in the industrial world was visited by a large crowd. Of special interest was the section which dealt with the activities of women as nurses. Sisterhoods of the Catholic and Evangelical sects furnish a large proportion of the hospital nurses in Germany, the former providing 50,000 nurses in 1,100 hospitals, and the latter providing 21,000 nurses. Both organizations display a most rigid discipline, and the sisters who have once adopted the nurses' calling never forsake it. Unlike the deaconesses the Catholic sisters work for no pay. In addition there are 5,000 nurses belonging to the Red Cross, and these are so well organized and so well provided with the necessary military equipment, that at least half of them are ready for the field on the tenth day of the mobilization of the army for war. In time of peace they are always prepared for service. Besides the members of these organizations there are a large number of nurses in private practice, but the absence of uniformity in their work renders the compilation of statistics regarding them impossible.

Schwebe's method of laryngoscopy representing a substantial advance in the operative technique on the larynx and bronchial tubes, was the subject of a discourse before the Berlin Medical Society, March 13, by Killian, the successor of Fränkel in the chair of laryngoscopy. The first attempt to see the larynx directly was made by Kirstein. Since his tubular speculum limited the freedom of mobility of the instrument, a speculum having the form of a spatula has been contrivel. The first experiments were made on the cadaver. Then the experiments were tried on individuals anesthetized with chloroform. Later scopolanim-morphine was tried, and it was finally discovered that local anesthesia by means of cocaine was sufficient for the purposes of the examination. The instrument consists of a spatula with V-shaped edges, and of a suspension apparatus for the spatula. This apparatus is a sort of gallows fastened at the head of the operating table, upon which the patient is placed, with his head supported by an assistant. The spatula, fastened to the gallows, is then introduced into the patient's mouth and the head is gradually released so that it is suspended from the gallows. In order that the spatula may not slide out there is attached to it a lever which grasps the chin between the rami of the mandible. The weight of the head suffices to push upward the root of the tongue so that a splendid approach to the larynx is provided. The method has not been devised for diagnostic purposes or for minor procedures about the larynx. It has been devised rather for operative purposes. With the aid of this contrivance it is possible at one sitting to perform most elaborate operations, in cases in which hitherto a number of sittings have been necessary. The following conditions have already been noted with the aid of this method: Lupus, foreign bodies, pachydermia, tuberculosis, and papilloma. Particularly in children is the removal of a papilloma rendered a simple operation.

Mesothorium was the subject of an address by Bickel at the same meeting. Regarding the thorium emanations there are four preparations representing different stages in the evolution of this substance, namely, mesothorium 1, mesothorium 2, radiothorium, and thorium X. The most available for the thorium emanations is the last preparation for this maintains its activity for five days while the other preparations maintain theirs in part for a much shorter time. These preparations have the following properties: Mesothorium has rays with an intensive action upon the skin and eyes; radiothorium causes inflammatory lesions in the skin, and also stimulates markedly the autolytic ferments. Thorium X is the best for internal administration, for out of it the emanation is developed within the body. In patients to whom this preparation has been administered, the thorium X as well as the emanation can be detected in the urine and in the expired air. Bickel has administered three times daily after meals a dose of 1,000 to 8,000 Mach units. The remedy was employed in a number of cases of chronic rheumatism of moderate severity, with results that were identical with those obtained from the use of radium. Some of the cases were not benefited, but in a larger number the pains and swellings in the joints were diminished. In some of the cases, irrespective of the dose of thorium, there was an aggravation of the symptoms.

In the discussion considerable interest was aroused by the remarks made by Plesch, who in this work started out with the idea that the radioactive substances must not only be permitted to act for a longer time, but should also be used in larger doses. He found that thorium had certain advantages over radium. The radium emanation is a gas which is effective only as long as it is inspired in a closed space. The thorium emanation is decomposed during the period taken by the blood in accomplishing one circulation, and the decomposition products remain in the blood. It is possible to inject large quantities of thorium. Its cost is considerably less than that of radium. It may be injected intravenously without ill effects. When used subcutaneously it causes abscess formation. It is excreted chiefly by the intestine and in the urine. Intravenous injections of large doses had the following effects. Immediate relief was obtained in cases of severe cardiac dyspnea, as well as of pneumonia. It caused a reduction of blood pressure to 100 mm. of mercury, and maintained it at this point for several weeks. Cases of angina pectoris were benefited. Diuresis resulting from vasodilatation fol-

lowed each injection. A favorable action was observed in gout as well as in rheumatism and in leucemia there was a marked reduction in the number of leucocytes.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

BRONCHIAL ASTHMA—RATIONALE OF THE THERAPEUTICS OF ADRENALIN IN ASTHMA—THE PARASECRETION OF THE STOMACH—CONGENITAL MYXEDEMA.

VIENNA, April 1, 1912.

The pathology and therapeutics of bronchial asthma have been made the subjects of study by Leo Pollak and Hans Januschke, who sought particularly to find an experimental basis for the favorable effects of injections of adrenalin in bronchial asthma. The statement made by Brodie and Dixon that large intravenous doses of suprarenal extract have a weak bronchoconstricting action has been at variance with the clinical findings. If a dog or cat that has not been experimented upon before is injected with adrenalin there results a slight increase in the respiratory movements as determined by the plethysmograph. If by means of a preliminary injection of muscarine a spasm of the bronchial tubes has been evoked, then this spasm is quickly overcome by the adrenalin. A bronchial spasm produced by peptone is also neutralized by adrenalin, but not that produced by imidazolylethylamine. The question arises: How may one explain the antagonism between muscarine and adrenalin? The respiratory inhibition produced by muscarine and provisionally attributed to bronchoconstriction has been conceived by various authors, chiefly by Grossmann, as an expression of pulmonary rigor resulting from stasis in the pulmonary circulation. Upon the basis of this explanation the activity of adrenalin would be understood, since this drug would overcome the stasis in the pulmonary vessels. Measurements of the blood pressure in the left auricle following the administration of adrenalin and muscarine, respectively, show that the former produces a stasis in the pulmonary circulation as great as, if not greater, than that produced by the latter. Since, furthermore, the experiments performed with the aid of ergotoxin have refuted the conception that adrenalin relieves respiratory embarrassment by removing the swelling of the bronchial mucosa, the conclusion seems justified that muscarine evokes bronchoconstriction, while adrenalin evokes bronchodilatation. This relaxing effect of adrenalin with respect to the tone of the bronchial musculature can be utilized clinically in counteracting the bronchoconstrictor components of various forms of dyspnea.

The parasecretion of the stomach, as revealed by the *x*-rays, was the subject of a report made before the Imperial Association of Physicians by K. Fujinamo and Docent Holzknecht. By parasecretion is meant the secretion of gastric juice that occurs at a time when the stomach contains no food. To detect this secretion there are employed two capsules, one filled with bismuth and the other only partly filled with bismuth. These capsules are swallowed by the patient, and if the stomach contains any fluid the filled capsule sinks and the one partly filled floats on the surface of the fluid. In the normal empty stomach the swallowed capsules lie next to each other. In a stomach containing parasecretion the vertical distance between the capsules represents the height of the fluid. The normal empty stomach contains no parasecretion. In pathological conditions there may be detected free hydrochloric acid and parasecretion, with or without evidence of stagnation of the stomach contents. In stenosing carcinoma of the stomach there coexist stagnation of food and parasecretion, but there is no free hydrochloric acid. By means of a phantom meal, that is the chewing of foods without swallowing them, there may be evoked in the person experimented upon a flow of parasecretion, which begins within ten to twenty minutes after the food is taken into the mouth.

Myxedema in the newborn was observed in a case reported recently by H. Abels. A few hours after birth the infant presented the following picture: a bluish-red, cool skin without any apparent cyanosis of the mucous membranes; a wide open mouth with protruding tongue; thick lips; almost constant wrinkling of the fleshy forehead; baglike protrusion of the upper lids; broad and somewhat hanging cheeks; abundant, long, and soft hair growing down over the forehead and cheeks; a strikingly short neck with a slight arching of the supraclavicular region; a normally sized fontanelle with hard borders; a flat bridge of the nose, and marked bowing of the tibiæ. Within the next few days the diagnosis of congenital myxedema was confirmed by the continuous pronounced hypothermia of 34.5° to 35° C., with an initial birth weight of 3090 grams; protracted bradycardia of about 104, the bulging of the abdomen, and the existence of moderate constipation and general sluggishness. The infant died at the age of five weeks from bronchopneumonia. Autopsy revealed complete absence of the thyroid, small cysts in the upper pair of the parathyroid bodies, a characteristic tumor at the root of the tongue, and an abnormally small thymus. The mother of the infant and her sisters, as well as the infant's father, showed evidence of goiter.

Progress of Medical Science.

Boston Medical and Surgical Journal.

[illegible], 191[illegible].

1. Causes of [illegible] Treatments of Chronic Joint Diseases, and Some Suggestions How Greater Successes Can Be Attained. H. W. Marshall.
2. The Eradication of Typhoid Fever. A. J. McLaughlin.
3. The Control of Typhoid Fever. M. W. Richardson.
4. The Importance of Milk Stations in Reducing City Infant Mortality. A. J. H[illegible].
5. Hemoglobin, [illegible] Iron and Arsenic in Secondary Anemia. J. H. Musser, Jr.
6. Treatment of Fractures of the Clavicle. F. E. Peckham.
7. The Prevention of Occupational Diseases. H. Linenthal.

2. **The Eradication of Typhoid Fever.**—A. J. McLaughlin states that for this purpose the campaign of education should be systematically planned and should press into service every available agency. The public press, the clergymen, the settlement workers, and the school teachers should take a prominent part in disseminating the necessary information. The gospel preached by these lay workers should be simple and need not involve more than two primary facts: (1) Contamination of food or drink by careless fingers may be equivalent to homicide. (2) Such dire results can be avoided by careful cleansing of hands and finger nails after using the toilet and before handling food and drink. This simple instruction should be general. More intensive and complicated instruction should be given only by professional nurses and physicians where actual cases of illness exist in the proper care and disinfection of human excreta. Such a campaign of education would not only reduce the typhoid fever prevalence, but would be followed by a decrease in bacillary dysentery and in the group of entities commonly classified as diarrhea and "enteritis of children."

5. **Hypodermic Injections of Iron and Arsenic in Secondary Anemia.**—J. H. Musser, Jr., concludes that the intramuscular injection of an organic compound of iron and arsenic is entirely practical in office and dispensary work. It is a valuable adjunct to the treatment of anemia secondary to some relatively mild condition. It affords a method of giving the drugs in which the exact amount administered is accurately known. It obviates the annoying complications frequently resulting from the administration of the drugs by mouth.

7. **Prevention of Occupational Diseases.**—H. Timon thal states that for the prevention of industrial diseases the following measures should be adopted: The collection of complete and accurate data regarding industrial processes, the conditions under which the various industries are carried on, and the effect of occupation on morbidity and mortality records. The instruction of the medical student in this important field of preventive medicine. The placing of the specific industrial diseases on the list of diseases notifiable to the central health authority. The periodical examination of all workers in certain industries, these industries to be named by the central health authority. The exclusion of minors and women from certain industries which are designated by the central health authority as injurious to health. The enactment of adequate laws regulating sanitary conditions and protective devices in industrial establishments. The issuance by the central health authority of regulations for certain dangerous trades with instructions to employers and employees as to how they may guard themselves against the ill effects of their work, and the posting of these instructions in the workrooms.

New York Medical Journal.

May 25, 1912.

1. Hysterical Dreamy States, Their Psychological Mechanism. A. A. Brill.
2. The Training of the Urologist. H. Cabot.
3. Research in Psychiatry. B. Holmes.
4. The Application of Psychoanalysis to Insanity. C. M. Campbell.
5. Diagnosis and Treatment in the Surgery of the Stomach. G. Woolsey.
6. Organacidia Gastrica, Diagnosticated by Inspection. M. I. Knapp.
7. Old Age in Its Medicolegal Relations. I. L. Nascher.
8. Results Obtained from the Addition of Lactalbumin to Modified Cow's Milk in the Feeding of Infants. E. M. Sill.
9. A Case of Burn of the Urethra with Lunar Caustic, Followed by a Complete Cast of the Urethra. V. C. Pedersen.

1. **Hysterical Dreamy States.**—By A. A. Brill. (See MEDICAL RECORD, May 11, 1912, page 918.)

3. **Research in Psychiatry.**—B. Holmes states that research in psychiatry ought to be undertaken according to the clinical method of Sydenham and the laboratory method of Metchnikoff, and every State should expend for research not less than 10 per cent. of the appropriations which are so liberally made for custody and confinement. When the State has devoted a tithe of the energy now expended in custody and confinement upon research and cure, when all natural, rational avenues for disease have been followed out, and no physical basis of such long lasting conditions as dementia precox have been discovered, then it seems to the author that every good citizen, every rational physician, every sociologist and humanitarian would unite in such an effort as will make it possible to obtain for these afflicted ones the remedy of euthanasia. By the law of equity which provides a remedy or attempts to provide a remedy for all legal torts, according to the author, it ought to be possible for the friends of the committed insane to appear in court and secure an order which would command the sheriff or his deputy to execute the hopelessly insane and remove them from the consuming custody of the State and from their own hopeless calamity.

4. **Application of Psychoanalysis to Insanity.**—By C. M. Campbell. (See MEDICAL RECORD, May 11, 1912, page 919.)

7. **Old Age in Its Medicolegal Aspects.**—I. L. Nascher states that ignorance of the physical changes of old age is responsible for errors as to the character, extent, and permanence of injuries, their secondary effects, and the effects of shock. Ignorance of the senile mentality, especially during the senile climacteric, is the cause of errors relating to the responsibility of the aged individual, the extent of his judgment and reason, his conception of his acts, his lucid intervals, and the rationality of acts performed during these intervals. In old age there is a greater liability to fracture of the bones. The immediate and remote results of shock are far more serious than at maturity. The sight and hearing are generally impaired, and there is weakened mentality. The stiffening of joints and waste of muscles increase the liability to accidents. The senile climacteric is the critical point of the period of decline and occurs about the middle of the eighth decade of life. From the beginning of the period of decline to the climacteric the mental changes are not very marked. The memory is weakened, the brain works more slowly and becomes fatigued sooner than in maturity. Prominent traits of the aging mind are self-interest, egotism, and suspiciousness. The postclimacteric period is marked by senile dementia. Reason and judgment are clouded and the impairment is progressive until complete dementia is reached. In old age the moral sense is frequently blunted and the lessened control over the emotions and conduct may give rise to acts of impropriety and immorality. During the senile climacteric, or the transition period between old age and senility, every possible manifestation of insanity may occur. As to the testamentary capacity of aged individuals, a recent decision says that "to avoid an instrument on the ground of the alleged mental incapacity of the person who executed the same, such person must be so deprived of his mental faculties as to be wholly unable to understand or comprehend the nature of the transaction."

8. **Addition of Lactalbumin to Modified Cow's Milk.**—E. M. Sill concludes from his experience that the addition of powdered lactalbumin to modified cow's milk has a great field of usefulness, especially for those infants that are ill nourished or under weight for their age, and that do not seem to be making satisfactory gains. This soluble albumin seems to supply that ingredient which is not present in the diluted cow's milk in sufficient quantities to produce a healthy and rapid growth.

Journal of the American Medical Association.

May 25, 1912.

1. Operative Treatment of Fractures. Report of Fifty-Five Cases in Which Lane Bone Plates and Screws Were Employed. W. O'N. Sherman.
2. A Case of Asthenobulbospinal Paralysis (Myasthenia gravis). A. McL. Hamilton.
3. "Gas on the Stomach." T. W. Grayson.
4. Gonorrhea in Girls: Treatment of Three Hundred Cases. L. Morrow and O. Brideman.
5. Abdominal Pain as an Initial Symptom in Typhoid, with Some Statistics on Its Causation. H. S. Carter.
6. New Occluding Ureteral Catheter and Cystoscopes for Functional Renal Tests. E. Garceau.
7. Medicine as Depicted in English Literature Before the Eighteenth Century. M. Frank.
8. The Atrophy of Muscle and Bone Resulting from Joint-Disease, Injury and Fixation. R. W. Lovett.
9. A Simple Bleeding-Tube for Obtaining Specimens for the Wassermann Reaction. A. Keidel.
10. End-Results of Sixty-Six Platings. Remarks on the Treatment of Fracture of the Long Pipe Bones. E. A. Bidlee.
11. A Rare Case of Lymphatic Leucemia. C. E. Holzer.

1. **Operative Treatment of Fractures.**—W. O'N. Sherman concludes that fractures of long bones should be treated by the open method and the bones plated, if it is found that reasonably accurate approximation cannot be secured by splints, extension, and other mechanical appliances. There is no evidence to justify the assertion that the presence of a foreign body is the exciting cause of rarefying osteitis. There would be fewer cases of nonunion if the faulty approximation were early recognized and corrected. It is necessary to have the proper operating equipment and to exercise a most rigid technique. The

periosteum should be preserved and the tissues handled with delicacy. The operation should be done quickly; thoroughness, however, should not be sacrificed for speed. The uncertainty of continuous approximation during convalescence, caused by restlessness, delirious patients, or accidents, is obviated by the use of plates. It will be found necessary to remove the plates and screws in the majority of the compound cases, the plate causing sufficient irritation to allow of the persistence of a small sinus.

2. **Myasthenia Gravis.**—V. McL. Hamilton reports a case of the asthenobulbospinal type of this disease occurring in a girl who was first seen at the age of fourteen, when the disease had existed for two years. There was a general weakness shown in the performance of every voluntary act, mostly on the right side; the tongue was involved and the speech was ataxic and clumsy. Thyroid extract was first given with poor results, and then, following the views of Mandelbaum and Celler as to the thymic origin of the disease, the patient was given 5 grams of thymus extract thrice daily, with apparent immediate improvement, which has continued until the present time, eleven years afterward. The author is aware of no other case that has survived as long as the one he reports.

3. **Eructations of Gas from the Stomach.**—T. W. Grayson states that a slight eructation of air after meals is perfectly normal. True fermentation may be present in stasis, but this is comparatively rare. It is the unusual accumulation instead of the excessive production of gas in the stomach which gives rise to the annoying symptom commonly called "gas on the stomach." When this condition annoys a patient he is usually nervous and has too much acid in the gastric contents. One should then give him alkalies, a proper diet, and general treatment. Disease of neighboring organs may cause a feeling of fulness wrongly interpreted as "gas on the stomach."

4. **Gonorrhea in Girls.**—L. Morrow and O. Bridgman recommend the following treatment: (1) For cases in which the speculum can be used, semi-weekly treatments, once with 25 per cent. silver nitrate to the cervix and 10 per cent. to the vagina followed by an application of petrolatum, and once by a 25 per cent. paste of iodoform in glycerin have given the best results. This treatment is not improved by the use of gonococcus vaccine. (2) For little girls and in virgins with an innocent infection, local cleanliness and the use of gonococcus vaccine give the best results. Because of the tendency to recurrence of the infection, however, this is not entirely satisfactory. (3) Vaccine is of the greatest use in cases with joint complications. Here it is almost invaluable.

5. **Abdominal Pain as an Initial Symptom in Typhoid Fever.**—H. S. Carter notes that in a total of 1,815 cases of typhoid occurring between 1897 and 1911 in the Presbyterian Hospital, New York, there were twenty-four cases of acute complicating cholecystitis, and of these four cases were the only ones in which pain was an initial symptom. Adding two cases seen in consultation makes twenty-six in all, and these are analyzed as follows: Eleven were males and thirteen females. Their ages ranged from eleven to sixty-two years. None gave a definite history of previous trouble. Less than a third were severe. In the other twenty-two cases the pain with evidence of gall-bladder involvement appeared from the seventh to the sixty-fifth day of the typhoid fever and, in the average on the nineteenth day, lasting in most cases only a few days. In all, the pain was referred to the region of the gall-bladder and local tenderness existed in practically all. In eleven cases the gall-bladder could be definitely palpated and in all but two of these there was a large and palpable liver. There was jaundice in four cases. Except in some of the severe cases there was little increase of fever and in the majority there was no change in the leucocytosis. In the whole series there were three cases of complicating acute appendicitis, in one of which the abdominal pain from this cause was the initial symptom. In the 1,815 cases of typhoid fever there were twenty-six complicated by intestinal perforation, but in no one of these was the perforation the initial symptom. It is occasionally stated in text-books that such perforation may be the first recognized symptom of typhoid fever. This the author considers true, but of rare occurrence.

8. **Atrophy of Bone and Muscle Resulting from Joint Disease.**—R. W. Lovett reports five cases of bone and muscle atrophy associated with disease or injury of joints. He calls attention to certain points not very often alluded to in the literature. The muscular element in joint injuries has received too scant attention. In some cases of injury to large joints complete recovery does not occur as usual in a few weeks. The joint becomes irritable and painful on use, its circulation is impaired and the tone of the muscles about it is reduced. The bone also may be involved in cases of long duration and the *x*-ray shadow in the spongy portion is not so distinct and may be almost lacking. Very few cases are reported, and the importance of this factor in joint injuries is not sufficiently appreciated. With every sign of synovitis or arthritis there is muscular atrophy, some of which persists in acute cases and continues as a complicating factor in chronic cases. It is one thing to treat synovitis in college athletes and another to treat it in men and women with poor muscles or in middle life. The author would not abandon fixation in acute cases, but wishes to call attention to the inevitable muscular atrophy in any event and its increase through prolonged fixation. He insists on the importance of attention being paid to the after-treatment. In regard to bone atrophy, either alone or complicating other conditions, one should bear it in mind as a competent cause of pain, swelling, stiffness and disability when the *x*-ray shows marked loss of spongy tissue and clear white lines defining the cortex. As to the therapeutics of both conditions, the author states that rough or excessive massage invariably aggravates symptoms and overuse causes symptoms so severe that one is tempted to abandon the treatment. Massage, heat, passive congestion and active exercises in the smallest possible doses, followed by active progressive use of the joint, are the measures most likely to be of use.

The Lancet.

May 18, 1912.

1. Tuberculosis of the Conjunctiva: Its Etiology, Pathology and Diagnosis. J. W. H. Eyre.
2. Myeloid Leucemia—Chronic and Acute. P. N. Panton and H. L. Tidy.
3. The Treatment of Rodent Ulcer. E. R. Morton.
4. Intense Neuralgic Pain in the Arms After Childbirth. A. C. Geddes.
5. Cystitis and Urinary Antiseptics. C. Williams. With a Note on Analyses of Urines for Formaldehyde. W. H. Martindale.
6. The Treatment of Cancer with Selenium. C. E. Walker.
7. Sterile Abscesses Following the Use of Tuberculin. D. Forbes and C. Banks.
8. The Hemo-Renal Index. O. Grunbaum.
9. The Preparation of a Bronchitis Vaccine: a Method of Rapidly Obtaining a Pure Culture from Sputum. W. E. M. Armstrong.
10. Health of Europeans in West Africa. A. E. Horn.

2. **Myeloid Leucemia.**—P. N. Panton and H. L. Tidy state that the average duration of this disease in its chronic form is only fifteen months from the time of coming under observation in the fatal cases. In a small percentage of cases the immediate cause of death may be an intercurrent affection. Death may occur by failure of the erythroblastic function of the marrow, and the presence of severe anemia with large numbers of nucleated red cells in the blood is of grave prognosis. The more usual mode of death would seem to be by exhaustion of the leucoblastic tissues, as evidenced by the decreased production of leucocytes and the immaturity of the type produced. Treatment by arsenic and *x*-rays produces no alteration in the condition, or brings about a remarkable though temporary improvement, or in some cases appears to precipi-

tate the fatal issue. The most interesting blood change observed in the author's cases was the replacement of the typical granular cells by non-granular myeloblasts shortly before death. The myeloblasts are present in the stage of compensation, but in small numbers; they may come to outnumber all the other varieties of cells. The large type of myeloblast can be differentiated by Leishman's stain from other non-granular cells. The highest percentage of this type recorded in the author's series was thirty. In another case the percentage was 05, but a proportion of these cells were either intermediate in size or of the small type. The appearance of myeloblasts in large numbers is of importance, not only because of the grave prognosis associated with their increase, but also from the point of view of the relationship between the two leucemias. The fact that a typical myeoblast can be differentiated from a typical lymphocyte does not negative the view that one cell is derived from the other. The numerous intermediate cells which are found connecting the myeloblast with the polynuclear neutrophile suggest that the latter is derived from the former. The cases described by the authors as acute might have been acute only in their termination. They could obtain no evidence, however, of any prior chronic condition in any of the cases, and their clinical condition was scarcely suggestive of chronic myelemia even in its terminal stages. The absence of marked splenic enlargement in the acute cases suggests a failure of any protective action of the spleen. The leucopenia present in one case, in spite of the overproduction of red marrow, is difficult to account for, and in two cases the type of leucocyte present was remarkable. The condition of "hyalemia" present in two cases almost exhausts the possibilities of leucocytic blood changes, and has an important bearing upon the knowledge of the source and mode of production of this cell.

4. **Neuralgic Pain in the Arms after Childbirth.**—J. C. Geddes reports a case of this condition in a patient aged thirty years. The pain was most intense over the lower part of the deltoid and middle third of the biceps, and was aggravated by standing or by attempting to lift a weight. The diagnosis was that the pain was due to pressure of the fifth cervical nerves against the transverse processes of the fifth cervical vertebra; that this was the result of a descent of the shoulder girdle consequent upon the descent of the ribs; that the ribs descended because they lost the support of the diaphragm which followed the viscera down when they gravitated toward the pelvis after childbirth; and that the viscera descended further than is usual because of the atrophy which was superadded to the inevitable relaxation of the abdominal muscles. The immediate treatment suggested was to force up the diaphragm by allowing the weight of the abdominal viscera to come against it when the head and shoulders were depressed and the pelvis elevated, and then to apply some abdominal support (a folded towel placed inside the ordinary corset was used) before assuming the erect attitude. The ultimate treatmeat was to redevelop the abdominal muscles.

5. **Cystitis and Urinary Antiseptics.**—C. Williams concludes from his investigations on the administration of hexamethylenetetramine that there was no decomposition in either neutral urine or urine acidified with acid sodium phosphate in 10 minutes, but in 20 hours there was evidence of slight formaldehyde formation in urine so acidified. This would indicate that to obtain formaldehyde liberation from hexamethylenetetramine the simultaneous administration of an acid rendering substance is necessary, and *per contra* the compound should not be given with drugs in sufficient quantity to produce an alkaline urine.

6. **Treatment of Cancer with Selenium.**—C. E. Walker records the results of his experiments with selenium at the Glasgow Cancer Hospital laboratory. The first preparation tried was colloidal selenium and eosin, which apparently form a colloidal complex. These experiments are of particular interest in view of the claims now made for colloidal selenium. It has been suggested that chemically prepared colloidal selenium is not in sufficiently finely divided particles, and that resort has been had to the electric arc, as is the case in the preparation of the colloidal forms of the metals. The author notes that it is difficult to see how this has been possible as selenium is a very effective non-conductor. Its conductivity is increased, or rather its non-conductivity is decreased, by a very strong light, but the production of an electric arc in distilled water between points of selenium would appear to be so difficult as to be almost impracticable. The satisfactory preparation of selenium for therapeutical purposes in the colloidal form by chemical methods is sufficiently difficult. It is easy enough to arrive at the colloidal condition, but the difficulty is to obtain a permanent preparation. The colloidal selenium tends, upon the slightest provocation, to precipitate in the red amorphous form or to turn into the dioxide (SeO_2). With experiments extending over two months sufficient facts were added to those already available to obtain a permanent preparation. The statement that the particles are not sufficiently small except when the electrical method is resorted to, if any electrical method has been discovered, does not apply to the preparations made in the author's laboratory, and the colloid is just as active at the end of six weeks as on the day it was made, and is not precipitating. Eosin is supposed to be an electrolyte to colloidal selenium. Practically the eosin used by the author has not so acted. Mice and rats with grafted malignant growths of various sizes have been absolutely unaffected by intravenous injections of this preparation except that they have turned pink within 30 seconds or a minute of the injection, and their excreta have been pink for two or three days. Wassermann's preparation was highly toxic. The colloidal selenium, with or without eosin, is non-toxic. The author has injected 0.25 c.c. into mice and 1 c.c. into rats without any ill effects. It is pointed out in this connection that 0.25 c.c. in a mouse corresponds roughly to 700 c.c. in a man. No effect whatever was produced upon the tumors in either mice or rats. The author has found that colloidal selenium is not toxic to monkeys, and the French reports state that it is not toxic to man.

7. **Sterile Abscesses Following Use of Tuberculin.**—D. Forbes and C. Banks analyze a series of 13 cases in which cold abscesses developed after the use of large doses of tuberculin. Twelve of the patients had received from 1/20 to 1/5 of a milligram of tuberculin at the abscess site. The thirteenth patient had received only 1/50 and 1/40 of a milligram. The abscess developed from two to three weeks after the injection, and seemed in no way to affect the general health. The contents of the abscess showed no other organism than the tubercle bacillus. The cause by the abscess formation was not the presence of living tubercle bacilli, but the irritation due to the presence of dead tubercle bacilli.

British Medical Journal.

May 18, 1912.

1. A Scheme for the Teaching of Anatomy. A. C. Geddes.
2. An Address on Pyelonephritis of Pregnancy. H. R. Andrews.
3. The Etiology of the Excessive Vomiting of Pregnancy. J. H. Martin.
4. Fever in the Newborn. E. Cautley.
5. Functional Derangement of the Liver. W. Bain.
6. Congenital Absence of the Colon. J. Morton.
7. A Simple Hemoglobinized Saline Culture Medium for the Growth of Leishmania and Allied Protozoa. R. Row.
8. Notes on Four Cesarean Sections. G. F. Aldous.
9. The Mechanism and Treatment of Shock. H. T. Gray and L. Parsons.

2. **Pyelonephritis of Pregnancy.**—H. R. Andrews states that the symptoms of this condition usually begin during the second half of pregnancy, and vary greatly in severity. In some cases there is only aching in the lumbar

regions with no constitutional disturbance. Cases in which there are no acute symptoms are comparatively common. If they are unrecognized, and therefore untreated, the patient undergoes a considerable amount of pain and discomfort, which might be relieved fairly easily. The symptoms in more severe cases are pain in the loins and lower abdomen, sometimes very severe, with acute exacerbations, suggesting renal colic, and accompanied by vomiting. The pain may be so severe that the patient's sleep is interfered with to a serious extent. It may be impossible to say whether the affected kidney is enlarged or not, the presence of the pregnant uterus rendering palpation of the kidney regions difficult, but tenderness of one or both kidneys and tenderness along the course of the ureters is found on pressure. In some cases there is little impairment of general health and nutrition; in others the patient is obviously very ill. The temperature is usually raised, and there may be a high degree of pyrexia, usually with oscillations, and rigors may occur. The pulse rate is, of course, rapid when there is much pyrexia. On vaginal examination the intrapelvic portion of the ureter may be found to be tender, and if there is cystitis the base of the bladder is tender to the touch. Micturition may be frequent and painful. The urine is usually acid, and on superficial examination, even when severe symptoms are present, it may show little that is abnormal. After it has been allowed to stand for some time, however, or after centrifugalization, a deposit of pus is found. Sometimes there is a very large amount of pus, but pus may be almost or entirely absent on a single examination. It is possible that the occasional absence of pus may be accounted for by temporary blocking of the ureter on the affected side. Bacteriological examination reveals the presence of microorganisms, most commonly the *Bacillus coli communis* or a "coliform" bacillus. Recurrence in subsequent pregnancies is common.

3. **Etiology of Excessive Vomiting of Pregnancy.**—J. H. Martin states that the various explanations of the causes of excessive vomiting during pregnancy may be classified under three main groups: (1) toxemic, (2) reflex, and (3) neurotic. The theory of the toxemic origin of the hyperemesis is the most rational one. Dirmoser believes that the excessive vomiting is a reflex irritation of the central nervous system, commencing in the internal sexual organs, and through the secretory and motor nerves of the sympathetic, leading to biochemical changes in the digestive tract with the increased production and absorption of toxins. Cazeaux lays stress on the severe constipation associated with excessive vomiting. Williams emphasizes the importance of the high ammonia coefficient of the urine. Behm refers the autointoxication to syncytiolysin. Freund believes the source of the toxins is in the periphery of the ovum or corpus luteum or placenta. As regards the reflex causes it is stated that many observers have noted that displacement of the uterus is a frequent cause of hematemesis gravidarum. Other causes are hydramnios and twins; rigidity, deep tears, and erosions of the cervix; and enlargement and congestion of the inferior turbinate bones. The neurotic cause of the excessive vomiting is frequently hysteria.

4. **Fever in the Newborn.**—E. Cautley states that roughly speaking sepsis is the cause of quite 50 per cent. of the cases of fever in the newborn. About 25 per cent. can be ascribed to gastroenteric infection, but it is probable that many of these are really septic in origin and the alimentary affection is purely symptomatic. Various causes account for the remaining cases. One may leave out of consideration the occurrence of fever transmitted by the mother while suffering from some specific fever, malaria, or variety of sepsis. The malarial parasite may be present in the blood at birth, yet not cause fever until some days or weeks have elapsed. The sources of septic infection are numerous. It may be antenatal, maternal, or congenital; natal, due to infected liquor amnii or vaginal secretions; or postnatal, due to dirty hands, scissors, ligatures, powders, dressings, bath water, sponges, flannels, etc. Often it is impossible to ascertain the portal or source of infection. Sepsis may occur, although apparently the strictest precautions have been taken throughout. Occasionally the evidence of infection by the mouth is fairly conclusive. Clinically there are various types of septic infection. There may be no symptoms except sudden collapse, rapid fall of temperature, and death—a type most common in premature infants. Often it simulates acute gastroenteritis, with vomiting, diarrhea, and high fever. In other cases, cerebral and meningeal symptoms or pneumonic conditions predominate. Or there is severe toxemia, with fever, grayish pallor, and hemorrhages. Hemorrhage after the second day of life is almost always septic. Many cases of hematemesis, melena, and adrenal apoplexy are of this type. Tetanus, hemorrhagic disease, and the affections named after Winckel and Buhl are also septic in origin. The chief affections of the navel giving rise to fever are omphalitis; gangrenous lymphangitis, probably a variety of erysipelas; umbilical ulcer, subnavel abscess, and gangrene; and erysipelas, usually localized at first and insidious in onset, but generally fatal. In these affections the fever begins at the end of the first or beginning of the second week of life, sometimes later.

Berliner klinische Wochenschrift

May 20, 1912.

Can the Blood Stream Be Reversed?—Rothmann sums up the conclusions to date from the experimental work in this field: When the veins are well provided with valves this reversal is impossible, for the resistance is too great to be overcome. In localities where the veins are valveless, and where one vein alone drains the area it is possible to reverse the circulation. The injection fluid, however, only partly escapes by the arteries, the balance appearing in the tissues as edema. If the veins of the locality are without valves, and several veins drain the area, the blood stream can in part be reversed if the fluid is thrown into the single veins. Some of the fluid finds its way out by the arteries but most of it escapes into the other veins by the anastomoses. The authors made several sets of experiments in which arteries and veins were united by anastomoses or cannulas. The mechanical conditions alone were tested, the animals having been bled and artificial fluids infused into the veins. The crucial part of the experiment was the study of the capillary circulation under the microscope.

Errors in Diagnosis of Malignancy.—Fabian relates three cases styled by him "interesting." The first patient, a man aged 44, presented the picture of cancer of the hepatic flexure of the colon. Laparotomy revealed a mass of adherent intestines in which the kidney appeared to be engaged. The liver was studded with metastatic nodules. The case was pronounced inoperable and the wound was closed. The patient even improved at first, but within a month the symptoms reappeared. Patient was lost to view, but five years later reappeared as a dispensary patient. The mass was still present in the right hypochondrium. It was now evident that the lesion had either been syphilitic or tuberculous. Positive Wassermann. Patient made a marvelous recovery on KI. The second case was diagnosticated cancer of the gall-bladder, pronounced inoperable after trial laparotomy. About six years later the patient again appeared without sign of tumor. What she had actually suffered from it was impossible to tell. Syphilis could be excluded, and as the patient when last seen was perfectly well, other destructive processes could also be left out of account. The third case was one of simulation of malignancy by tertiary syphilis.

Ovarian Grafting at the Artificial Climacteric.—En-

gel refers to the conflicting character of some of the clinical results. The difficulty of determining whether ten days or follicular tissue has really healed in must first be overcome before we can pronounce on the therapeutic efficacy of the procedure. A young woman who had been castrated for local causes developed within two months the picture of acute ovarian insufficiency. Ordinary treatment having proved unsatisfactory laparotomy was performed for the purpose of remedying any imperfections resulting from the operation. Scars were excised, adhesions resected, and the uterus freed from a ventrofixation. No benefit resulted. The patient's psyche now began to show improvement. The healthy ovary from a myoma castration was then transplanted into the patient's vagina. It was first fixed to the cervix and then buried beneath the vaginal mucosa. During the next few months the patient steadily improved up to complete recovery. Although the ovary was purposely grafted in a locality where it could readily be studied the author neglects to mention its state at the completion of the cure.

Münchener medizinische Wochenschrift.

May 14, 1912.

Artificial Impregnation.—Doderlein writes in part as a commentary on Rohleder's recently published monograph on this subject. The percentage of sterile women appears to range from 8 to something over 20, according to the material studied. In recent years our knowledge of the causes of sterility has increased notably. In a large proportion of cases the causes can be determined and perhaps corrected, but there is a residue in which no cause is to be found in either husband or wife. It is this so-called essential or functional sterility in which artificial impregnation appears to be indicated. We know that after years of sterile wedlock these women may suddenly conceive and this appears to justify anticipating this possible climax, especially as animal experiment gives positive results which are suggestive for human work. The author, like Rohleder, has one personal case to his credit. His patient, aged 24, had been sterile six years and had undergone the usual treatment of the cervix. The husband's spermatozoa were normally active. Some of the latter were injected into the uterus just before menstruation. The next period was normal, but after that the menses ceased. There had been no coitus meanwhile. The woman is now four months pregnant. This is the sixth attempt of the author in this field. The technique is simple. With everything in readiness coitus is performed with a condom, the semen transferred to a sterile dish and a little of it at once thrown into the uterus with a Braun's syringe. In theory great care should be employed throughout to secure asepsis, for a case is on record in which as a probable result of gonorrheal spermatocystitis the wife was infected through the intrauterine exposure. As a matter of fact, however, accidents of this sort must be extremely infrequent and too much asepsis would be felt by the spermatozoa, for example should the syringe be first boiled in caustic soda. Care must be taken not to inject too much semen lest it make its way from the uterus to the tubes and peritoneal cavity, there perhaps to set up ectopic pregnancy.

Annular Scotoma from Sun Blindness.—Jess writes of the peculiar forms of sun blindness so called due to watching solar eclipses. The actual lesion of the macula is well known, as it appears under the ophthalmoscope as a reddish-yellow spot with a red areola. This lesion is virtually a burn, caused doubtless by the action of the lens in focusing the solar light upon the retina. Subjectively a central scotoma is caused, which varies greatly with the individual. There are associated with it as a rule more or less clouded vision and diminished acuteness. At the recent eclipse visible in Germany over 100 cases of sun blindness are known to have occurred in Dresden. Careful testing shows that the scotoma is really annular. It is evident that if these retinal burns are sufficiently shallow complete restitution occurs.

Deutsche medizinische Wochenschrift.

May 16, 1912.

Lesions of the Eye from Watching a Solar Eclipse.—Feilchenfeld states that the eclipse of April 17 was viewed in Berlin through a perfectly cloudless sky and at a very convenient period of the day. These two factors conspired to make the event a source of some danger to the beholders' eyes. These eclipses occur so rarely that one generation does not profit by the experience of its predecessors. The last event of the sort took place in 1887, and as the day was cloudy and the eclipse occurred soon after sunrise on a long summer day not many people saw it, and but few cases of ocular trauma are known to have occurred. On the present occasion the public was warned as usual by the daily press to protect the eyes. It was advised that the eclipse be viewed through a minute opening in a piece of cardboard. This counsel is evidently very unwise, for although much light is shut out by following it, the macula is exposed especially to a sharp pencil of rays which pass through the paper. Immediately after the event colored vision was common, with scotomata and unpleasant subjective sensations. But in the majority of cases all such symptoms vanished in a few hours. In a large number of cases the effects persisted and professional advice was sought. All the local eye specialists are believed to have seen many cases. The author reports a number of illustrative cases. Patient No. 1 watched the eclipse with the naked eye and had a scotoma of the right eye for two days, but rapidly recovered. A second patient also watched the eclipse with naked eyes and was bothered for a time by dark specks before the eyes and blurring of vision. After the symptoms had become aggravated for a day he began to improve. The third patient watched the eclipse for twenty minutes with smoked blue glasses. She saw red spots and had cloudy vision. Her symptoms became worse day by day and the ophthalmoscope showed on the fifth day lesions in both maculæ. These slowly resolved, the vision becoming normal. A fourth patient saw the eclipse with naked eyes. By the sixth day she had a left central scotoma of 5 mm. diameter on the perimeter, due entirely to a lesion which could be seen on the macula. This slowly underwent resolution. The author saw no cases of permanent injury resulting from exposure of the eyes to the intense light of the sun.

Appendicitis in a Case of Transposed Viscera.—Muhsam calls attention to the fact that on June 15, 1911, he reported a case of this association before the Hufeland Society of Berlin. That it escaped the attention of the profession appears from the fact that Hollenbach some time afterward reported a personal case with no allusion to the author's or indeed to any previous case. At least 200 cases of transposed viscera are upon record, but up to a few years ago but one case of associated appendicitis was mentioned in standard authors. But since two cases have now been reported in neighboring localities and at nearly the same period it is possible that the condition is by no means as rare as has been believed. The author operated on a young man for acute appendicitis, the diagnosis of inverted viscera having previously been made. In Hollenbach's case on the contrary the condition in the female patient had not been surmised by several abdominal surgeons who had done in succession an operation for a left floating kidney, a ventrofixation, and a right-sided ovariotomy. After appendicitis had developed an *x*-ray readily revealed the transposition.

Insurance Medicine.

The Acceptability of Applicants with a History of Operations.—Flesch says that at one time the history of an operation served as sufficient cause for declining an applicant. This was because at that time operations were performed only as procedures of last resort, when the patient had been between life and death for many days, and his recovery meant good fortune more than the result of operation. It could therefore be concluded that the patient remained very weakened by the preceding illness. Things have changed nowadays, yet a history of an operation must be carefully considered if given by an applicant.

Such postoperative cases may be considered under several headings. First are applicants who must be declined however successful was the operation. These are the applicants with malignant disease, who have recently been operated upon, whether the neoplasm was a cancer of the breast, of the uterus, or of the intestines. Persons in whom one kidney has been removed for tuberculosis must be classified with those suffering from malignant disease.

The second group includes persons operated upon for affections that frequently are only a part of a general predisposition or "morbid diathesis." Here belong caries of bones, syphilitic joint diseases, local extrapulmonary tuberculosis, extirpation of lymphnodes, cholecystotomy and cystectomy, bladder and kidney stones, gastroenterostomy for gastric ulcer, gastric dilatation, etc. Caries of bone and lymphnode tuberculosis are usually diseases of childhood and youth, and applicants with operative history for these affections are acceptable if some ten years have gone by without new foci of disease and without signs of general organic weakness. Tuberculosis of the testicles should be especially carefully dealt with. Mere cholecystotomy with drainage for gallstones does not insure against recurrence of stones. Cholecystectomy should, of courses, be judged more favorably. If stones have been removed from the genitourinary system, careful examination of the urine should precede insurance: excess in uric acid or in phosphates should disqualify the applicant. After gastroenterostomy with a favorable result, marked by cessation of symptoms of gastric ulcer, gain in weight, etc., an applicant could be recommended for insurance if three years have elapsed. If dilatation with marked motor insufficiency existed the application should be denied, as "restitutio ad integrum" may be considered impossible in such cases, however good may have been the functional result. Patients who have been operated upon for abdominal symptoms, nothing more than adhesions having been found, should be handled with suspicion, for the true cause of the symptoms may turn up later and prove much more serious.

Appendectomy resulting in a good scar without tenderness in the appendix region should result in acceptance of the applicant. If little change has been found in an appendix where several abdominal symptoms existed, a postponement is advisable; it may be that another cause for the symptoms has been overlooked. Mastoid operations should not stand in the way of insuring an applicant. Radical operations for hernia should be judged similarly. Removal of benign thyroid tumors should be judged leniently; patients operated upon for exophthalmic goiter, on the other hand, should usually be refused.

Operations in the female genital sphere, as a rule, form no obstacle to insurance; indeed, hysterectomy or double oophorectomy, will save the dangers accompanying possible pregnancy in a female applicant. Operations for empyemata of the sinuses about the nose and face should not be counted against an applicant. In general it must be said that division of applicants into the three groups mentioned above is advantageous, yet each applicant must likewise be individually judged.—*Zeitschrift für Versicherungs Medizin*, March, 1912.

Loss of One Eye in Reference to Insurance.—Hilbert concludes that persons who have lost one eye through disease or accident, in whom the stump of the eye has been satisfactorily removed, and whose employment does not contain any conditions dangerous to the other eye, may be insured just as healthy persons and at the same rates. If the stump has not been removed insurance should be declined until this has been done. If the occupation is a hazardous one for the remaining eye, a special clause limiting liability in case of loss of that eye should be included. Applicants who have lost one eye because of a non-malignant growth should likewise be insured at the ordinary rates; on the other hand, if giving a history of melanosarcoma, glioma, or simple sarcoma of the eye or neighboring structures, they should be declined or insured for a short term only.—*Wochenschrift für Therapie und Hygiene des Auges*, XV, 18.

Responsibility in Industrial Accidents.—L. Berard states that accidents resulting from labor of various kinds may be caused through the fault of the employer or of the workman; by accidental circumstances; by catastrophe, such as lightning and earthquakes; and by an unknown factor. It is calculated that one-fourth of all accidents are referable to the employer, another fourth to the laborer himself, and the other half to the three remaining causes. An accident is defined as something that occurs suddenly and unexpectedly. Thus industrial poisoning does not come under the head of accident, since it occurs slowly and gradually. Another important question is, what part the previous health and diseases of the individual take in the liability for damages. This is a most important question and one that is not easy to decide, but it should be studied by physicians in order that they may properly assist the courts in determining the responsibility for accidents and the amount of damage to be paid for injury. About 25 per cent. of all laborers have hereditary or acquired syphilis; the victims of alcoholism are many, and tuberculosis is another important factor in accidental injury. The author classifies accidents in relation to disease as follows: First, accidents determined by a previous condition of disease, but resulting directly from circumstances of labor, as when an epileptic falls and is injured; second, accidents aggravated by a previous disease, such as a fracture in a tuberculous subject; third, accidents which aggravate a preexisting disease, such as epithelioma infected through an accident; fourth, the results of an accident aggravated by a previous diathesis, as gangrene from injury in a diabetic subject; fifth, accidents aggravated by a previous accident resulting in some disability, as when a new cicatrix is opened afresh after injury. In all of these cases the employer should be considered entirely responsible, since the accident was the cause of the development of the disease which previously existed.—*Le Bulletin Médical*, February 7, 1912.

Book Reviews.

GESAMMELTE WERKE VON ROBERT KOCH. Unter Mitwirkung von Prof. Dr. G. GAFFKY, Geh. Ober-Med.-Rat in Berlin, und PROF. DR. F. PEUCH, General-Ober-Arzt a. D. in Berlin. Herausgegeben von Prof. Dr. J. SCHWALBE, Geh. San.-Rat in Berlin. Drei Bände mit 104 Textabbildungen, 43 Tafeln, dem Protrat Robert Kochs und der Abbildung seiner Grabstätte im Institut für Infektionskrankheiten zu Berlin. Price, 80 marks, bound, 88 marks. Leipzig: Verlag von Georg Thieme, 1912.

IN these days of rapid advances in medicine it is not every man's works, however valuable they may have been when published, that are worth preserving or rather republishing in permanent form. Many of them may be of interest in an historical sense and may serve as valuable documents for the student of medical history, but the busy practitioner could ill afford the time for rereading them, since their teaching, modified or simplified as the case may be, is embodied in the current literature. But the case is different with the outgivings of a genius; the creations of his brain are imperishable; a seer, far in advance of his time, his outgivings are ever of contemporaneous interest as well as historically valuable. It is therefore gladly that we welcome this publication of the celebrated works of Robert Koch and we can but be grateful to the editors of these three ponderous volumes for their piety in collecting from all sources, often rescuing from the obscurity of comparatively unknown publications and disinterring from volumes of society transactions, all the products of this master's ready pen. Many of these articles—addresses, brief essays, and discussions of various subjects, preserved only in manuscript or privately printed reports—are here published for the first time in a collected edition.

The writings of Robert Koch represent practically the history of modern bacteriology, so closely has the name of this indefatigable worker been identified with the progress of this science from its very beginnings—from the investigation of the etiology of anthrax to that of the origin of sleeping sickness. His fame, however, would have been no less than it is if his achievements had ceased with the discovery of the tubercle bacillus. In collecting in one edition the numerous and varied writings of Robert Koch the editors have acquitted a task of no small magnitude, and have rendered an immeasurable service to all students of modern bacteriology and hygiene. Unlike many medical writings, the works of Robert Koch will ever remain a source of inspiration and profit to all students of disease, whether in its individual aspects or in its larger rôle as a national or international scourge. It is pointed out by Schwalbe in the preface to this edition that Koch's writings were comparatively few, reaching barely one hundred. He wrote with few exceptions only when he had something new to convey. He wrote few monographs and never published a textbook. His epoch-making investigations on tuberculin were responsible for only six articles on the various phases of this subject.

The first volume contains the series of brilliant articles that represent the work of the pioneer in modern bacteriology: the investigations on the etiology of anthrax; the methods of studying bacteria; the relation of bacteria to infectious diseases; the rôle of bacteria in wound infections; recurrent fever and the spirochetes; anthrax vaccination; methods of studying bacteria in the soil, air, and water; disinfection; and the series of articles on tuberculosis and the tubercle bacillus. These latter include the following: The etiology of tuberculosis; the campaign against tuberculosis; the transmissibility of bovine tuberculosis to man; the immunization of cattle against tuberculosis; the Nobel lecture on the modern status of the antituberculosis movement; preventive measures against tuberculosis; the relation between human and bovine tuberculosis; the epidemiology of tuberculosis; bacteriological research; remedies for tuberculosis; the newer tuberculin preparations; the treatment of pulmonary tuberculosis with tuberculin; and the agglutination of the tubercle bacilli and its practical value.

The first part of the second volume contains the important articles on cholera and its epidemiology and diagnosis. These articles include the reports on the expedition sent in 1883 to study cholera in Egypt and India; the Berlin conference on cholera; the cholera organisms; modern cholera diagnosis; water filtration and cholera; cholera in Germany during 1902 and 1903; and the means of combating cholera. There are also the valuable articles on the following subjects: The prevention of infectious diseases, particularly in armies; the campaign against typhus; malaria in East Africa and blackwater fever; medical observations in the tropics; the results of the expeditions to Italy for the study of malaria, the development of the material parasite; and the fight against malaria. Then follow the more recent studies on sleeping sickness as follows: The trypanosome diseases, the results of the German expedition to East Africa in the study of sleeping sickness, anthropological studies undertaken during the expedition to Victoria-Nyanza; the bubonic plague in India and Africa; and the spread of bubonic plague. The second part of the second volume contains the following articles: Frambesia tropica and tinea imbricata; travel reports on rinderpest, tropical malaria, etc.; the immunization of cattle to surra; Rhodesian redwater fever or African coast fever; and vaccination against horsesickness. In addition to these there are a large number of miscellaneous articles, addresses, and unpublished reports and discourses before various assemblies. These latter are too numerous to enumerate in detail. An excellent portrait of Koch forms the frontispiece of the first volume, while that of the second volume shows Koch's epitaph in the Koch-Mausoleum of the Institute for Infectious Diseases in Berlin. The illustrations and colored plates accompanying the text are in keeping with the monumental character of this work, which in every respect represents the best of the publisher's art.

DIE ZUCKERKRANKHEIT: IHRE URSACHEN, WESEN, UND BEKÄMPFUNG. Gemeinverständlich dargestellt von Dr. med. A. SÖPP. Price, marks 1.50. Würzburg: Curt Kabitzsch, 1912.

DIABETES is so essentially a disease that requires skilled medical supervision for its proper management that the wisdom of placing in the patient's hands a popular treatise that is likely to lead to efforts at self-treatment is more than questionable. Aside from its object, however, of instructing the laity there is little to criticise about the present pamphlet of seventy pages. It is clearly written, in easily understandable language, and gives useful warnings in regard to the so-called carbohydrate-free diabetic foods and the various nostrums advertised as remedies. Serviceable diet lists and tables of food values are included.

DUODENAL ULCER. By B. G. A. MOYNIHAN, M.S. (Lond.), F.R.C.S. (Leeds). Second Edition, Enlarged. Illustrated. Price $5.00. Philadelphia and London: W. B. Saunders Company, 1912.

DR. MOYNIHAN'S epoch-making book on duodenal ulcer now appears in an enlarged edition less than two years after its first appearance. Its contents have become part and parcel of advanced medical and surgical knowledge of to-day, and the second edition, therefore, requires but brief notice. It contains, among new matter, extended discussion of the differential diagnosis of duodenal ulcer and the result of *x*-ray examinations of the stomach after the administration of bismuth.

Moynihan's work consists of two parts, the first of eleven chapters giving the etiology, symptomatology, and treatment of duodenal ulcer; the second contains two appendices giving a detailed statement of 305 cases of duodenal ulcer observed and operated upon by the author since 1900. This wealth of material shows that no surgeon or internist who claims to be progressive can afford to be without this monograph on the subject.

TEXTBOOK OF OPHTHALMOLOGY IN THE FORM OF CLINICAL LECTURES. By Dr. PAUL ROEMER, Professor of Ophthalmology at Greifswald. Translated by Dr. MATTHIAS LANCKTON FOSTER, Member of the American Ophthalmological Society; Member of the American Academy of Ophthalmology and Oto-Laryngology. With 180 illustrations in the text and 13 colored plates. Volume I. Price $2.50. New York: Rebman Company, 1912.

THE translation of Roemer's textbook has been very well done by Dr. Foster. The author endeavors to cover the subject of clinical ophthalmology by a series of lectures didactic and clinical in nature. The text, written in the style of a monologue, is informal and pleasing, and the meaning that it is intended to convey is easily grasped. The arrangement is systematic; the illustrations well chosen and sufficient in number. The colored plates are excellent. Refraction and conditions of the ocular muscles are not considered. There is no bibliography. In the presentation the author displays a profound, up-to-date knowledge of the subject. There is much of the personality of the writer in evidence. However, this does not detract from the work. The volume, which is one of 275 pages, is heartily recommended for perusal and study by all who are practising ophthalmology.

THE TREATMENT OF SHORT SIGHT. By Dr. J. HIRSCHBERG, Geh. Med. Rat in Berlin. Translated by G. LINDSAY JOHNSON, M.D., F.R.C.S. With twelve illustrations. Price $1.25. New York: Rebman Company, 1912.

PROFESSOR HIRSCHBERG'S Essay on Short Sight forms a small volume of 123 pages. It is a rather comprehensive statement of his views on the subject founded on "an uninterrupted ophthalmic practice extending over several decades." Professor Hirschberg's well-known exceptional powers of observation and his erudition entitle his writings to careful consideration. In the monograph the history of myopia is given; then follows a description of the various forms of myopia; its correction by the use of glasses; the anatomical conditions met with; the operative and non-operative treatment, including removal of the crystalline lens in high degrees, and of that frequent complication, namely, detachment of the retina. The essay merits careful perusal by all who are interested in the subject.

DIAGNOSE UND THERAPIE DER MAGEN- UND DARMKRANKHEITEN. Anhang: Die chemische und mikroskopische Untersuchung des Mageninhaltes und der Fæces. Von PRIV.-DOZ. DR. WALTER ZWEIG, Abteilungsvorstand am Kaiser-Franz-Josef-Ambulatorium in Wien. Zweite, vermehrte Auflage. Mit 35 textabbildungen und 1 farbigen tafel. New York: Rebman Company; Berlin: Urban & Schwarzenberg, 1912.

ZWEIG has furnished us with a new book on the diagnosis and therapy of diseases of the stomach and the intestines. Respecting the treatment of hyperacidity he says that Rosenheim and Ehrmann introduced a soluble aluminum silicate called neutralon. Its effect develops through the gradual splitting up of aluminum silicate by the muriatic acid secreted into silicic acid and aluminum chloride, which is astringent and disinfectant. The amount of HCl neutralized by neutralon in the course of a few hours can be considerable, as a teaspoonful of the powder is able to neutralize 400 c.c. of a 0.2 per cent. HCl solution during the course of a few hours at body temperature. The author has used neutralon in many hundreds of cases and has been very well satisfied with its effect. It is best to give a teaspoonful t.i.d. in a wineglassful of water ½ hour before meals. In severe cases 0.02 g. ext. belladonna may be added. Referring to the point of tenderness in ulcer Zweig maintains that we must consider whether this pain is caused by gastric ulcer, gallstones, or gastroptosis. In favor of ulcer: Pain after taking of food, more intense after solid than liquid substances, stronger in the upright than recumbent position, pain lasting for weeks, improvement after milk diet, occult hemorrhages. In favor of cholelithiasis: Occurrence of pain in attacks with intervals free from pain; pain radiating to right, liver large, sometimes jaundice, pain independent of quality of food, pain not influenced by lying down. In favor of gastroptosis: Not dependent on quality of food, cessation of pain on lying down and active support of abdomen, pulsation of aorta, other signs of intestinal neurosis, lack of occult hemorrhages.

When may we consider an ulcer to have been healed? This question we can only rarely answer with certainty. We have no single symptom which will indicate to us unfailingly whether the ulcer has healed, and we are never able to judge of the firmness of the scar tissue. We have only two criteria in reference to the healing of the ulcer. The one is complete cessation of pain and the other, examination for occult blood in the stool with meat-free diet, as recommended by Boas. As long as there are pains after meals and as long as blood can be demonstrated in the stool we cannot consider the ulcer healed. The finding of occult blood is in these cases more important than the pain. The ulcer may be entirely healed and yet a certain tenderness persist which can be referred to adhesions or hyperacidity. Blood in the stool, however, proves that the ulcer is not yet entirely healed. In such a case another period of exclusive milk diet must be inaugurated and the patient kept under observation until repeated stool examinations have proved that there is no longer any occult blood. Frequently several ulcer cures will be necessary.

Zweig's book may be recommended to physicians interested in gastroenterology.

DIE CHRONISCHE ENTZÜNDUNG DES BLINDDARMANHANGES (Epityphlitis Chronica). (Chronic Inflammations of the Appendix.) By Dr. FRITZ COLLEY. Price, 6 marks. Berlin: August Hirschwald, 1912.

IT is the writer's aim to present in this manual a résumé of the numerous studies on the subject of chronic appendicitis, in which he discusses principally the pathology, symptomology, and diagnosis, not giving more than a cursory attention to the operative technique, as he considers that this varies to such an extent with the individual surgeon that a general account must be unsatisfactory. In this book of over 200 pages the text is made up largely of didactic discussions, from which it would appear that the contentions between the internists and the surgeons in this field have not been adjusted. Colley, in fact, makes it appear as if the views of these two classes of observers were further apart at the present time than ever before and that the surgeons seem to have developed the subject to the exclusion of its treatment by the medical men. Colley believes that the future will demonstrate that the pathogenesis of so-called chronic appendicitis has resolved itself into a problem dependent on obstipation and that to the appendix has been falsely attributed the reason for this condition. In view of the existing uncertainty regarding the precise pathology of the acute as well as chronic varieties of appendicitis, the author considers it dangerous to depend on a spontaneous cure of the same and regards surgical interference as invariably indicated. The book may be regarded as a valuable contribution to the literature on this important subject.

FOOD FOR THE INVALID AND THE CONVALESCENT. By WINIFRED STUART GIBBS, Dietitian for the New York Association for Improving the Condition of the Poor; Teacher of Economic Cookery, Teachers' College, Columbia University; Author of "Lessons in the Proper Feeding of the Family." Price, 75 cents net. New York: The Macmillan Company, 1912.

SO capricious is the appetite of many invalids that a fresh viewpoint on diet for invalids and convalescents is always welcome. The present little volume contains many helpful hints. How to Buy, How to Eat, and How to Cook are among the problems considered. The preparation of the various classes of foods next claims the reader's attention while Part II is devoted to special menus and diets. Unfortunately, there is no index—a defect even in the smallest volume of reference.

DIE ZUCKERKRANKHEIT UND IHRE BEHANDLUNG. Von Professor Dr. CARL VON NOORDEN. Vorstand der I medizinischen Universitätsklinik in Wien. Sechste vermehrte und veränderte Auflage. Price 10 marks. Berlin: August Hirschwald, 1912.

THE sixth edition of von Noorden's classical work on diabetes contains about twenty pages more than its predecessor, and comparison of the two volumes shows that the revision has been thorough in nearly all sections of the book. The most important additions, perhaps, relate to the subject of the oatmeal cure—the *modus operandi* of which the author admits is still something of a mystery. Three possibilities suggest themselves: the oatmeal may contain substances that modify in some specific way carbohydrate metabolism in the liver, or the carbohydrate of oatmeal behaves differently in the course of its breaking up in the body from starch of other origin, or the oatmeal has the effect of causing greater efficiency of the renal filter. None of these theories, however, suffices to explain the clinically well demonstrated fact of the utility of the oatmeal cure, which in many instances is extremely great. The very valuable bibliography has been brought up to date, and the index has been considerably changed, though as the latter alteration consists in reducing its size to about one-half it can hardly be considered an improvement.

PHARMACEUTICAL BACTERIOLOGY. WITH SPECIAL REFERENCE TO DISINFECTION AND STERILIZATION. By ALBERT SCHNEIDER, M.D., Ph.D., Professor of Pharmacognosy, Histology and Bacteriology, California College of Pharmacy; Pharmacognosist, U. S. Department of Agriculture. Price $2.00 net. Philadelphia: P. Blakiston's Son & Co., 1912.

AS bacteriology develops and becomes broader in its practical applications, the need arises for special text-books designed for the use of a single profession. This is the first work to appear devoted entirely to pharmaceutical bacteriology. Its aim is to give the pharmacist a fair knowledge of microorganisms in general and sufficient familiarity with bacteriological technique to enable him, first to prepare and keep sterile medicaments and second to assist the physician and sanitarian when necessary in bacteriological investigation. The book is sufficiently complete for its purpose. The directions are clear, though in places perhaps somewhat lacking in detail, and the text contains much of value. The volume may be recommended.

Society Reports.

AMERICAN MEDICAL ASSOCIATION

Sixty-third Annual Meeting, Held at Atlantic City, N. J., June 3, 4, 5, 6, and 7, 1912

(Special Report to the Medical Record)

HOUSE OF DELEGATES.

Monday, June 3, First Day.

THE PRESIDENT, DR. JOHN B. MURPHY, OF CHICAGO, IN THE CHAIR.

President's Address.—Dr. John B. Murphy, after expressing his appreciation of the honor conferred upon him in electing him to preside over the most representative body of medical men in the world, said that it was customary on this occasion for the president to express his estimate of the work done during the year and to give his opinion as to the activities which were desirable in the future. While the work accomplished was not all that they desired it was the best that was possible.

Medical interest in public welfare had been characteristic of the profession through the centuries and had become axiomatic. During the year there had been an organized attack against this work for the public welfare. False statements had been so persistently reiterated that many right minded people had come to believe them true. Its most conspicuous efforts had been directed against the movement for the establishment of a National Health Bureau. As was well known those most active in this movement were the food adulterators and patent medicine men, Christian Scientists, osteopathists, eclectics, etc. It was time to put before the public the real position of the profession. Every time one of their speakers appeared before the public, the medical profession should have one of its members on the ground, on the same platform if possible, in order to refute false statements and to place the matter before the people in its true light. In their work toward securing a National Health Department two points were important, first, that of public education, and second, that of securing men familiar with legislative procedures who would push the work for them. This work should be transferred from the Council of Public Health to the Council on Legislation. The secretary of the association should be secretary of this council. Activity on the work of organization had about reached a standstill. Several thousand members had resigned and they should find out why the association was losing prestige. There were 102,000 medical men in the United States and only 34,000 in the association; in some states as many as 66 per cent of the profession were affiliated with the organization while in others as few as 22 per cent. belonged to the association. They must find out why this was so and do what they could to retain the interest and support of the rank and file of the medical profession. Dr. Murphy, therefore, recommended that a Council on Organization be appointed to consist of five members. The work of such a council could only be advanced by direct contact with the members of the profession in their home localities. After speaking of the creditable work of the Journal Dr. Murphy spoke of the surplus funds which had been accumulated and the necessity of expending them for the benefit of the profession. It seemed advisable that the amount of reading matter in the Journal should be increased as there were many excellent papers for which they now had no space. He thought that an addition of 50 to 100 per cent. to the present amount of reading matter could be made with advantage. They should give more attention to matters concerning state and county societies and should have a bureau of inqury and information. Whether the additional matter should be added to the Journal in its present form or issued as a supplement was a question for the editors to decide, but the House of Delegates should insist that something in this direction be done. The last century had been a century of reading and the present century was one of observation, and inspection; it seemed advisable, therefore, that they should have three clinical days in connection with these meetings, Monday, Friday, and Saturday. The committee appointed last year to consider this matter should be made a permanent one. In closing Dr. Murphy suggested that in the selection of officers and the appointment of committees the House of Delegates should endeavor to avoid any tendency to plutocracy or autocracy.

Report of the Secretary.—Dr. Alexander R. Craig said that there had been added 3,474 names to the membership roll, of which 2,353 were transferred from the subscription list. The membership of the association on May 1, 1912, was 34,283, a net increase for the year of 323. A committee to represent the American Medical Association at the Third National Conservation Congress was constituted and the following were appointed: Chairman, William A. Evans of Chicago; Abraham Jacobi of New York; Norman Bridge of Los Angeles, Cal.; Hubert Work of Pueblo, Col.; Oscar Dowling of Shreveport, La., the Very Reverend Andrew J. Morrissey of South Bend, Ind. In order that all the activities of the association might be coordinated it was advisable that the House of Delegates extend the courtesies of the floor to the members of the various Councils and especially that it request the secretaries of these Councils to attend the sessions of the House, according them the privilege of the floor, in order that the House might be constantly in position to obtain information concerning work that was being done by these Councils that this body might direct these activities. In order that this end might be attained, it was advisable that the reference committee should meet at places and times which should be publicly announced in order that not only members of the House but that the members of the association might appear before these reference committees. The House should know when a reference committee reported that it had carefully considered the subject and that an opportunity to be heard had been granted all members of the reference committees as well as members of the association; the importance of the work demanded the service of the delegates. It was advisable that the House of Delegates should define what was understood by the term "invited guest." The ruling in the past had been that as associate membership in the association was limited to those who were not eligible to regular membership, so it was evidently intended that "invited guests" should be limited to those who were not eligible to membership in the organization. Reading the section of the by-laws with reference to invited guests, it would be noted that this was not definitely stated since the term Scientists could be held to include certain men who could become members in their local societies. If the House concurred in the precedents that had been established, section 9, chapter 1 of the by-laws should be amended to read as follows: "Sec. 9—Invited Guests.—Scientists, who are not eligible to membership in the component society of the locality in which they reside, may be invited by the general officers or by the officers of a Section to attend any annual session and to take part in the scientific work. They shall be designated as invited guests and be entitled to participate in the scientific and social functions." One of the most important reports submitted this year to the House of Delegates was that of the Judicial Council, embodying as it did a revision of the Principles of Medical Ethics, so framed that it could be regarded as a code of laws governing the membership of this Association. This report should have the serious consideration of the House. The Council had gone over the revision proposed at both meetings which that body held and a number of the preliminary proofs of the revision were submitted to the past officers of the Association and a considerable number of the House of Delegates for their criticism. The entire subject was presented to the House of Delegates for its consideration, but it should be remembered that unless some action was taken at this session, the Judicial Council would have no laws under which cases might be brought to its attention until the Association did frame some legal code.

Report of the Board of Trustees.—Dr. W. W. Grant, Chairman, congratulated the House on the continued prosperity of the Association, on the splendid work it was doing through its publications and its councils for the improvement of medical education, and for the enlightenment of the public regarding health matters and public sanitation in its broadest conceptions. It was a pleasure to state that Library Hall, in the new building, had been dedicated to the memory of Dr. N. S. Davis, and a bronze statue of the distinguished founder of the Association would be placed therein. The button, the emblem of the Association, was something more than the button; it was, in a sense, their trademark. It was used as such, at least, on their books, pamphlets, etc. Not only this, but as a button on the lapel of the coats of their members—over 20,000 had been distributed—it had become well known and was generally recognized as the emblem of the organized medical profession. Therefore, it should not be given up for the new one which had been suggested which was not distinctive and they urged the House of Delegates to consider this matter more carefully. As regards membership in the Association, they regretted not being able to make a satisfactory and final report. The question had been referred to the State societies for action and report to the Board. Most of them evidently did not understand it and did not take specific action. They felt compelled to refer the whole matter back to the House

of Delegates for more elaborate inquiry and fuller investigation. As regarded the matter of organization, they felt that this should be transferred from the Council on Health and Public Instruction to the Judicial Council. It was believed that to the Judicial Council would be gradually transferred all matters affecting the internal relations of the profession, and to the Council on Health and Public Instruction all matters affecting external matters of the organization, that was, its relation to the public and to nonmedical organizations. The Board therefore recommended changes in the by-laws which would effect this transfer. In regard to the *Archives*, now in its fifth year, and the *Journal of Children's Diseases*, both had fulfilled all expectations, and they now had in hand a petition of about 100 of the most distinguished surgeons of the country urging the publication of a surgical journal by the Association along the lines of the *Journal de Chirurgie*. In regard to the report of the Council of Pharmacy and Chemistry, it appeared that there was an agreement among a few firms in this country to ignore the Council, while practically all of the reliable foreign firms were finding it of decided advantage to have their products passed on by the Council. Of course, it rested with the profession whether this opposition by some firms should continue. A most important work had developed in connection with the work of the Council on Pharmacy and Chemistry. This was the work that was enlightening the public in regard to the frauds connected with patent medicines and quackery in general. A large amount of this matter had been gathered into book form and published under the title "Nostrums and Quackery." In speaking of the third edition of the American Medical Directory they called attention to the fact that the present book contained 180 pages more than the preceding one and, above all, that the information it contained was based on official information and was thoroughly dependable. This report also contained a detailed report of the finances of the Association which showed the total assets of the Association to be $511,750, and that the net income for the present year was $53,815.

Report of the Judicial Council.—Dr. ALEXANDER LAMBERT of New York presented this report. As there were no methods of procedure and no laws to govern the personal conduct of a member in his relation with other members this Council offered a set of rules for its government and a method of procedure for conducting cases which might be brought before the Council. The Judicial Council approved the method of procedure for transferring membership from one component society to another, including the "member's transfer card," as outlined by the Committee on Uniform Regulation of Membership. The Judicial Council specially recommended to the House of Delegates that laws be enacted by the Association condemning the secret division of fees and the giving of commissions; also, laws for the proper control of contract practice, and further, that the House of Delegates request that similar laws be enacted by the several state associations.

Report of Council on Medical Education.—Dr. ARTHUR DEAN BEVAN presented this report. He stated that ten years ago when the Council began its work there were 160 medical colleges in the United States, today there were only 118. Since the Council's first classification was made, in 1907, 53 medical colleges had been closed by merger or otherwise. That further persistent work was necessary was evidenced by the fact that at least 45 medical colleges were still adhering to less than a four-year high school education, many were still conducted for profit, at least 50 carried on no research work, and while this country had 118, or about 10 per cent. of the world's supply of medical colleges, only about 30 per cent. of those in this country could compare at all favorably with the medical schools of the leading nations abroad. There were still several states where non-graduates are admitted to take the examinations of the state licensing boards. Dr. Bevan requested the delegates from those states to use every effort to wipe off this blot. The smaller irregular schools of medicine were fast disappearing; this was true of both eclectic and homeopathic schools. There were a few good homeopathic schools left and they were attempting to teach modern scientific medicine. At the recent conference on Medical Education of the American Medical Association they had come to the general agreement as to what was necessary to give the student in order to make him a safe practitioner of medicine. They had found that the necessity for an arts or science degree as a requisite for entrance to a medical school demanded so much time, that the average age of those who followed this plan was between twenty-eight and twenty nine years when they began the practice of medicine. This was too late. In England the average age of the graduate in medicine was between twenty-five and twenty-six years. It was now thought that the minimum requirement should be only one year in the study of physics, chemistry, and biology, in addition to the high school course. The highest extreme at present should not be more than two years of university science. The interne year in a hospital should be made a requirement throughout the country by state medical licensing boards within the next two or three years. There were now in this country at least 2,500 hospitals, having 25 or more beds each, and having a total of at least 200,000 beds. There was no doubt but that interneship could be provided in the better portion of these hospitals for every one of the 4,000 senior medical students now enrolled in the medical schools of this country. The House of Delegates should instruct the Council on Medical Education to make a preliminary investigation of the hospitals of the country similar to that made of the medical schools; they should be graded in the same way that the medical schools now were. Such a work would not only lead to providing interneships for students, but would result in elevating the standards of hospitals. The report then referred to the great assistance rendered by Mr. Frederick G. Hallett, secretary of the Examining Board in England, at the recent conference of the Council, and believed that it would have splendid results in this country. Mr. Hallett's visit had been so satisfactory that they would recommend a similar measure for the coming conference where the problem would probably be to ascertain the best scheme of reorganizing the clinical years of the medical course, and at the same time developing the best clinical teachers. Hence, they would like to have the authority to invite one of Germany's great clinicians, such as Professor Frederick von Muller. The report then considered the methods of grading the colleges and said that in the third inspection of the medical colleges of the country they had adopted the plan of having an A minus class comprising those colleges which were fairly well equipped but still lacked something. Tabulated lists of the colleges in the various classes were presented and statistics showing the number of students taking examinations for licenses, the number from each college that passed, and the number who failed. This, while not an entirely reliable index of the condition of the medical colleges, was of some decided value. As to future work the report stated that there were three great tasks to be performed: (1) The State licensing board must require that amount of medical training which was necessary before the medical student could safely begin medical practice; this requirement should be put into effect in the next few years. (2) Sufficient funds should be secured to reorganize the medical departments of the general lines of the German universities. (3) Proper affiliation should be secured between our great charity hospitals and their medical schools. Forty-seven colleges are now requiring the one year additional preparation in physics, chemistry, and biology. If their plans could be carried out they hoped within the next few years to reduce the number of medical schools to 70 or 80.

Afternoon Session.

Report of Committee on National Health Legislation.—Dr. JOHN B. MURPHY of Chicago made this report, which stated that the committee had considered Senate Bill No. 1, some suggestions made were incorporated into the bill, and it was reported into the United States Senate with a favorable recommendation from the Committee on Health. They had done all they could to forward the interests of this bill.

Report of Committee on Memorial to Medical Officers Who Lost Their Lives in the Civil War.—Dr. WILLIAM C. GORGAS of Panama made this report. He reported progress and stated that through the courtesy of the Surgeons General of the Army and Navy a list of the surgeons who lost their lives in the Civil War was being compiled. It had been ascertained thus far that 51 surgeons were killed, 83 seriously wounded, and that 283 died from wounds or disease contracted in the Civil War. The committee recommended that it be continued with the same instructions and appropriation authorized by the House of Delegates in 1909.

Report of Committee to Advise with the Red Cross.—Dr. A. T. MCCORMACK of Bowling Green, Ky., made this report. He said that in forming an organization which should cooperate with the Red Cross Society in times of great disaster it was difficult to find out how many men were available and how many were competent. They were convinced of the great advantages that would accrue to the public by an organized medical service which

would cooperate with the Red Cross Society and advised the appointment of a committee consisting of three members, one to be appointed by the Surgeon General of the Army, one by the Surgeon General of the Navy, and one by the President of the House of Delegates, who should further consider the matter of forming such an available body of men for times of disaster. Furthermore, if they were to be available in times of disaster they must be kept in training, and to this end they should have a central organization and should cooperate with all existing forces working for public health and the solution of sanitary problems, and they should not rest satisfied until they had small towns and rural districts as sanitary as Colonel Gorgas had made Panama.

Report of Committee to Consider the Mode of Commemorating the Completion of the Panama Canal.—Dr. A. L. Brittin of Athens, Ill., presented this report. The report stated that it was the opinion of the committee that a Congress on Tropical Medicine and Hygiene should be held just after the meeting of the American Medical Association in 1915. This congress should be held by preference in San Francisco and under the auspices of the American Medical Association and the authorities of the San Francisco Panama Exposition. Such a congress should receive the official commendation and support of the United States Government by congressional act. This would provide for the proper invitation of foreign delegates. The report then outlined a plan for such a congress and suggested that the American Medical Association should memorialize the congress with a view to a permanent monument in recognition of the great and glorious work of Americans in sanitary science and preventive medicine. Such a monument might take the form of a hospital for tropical diseases, to be located within the confines of the United States, or more properly in the Canal Zone itself, and the dedication of such a memorial could be contemplated among the plans for the celebration in 1915.

Home Offered for Physician's Widows and Orphans.—Dr. G. Lane Taneyhill of Baltimore spoke of the many sad and pitiful cases of the widows of physicians who were left destitute and who were debarred from other homes for the aged because of lack of funds. In Baltimore the physicians had a three story brick building free from encumbrance which they would like to deed to the Association if the Association would accept it and maintain it. In case they did not wish to do this he suggested that a gift toward the support of the home of $1,000 to $1,500 per year would be acceptable. This matter was referred to the Committee on the Establishment of a Physician's Sanatorium for consideration.

Report of Committee to Formulate Amendments to the Constitution and By-Laws to Extend Membership.—This committee reported that if any other plan than the one now in force was adopted it must be: first, to extend membership to all members of the constituent medical association so that every physician who became a member of his county and state organization should automatically become a member of the American Medical Association; second, to increase the dues collected by the county societies so as to include in addition to the county and state dues a sufficient sum of money to carry on the work of the American Medical Association. Investigation showed at once that the second plan was impracticable. The first plan was the only one considered. In accordance with this plan section 2 chapter 1 of the by-laws should be changed to read as follows: "The American Medical Association shall consist of the membership of its state and territorial associations and the Association shall be divided into two branches, (a) business branch, (b) scientific branch." To further the interest of the scientific branch it was recommended that upon making application on suitable blanks and paying the sum of $5.00 a member of the American Medical Association might become a fellow of the American Medical Association, which would carry with it the rights and privileges which were now accorded those at present known as members of the American Medical Association.

Report of Committees on Scientific Research.—Dr. Ludvig Hektoen made this report, in which he said that since the last meeting of the House of Delegates grants of money for purposes of scientific research had been made to Dr. R. M. Pearce of Philadelphia for an investigation entitled "Studies on Experimental Blood Infection," and for investigation by H. T. Karsner and J. B. Nutt, entitled "The Relation of Toxic Doses of Horse Serum to the Protective Dose of Atropin in Anaphylaxis"; to Dr. E. C. Rosenow of Chicago in support of his work on "Autolysis of Pneumococci"; to Dr. K. K. Kroessler of Chicago for work on "Antibodies in Scarlet Fever"; to Mary R. Lawson of Boston for work on "The Development of the Tertian Malarial Organism," and to Dr. G. B. Webb for further investigation on the "Production of Immunity by Inoculation with Living Bacteria."

Committee to Investigate the Advisability of Publishing a Small Medical Journal.—Dr. J. N. McCormack of Bowling Green, Kentucky, made this report. He stated that there were at present 278 medical journals published in this country and he questioned the advisability of publishing another. He suggested that the by-laws might be amended so that any medical editor who accepted advertisements of a fraudulent character should be debarred from membership in the American Medical Association. This would curtail the incomes of a number of journals and might force them to discontinue and the American Medical Association might assist other journals in securing honest advertisements and also in obtaining reading matter on subjects of interest to the general practitioner.

Presentation of Resolutions.—A resolution was presented stating that, *Whereas*, the present name of the Section on Obstetrics and Diseases of Women was ambiguous and obsolete, *Resolved*, That the name of the section be changed so as to read "The Section on Obstetrics, Gynecology, and Abdominal Surgery." Resolutions were also presented asking for the creation of a Section on Orthopedic Surgery and also one on Physical Therapeutics.

Report of the Committee on Anesthesia.—Dr. Yandell Henderson, chairman, said that the functions of the committee were to gather and analyze data regarding anesthetics, to initiate and stimulate investigation, and to make such recommendations to the House of Delegates and to the members of the American Medical Association generally as a careful consideration of the present status of anesthesia might suggest. Recent developments in this field afforded ground for the hope that they were today at the beginning of an epoch of progress in anesthesia unequalled since its original discovery and introduction. In the judgment of the committee the easiest and safest line of approach to many of the practical problems of anesthesia today lay in the recognition of anesthetists as specialists on a par in the importance and difficulty of their work with those of other branches. It should be recognized that the welfare of the patient demanded skill on the part of the anesthetist no less than on that of the surgeon. Anesthesia should cease to be regarded as merely an adjunct of surgery. Every hospital should have a regular member of its staff an attending anesthetist whose authority in his special department should be as complete as was that of the attending physician or surgeon in their fields. The following specific recommendations were offered:

(1) The use of chloroform as the anesthetic for major operations was no longer justifiable. Scientific investigation and clinical experience agreed in demonstrating that necrosis of the liver ("delayed chloroform poisoning") followed in a by no means inconsiderable percentage of cases. The mode of causation of this sequel was unknown. There were therefore no precautions that could be intelligently taken against it. Accordingly the surgeon whose patient died in this manner a day or two after operation must face the responsibility of having knowingly taken an unnecessary chance—and lost. They saw no reason to believe that in respect to toxicity there was more than a slight quantitative difference between chloroform alone and such chloroform mixtures as A. C. E., anesthol, etc.

(2) For minor operations also the use of chloroform should cease. In general it might advantageously be replaced by nitrous oxide or nitrous oxide-oxygen. It was a mistake to think that a fatality under anesthesia was necessarily due to an unusually large administration of the anesthetic. A previous condition of suffering or anxiety, or a prolongation of the stage of anesthetic excitement rendered a subject who would otherwise be able to resist a large dosage liable to collapse even under a small dosage. The practical importance of avoiding so far as possible all anxiety and pain had been demonstrated on the clinical side by Crile, and experimentally by Henderson. It was noteworthy that Levy (with Cushny) had recently demonstrated that in cats a sudden heart failure (fibrillation) was induced by a period of *light* chloroform anesthesia, while this form of death was not inducible by deep anesthesia. Risks of this sort were far greater with chloroform than with ether, and greater with ether than with nitrous oxide. As they could not be foreseen, they could not be avoided, except by replacing a dangerous anesthetic by a safe one.

(3) Chloroform was sometimes found convenient for initiating anesthesia in alcoholics or other difficult sub-

jects. As a means of avoiding the ill effects of a prolonged period of ether excitement the temporary employment of chloroform for this purpose was perhaps sometimes the lesser of the two evils. It was justifiable only when nitrous oxide was not available. If chloroform was to be used, it should be given as soon as it was evident that the patient would not go under ether readily. Unless the change to chloroform was made early it should not be made at all. They wished especially to emphasize the point that chloroform should never under any circumstances be administered after a prolonged period (10 or 15 minutes or more) of ether excitement. Even a small administration of chloroform was then peculiarly liable to induce respiratory or cardiac death. As soon as full anesthesia was attained ether should be substituted. (4) As regarded ether, the two points to be especially emphasized were that anesthesia should always be induced quickly, and that throughout its entire duration it should be as nearly uniform as possible. Physiology had demonstrated that the predominant stimulant maintaining respiration in a normal subject was the CO_2 in the blood. If for even a few minutes this gas was exhaled more rapidly than it was being produced, a compensatory period was liable to follow in which all spontaneous breathing ceased. This apnea vera tended to last until the body had reaccumulated its normal store of CO_2, and the respiratory center was thereby again stimulated to its normal activity. During the initial period of etherization, the so-called stage of excitement, the subject generally breathed excessively. The analyses of Henderson had shown that if this period was prolonged a condition of intense acapnia (deficiency of CO_2) resulted. When full anesthesia was thereafter attained the subject, although acapnic and prone to apnea, was still sufficiently stimulated by the influence of ether so that, in the majority of cases, an apparently natural or even excessive respiration was maintained. This condition might continue even up to the end of a long operation. At any time, however (and the tendency increased as time went on), the balance between the stimulant action of ether and the depressant influence of acapnia might become negative, and the subject might stop breathing. If the acapnia was sufficiently intense, this respiratory failure (apnea) might continue until death resulted from lack of oxygen. Fortunately lack of oxygen also exerted indirectly some stimulating influence upon respiration. Otherwise such fatalities would be much more frequent than they were. They were of the opinion that respiratory failure must be in certain cases the indirect result of an unskillful timidity which, by prolonging the stage of excitement, induced acapnia, rather than the direct result of over-boldness in the administration of ether at the moment of failure.

(5) It was a well demonstrated and important rule that a subject who had once been etherized or chloroformed could not be again anesthetized within a few hours without great risk. Essentially the same danger was involved in allowing the intensity of anesthesia to vary during an operation. It was not the anesthetist who at all times maintained uniformly deep anesthesia whose patient stopped breathing. This accident came particularly to those who administered it so irregularly that the patient at times came nearly out of anesthesia and again was plunged into profound narcosis. In the production of a fatality the intervals of incomplete anesthesia played a part as great as, or even greater than, the period of profound narcosis which immediately preceded the respiratory (or cardiac) failure. Anesthesia was good in proportion as it was uniform. (6) Offenses against this principle occurred most frequently in adenoid and tonsil operations. When the death of the patient (usually a child) resulted it was assigned either to "heart disease" or to an "unrecognized condition of status lymphaticus." It was probable that in most cases these deaths were merely the natural result of intermittent anesthesia and of the increased susceptibility induced by fear. Under the ordinary methods the anesthetist and the operator were alternately in control of the patient's nose and mouth. The method of intratracheal insufflation introduced by Meltzer and Auer appeared to be peculiarly well adapted to afford a safe anesthesia and at the same time to keep the field of operation clear, and the anesthetist out of the way. There was now a sufficient accumulation of clinical experience with this method to demonstrate its safety and convenience. They recommended that it be widely adopted. For operations upon the head and neck when it was advantageous to keep the anesthetist out of the surgeon's way, most of the advantages of intratracheal insufflation were afforded by intrapharyngeal insufflation with the simple apparatus (air blower, ether vaporizer, and catheter inserted through one nostril) devised by Thoms. Gwathmey had shown the marked advantage of warming ether vapor, even in the ordinary methods of administration. For any form of insufflation an arrangement for heating was essential. (7) Theory and practice alike demonstrated the propriety in the large majority of major operations of administering subcutaneously a liberal dose of morphine half an hour or more before initiating anesthesia. It obviated anxiety, diminished the intensity and duration of the stage of excitement and lessened pain after the anesthesia was terminated. These were all points of marked advantage in conserving vitality. Morphine was par excellence the prophylactic against shock. Against the use of morphine it had been argued that it depressed respiration and thus tended to delay the elimination of the anesthetic after the operation. This was true, and it was a point of importance. In the next section was set forth a method of overcoming this disadvantage.

(8) The committee suggested that in every operating room there be kept on hand and available for immediate use tanks of oxygen containing 8 or 10 per cent of CO_2. They had communicated with all of the principal companies manufacturing gases for clinical use, and they had been informed by them, not only that they could supply such a mixture, but that as soon as there was a considerable demand for it they would be able to do so at the same price as that charged for pure oxygen. It had been demonstrated that CO_2 (properly diluted) was by far the most efficient (because it was the natural) respiratory stimulant. The carbonated oxygen was conveniently administered by means of such a mask and bag as was ordinarily used for nitrous oxide. It should be administered at the first sign of respiratory or circulatory failure. By using it at the outset of anesthesia by any "closed" method a more rapid absorption of ether would be obtained, and a consequent shortening of the period of excitement. By administering it alone after the operation respiration was stimulated to a more rapid elimination of the anesthetic in even a deeply morphinized subject. It was thus easy to prevent the prolonged period of subnormal breathing with its cyanosis and ether retention which now frequently followed anesthesia. For the last mentioned purpose it would be equally effective and much cheaper to employ pure CO_2 (such as was used in the manufacture of carbonated table waters) diluted with 10 to 12 volumes of air. An apparatus for effecting this dilution was now being devised and tested by a member of this committee, and would probably be available for general use within a few months. (9) The most important event in the recent progress of practical anesthesia was the demonstration by Gatch of the beneficial effects of a certain amount of rebreathing in nitrous oxide-oxygen anesthesia. It afforded a clinical confirmation of the validity of the acapnia theory in relation to anesthetic fatalities. As the result of Gatch's work nitrous oxide-oxygen, re-enforced when necessary with a very small amount of ether, and administered by "rebreathing" methods, was being extensively adopted as the anesthesia of choice for major operations involving a considerable amount of shock, or upon already shocked subjects. A number of ingenious and convenient forms of apparatus for the administration of nitrous oxide had recently been devised and put upon the market. They had examined them, but feel that it was as yet too early to decide on their relative merits. In one respect all of those that they had seen were defective, namely, in the insufficient closeness of the mask upon the face. If the air in any quantity leaked into the mask and bag, the oxygen which it contained was quickly absorbed, and left the nitrogen. As air was 4 parts nitrogen to 1 of oxygen, the mixture of nitrous oxide and oxygen which the patient was breathing soon became so diluted with nitrogen that it neither prevented cyanosis nor maintained full anesthesia. Such troubles as occasionally arose with nitrous oxide anesthesia were principally due, in their opinion, to this dilution. To overcome this defect a mask which was at once light, easily adjusted, absolutely air tight on any face, quickly removable, and not requiring to be held by the hand of the anesthetist was the greatest need. They recommended that a prize of $200 be offered for the invention of a mask fulfilling these requirements—the award to be made by their successors on this committee. While nitrous oxide-oxygen appeared to afford the least deleterious of all forms of anesthesia, it was also unfortunately the most expensive. It was easily seen that the greater part of this cost was not for the nitrous oxide which was actually absorbed to induce anesthesia, nor for the oxygen which the patient consumed. The patient was constantly exhaling CO_2; and even when a considerable amount of rebreathing was practiced, the removal of this substance from the mask and bag involved the waste of 10 to 20 times as much oxygen, and 50 to 100 times as much nitrous oxide. It was the necessity of removing CO_2,

therefore which was the source of at least [illegible] of the cost of this form of anesthesia. As a [illegible] worth of sodium or potassium hydroxide will [illegible] all the CO_2 exhaled by the patient in many hours, and a member of this committee had undertaken the problem of devising a simple form of absorber. (10) Finally the committee recommended that the President of the Association in appointing their successors upon this committee make his selections not, as had been the custom in the past, wholly or almost wholly from the ranks of the surgeons, but rather from among those whose principal interest was in this field of work, and who during the past few years had themselves made contributions of value to the theory and practice of anesthesia.

Tuesday, June 4—Second Day

THE PRESIDENT, DR. ABRAHAM JACOBI, IN THE CHAIR.

Report of Committee to Investigate the Advisability of Publishing a Health Journal.—Dr. W. A. Evans, Chicago, Ill., made this report in which the committee expressed the opinion that the work along lines of hygiene and public health made such a journal desirable and recommended that the House report favorably on this subject.

Report of Council on Health and Public Instruction.—Dr. HENRY B. FAVILL presented this report. The report stated that the Council had been profoundly impressed with the interest evinced by the public in matters pertaining to health. It was their object to bring together the people and the profession, to restore confidence in the scientifically trained physician to-day that was formerly given to the family physician, and to unite the public and the medical profession in an intelligent and irresistible campaign for better health conditions. The following recommendations were made by the Council for guidance during the coming year: (1) That the Council declare that in its judgment its principal mission is the development of public confidence in the purposes and work of the American Medical Association and of the profession. (2) That in addition to its present work and committee and bureau activities already provided for, the Council concentrate its efforts during the coming year on the following: (a) Formulation and adoption of a platform setting forth the aims and purposes of the Association and the profession, and asking for the support and confidence of the public; (b) Continuation and extension of the Press Bureau; (c) Organization of a Speakers' Bureau; (d) Compilation of a handbook for speakers; (e) Organization and development of a Bureau of Literature. The Press Bureau was publishing a bulletin which was sent out every week to 4,900 publications which used the subject matter, sending it in turn to a circulation of 68,000 weekly. They had sent 2,500 copies of "Nostrums and Quackery" to various publications, many of which reviewed the book and commented favorably upon it. The attitude of the newspapers toward the work of the Press Bureau was most gratifying. Following the organization of the Press Bureau they had organized a Speakers' Bureau. The plan proposed was that appointment be made for public addresses for meetings held under the auspices of local medical societies in states adjoining that in which the speaker lived. A list of speakers was now available. The Speakers' Bureau had now been in operation four months and was still largely experimental. It was necessary to find out by actual experience how much demand existed for such meetings. It would be necessary in order to secure the interest and confidence of the public to approach them through the leaders in the profession; this would require a sacrifice on the part of some, but it would yield large returns in public support and confidence. After calling attention to the legislative work in the promotion of a bill for a National Health Department and to their work in the protection of medical research the report gave an account of their cooperation with the Electric Light Association in considering the question of the resuscitation from electric shock. The Council felt that it had reason to congratulate itself and the Association on the appointment of this committee which had established friendly relations with such bodies as the National Electric Light Association, the American Institute of Electric Engineers, the American Bar Association and the National Educational Association.

A second portion of this report consisted of the reports of the following subcommittees:

The Committee on the Prevention of Blindness reported during the past year propaganda on ophthalmia neonatorum had been so widespread that in almost every State there had been papers read before county and state medical societies, that the subject had been given wide publicity in the press, and that the last year had shown the practicability of the complete [illegible] earth infections of the eyes. A most unexpected [illegible] in the four years' study of the question in Massa[illegible] was that the doctors and not the midwives were [illegible] for blindness from ophthalmia neonatorum. It was not because the midwives had been careful but [illegible] they had figured in only a small proportion of the [illegible] recorded in the series investigated. This report further considered the subject of trachoma. This disease was assuming serious proportions in some localities among the Indians, especially in Oklahoma. It seemed imperative that measures should be taken by the Federal government to supplement the efforts of the few men who were now employed in fighting the disease in order that its extent might be determined and steps taken to prevent its further spread. The report then considered industrial accidents as one of the causes of preventable blindness, and blindness from wood alcohol.

The Committee on Visual Standards for Pilots reported that the standards adopted at the suggestion of this committee had created some dissatisfaction among the pilots and others affected by them, for a number who had been long in the service did not come up to the standard. Consequently the Department of Commerce and Labor was compelled to recede from its ruling of 1911, when all of the recommendations of this committee were adopted and, so far as the matter now stood, there was nothing to debar a marine officer from continuing his duties after he had once qualified at the original test, even if in after years his vision became seriously compromised.

The Report of the Committee on Uniform Regulation of Membership.—At the meeting of this committee in December, 1911, the following recommendations were adopted: (1) That the fiscal year of component and constituent societies should begin January 1 and end December 31, and that all annual reports from component county societies, including the names of officers, delegates and the roster of members for the ensuing year, together with the State per capita assessments, should be in the hands of the State secretary on January 1 of each year. (2) That it was advisable to devise and adopt uniform application blanks, receipt blanks, membership cards and transfer cards. (3) That all constituent state associations should hold charters from the American Medical Association. (4) That a uniform plan for the transfer of members from one component county society to another was necessary for the good of the organization. A second meeting was held in March, 1912, when the committee recommended that county societies be requested to hold their annual meetings in October, and that newly elected officers should assume office on January 1 following.

This committee further recommended that a meeting of the secretaries of constituent state societies be called in Chicago some time in the fall of 1912, and that this committee be instructed to present these recommendations to the State secretaries for their approval and adoption.

Invitation from the Australian Congress of Medicine.—Dr. A. W. BARRETT, of the Melbourne University, Australia, after having been introduced to the House of Delegates, said that he was on a tour of inspection of the medical colleges of this country and of Europe, and he had been instructed to extend an invitation to the American Medical Association to attend the next Australasian Congress which would hold its meeting in Auckland, New Zealand, in February, 1914.

The Report of Committee on Relief Fund and Physicians' Sanatorium.—Dr. EDWARD JACKSON of Denver, Col., reported that in view of the difficulties attending the raising and administration of such a fund it would be impracticable to do anything at present. They might possibly reach some compromise by accepting the offer of the Baltimore physicians of the building to be used as a home for physicians' widows and orphans.

Report of Committee to Arrange for Clinical Days.—This committee reported that after correspondence with the secretaries of the fourteen sections of the American Medical Association it had abandoned the idea of having the sections participate in the clinics and had arranged for a limited number of clinics which should not overlap. A supplementary program had been prepared by which clinics would be held in several of the Philadelphia and Baltimore hospitals on Friday of the week of meeting.

REPORTS OF REFERENCE COMMITTEES.

Report of Reference Committee on Amendments to the Constitution and By-Laws.—Dr. A. R. MCCORMACK of Bowling Green, Ky., reported for this committee. They approved the recommendation of the Secretary that "invited guests" of the Association be limited to those scientists who were not eligible for membership in the com-

ponent society in the locality in which they resided. The recommendation of the Secretary, in regard to extending the courtesy of the floor to members of the various councils, was approved and recommended for adoption. The rules and methods to govern the action of the Judicial Council were recommended for adoption, as also the Principles of Medical Ethics recommended by the Judicial Council. These measures and several others affecting membership and the transfer of membership were adopted by the House of Delegates.

The Principles of Medical Ethics.—As adopted by the House of Delegates these were as follows:

CHAPTER I.

DUTIES OF PHYSICIANS TO THEIR PATIENTS.

The Physician's Responsibility.

SECTION 1.—A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals.

SECTION 2.—Patience and delicacy should characterize all the acts of a physician. The confidences concerning individual or domestic life entrusted by a patient to a physician, and the defects of disposition or flaws of character observed in patients during medical attendance should be held as a trust and should never be revealed except when imperatively required by the laws of the state. There are occasions, however, when a physician must determine whether or not his duty to society requires him to take definite action to protect a healthy individual from becoming infected, because the physician has knowledge, obtained through the confidences entrusted to him as a physician, of a communicable disease to which the healthy individual is about to be exposed. In such a case the physician should act as he would desire another to act toward one of his own family under like circumstances. Before he determines his course, the physician should know the civil law of his commonwealth concerning privileged communications.

SECTION 3.—A physician should give timely notice of dangerous manifestations of the disease to the friends of the patient. He should neither exaggerate nor minimize the gravity of the patient's condition. He should assure himself that the patient or his friends have such knowledge of the patient's condition as will serve the best interests of the patient and the family.

SECTION 4.—A physician is free to choose whom he will serve. He should, however, always respond to any request for his assistance in an emergency or whenever temperate public opinion expects the service. Once having undertaken a case, a physician should not abandon or neglect the patient because the disease is deemed incurable; nor should he withdraw from the case for any reason until a sufficient notice of a desire to be released has been given the patient or his friends to make it possible for them to secure another medical attendant.

CHAPTER II.

THE DUTIES OF PHYSICIANS TO EACH OTHER AND TO THE PROFESSION AT LARGE.

Article I.—Duties to the Profession.

SECTION 1.—The obligation assumed on entering the profession requires the physician to comport himself as a gentleman and demands that he use every honorable means to uphold the dignity and honor of his vocation, to exalt its standards and to extend its sphere of usefulness. A physician should not base his practice on an exclusive dogma or sectarian system, for "sects are implacable despots: to accept their thraldom is to take away all liberty from one's actions and thought" (Nicon, father of Galen).

SECTION 2.—In order that the dignity and honor of the medical profession may be upheld, its standards exalted, its sphere of usefulness extended, and the advancement of medical science promoted, a physician should associate himself with medical societies and contribute his time, energy and means in order that these societies may represent the ideals of the profession.

SECTION 3.—A physician should be "an upright man, instructed in the art of healing." Consequently he must keep himself pure in character and conform to a high standard of morals, and must be diligent and conscientious in his studies. "He should also be modest, sober, patient, prompt to do his whole duty without anxiety; pious without going so far as superstition, conducting himself with propriety in his profession and in all the actions of his life." (Hippocrates.)

SECTION 4.—Solicitation of patients by circulars or advertisements, or by personal communications or interviews, not warranted by personal relations, is unprofessional. It is equally unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisements, as by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession and so are intolerable. The most worthy and effective advertisement possible, even for a young physician, and especially with his brother physicians, is the establishment of a well-merited reputation for professional ability and fidelity. This cannot be forced, but must be the outcome of character and conduct. The publication or circulation of ordinary simple business cards, being a matter of personal taste or local custom, and sometimes of convenience, is not *per se* improper. As implied, it is unprofessional to disregard local customs or offend recognized ideals in publishing or circulating such cards.

It is unprofessional to promise radical cures; to boast of cures and secret methods of treatment or remedies; to exhibit certificates of skill or success in the treatment of diseases; or to employ any methods to gain the attention of the public for the purpose of obtaining patients.

SECTION 5.—It is unprofessional to receive remuneration for patents for surgical instruments or medicines; to accept rebates on prescriptions or surgical appliances, or perquisites from attendants who aid in the care of patients.

SECTION 6.—It is unprofessional for a physician to assist unqualified persons to evade legal restrictions governing the practice of medicine; it is equally unethical to prescribe or dispense secret medicines or other secret remedial agents, or manufacture or promote their use in any way.

SECTION 7.—Physicians should expose without fear or favor, before the proper medical or legal tribunals, corrupt or dishonest conduct of members of the profession. Every physician should aid in safeguarding the profession against the admission to its ranks of those who are unfit or unqualified because deficient either in moral character or education.

Article II.—Professional Services of Physicians to Each Other.

SECTION 1.—Experience teaches that it is unwise for a physician to treat members of his own family or himself. Consequently, a physician should always cheerfully and gratuitously respond with his professional services to the call of any physician practicing in his vicinity, or of the immediate family dependents of physicians.

SECTION 2.—When a physician from a distance is called upon to advise another physician or one of his family dependents, and the physician to whom the service is rendered is in easy financial circumstances, a compensation that will at least meet the traveling expenses of the visiting physician should be proffered. When such a service requires an absence from the accustomed field of professional work of the visitor that might reasonably be expected to entail a pecuniary loss, such loss should, in part at least, be provided for in the compensation offered.

SECTION 3.—When a physician or a member of his dependent family is seriously ill, he or his family should select a physician from among his neighboring colleagues to take charge of the case. Other physicians may be associated in the care of the patient as consultants.

Article III.—Duties of Physicians in Consultations.

SECTION 1.—In serious illness, especially in doubtful or difficult conditions, the physician should request consultation.

SECTION 2.—In every consultation, the benefit to be derived by the patient is of first importance. All the physicians interested in the case should be frank and candid with the patient and his family. There never is occasion for insincerity, rivalry or envy and these should never be permitted between consultants.

SECTION 3.—It is the duty of a physician, particularly in the instance of a consultation, to be punctual in attendance. When, however, the consultant or the physician in charge is unavoidably delayed, the one who first arrives should wait for the other for a reasonable time, after which the consultation should be considered postponed. When the consultant has come from a distance, or when for any reason it will be difficult to meet the physician in charge at another time, or if the case is urgent, or if it be the desire of the patient, he may examine the patient and mail his written opinion, or see that it is delivered under seal, to the physician in charge. Under these conditions, the consultant's conduct must be especially tactful; he must remember that he is framing an opinion without the aid of the physician who has observed the course of the disease.

SECTION 4.—When a patient is sent to one specialist in the care of the condition from which he is thought to be suffering, and for any reason it is impracticable for the physician in charge of the case to accompany the patient, the physician in charge should send to the consultant by mail, or in the care of the patient under seal, a history of the case, together with the physician's opinion and an outline of the treatment, or so much of this as may possibly be of service to the consultant; and as soon as possible after the case has been seen and studied, the consultant should address the physician in charge and advise him of the results of the consultant's investigation of the case. Both these opinions are confidential and must be so regarded by the consultant and by the physician in charge.

SECTION 5.—After the physicians called in consultation have completed their investigations of the case they may meet by themselves to discuss conditions and determine the course to be followed in the treatment of the patient. No statement or discussion of the case should take place before the patient or friends, except in the presence of all the physicians attending, or by their common consent; and no opinions or prognostications should be delivered as a result of the deliberations of the consultants, which have not been concurred in by the consultants at their conference.

SECTION 6.—The physician in attendance is in charge of the case and is responsible for the treatment of the patient. Consequently, he may prescribe for the patient at any time and is privileged to vary the mode of treatment outlined and agreed on at a consultation whenever, in his opinion, such a change is warranted. However, at the next consultation, he should state his reasons for departing from the course decided on at the previous conference. When an emergency occurs during the absence of the attending physician, a consultant may provide for the emergency and the subsequent care of the patient until the arrival of the physician in charge, but should do no more than this without the consent of the physician in charge.

SECTION 7.—Should the attending physician and the consultant find it impossible to agree in their views of a case, another consultant should be called to the conference or the first consultant should withdraw. However, since the consultant was employed by the patient in order that his opinion might be obtained, he should be permitted to state the result of his study of the case to the patient, or his next friend, in the presence of the physician in charge.

SECTION 8.—When a physician has attended a case as a consultant, he should not become the attendant of the patient during that illness except with the consent of the physician who was in charge at the time of the consultation.

Article IV.—Duties of Physicians in Cases of Interference.

SECTION 1.—The physician, in his intercourse with a patient under the care of another physician, should observe the strictest caution and reserve; should give no disingenuous hints relative to the nature and treatment of the patient's disorder; nor should the course of conduct of the physician, directly or indirectly, tend to diminish the trust reposed in the attending physician.

SECTION 2.—A physician should avoid making social calls on those who are under the professional care of other physicians without the knowledge and consent of the attendant. Should such a friendly visit be made, there should be no inquiry relative to the nature of the disease or comment upon the treatment of the case, but the conversation should be on subjects other than the physical condition of the patient.

SECTION 3.—A physician should never take charge of or prescribe for a patient who is under the care of another physician, except in an emergency, until after the other physician has relinquished the case or has been properly dismissed.

SECTION 4.—When a physician does succeed another physician in the charge of a case, he should not make comments on or insinuations regarding the practice of the one who preceded him. Such comments or insinuations tend to lower the esteem of the patient for the medical profession and so react against the critic.

SECTION 5.—When a physician is called in an emergency and finds that he has been sent for because the family attendant is not at hand, or when a physician is asked to see another physician's patient because of an aggravation of the disease, he should provide only for the patient's immediate need and should withdraw from the case on the arrival of the family physician after he has reported the condition found and the treatment administered.

SECTION 6.—When several physicians have been summoned in a case of sudden illness or of accident, the first [illegible] arrive should be considered [illegible] in charge. However, as soon as the exigency [illegible] permit, or on the arrival of the acknowledged [illegible] attendant or physician the patient desires, [illegible] the first physician should withdraw in favor [illegible] attendant; should the patient or his family [illegible] one other than the physician known to be the [illegible] physician to be in charge of the case the patient should [illegible] the family physician of his desire. When, because of sudden illness or accident, a patient is taken to a hospital, the patient should be returned to the care of his known family physician as soon as the condition of the patient and the circumstances of the case warrant this transfer.

SECTION 7.—When a physician is requested by a colleague to care for a patient during his temporary absence, or when, because of an emergency, he is asked to see a patient of a colleague, the physician should treat the patient in the same manner and with the same delicacy as he would have one of his own patients cared for under similar circumstances. The patient should be returned to the care of the attending physician as soon as possible.

SECTION 8.—When a physician is called to the patient of another physician during the enforced absence of that physician, the patient should be relinquished on the return of the latter.

SECTION 9.—When a physician attends a woman in labor in the absence of another who has been engaged to attend, such physician should resign the patient to the one first engaged, upon his arrival; the physician is entitled to compensation for the professional services he may have rendered.

Article V.—Differences Between Physicians.

SECTION 1.—Whenever there arises between physicians a grave difference of opinion which cannot be promptly adjusted the dispute should be referred for arbitration to a committee of impartial physicians, preferably the Board of Censors of a component county society of the American Medical Association.

Article VI.—Compensation.

SECTION 1.—The poverty of a patient and the mutual professional obligation of physicians and certain public duties should command the gratuitous services of a physician, but institutions endowed by the public, or by the rich, or by societies, and organizations for mutual benefit, or for accident, sickness and life insurance, or for analogous purposes should be accorded no such privileges.

SECTION 2.—It is unprofessional for a physician to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession.

SECTION 4.—It is detrimental to the public good and degrading to the profession, and therefore unprofessional, to give or to receive a commission or to divide a fee for medical advice or surgical treatment, unless the patient or his next friend is fully informed as to the terms of the transaction. The patient should be made to realize that a proper fee should be paid the family physician for the service he renders in determining the surgical or medical treatment suited to the condition, and in advising concerning those best qualified to render any special service that may be required by the patient.

CHAPTER III

THE DUTIES OF THE PROFESSION TO THE PUBLIC.

SECTION 1.—Physicians, as good citizens and because their professional training specially qualifies them to render this service, should give advice concerning the public health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interests of humanity. They should cooperate especially with the proper authorities in the administration of sanitary laws and regulations. They should be ready to counsel the public on subjects relating to sanitary police, public hygiene and legal medicine.

SECTION 2.—Physicians, especially those engaged in public health work, should enlighten the public regarding quarantine regulations; on the location, arrangement and dietaries of hospitals, asylums, schools, prisons and similar institutions; and concerning measures for the prevention of epidemic and contagious diseases. When an epidemic prevails a physician must continue his labors for the alleviation of suffering people, without regard to the risk to his own health or life or to financial return. At all times, it is the duty of the physician to notify the properly con-

stituted public health authorities of every case of communicable disease under his care, in accordance with the laws, rules and regulations of the health authorities of the locality in which the patient is.

SECTION 3.—Physicians should warn the public against the devices practiced and the false pretensions made by charlatans which may cause injury to health and loss of life.

SECTION 4.—By legitimate patronage, physicians should recognize and promote the profession of pharmacy; but any pharmacist, unless he be qualified as a physician, who assumes to prescribe for the sick, should be denied such countenance and support. Moreover, whenever a druggist or pharmacist dispenses deteriorated or adulterated drugs, or substitutes one remedy for another designated in a prescription, he thereby forfeits all claims to the favorable consideration of the public and physicians.

CONCLUSION.

While the foregoing statements express in a general way the duty of the physician to his patients, to other members of the profession and to the profession at large, as well as of the profession to the public, it is not to be supposed that they cover the whole field of medical ethics, or that the physician is not under many duties and obligations besides these herein set forth. In a word, it is incumbent on the physician that under all conditions his bearing toward patient, the public, and fellow practitioner should be characterized by a gentlemanly deportment and that he constantly should behave toward others as he desires them to deal with him. Finally, these principles are primarily for the good of the public, and their enforcement should be conducted in such a manner as shall deserve and receive the endorsement of the community.

Report of Reference Committee on Reports of Officers.—Dr. HUBERT WORTH of Pueblo, Col., reported for this committee. His report urged the House of Delegates to adopt the resolution requesting the Council on Education to provide some fitting way of commemorating the founding of the first medical school in this country by John Morgan of Philadelphia in 1765. They endorsed the resolution which proposed to make the clinical days a permanent feature of these meetings. They endorsed the resolution providing that the President and Secretary of the House of Delegates should become members *ex officio* of the Board of Trustees without voting power. These recommendations were adopted by the House.

GENERAL SESSIONS.

Tuesday, June 4—First Day.

THE PRESIDEN, DR. JOHN B. MURPHY OF CHICAGO, IN THE CHAIR.

Invocation.—The Reverend FRANCIS J. MCSHANE of Atlantic City made the invocation.

Addresses of Welcome.—MAYOR HARRY BACHARACH welcomed the Association on behalf of Atlantic City, and presented the keys of the city to the president of the Association.

DR. DANIEL A. STROCK, President of the New Jersey State Medical Society, made the address of welcome on behalf of the State of New Jersey, in which he took as his theme the work of the medical societies in that state. He spoke particularly of the pride they took on being one of the few states in which osteopathy was not recognized. In speaking of the disqualifying of lodge doctors from membership in their medical societies, he said he was not sure that this was the best way to deal with this problem. This problem was by no means satisfactorily solved. He also discussed the move to make every licensed practitioner eligible to the local societies. This would admit homeopathists.

GOVERNOR WOODROW WILSON made the address of welcome on behalf of the State of New Jersey. He said that the people who usually come to Atlantic City came as idlers, and he was glad to welcome those who came with a serious object in view. He recognized the medical profession not only as the guardian of the health of the community but of its morals as well. There was a sense in which the doctor represented the morality of the community. Knowledge was not vital and useful unless it went hand and hand with insight. It was regrettable that it had become necessary to specialize to such a high degree, as this had been responsible for the disappearance of the family physician. There had been one year in his life when for different members of his family it was necessary to call in thirteen different physicians; his father would only have had to call in one. He, himself, no doubt, had had better advice, at least he was still alive, but his father had had a faithful friend and a sympathetic confidant in his family physician. We of the present day had lost this comfort. If specialism had become a necessity the medical man should still endeavor to generalize so far as sympathy was concerned. He said that as the head of a university it had always been his object to make a boy just as unlike his father as possible; this was because by the time a man had a son old enough to go to college he had become narrowed by his special vocation and the boy should be given as broad a view as possible. The physician should never forget his general and geographical relation to mankind and should refresh his sympathies by reconnecting himself with the general life. Governor Wilson then proceeded to show that politics was much like surgery in that many things should be cut out of modern life, but no healthy tissue, and drew an analogy between political conditions and surgery, showing that both required diagnosis, dietary tonic, etc. There were even quacks in politics, and hence he was in a position to sympathize with the physician. He felt therefore that he, like the physician, was in a more difficult position than those wandering in broader society. The problems of life were all one, and by dividing life into sections one could not serve humanity with success. The whole problem was one of mutual comprehension, of effort to avoid separation of intelligences, to unite ourselves into one body moving toward a common end, and he challenged them to seek part in the accommodation of the various parts of life to one another.

Installation of the New President.—Dr. JOHN B. MURPHY of Chicago said it was a pleasure and an honor in retiring from office to have the opportunity to hand the honor to a man who stood for the highest ideals in medicine, who received the recognition of the entire world, to the Nestor of Medicine, a man who needed no introduction to the profession of medicine or to the people of the United States, Dr. Abraham Jacobi.

President's Address.—Dr. Abraham Jacobi delivered this address. (See page 1065.)

Introduction of Foreign Guests.—Dr. THOMAS W. HUNTINGTON, Chairman of the Section on Surgery, introduced Dr T. Rovsing of Copenhagen, Denmark, to the Association as the guest of the Section on Surgery.

SECTION ON PRACTICE OF MEDICINE.

Tuesday, June 4, 1912—First Day.

DR WILDER TILESTON OF NEW HAVEN, CONN., IN THE CHAIR.

Arteriosclerosis.—Dr. THOMAS D. COLEMAN of Augusta, Ga., read this paper. He said that for a profitable consideration of the subject certain fundamental facts of the physics of the circulation and the maintenance of cell life should be recalled. The proper nutrition of the different organs of the body was dependent not only on the functional activity of its own cells, but also on the vital activity of the cells making up the cardio-vascular mechanism. Not only must both cell elements remain structurally and functionally intact, but there should be a certain intravascular tension in the arteries, arterioles and capillaries. In the absence of tension he believed no physiologist held that tissue nutrition could be maintained. Why was sclerosis sometimes localized and sometimes general? As a working hypothesis it might be assumed (a) that there was a local defect, either congenital or acquired, in the organ or organs involved; or that (b) the specific toxin had a selective influence which acted upon the vasomotor or trophic centers, regulating the blood supply and nutrition of the part involved. Excessive muscular exercise, either general or local, might impair the integrity of the vascular mechanism; even in this it was likely that the toxins resulting from tissue destruction might be operative. It had been conclusively shown that local sclerosis, without marked sclerotic change in other parts, occurred in the vessels of the brain, and to this condition was due the reason why so many ruptures occurred in this portion of the arterio-capillary tree than elsewhere. The importance of this phase of the subject was apparent when one reviewed the number of sudden deaths, the frequent paralyses that made the further life of the sufferer a burden to themselves and the state, all the result of sclerosis not infrequently limited to the cerebral arteries. If the preapoplectic symptoms could be interpreted with any degree of accuracy, how many of these tragedies of existence might be averted? Dr Coleman had had the opportunity of being with a number of patients immediately before, during and after the rupture of cerebral vessels and beyond some increase in vascular tension and irritability of temper, or depression of spirits, there was nothing to give warning of the impending catastrophy. Sclerotic changes might occur in any portion of the arterial tree and athero-

matous patches were very frequent in the lar[illegible] after middle life, the coronary arteries being [illegible] subject to sclerotic degeneration. Coronary sclerosis had been frequently encountered. After middle life a certain degree of sclerosis was apt to be found in a [illegible] of persons. Though the expression was trite, nothing truer than the axiom, "a man is as old as his arteries." The life of an engine was dependent upon the metal [illegible] went into its construction and the care that was taken of it; the same was true of the more perfect physical mechanism, and Osler had aptly observed that a man often took less care of his body than he did of his motor. The average man or woman lived in an atmosphere of work and worry, taking insufficient thought of either physical or mental needs. Man presented a pitiful spectacle racing at top speed to gain wealth or position, staggering under the delusion that old age would bring rest and enjoyment, and, becoming enlightened too late, to find that his rest was disturbed by discomfort and enjoyment a memory only. Next to the strain of modern life came the acute infections and intoxications as causative agents. Among the poisons might be included lead and other minerals, alcohol, tobacco, tea, coffee, etc. Again sclerosis was caused by occupations which demanded great and continued physical strain, and in young men who kept up high and long continued tension through athletic sports. Their estimate of the blood pressure was gained through the medium of the touch in palpable arteries and by the employment of the sphygmomanometer. Hoover made the following observation: "Whether there were really different endovascular pressures in the several arteries or different degrees of hypertonus in the arterial walls which gave the results, the deduction remains the same; namely, that the blood pressure apparatus applied to accessible arteries does not give infallible information as to the aortic blood pressure, and as a consequence it is not safe to rely on routine measurements from the area as a guide to the employment of vasodilators in treating patients with a high arterial pressure." Daland had shown that the mere application of the pneumatic cuff in certain neurotic subjects often increased the blood pressure as much as 30 to 40 mm. The widest field for good lay in the prevention rather than in the cure of arteriosclerosis.

Urobilin: Its Clinical Significance.—Dr. RAY LYMAN WILBUR and Dr. THOMAS ADDIS of San Francisco, Cal., presented this communication and offered the following conclusions: (1) Simultaneous estimation of urobilin and urobilinogen in the stools and urine, after certain allowances were made for the state of the liver and intestinal peristalsis, permitted valuable approximations to be drawn as to the amount of hemoglobin broken down within the body. (2) Urobilinuria might be used as an early indicator of the failure of the liver to functionate normally in alcoholic individuals with enlarged and tender livers. (3) While in a jaundiced individual the persistent failure to obtain positive tests for urobilinogen in the urine by the present methods pointed usually to obscure closure of the duct, the presence of not inconsiderable amounts of urobilin in the stools of cases in which very little bilirubin (closure of the common bile duct) or no bilirubin (closure of the common duct and a biliary fistula) reached the intestine, seemed to indicate that the commonly accepted view that the only origin of urobilin was from the reduction of bilirubin in the intestine could not be correct. (4) The urobilinuria and urobilinemia of pneumonia deserved more study as the occurrence of urobilin as such in the blood was apparently, by the present methods, found during life only in this disease, and it might indicate that peculiar relations existed between urobilin and the factors accompanying cyanosis. (5) The discovery of a persistent urobilinuria should incite a careful study for all possible factors leading either to blood destruction or to parenchymatous or obstructive hepatic disorders.

Chloroma. A Clinical Study of Two Cases.—Dr. WALTER L. BIERRING of Des Moines, Iowa, reported in detail these two cases. This disease constituted a rare picture in human pathology. It was distinctly an affection of early life. Of the 73 cases gathered from the literature by Lehndorff, 50 occurred in the male sex. The disease apparently had very little relation to previous disease conditions, and usually was met with in healthy children of healthy parents. Trauma apparently had no relation to the disease. The characteristic pathologic anatomic changes in the form of lymphoid tumors and associated blood changes were a significant feature of the disease. The spread of tumors in the cranial and facial bones explained most of the characteristic symptoms. The exophthalmos was usually associated with pain because of the crowding of the bulb, and in this respect differed from other forms of exophthal[illegible] regard to general symptoms aside from those [illegible] directly attributed to the tumor formati[illegible] an early weakness in all cases, and the patient [illegible] became bedridden. The sensorium often remained [illegible] until the end. Since the work of Recklinghausen and [illegible] suggesting that chloroma was closely related to leukemia and generally accompanied by leucemic blood [illegible], greater attention had been paid to the study of the blood and the blood-making organs. Two distinct forms of chloroma were now recognized, the lymphatic and the myeloid, the former being much the more frequent. In both forms of chloroma the hemoglobin content was usually greatly diminished, the red cells became also variably reduced in number. The color index was usually minus. The anemia usually became more pronounced in the later stages of the illness and was often augmented by external influences as excessive hemorrha through epistaxis, hematemesis, hematuria, etc. Chloroma seemed to be specially characterized by the malignancy of its manifestations, the tendency to aggressive proliferation, giving it the character of leucosarcomatosis. The diagnosis was in most instances easily made at the first examination. The characteristic predilection of the tumors for the cranial and facial bones, exophthalmos, facial paralysis, visual disturbances, deafness, deformity of the skull, with the characteristic "frog-like" aspect, were so distinctive as to be recognized at the first glance. In the differential diagnosis malignant tumors especially osteosarcoma were to be considered. The prognosis of chloroma was like that of acute leucemia and similar processes where the hemotopoietic system was primarily involved in that the outlook was distinctly hopeless. Treatment could only be directed toward a relief of certain symptoms of the disease, particularly hemorrhage. In the light of their present knowledge the following conclusions would be proposed: (1) That chloroma was not a distinct disease entity. (2) That it belonged to the primary diseases of the blood-making parenchyma, and (3) that it was a generalized systemic affection of the lymphoid hemopoietic apparatus characterized by a tendency to malignant growth and heterotopic localization of its greenish pigmented infiltrations.

The Treatment of Leucemia and Pseudoleucemia with X-Rays.—Dr. ALFRED STENGEL and Dr. H. K. PANCOAST of Philadelphia presented this paper. They said that little had been added to their knowledge of the etiology or pathology of leucemia and Hodgkin's disease during the last few years. In a former discussion they called attention to the fact that so far as leucemia was concerned all recent investigations tended to prove that the bone marrow was the primary seat of the morbid process. A feature in the pathology of these diseases was the influence of the disease of the bone marrow on the formation of red blood corpuscles. The clinical study of the blood in cases of leucemia progressing unfavorably always showed advancing anemia, manifestly hypoplastic and hemolytic. All the evidences of the studies of the blood pointed to increasing imperfection in blood making and few of the signs of hemolysis. A matter of considerable clinical interest was the tendency to spontaneous recessions occasionally seen in leucemia.

Bacteriological Study of Streptococci in Milk in Relation to Epidemic Sore Throat.—Dr. DAVID J. DAVIS of Chicago read this paper and gave the following summary: The epidemic of sore throat in Chicago in the winter of 1911-1912 was caused by an organism belonging to the streptococcus group. In the exudates and in the body it was usually encapsulated, but not infrequently in the throats a capsule was not present. It was highly pathogenic for animals, readily producing arthritis in rabbits, and occasionally endocarditis. The cork of Capps and Miller showed clearly that the infection was largely milk borne and that an epidemic of mastitis in cows and sore throats in farmers prevailed during the winter in the vicinity of Batavia, Ill., the territory which supplied the contaminated milk. From a typical case of mastitis in a cow from a farm in this region a streptococcus was obtained pure which was pathogenic to animals, became encapsulated on animal passage and agreed in all essential respects to the human epidemic streptococcus. An identical coccus was obtained from a human case of tonsillitis and arthritis on the same farm. The relation of these streptococci to the common hemolytic variety was certainly very close. They might be identical, the differences noted being caused by environmental factors. The fact should be emphasized that streptococci which were pathogenic for animals, and which apparently were identical with streptococci causing human infections, might cause mastitis in milch cows.

The Relation of Aortitis to Syphilis and the Import-

ance of Its Recognition.—Dr. CLYDE L. CUMMER and Dr. RICHARD DEXTER of Cleveland presented this communication and made the following summary. From the cases reported by others and the work done upon them, together with the material upon which their paper was based, the following conclusions seemed justifiable. (1) That a large proportion (70-75 per cent.) of lesions of the aorta or aortic valve were syphilitic in origin. (2) That syphilitic aortitis was a definite pathological and clinical manifestation of syphilis, usually coming late after the disappearance of the early manifestations, after a long period of latency. (3) That aortitis occasionally was associated with luetic cerebrospinal manifestations. (4) That a complaint of pain in the chest and dyspnea should lead to careful examination of the thorax in the region of the aorta. In case of suggestive or doubtful physical findings an *x*-ray examination was desirable. (5) That after a diagnosis of aortitis had been made a Wassermann reaction should be performed. A positive reaction indicated the desirability of urgent mercurial treatment.

SECTION ON DISEASES OF CHILDREN.

Tuesday, June 4—First Day.

DR. ISAAC A. ABT IN THE CHAIR.

Chairman's Address.—Dr. ISAAC A. ABT of Chicago discussed the necessity for a more thorough study of gastrointestinal diseases. After thoroughly reviewing the history of the study of this condition from the very early literature of East India down to the present time, he urged retrospective study in order that studies already made might not be duplicated. He called attention to the very scientific classifications of these conditions made in the middle of the nineteenth century. He said that bacteriological research had failed to materially aid in the classification of disease, and that the improper use of designating terms had been a constant source of confusion, and that pathological conditions had been repeatedly assumed which did not exist. He called particular attention for division between the study of gastrointestinal diseases of infants and those of older children. He thought that the present danger was to drift too far afield, and that while bearing in mind the ground already covered, careful account should be kept of the progress being made.

The Ability of Women to Nurse Their Children.—Dr. J. P. CROZER GRIFFITH of Philadelphia read this paper, giving statistics to show the importance of breast feeding as compared with artificial feeding, and the influence which the latter had on the deathrate, and the subsequent later health of children. He said that in many instances the deleterious effects of artificial feeding might even be traced to adult life. He thought that probably over 60 per cent. of women would be able to nurse their children under proper instruction and care. He said that among the poor probably some artificial feeding was due to the women being compelled to earn their own and their children's living, but that even here partial breast feeding would be more general if its importance was emphasized by physicians. He believed that actual disability that could not be corrected by careful instruction existed to a very small degree, and that physicians were too ready to abandon efforts to establish breast feeding.

Supplemental Breast Feeding in Infants.—Dr. H. M. MCCLANAHAN of Omaha gave the general indications for supplemental feeding as follows: The better development of the infant, and the health and comfort of the mother. He said that the mother's milk being the natural food of the infant, it was more especially adapted, chemically, to the needs of the infant's body than any artificially modified milk could possibly be, therefore even a small amount was of value. He gave statistics from his own practice of 400 tabulated cases showing that in only fourteen cases was there real inability to nurse the child. His cases showed that even a small quantity of mother's milk enabled the child to assimilate the artificial food more fully, thus increasing the weight and general health of the infant. He called attention to the responsibility of physicians to teach mothers the necessity of breast feeding.

Dr. D. B. ENGLISH of Summit, N. J., said that in his experience nursing and feeding at the same time, putting the child to one breast, then to the bottle, then to the other breast, alternating until it was sufficiently fed, gave excellent results, the elements of the mother's milk, so necessary to the infant, thus being thoroughly mixed with the artificial food. He said that some preferred to give first the mother's milk and then the bottle feeding, or vice versa, but in his experience the practice of alternating the foods helped digestion, maintained the mother's supply, and kept the child in good condition.

Dr. CRAM of Milwaukee thought that often the scant supply of mother's milk was due to her not having had sufficient sleep, and that in his practice even such a measure as removing the infant for a short time produced good results.

Dr. SOUTHWORTH of New York said that one reason that babies did so much better on breast milk than any other food was because it did not require supervision. Bottle foods had to be constantly changed and modified to adapt them to the child's needs, but this was all done naturally when breast milk was fed. But even in view of this he did not think it would be well to give no supervision to breast feeding, because sometimes when the mother had plenty of milk the child did not do well. He did not believe there were many cases of actually bad milk, although there were many that were scanty on account of improper attention. He did not believe that too much dependence should be placed upon the analysis of milk, but that rather that the mother's physical condition should be looked after. He believed that too infrequent feedings tended to lessen the quantity on account of the lack of stimulation of the breasts. He thought that breast feeding was a safeguard to the health of the child.

Dr. SHAW of Albany thought that many infants' lives were saved by even one small breast feeding. In institutions where but one wet nurse was employed the mortality was much lower than before this measure was introduced. He criticised the statement that the pump did not stimulate the breast, stating that in his practice it had proven beneficial. He also disagreed wih Dr. Southworth's statement that the milk analysis was of no value. He had found it of distinct advantage.

Dr. CHURCHILL of Chicago said that at the Children's Memorial Hospital for some time one wet nurse had been employed during the winter and two during the summer with excellent results. He stated that their nurses were not allotted for the feeding of certain children, but that all the milk the nurses supplied was removed by means of a breast pump and divided among all the children so that each child had some. He said that one mother for a few weeks gave five quarts of milk daily, which seemed to disprove the statement that the breast pump was not of value in increasing the quantity. He said that careful records were kept and they knew that the quantity secreted was exact.

Dr. JOHNSON of Grand Rapids, Mich., said that in small towns difficulty was experienced in getting wet nurses, so that they had resorted to the practice of getting small amounts of milk from a number of nursing mothers, varying from an ounce to a pint, and that in this way they had had excellent results with infant feeding. In Berlin he had procured statistics showing that in mixed feeding (part bottle and part breast) the mortality was about 10 per cent., while the entirely artificially fed gave a much higher rate. He cited one group of thirty families among which there were eighty children, partly bottle fed and partly breast fed; at the end of the eighth year investigation of these families showed that all the bottle-fed children had died.

Dr. SCOTT of New York thought that psychic conditions had something to do with the disinclination of some women to nurse their children. That if they would appreciate the necessity for doing so there would be little difficulty in bringing the supply up to normal, or nearly so. He wished to protest against the practice of some obstetricians attempting to feed the child steadily from birth, allowing it to get into a poor condition and then handing it over to the pediatrist.

Dr. HARINGTON of Milwaukee said that the practice of putting the child first to one breast and then to the other was a mistake, because normally the mother had a rest of four hours between feedings, and with this practice she got only a rest of two hours to a breast that was not up to normal. He thought that no periodical nursing should be of more than ten to twelve minutes' duration, and that after the lapse of this time the needs of the child should be supplied with a bottle.

Dr. DOUGLAS of Detroit believed that every woman could nurse her child if she was correctly managed. He said that successful feeding was not merely a matter of getting a certain amount of liquid into the child; that the mother's habits of diet, exercise and rest should be regular so that the best results might be obtained. After this had been done, if the stool was still not in normal condition, he though that some readjustment of the method of feeding should be instituted. He emphasized the necessity for analysis of the breast milk that it might be known what the child was getting.

Dr. DENNY of Brookline, Mass., said that Dr. McClanahan omitted to state the advantages associated with giving

the child at an early period cow's milk, so that [illegible] weaning was necessary no serious disturbance occurred.

Dr. Zahorsky of St. Louis said that the main difficulty was the lack of definite knowledge regarding the whole subject of human lactation and infant feeding. He thought that if the causes of the unpleasant sensations which nursing aroused in some mothers could be discovered this knowledge would dispose of many cases.

Dr. Southworth wished to correct Dr. Shaw's impressions derived from the speaker's remarks. He said he did not intend to intimate that the analysis of breast milk was of no value, but to discourage immediate weaning upon the results of the first findings.

Dr. Brady of St. Louis thought that occasionally children were weaned because there was too much milk and they were overfed.

Long-Interval Feeding of Premature Infants.—Dr. J. C. Litzenberg of Minneapolis reported cases showing that a marked increase in weight occurred when premature babies had been taken from the short-interval feedings, so generally recommended, and had been fed at intervals of three to four hours. His charts showed an almost instant advance and no digestive disturbance. It had also the advantage of causing less disturbance to the child, permitting it to sleep for long periods.

A Plea for Longer Intervals in Milk-Feeding.—Julius H. Comrof of York, Pa., read this paper, showing that the average healthy infant received an excessive number of feedings during the first year. He thought that many of the signs of so-called insufficient nursings were more properly attributable to incomplete emptying of the stomach between feedings. He though that the advantages of longer intervals would be more complete gastric digestion; more complete emptying of the stomach; increase in quality and quantity of the milk supply in the breast fed; more rest for the infant and the mother. He thought that if the method were thoroughly tried out the present almost-universal rule of two-hour periods would become less common.

Dr. Lowenberg of Philadelphia said that his good results from short-interval periods would not justify him in changing. He criticised the reader of the paper for being as dogmatic in his plea for four-hour intervals as he had accused others of being in their use of the two-hour period. Statistics in the speaker's practice did not show that children fed at longer periods weighed more than those fed at short intervals.

Dr. Miller of Atlantic City had found, by use of the stomach-tube, that the child's stomach did not empty for at least four hours. He said that the results of past experience should, as a rule, be the guide, but when confronted with an infant with gastric indigestion, vomiting and other pathological symptoms he thought longer periods of rest would prove beneficial.

Dr. J. L. Morse of Boston called attention to the fact that usually the term "premature infant" implied a much weaker and feebler infant than those shown in the cases recited and that in these cases where often only a teaspoonful of food could be given at a time long periods were not possible or feasible. He called attention to the absolute necessity of adapting the feeding and the intervals between feedings to each individual case.

Dr. Royster of Norfolk, Va., said that a baby was not a laboratory, and that therefore there could be no hard and fast rule for its feeding: that it was one thing to measure the stomach of a child and another to enable it to take and absorb and digest the amount of food that could be put into such a sized stomach. He wished Dr. Litzenberg in closing to state at what time he put the child to the breast of the eclamptic mother, and what the toxic condition of the milk was.

Dr. Englis of Summit, N. J., said that infants could not be fed by a clock, that when their stomachs were empty they would make the fact known and that until they did they should not be fed. He thought that other measures than feeding should be tried when the infant cried and that if these measures failed there was time enough to feed it. He thought that not as much harm would come from eight-hour intervals between feedings if the child would stand it as from too frequent feedings.

Dr. Hess of Chicago said that he did believe it necessary to feed a large amount in order to make a premature child gain, but that it did seem, from his experience, that the premature would take more in proportion to its weight in order to gain than the normal infant. In his experience he had had infants weighing 1500 grams gain on 70 calories. He said he rarely fed at shorter than three-hour intervals, but kept up the number of calories by concentration of the food.

Dr. Southworth of New York [illegible] attention to the reaction from the recently widely recommended four hour interval in the German literature, the substance of which was that where milk was method to be scant there was not sufficient breast stimulation in four hour feedings to stimulate it.

Dr. McClevi of California had used the four hour intervals successfully in his practice. He said, in reply to the criticism of the dogmatic recommendation of the four-hour interval, that it permitted of just as much adaptation to individual cases as did two hour intervals. He called attention to the fact that modified cow's milk was the best substitute for mother's milk.

Dr. Zahorsky of St. Louis emphasized the fact that the general term "when an infant's stomach is empty" was only a relative one, depending entirely upon the amount of food taken, and that when only a little could be taken short intervals should intervene between feedings.

Dr. Litzenberg in closing said that he had not offered his method as a propaganda, but as a method to be tried in cases in which all other methods had failed. He said, in reply to Dr. Royster, that the child of the eclamptic patient was fed by another woman and not put to its mother's breast until the mother's condition was normal.

Dr. Comrof, in closing, said that the criticism seemed to come from those who had not tried the four-hour intervals, and who therefore were hardly in a position to speak authoritatively.

Intestinal Toxemia in the Newborn.—Dr. John Lovett Morse of Boston called attention to the almost uniform symptoms presented in these cases. Babies, normal at birth, became suddenly sick on the third or fourth day, were unduly quiet or markedly restless. The rise of temperature was moderate. The meconium was usually not all passed. He said that these symptoms were probably due to absorption of toxins of meconium occurring soon after birth. In his experience recovery was prompt when the intestines were thoroughly cleaned out. He recited several cases and showed the close resemblance to other infantile disorders.

Dr. Goodman of Jersey Shore, Pa., called attention to the clinical and laboratory research that had been done on this class of cases, stating that French physicians had inoculated guinea pigs with the watery extract of the contents of bowels in such cases, with the prompt death of the guinea pig; after treatment, they had again similarly inoculated guinea pigs with no harmful results. Inoculation with fluid from spinal puncture had also proven fatal to guinea pigs, showing the toxemia to be quite general.

Dr. Lowenberg of Philadelphia said that he had often looked upon these cases as instances of infection from the bronchi, or, as cases of simple pneumonia, and asked Dr. Morse if he had ever considered these possibilities.

Dr. Churchill of Chicago said his indications in this class of cases had not been so clear. He said that he always considered the possibility of pneumonia and that he had had a number of cases that gave a high leucocyte count.

Dr. Scott of New York said that there was undoubtedly some chemical combination between the sugar and proteid content of the mother's milk and the bacteria of the nipple that causes this condition.

Dr. McClanahan of Omaha said that if the condition was met promptly and immediately by a cleaning out of the alimentary canal the prognosis was good.

Dr. Morse, in closing, said that he had always used castor oil in these cases because of its quicker and more effective action. He said that he thought if all the indications of this condition were clearly in mind it would scarcely be confused with other conditions.

Pellagra in Children.—This paper was read by Dr. J. Ross Snyder of Birmingham, Ala. The paper embraced a brief history of the disease in the Southern States; the widely differing theories as to its etiology; the frequency of its occurrence in children; the symptoms presenting in children that differed from those in adults, and the difference in the mortality. The author summed up with a preliminary report of his experience together with that of the various physicians with whom he had corresponded, the substance of which was that while pellagra did occur in young children, it was more common after the age of eighteen months and that approximately 10 per cent. of all cases were children under the fifteenth year.

Dr. Butterworth of New Orleans called attention to the fact that Bass of New Orleans had fed chickens with spoiled corn and that the chickens developed unmistakable symptoms of pellagra, thereby seeming to establish the theory so common that the use of corn does have something to do with the development of the disease. He

said that the symptoms occur in order as follows: intestinal disturbances, the cutaneous eruption, and the nervous symptoms.

HOUSE OF DELEGATES.

Wednesday, June 5, 1912—Third Day.

Afternoon Session.

Report from the Board of Trustees.—This report stated in reference to the matter of giving support to small journals, that this course was already being pursued by the Association. The recommendation favoring a Health Journal had been submitted to them and they favored the establishment of such a journal which might be discontinued at any time on the request of the Board of Trustees in case they decided that such a course was advisable.

Report of Reference Committee on Sections and Section Work.—This committee reported that it had considered the resolutions asking for the formation of a Section on Physical Therapeutics, a Section on Proctology, and one on Orthopedic Surgery, and it had decided that it would not be expedient to establish the sections on the first two subjects mentioned but that it recommended the adoption of the resolution forming a Section on Orthopedic Surgery.

Dr. POPE said that the Section on Physical Therapeutics was desired by from 250 to 300 men and he thought the demand was reasonable. There was no doubt but that physical therapeutics had a place in medicine. Again, the profession had to deal with a great many quacks and impostors in this line and this class could best be eliminated by recognizing that branch of therapeutics and creating a standard for those using these methods. He hoped therefore that the house would consider this matter, as it concerned the wishes of many.

Dr. HORACE D. ARNOLD of Boston, Mass., said that the value of this branch of therapeutics was being more and more appreciated and it was going to become of far more importance in the future than it was at present. He thought they should have proper recognition from the Section on Therapeutics and Climatology.

Dr. C. E. CANTRELL of Greenville, Tex., said that they must not forget that the establishment of a section meant expense, time, and energy. If it was worth while to consider the subject he was sure it could be cared for in other sections. There were so many sections now that the Association was getting unwieldy. There was only one science of medicine and it was not a good thing to go after theories and dogmas. If they began this they would soon have a section on purgatives, one on opiates, etc. All therapeutic measures should go together.

Dr. PENNINGTON of Chicago said that he appeared before the House to speak in favor of the formation of a Section on Proctocology. The American Association of Proctologists had been formed fourteen years ago and it always met the day before the American Medical Association and in the same place; such an organization was no longer an experiment. As an instructor in post-graduate work he had been asked by rural physicians why they were not given the opportunity to know what the proctologists were doing.

The House adopted the resolution as recommended and refused to grant further hearing on the subject for the present.

Report of Reference Committee on Medical Education.—This committee reported that it desired to congratulate the Council on Medical Education on the continuance of its excellent work. They recommended that in the classification of medical colleges instead of Class A and Class minus A they should classify as follows: Class A plus, those that rank above 70 per cent. according to the scale of marking; Class A, those that have a general average of 70 per cent., though they might be slightly below in one or two subjects; Class A minus, those that might have an average of nearly 70 per cent, but fall off in three or four departments. They also recommended that the Council let it be known that they were ready to offer advice to any institution and to tell it how it might be brought up to the standard. They also recommended that the House of Delegates appropriate money for the proposed hospital investigation and classification.

The report of the Council on Education was adopted by a rising vote as a tribute to the excellence of the work it had done.

Report of Reference Committee on Legislation and Political Action.—Dr. W. A. EVANS of Chicago, Ill., in reporting for this committee said that they recommended that the House of Delegates appropriate $1,000 in accordance with the request of the committee, which had met in connection with the National Education Association, as the latter organization had pledged a like sum for carrying on a campaign of education and hygiene among school children. He recommended that the Committee on Public Health Education among Women be received, and called special attention to the good work done. Between July 1, 1911, and April 1, 1912, talks were given to approximately 3,342 audiences, not including 935 audiences of school children. The lectures had been so favorably received that it was impossible to restrict the work to women, as men had asked for talks and the requests could not be refused. In regard to the report of the Committee on the Prevention of Blindness and Ophthalmia Neonatorum, he said that they recommended that the secretary of the committee be requested to inform all State boards of health that ophthalmia neonatorum should be made a reportable disease, and also recommended that a resolution be sent to the Public Health and Marine Hospital Service requesting that this service undertake the investigation of trachoma, as relating to its cause, spread and control. He also recommended that the council be instructed by the House of Delegates to carry on a more definite and vigorous policy in regard to legislation.

This report was adopted as read, together with the above recommendations.

Reference Committee on the Nomenclature and Classification of Disease.—This committee reported that the report had been accepted by them as presented and they therefore recommended its adoption. The report stated that the copy for a practical nomenclature of diseases was completed and would soon be published. The Bellevue Hospital Nomenclature of Diseases and Conditions had been adopted and the differences in the Army, Navy and Philippine lists had been considered. Overtures had been made looking to cooperation with the Committee of the Royal College of Physicians and Surgeons of London to arrange for the fourth decennial revision of the fifth edition of the nomenclature that had been the authority in England for the past forty years.

Other Resolutions Introduced.—Dr. W. A. EVANS of Chicago introduced a resolution from the Section on Preventive Medicine and Public Health providing for the appointment of a permanent Committee on Industrial Hygiene to cooperate with the American Association for Labor Legislation. Also a resolution to the effect that the American Medical Association send a resolution to the Federal government urging the enactment of laws restricting the interstate traffic in opium, cocaine, morphine and other opiates not used for medicinal purposes, and that it take steps to restrict the importation of such drugs and to control their distribution in this country.

Dr. OSCAR DOWLING of Louisiana introduced a resolution providing for an inspection of doctors' and dentists' offices and the use of a score card that would classify them. He said that they should be required to come up to a certain standard. The unsanitary condition of many offices and the careless personal habits of some physicians demanded such a course. Dr. Dowling also introduced a resolution to the effect that whereas many physicians opened offices and practised as specialists in ophthalmology, otology, etc., who were by no means fitted for this work, provision should be made for the establishment of some standard or basis of determining the fitness of such practitioners and that the Council on Medical Education seek some means of supplying this deficiency by making provision for post-graduate work in such specialties and that State boards be enlightened as to the necessity of establishing a standard and permitting only those to practise a specialty who showed their fitness.

Dr. JACOBI said that as chairman he was not permitted to introduce a resolution, but that he wished to say that public opinion had been awakened to the necessity for conservation. After referring to the loss of life through automobile accidents, factory accidents, and floating palaces, he spoke of the loss of life and the suffering occasioned by the floods in the Mississippi which had permanently beggared many and created a desert which would not bloom again in a decade. This was because we had murdered our forests. We could not expect much from politics, but the American Medical Association was a permanent body and should take up the matter of rebuilding the forests, which could be done in the course of fifty years. Spain, Italy, Greece, and Palestine had been great because of their forests. He, therefore, urged that some one frame a resolution urging and compelling the government to take action in this matter and to follow it up persistently.

SECTION ON MEDICINE.

Wednesday, June 5—Second Day.

My Experience with Diabetes Mellitus Patients Living Ten or More Years.—Dr. ELLIOTT O. JOSLIN of Boston said it had been a gratifying surprise to him that sixty-seven of his patients with diabetes had lived or were still alive at least ten years after the onset of the disease. Eleven per cent. of all cases of diabetes which he had seen in private practice had had a duration of life of ten or more years. The duration of life in one case was thirty-five years and in five other cases twenty or more years. A study of his cases had taught him that the diabetic patients must be prevented from becoming fat. Three qualities of temperament constituted a reason why some of these patients lived so long. These qualities were common sense, courage, and cheerfulness. Heredity played an important rôle among the group. Twenty-five per cent. of the sixty-seven cases showed parents, brothers, and sisters, cousins, or aunts with the disease. Syphilis had existed in only five of his cases and he felt sure that as time went on the importance of this disease in this connection would receive more recognition. Every case should be scanned carefully for a possible connection with syphilis. The favorable outcome in a considerable percentage of cases could be attributed to early treatment, and, contrary to the rules, a certain number of cases became less severe as time advanced. Eleven of the cases were free from sugar before death occurred. So far as he was aware acidosis was absent in all of the cases. A contrast of the statistics in his cases with those of twenty years ago showed remarkable progress in the treatment of this disease.

Family Hematoporphyrinuria and Its Association with Chronic Gastroduodenal Dilatation and Thyreopathy.—Dr. L. F. BARKER of Baltimore reported a case of prolonged hematoporphyrinuria in a patient suffering from gastroduodenal dilatation with tetanus-like attacks. The autopsy findings showed dilatation of the stomach and duodenum, hemorrhagic erosions of the stomach, fatty degeneration of the liver, kidney, heart muscle, and pancreas, together with other serious pathological conditions. Two sisters of the patient suffered with the same condition and the father showed signs of Graves' disease. This change in the urine occurred in a variety of conditions, but he was inclined in this case to regard the toxemia as of gastroduodenal origin and the thyreopathy as an accompaniment. He especially emphasized the family character of the disease and thought that perhaps some vice of development had affected all three sisters and accounted for the gastroduodenal dilatation which led to the intoxication and hematoporphyrinuria.

An Analysis of Five Hundred Cases Showing High Blood Pressure.—Dr. THEODORE C. JANEWAY of New York read this paper. In the study of the history of some 500 cases of persons showing a high blood-pressure of 170 or over during the past eight years, it was found that approximately 150 had died. Of these 150 patients, accurate information as to the cause and time of death had been obtained. His clinical diagnosis of the primary underlying disease in these 100 cases in private practice was as follows: Chronic nephritis, 79; diabetes, 7; general arteriosclerosis, 4; coronary sclerosis, 4, and the condition of the heart which seemed to be the primary disease, 4 cases. The analysis of these cases gave evidence of the frequent association of cardiovascular and renal disease with diabetes in elderly individuals. In the younger cases of pure diabetes, high blood-pressure was not observed, but in individuals of suitable age it seemed to predispose to the development of those changes which produced hypertension. This series of cases was studied as regarded age incidence, sex incidence, immediate cause of death, the relation of the initial symptoms, the cause of death and the relation of prominent early symptoms to the cause of death. So far as conclusions could be drawn from a study of 100 cases, it seemed reasonable that—(1) The early occurrence of dyspnea whether on effort or of the paroxysmal type in a patient with high blood-pressure indicated marked danger of cardiac insufficiency. In such patients the disease should be treated as a cardiac disease, especially by safeguarding methods. (2) Anginoid pain, even of marked severity, occurring on exertion, did not make the prognosis any worse than did other cardiac symptoms in persons with high blood-pressure. Of course, every precaution must be taken to prevent over-exertion. The bulk of these patients would not die in an anginal paroxysm. (3) Complaint of polyuria, marked headache, or of visual disturbance by a patient with high blood-pressure, if that patient was below fifty years of age, should make the prognosis very guarded, since chronic uremia was a frequent mode of termination in such cases.

Immunization in Pneumonia and Other Pneumococcus Infections.—Dr. E. C. ROSENOW of Chicago presented briefly the results of immunization experiments in animals and the results of the treatment of lobar pneumonia in man with various products obtainable from pneumococci. The opsonic content of the serum in lobar pneumonia had been found to be below normal during the early part of the disease, and well above normal as the symptoms subsided. In those cases which died from overwhelming infection it remained persistently below normal. When highly virulent pneumococci were allowed to autolyze in NaCl solution there appeared at a certain period a highly toxic substance. This when injected intravenously in guinea pigs, rabbits, and dogs produced symptoms characteristic of anaphylaxis in these species and when injected subcutaneously in man produced a moderate increase in opsonins after a short negative phase, rather marked local reactions, leucocytosis, and some fever. These extracts called forth reactions in man similar to the heat-killed bacteria. For the treatment of lobar pneumonia the autolyzed pneumococci had been mostly used so far. A study of the statistical method during the past two years at the Cook County Hospital had shown a definite reduction in the mortality of the 130 cases treated. The number of cases treated was too small, however, to allow one to draw definite conclusions, but when they considered the patients that had been treated in this way belonged to the most unfavorable group, it looked as if this antigen really was of definite value.

Pleural Vomicæ with an Analysis of Sixteen Cases.—Dr. ELSWORTH SMITH of St. Louis said that if left to nature the destiny of pus within the pleural sac would be (1) absorption; (2) formation of a pleural vomica; (3) perforation of the chest wall, resulting in empyema necessitatis; and (4) perforation through the diaphragm into some of the abdominal organs or peritoneal cavity. Of these several results, all quite rare, that by way of formation of pleural vomica was probably the most frequent. Their series comprised sixteen cases, ten seen in private practice. An analysis of these sixteen cases developed some points of interest and value. Four cases developed in the course of pneumonia, one in appendicitis, one in an infection from the mouth, two in chronic bronchitis, three in empyema, three in abscess of the liver, showing that four sources were below the diaphragm. In not one of the sixteen cases were tubercle bacilli present. The important points in the diagnosis were the history of an etiological source for pus, septic fever, sudden, profuse and constant expectoration of pus, generally offensive and in large quantities, and above all in the localization of an area in the chest, giving the classical physical signs of fluid in the pleura, and on such findings had also to be based the differential diagnosis between pleural vomicæ and delayed pneumonic resolution, pulmonary tuberculosis, bronchiectasis, abscess of the lung, pulmonary gangrene, and the more rare conditions of new growth, lues, hydatid, etc. In conclusion he stated that pleural vomicæ belonged to a class of cases deserving far more attention than was accorded in the literature; that many a poor victim of this generally supposed curable malady was doomed to an untimely grave because believed to be suffering from such hopeless affections as advanced pulmonary tuberculosis, inoperable bronchiectasis, pulmonary abscess, or some of the more rare and fatal types of diseases of the respiratory tract; while, if the localized empyema was diagnosed before perforation or if every case of copious purulent expectoration were carefully studied and correctly appreciated, much untold misery and suffering might be averted and many lives might be saved.

A New Principle in the Treatment of Typhoid Fever.—Dr. WARREN COLEMAN of New York said that three years ago he brought to their attention a new principle in the dietetic treatment of typhoid fever, the principle of supplying the patient with sufficient food to diminish materially, and in some cases to prevent, loss of nitrogen and weight. The amount of food recommended exceeded that furnished by any diet hitherto employed in the treatment of the disease by 1,500 to 2,000 more calories per day. Though the number of cases thus treated was not large, something less than fifty, the results had been so striking that it seemed desirable to advocate the principle publicly. In the three years which had elapsed since the paper was presented the study of the effects of the diet had been steadily pursued, and the purpose of this paper was to present these results. The following foods had been given a thorough trial and were recommended for appropriate

ases. Apple sauce, one ounce; bread, average slice; butter, one pat (1/3 ounce); cereal, one heaping tablespoonful; crackers, one ounce; cream, one ounce; egg, two ounces; Lactose, one tablespoonful; milk (whole), one ounce; potato (whole), one medium; potato mashed, one tablespoonful; rice (boiled), one tablespoonful; sugar (cane), one lump; milk sugar, one tablespoonful; toast, average slice. The caloric values of these articles were based upon the tables of Atwater and Bryant, Schall, and Heisler. At present the foods which Dr. Coleman said he believed harmful were meat and its preparations, vegetable foods containing cellulose and fruits containing much cellulose and small seeds. The three objections brought against this diet were: 1. That the patient could not digest and absorb the amount of food recommended. 2. That the amount of fat would inevitably cause alimentary disorders and acidosis. 3. That, granting its absorption, patients did not require the amount of food which was advocated. The objection that patients could not digest and absorb the amount of food recommended was based upon the prevalent notion that typhoid fever caused serious impairment of the digestive powers. This belief was without foundation. Disorders of digestion depended not so much upon the quantity of food as upon the method of giving it. Sudden changes in diet and individual peculiarities were two factors that must be taken into consideration; these could be discovered only by testing the capacity of each patient for the foods allowed. In regard to the absorption of the large amount of food, investigations showed that the capacity of the typhoid fever patient to absorb large amounts of food was remarkable. The absorption of carbohydrate was practically complete, less than one-half of one per cent. being lost. The loss of protein was usually under 10 per cent. The loss in a normal man used as a control was 7.9 per cent. The objection that the amount of fat recommended would inevitably cause alimentary disorders and acidosis had likewise proven to be without foundation. The majority of patients had taken from 100 to 250 grams of fat a day without disturbance of any kind. Moderate diarrhea had occurred in a few cases, but had ceased upon withholding the cream. Instead of being harmful there was reason to believe that fat aided the digestion of carbohydrate. The third objection, that patients did not require the amount of food advocated should be considered from the clinical as well as the metabolic standpoint. In general, the more food a patient took the better his physical condition. Patients lost weight when an apparent excess of food was not given. The largest amounts which had been administered had been reached in the attempt to satisfy the patients' hunger. Though this was clinical evidence, it possessed considerable value, the ultimate test of any method being the effect it produced on the patient. The study of protein metabolism in typhoid fever had demonstrated that large amounts of food were required to keep a patient in, or nearly in, nitrogen balance. The total number of cases of typhoid fever treated at Bellevue during the five years previous to January 1, 1912, was 975 and the total number of deaths 157 or 16 per cent. The total number of cases on the diet treatment was 138, of which 44 were mild, 57 severe, and 37 very severe. The mortality rate for the series was 8.69 per cent. Both mortality rates were abnormally high because the worst types of the disease were admitted to the hospitals of the department, and many patients were brought in apparently only to die when treatment at home had proven unsatisfactory. Records of cases followed showing that under this diet the period of convalescence was materially shortened.

A Plea for the More Frequent Scientific Employment of Physical Therapeutics.—Dr. PHILIP MARVEL of Atlantic City, N. J., said that now physical treatment, too indefinitely directed, was given in a more or less routine manner, and was scientifically employed only in a few of the best sanatoria. Conditions, the outgrowth of a complex civilization, demanded the employment of mechanical and various other forces in the restoration of health. The public complainingly resented the failure of medical science properly to recognize the efficiency of this system of therapeutics in both anatomical and functional disturbances. There was a deplorable absence of physical therapeutics in the teaching curricula of medical colleges which was largely responsible for the growth and maintenance of cults and pathies. Knowing as well as they did the efficiency of massage, electricity, calisthenic exercises, and hydrotherapy when scientifically applied in correcting the undeveloped muscular system, functional deficiencies and tardy mental development not infrequently seen in childhood, it seemed astonishing that so many physicians so greatly needed the intelligent employment of these therapeutic agents. Fundamentally speaking there were three cardinal conditions that were directly concerned, as both contributing and causative agents, in various diseases that were accompanied by toxemia. They were intemperate food indulgence, indifferent muscular activity, and insufficient elimination.

Diagnostic Pitfalls Identified During a Study of 3,000 Autopsies.—Dr. RICHARD C. CABOT of Boston said that he wished to make three points: (1) That there was a goodly number of "classic" time-honored mistakes in diagnosis, which were familiar to all experienced physicians because they made them again and again. Some of those they could avoid, others were almost inevitable, but all should be borne in mind and marked on medical maps by a danger signal of some kind: "In this vicinity look out for hidden rocks," or "Dangerous, turn here, run slow." (2) That some common diseases were relatively inaccessible to diagnosis, no matter how carefully they were on the watch for them. From a study of 3,000 autopsies he had begun to work out a percentage or ratio of accessibility for the commoner diseases. (3) That beside the classic and well known pitfalls, there were some less familiar to the profession and needing all the more, therefore, to be marked "Dangerous." The following tables were of interest.

Percentage of Correct Diagnoses—Diabetes mellitus, 95 per cent.; typhoid fever, 92 per cent.; aortic regurgitation, 84 per cent.; cancer of colon, 74 per cent.; lobar pneumonia, 74 per cent.; chronic glomerulo-nephritis, 74 per cent.; cerebral tumor, 72.8 per cent.; tuberculous meningitis, 72 per cent.; gastric cancer 72 per cent.; mitral stenosis, 69 per cent.; brain hemorrhage, 67 per cent.; septic meningitis, 64 per cent.; aortic stenosis, 61 per cent.; phthisis, active, 59 per cent.; miliary tuberculosis, 52 per cent.; chronic interstitial nephritis, 50 per cent.; thoracic aneurysm, 50 per cent.; hepatic cirrhosis, 30 per cent.; acute endocarditis, 30 per cent.; peptic ulcer, 36 per cent.; suppurative nephritis, 35 per cent.; renal tuberculosis, 33 per cent.; bronchopneumonia, 33 per cent.; vertebral tuberculosis, 23 per cent.; chronic myocarditis, 22 per cent.; hepatic abscess, 20 per cent.; acute pericarditis, 20 per cent.; and acute nephritis, 16 per cent. One naturally asked "Whose diagnosis?" Whose success or failure did this represent? Where Smith and Jones failed they might have done better. He doubted it. The study of the details in these cases before and after death convinced him that, for the present and under the present limitations of diagnostic method, few of the mistakes tabulated above could have been avoided. This table represented the success-and-failure ratio of certain methods, rather than of certain men. Admitting that the man behind the gun (or the method) made a vast difference, he did not believe that these figures depended to any considerable degree on the possession or lack of special virtuosity in diagnosis. They mirrored the methods of an average up-to-date American hospital. Dr. Cabot concluded his paper by telling of the relatively unfamiliar mistakes.

Oration in Medicine: Prognosis in Chronic Heart Disease as Adversely Affected by Certain Medical Traditions.—Dr. CHAS. LYMAN GREENE of St. Paul, Minn., emphasized the contentions upon which this address was based as follows: (1) That an early diagnosis of cardiac insufficiency was absolutely essential to the patient's welfare. (2) That such early diagnosis necessitated a change in the general attitude of medical men with relation to the valuation of subjective symptoms and the determination of the symptomatic relationships of lesser cardiac dilatations. (3) That a large group of chronically diseased individuals usually classed as neurasthenics, while usually free from serious organic heart disease, were peculiarly lacking in heart muscle tonus and possessed extremely dilatable, symptom-producing hearts as a part of their fundamental and usually congenital defects in general bodily structure and function. (4) That so little basis now remained for the retention of the term "neurasthenia" as a description of a concrete disease, and such serious errors of omission resulted from its continued prominence in the field of chronic ailments, that it should be dropped from the literature of medicine, or be given its true valuation under a proper terminology. (5) That the term "perfect compensation" in heart disease was a misnomer, and that the pathological events in such cases made it evident that there was a constant, more or less gradual but progressive limitation of the field of cardiac response, and that periods must inevitable occur from time to time, long before the onset of emergent or gross symptoms, when appropriate therapeutic measures would support and aid the embarrassed and laboring heart, relieve suffering and prolong life. (6) That to make the symptom of extreme cardiac exhaustion one's only justification for active

therapy was both illogical and dangerous. (7) That recent studies of the causative agents and portals of entry in acute rheumatism a better knowledge of the nature and means of detection of syphilitic infection, and the introduction of new agencies and better methods for the intensive treatment of lues, made both the avoidance and permanent cure of these conditions easier, and indicated the possibility of greatly limiting the large group of myocardial and aortic lesions of which they were the causative factors. (8) That chronic disease in general, and cardiac disease in particular, were granted far less critical attention and direct control than was properly due them. (9) That chronic heart disease though incurable was wonderfully responsive to intelligent and properly timed treatment, and always benefited by such proper supervision and control as was indicated in the individual case and obtainable only through early diagnosis, tactful disclosure, and a well balanced optimism.

SECTION ON DISEASES OF CHILDREN

Wednesday, June 5—Second Day

DR ISAAC A. ABT OF CHICAGO IN THE CHAIR.

Use of Polycarbohydrates in the Diet of the Young Infant.—JULES M. BRADY of St. Louis showed that the usual milk modifications used successfully in private practice did not produce good results in asylums. He illustrated with this paper the favorable results obtained from furnishing the infant, in the first three months of life, the carbohydrate content of its milk mixture in the form of maltose, dextrin, cane-sugar, lactose, and barley, instead of the generally used seven per cent. lactose. From his observations he concluded that the possibility of rickets need scarcely be mentioned, so seldom had it been seen. From his experience in 170 cases, all of which were under control for six months and longer, he concluded that the asylum infant was materially assisted in its development by the use of liberal varieties of easily-assimilated carbohydrates.

Clinical Notes from the Willard Parker Hospital, New York; Intestinal Intoxication.—Dr. LOUIS FISCHER of New York showed that research into infant metabolism had proven many new facts, chief among which was that heretofore too much stress had been laid upon bacteria and too little upon fat, sugar, and casein. He concluded that sugar disturbed digestion in the large majority of cases, even causing fever in many. Fat he considered a very important therapeutic element, and the fact that casein curds, might be prescribed in febrile conditions, to lessen and modify intestinal putrefaction to distinct advantage had been demonstrated in his cases. He concluded that where there was metabolic disturbance with loss of weight there was no sugar to equal maltose but emphasized the fact that no food should be allowed to stagnate in the intestines.

A Series of Infants Fed on a High Percentage Albumin Milk.—FRANK C. NEFF of Kansas City, Missouri, presented a series of sixteen cases (with weight-chart illustrations) in which a modified *eiweiss milch* had been given. In his formula he increased the element of whey, and used all buttermilk as a diluent in place of half buttermilk and half water, as in the *eiweiss*. His cases represented infants ranging from 22 days to 5½ months old, all in institutions. They had not been gaining on the breast milk, but as soon as placed upon this modification gained steadily. Many of his cases showed gain on the high percentage albumin milk both before and after the addition of supplemental sugar.

Ileocolitis with Meningeal Symptoms.—A. L. GOODMAN of New York gave the history of several rather obscure cases in which meningeal symptoms were present, and yet spinal fluid, upon examination, proved to be sterile. He said that gastrointestinal autointoxication often gave rise to symptoms which might be confused with genuine meningitis and that a microscopic examination of the contents of the intestinal flora was oftentimes necessary to a differential diagnosis, but called attention to the misleading fact presented by such examinations because all the microorganisms found in pathological conditions could be found in the normal stool and the factor of the colon bacilli had not yet been definitely established. He called attention particularly to the confusing nature of the symptoms presented on account of their similarity to other conditions, but gave a favorable prognosis where purgatives were used early, the diet reduced, thus stopping the digestive irritation.

Dr. ZAHORSKI of St. Louis, discussing Dr. Brady's paper, said that he believed general conditions in asylums were so much improved that infants [illegible] dying with the rapidity which had obtained previously. Some years ago, he said, a mortality of 60 and 70 per cent. had not been unusual, while now, in the asylum with which he was connected, they had a mortality of only 10 per cent. and that all of the deaths had been among the bottle fed. He said that they had not used the carbohydrate diet mentioned, but considered it excellent. He thought that as long as their plan of half top-milk with sugar gave such a low mortality and such excellent results there was no necessity for changing. He deplored the lack of comparative tests of babies fed upon small amounts of fats and those in which it was the principal content of the diet. He thought that until these were supplied no one was justified in saying that young babies should not be fed fats.

Dr. WEEMS of Columbia, Texas, said that he had had several cases presenting such symptoms as Dr. Goodman had outlined which in the light of his presentation he concluded must be ileocolitis, but in view of the fact that the parents would not consent to lumbar puncture he was unable to say whether the fluid was sterile or not.

Dr. DOUGLAS of Detroit wished to know what, exactly, was meant by the general term "maltose," the use of the loose designation being misleading.

Dr. HESS of Chicago, discussing Dr. Fischer's paper, thought that unquestionably catharsis was of great benefit, both in elimination from the bowels and from the kidneys, but thought it possible to push it too far. He said that in his work he had never felt justified in giving a five-grain dose of calomel to a young child. He cited the experiments of Dr. Abt at the Michael Reis Hospital, where one grain of calomel, in divided doses covering a period of three days, showed blood in the stools upon microscopic examination, as did also magnesium sulphate, one gram, and castor oil, given in the same way over a like period. Some of the cases used for this series were normal children, in the hospital because the mother was confined there for some reason. He said that he considered most of the difficulties arising in the use of *eiweiss* milk were because it was not properly prepared, and that since Finkelstein had published more specific directions for its preparations he thought much better results would be produced.

Dr. MORSE of Boston expressed it as his opinion that the etiology of diseases of the gastrointestinal tract and their classification was in a transitional stage. He thought that German writers put too much stress upon the chemical side, and Americans, probably, upon the bacteriological, while the truth was between the two. He thought that any baby, from birth on, was able to digest a certain amount of starch, and that, where sugar was called for, lactose was the best form to give. He said that milk sugar would do harm to the intestinal tract, as shown by the large class of cases of intestinal disturbances that were due to fermentation from sugar. There were cases he said, in which lactose was the sugar of choice on account of its slow absorption, while in others maltose was preferable because of its rapid absorption. He had seen in his practice cases of meningismus in which there was increase in the mononuclear cells which would cause one to suspect tubercular meningitis.

Dr. ROYSTER of Norfolk, Va., also called attention to the necessity for differentiating between the institutional and the private-practice case. He thought that the cause for more trouble in institutions was lack of personal attention and too little fresh air. In the institution with which he is connected he said that they never had over ten babies; they had one graduate nurse, one student, and two ward attendants, which insured personal attention to each child, which went a good long way toward reducing mortality. In selected cases he used malt sugar with interesting results. Two infants did well for a while, and then began to retrograde. He then substituted dextrose with return to normal conditions. He reported that in a little series of cases he used a proprietary food rich in malt sugar, in another milk sugar, in the last dextrose malt. The infants on the proprietary food gained three ounces, milk sugar six ounces, and the dextrose malt one ounce. He believed it would not be well to keep them on any one diet continuously, that there came a time when a change was necessary to stimulate digestive functions.

Dr. SCHWARTZ of New York thought that ordinary results were better with malt sugar, and that chronic intestinal disturbance yielded better to it; that it was also one of the only preparations that reduced fatty acids to any appreciable extent. He said that the good results from *eiweiss* milk were due to the high percentage of protein. He stated that frequently a low percentage of sugar and increase of fats gave good results, and that in other cases

the reverse would prove beneficial, but that a balance should be struck between the two. In children with fever and intestinal disturbance he eliminated all food for twenty-four hours -or until the fever disappeared.

Dr. Southworth of New York had found, in his experience, that where there was disturbance a diluent of cereal nature produced good results. The use of starch he thought produced a chemical protection in the stomach by splitting the fats and the sugars. He considered dextrose a protection to the intestines much in the same way as starch. He said that if part of the sugar was given as maltose and part as dextrose it would be slowly split in the intestines and furnish further maltose during the time of absorption. He said that the dry preparations had a percentage of between 40 and 60 per cent: dextrin, while the liquid preparations have 50 or below.

Dr. Lowenburg of Philadelphia said that for eleven years he had been feeding top milk and cane sugar and had had such excellent results that he did not feel justified tin changing. During the summer months he pasteurized the milk. If the combined chemical and bacteriological etiology of the digestive disturbances were understood he believed that the treatment would be comparatively simple. He did not see any possible danger from the use of sugar, as all human milk contained it.

Dr. Dennett of New York called attention to the safeguard of boiling as a further preventive of digestive disorders.

Dr. Louis Fischer (closing the discussion) said that the dose of calomel he had recommended was not an infant's dose, but suitable for children (with scarlet fever) up to the fifteenth year; he however called attention to the absolute necessity for free elimination.

Dr. Johnson of Grand Rapids brought out the overlooked fact that *eiweiss* milk was for sick babies, not a diet for normal, and should in no instance be given for longer than six weeks. He said that in the Grand Rapids institution the death rate was but 10.8 in infants under one year.

Dr. Jules M. Brady in closing said that the chief factors in raising the mortality rate in asylums were the overcrowding of wards, insufficient help, etc. He thought that the fact that during the past year the ward temperature had been kept at 75°, instead of the usually prescribed 68° had helped to keep their infants in good condition. He said that their records showed undeniably that their best results were from small percentages of fats, their place being taken by carbohydrates. They were able to feed four ounces of one of their formulas to a new baby without producing vomiting. He drew particular attention to the necessity for watching the caloric requirements. He fed seven times a day at first, then as the fat was increased, decreased to five. He believed that the trouble experienced with *eiweiss* milk was due to the fact that it was not finely curdled. He believed that if flour were added to the feeding early there would be no necessity for adding maltose and dextrose preparations. His experience showed that infants under three months, even as early as three weeks, tolerated maltose very well.

Dr. Frank C. Neff, closing the discussion, said in answer to Dr. Hess that in his cases no gain had been produced until the malt was added. He believed that the sugar contained in milk varied greatly, so that cases where gain was shown when only milk was given were probably getting a high percentage of sugar in the milk. He put forth his formula simply as a method to be used in those cases where the other modifications did not produce good results, not as a routine.

HOUSE OF DELEGATES.

Thursday, June 6—Fourth Day.

Election of Officers.—The following officers were elected: *President*, John A. Witherspoon, Nashville, Tenn.; *First Vice-President*, Philander A. Harris, Paterson, N. J.; *Second Vice-President*, John Heffernon, Syracuse, N. Y.; *Third Vice-President*, H. H. McClanahan, Omaha, Neb.; *Fourth Vice-President*, Henry T. Fry, Washington, D. C.; *Secretary*, Alexander R. Craig, Chicago; *Treasurer*, William A. Pusey, Chicago; *Trustees*, M. L. Harris, Chicago; C. H. Dougherty, South Bend, Ind.; W. T. Councilman, Boston, Mass.; *Member of Judicial Council*, Frank Billings, Chicago; *Member of Council on Health and Public Instruction*, W. B. Cannon, Boston; *Members of Council on Medical Education*, James W. Holland, Philadelphia, and W. B. Hackett, Nashville, Tenn. The next meeting will be held at Minneapolis.

(*To be continued*)

New Instruments.

STOMACH SPRAY FOR THE LOCAL TREATMENT OF GASTRIC ULCER.

A PRELIMINARY COMMUNICATION

By ERNEST ZUEBLIN, M.D.,

PITTSBURGH, PA.

PHYSICIAN ALLEGHENY GENERAL HOSPITAL.

In Dr. Einhorn's string test and in his duodenal bucket we possess valuable methods for a more precise diagnosis of the ulcerated surface of the gastric wall. In treating cases of gastric ulcer by the ordinary methods (rest cure, diet, bismuth, alkalies, nitrate of silver, atropine, hot applications, etc.) and controlling the results with the string test I obtained in several instances a marked blood reaction. Even the disappearance of the subjective symptoms of gastric ulcer and a still positive brown discoloration of the string would indicate that the ordinary treatment of these pathological conditions is not in all instances sufficient. The question whether it would be possible to treat the ulcerated surface more

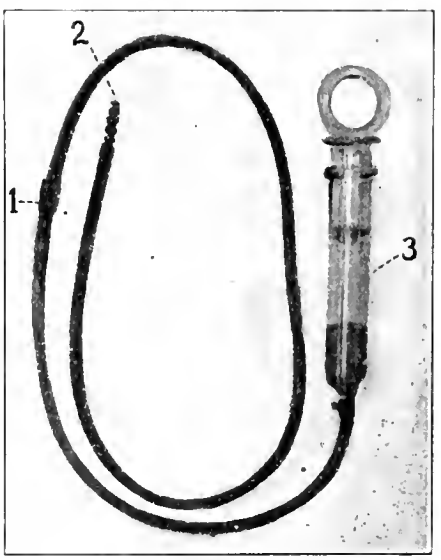


Fig. 1.—Tube for stomach spray: 1, guard-ring; 2, tip for spray with five lateral openings; 3, syringe.

effectively by local application seems very important. In many instances an operation is not accepted even if the former treatment was not successful.

As early as 1891 Einhorn recommended the appliance of a stomach spray, but the tube then used did not seem to me to answer well for the local treatment of gastric ulcer. The new irrigation tube which I have employed since October, 1911, consists of a thin rubber tube 3/16 inch in diameter, 30.1 inches long. Just above its closed lower extremity a series of fine openings allows the medicated fluid to escape in the form of a fine spray. A scale in inches on the outside of the tube denotes the level to which the tube has entered the stomach (distance measured from the dental row). The guard-ring fitting tightly on the tube and being caught by the teeth of the patient, prevents the compression of the tube and maintains it in a steady position, whereby the tickling sensation of the tube in the pharynx is reduced to a minimum, as well as the reflex movements of the pharynx. By suppression of the movements of regurgitation the change of the level corresponding to the ulcerated area of the tube is rendered less liable. The rubber tube can be

adapted either to Einhorn's outfit for duodenal feeding or it may be connected with an ordinary glass syringe (containing one ounce) filled with the medicated astringent solution.

The technique of the treatment may briefly be described as follows: The patient sits in an upright position. In a case of hyperchlorhydria where the string test has previously shown a marked brown discoloration with positive blood test at a level, for instance at 17 inches from the dental row, the guard ring is placed at 17¼ inches on the irrigation tube. The patient swallows the tube without difficulty, and bites on the guard-ring, so steadying the tube in this position. The glass syringe with the astringent solution is then fitted on, and by successive pressure the fluid is forced into the stomach at the level of the ulcerated bleeding surface. Then the tube is gradually withdrawn, the injection of the remnant fluid in the syringe being still continued until the cardia is reached. Then the whole tube is withdrawn. The patient then lies down in the right lateral position, and after a little while he swallows

Fig. 2.—Stomach spray in use.

a saline solution, in order to dilute the fluid in the stomach, which by a longer contact with the diseased part, might be injurious.

In order to try the treatment on a series of patients and to report later on a successful treatment by this method, I have delayed my communication up to the present time. So far as my observations on my cases are concerned this treatment has shown no disagreeable results or injurious effects. In regard to the clinical results the strength of the solutions used, the duration of the treatment, the experiments have still to be continued. For the present I can say that the string tests made some time after the treatment showed a marked improvement and the absence of blood. The patients were not only free from their previous subjective symptoms, and they did not object to the treatment at all, but also they said that the spray seemed to act directly on the spot, where previously they had remarked the pain.

429 Fourth Avenue.

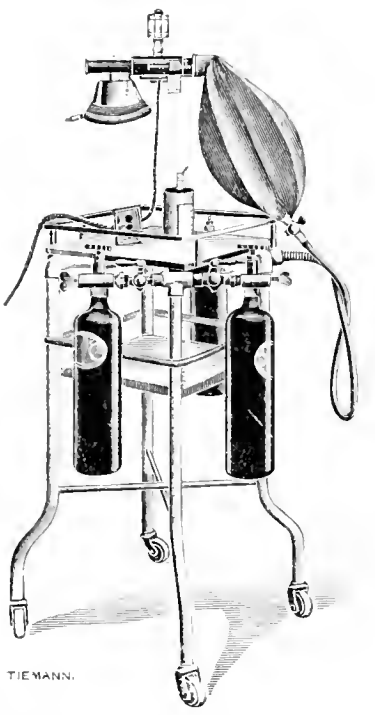
A NEW ANESTHETIST-CYLINDER STAND FOR HOSPITAL USE

By RAYMOND C. COBURN, M.A., M.D.

NEW YORK.

In the *Journal A. M. A.*, March 23, 1912, I described "A New Apparatus for Administering and Warming General Anesthetics" that was designed primarily for the administration of nitrous oxide-oxygen, with ether as an adjuvant. The stand for holding the cylinders in the apparatus therein illustrated is very light and portable. In the Medical Record, May 4, 1912, under the caption of "A Scientific System of Administering Ether" there were further illustrations of my apparatus, showing a folding stand mounted on casters. This stand occupies the minimum of space and is also light and portable.

The chief aim in designing a portable stand for the nitrous oxide and oxygen cylinders was that it should be light and compact, and easily and quickly assembled and taken apart. However, for hospital



use, lightness and compactness are not essentials, and so, in order to afford the most practical and convenient means for holding the cylinders and all other supplies of the anesthetist for this kind of use, the herein described and illustrated hospital stand was designed. Heretofore it has required one stand for the cylinders and another for the anesthetist's supplies, thus occupying a considerable amount of much needed space in the operating room, as well as causing unnecessary inconvenience in moving both stands about whenever the table is moved. In the anesthetist-cylinder stand I have combined the two stands into one, and, therefore, I believe this new hospital stand will fill a distinct and long-felt need, and this opinion is much strengthened by the fact that several of the largest and most progressive hospitals in this city have already added this stand and apparatus to their regular equipment, and they report that they are using them with entire satisfaction.

The stand consists of four legs mounted on small wheels. The top is made of thick plate glass,

twelve inches square, and one and one-half inches above is a light railing. About eight inches beneath the top is a shelf, also about twelve inches square; and above it is another railing. There is ample space for another shelf or two, if they are desired. At two opposite corners of the square stand are means for holding two cylinders each. When the cylinders are attached each one communicates with a fitting underneath the plate glass top at another corner of the stand. To this fitting is attached the small tubing that leads to the rubber bag.

The top is designed to hold the inhaler when not in use, and the supplies of ether, chloroform, anesthol and ethyl chloride, mouth gag, tongue forceps, etc., and on the lower shelf may be kept the supply of towels, gauze, hypodermic solutions, etc. The railings keep the supplies from being displaced when the stand is moved. As the stand is mounted on wheels it may be readily moved about with the cylinders attached, and all the supplies at hand for instant use in the anesthetizing room and during the transference of the patient, as well as in the operating room.

While the stand was designed for holding oxygen cylinders, a special fitting may be had for connecting with the regular oxygen tanks so universally used in hospitals.

The cost of nitrous oxide-oxygen anesthesia depends very much upon the method of its administration. The method of rebreathing and the intermittent supply of both gases, with the apparatus here shown, averages about $1.00 per hour, at the regular retail price of supplies, and, with the hospital discount, about $0.65 per hour. Where the hospital manufactures its own gas the cost is very considerably reduced, approximating that of ether by the open method.

Although the stand here shown was designed primarily for holding nitrous oxide and oxygen cylinders it may be advantageously used for holding a cylinder of carbon dioxide, or a mixture of carbon dioxide and oxygen, in the administration of all anesthetics, or for resuscitation in asphyxia from any cause. Provision for two more cylinders may be added without altering the design or changing the symmetry of the apparatus.

In my stands there is no breathing back and forth through any part of the stand conduits, and, therefore, all parts contaminated by rebreathing can be easily, quickly, and thoroughly cleansed and sterilized after each administration.

Hotel Bretton Hall, Eighty-sixth Street and Broadway

Treatment of Syphilis by Hectine and Hectargyre.—F. Dive presents his conclusions derived from the use of hectine and hectargyre in the treatment of syphilis in its various stages. Hectine is less toxic than the other derivatives of arsenic. It becomes localized in the muscles and skin, and hence causes the rapid resorption of cutaneous lesions. It may be applied subcutaneously in powder, or may be used in the form of an ointment. In pill form it is perfectly tolerated by the alimentary canal and acts well, being stable. It causes some pain when injected but no active inflammation. Injected in the thigh muscles it is generally painless. It increases the number of red and white blood cells, and the amount of hemoglobin. Its curative action is very rapid with respect to the chancre, the skin and mucous eruptions, the headache, gummata, scleroses, or ulcerations. It has little effect in paresis. When vision becomes affected the remedy should be stopped. Hectargyre may be advantageously combined with mercury. It is most used in malignant and precocious cases and in tertiary syphilis. It is well tolerated when taken by the mouth and when injected it causes neither induration nor infiltration, nor great pain. Injections should be made into the thigh muscles in the same manner as [illegible].—*Gazette des Praticiens.*

Medical Items.

Action of the X-rays on the Nervous System and Radiotherapy in Nervous Diseases.—U. de Luca has examined the literature as to the effect of the *x*-rays on the nervous system, has experimented on animals, and has employed the rays in a number of patients. He concludes that in no case has there been any harm done to the nervous system by the application of the *x*-rays. While the normal nerve elements remain unaltered the rays have a selective action on pathological nerve cells, since these are young tissue derived from pre-existing elements, such as the cells of the neuroglia, the ependymal cell, and the vascular and connective tissues, or consist of heterogeneous elements, as in the case of tumors. There is a special effect manifested by the *x*-rays on diseases of the spinal medulla, such as syringomyelia, in which the substratum is formed of gliomatous new-formed tissue with abnormal cavities. Here there is really a new formation, and on this the rays act promptly and specifically because they are rich in nuclein. There is an arrest of the degeneration and a diminution of the pressure of the new growth on the elements of the gray and white matter of the spinal medulla, and thus an improvement of the disturbances of sensibility and motility. Histories of appropriate cases are given.—*Rivista Ospidaliera.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended June 1, 1912.

CHOLERA

Places	Date	Cases	Deaths
India: Bassein	Apr. 1–6	3	2
Bombay	Apr. 14–27	13	9
Calcutta	Mar. 24–30	..	89
Madras	Apr. 14–27	7	5
Moulmine	Apr. 1–6	8	7
Indo-China: Saigon	Mar. 19–31	90	60
Saigon	Apr. 1–15	110	69
And vicinity.			

YELLOW FEVER

Brazil: Manaos	Apr. 28–May 4	..	2
Canal Zone: Culebra Island Quarantine Station	Mar. 2–4	1	1
From S.S. *Chile* from Guayaquil.			
Mexico: Puerto Mexico	May 25	..	1
San Juan Bautista	May 25	4	1
Venezuela: Caracas	Mar. 1–31	.	4

PLAGUE

India: Bombay	Apr. 14–27	339	320
Calcutta	Mar. 24–31	..	133
Karachi	Apr. 14–27	213	190
Indo-China: Saigon	Mar. 19–31	11	5
Saigon	Apr. 1–15	10	4
Japan: Formosa	Apr. 1–15	27	23
Java: Pasoerocan residency	Apr. 17–13	5	4
Mauritius	May 15–21	10	7
Persia: Bushire	Apr. 1–13	188	135
Mohammerah	Apr. 3[1]	1	..

[1]From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, May 8, 1912.

Straits Settlements: Singapore	Apr. 7–13	2	2
Turkey in Asia: Basra	Apr. 10–12[2]	3	..

[2]Bulletin Quarantenaire d'Egypte, May 9, 1912.
From S.S. *Adalia* from Newcastle.

SMALLPOX

British East Africa: Mombasa	Mar. 1–31	5	..
Brazil: Para	Apr. 21–May 4	4	1
Canada: Quebec	May 12–18	6	.
Vinal Haven	May 17	7	..
5 miles from Eastport, Me.			
Ceylon: Colombo	Apr. 7–13	1	.
Egypt: Cairo	Apr. 9–29	6	1
France: Marseille	Apr. 1–30	.	2
Paris	Apr. 14–May 4	2	..
Germany	Apr. 21–27	6	..
Additional.			
Germany	Apr. 28–May 11	34	..
Great Britain: Bradford	Apr. 28–May 4	1	..
Bristol	May 5–11	1	..
India: Bombay	Apr. 14–27	210	134
Calcutta	Mar. 24–30	.	6
Madras	Apr. 14–27	16	6
Indo-China: Saigon	Mar. 19–31	5	2
Saigon	Apr. 1–15	7	2
Italy: Leghorn	May 5–11	3	..
Naples	Apr. 28–May 11	3	..
Palermo	Apr. 28–May 4	9	3
Turin	May 6–12	1	..
Java: Batavia	Apr. 7–13	5	2
Mexico: Guadalajara	May 5–11	1	1
Juarez	May 12–18	3	..
Mazatlan	May 5–14	.	1
Mexico	Mar. 24–Apr. 6	32	20
San Luis Potosi	Mar. 9–16	.	2
Tapachula	Apr. 28–May 4	.	1
Portugal: Lisbon	Apr. 28–May 4	2	..
Russia: Moscow	Apr. 14–20	3	1
Odessa	Apr. 21–27	2	..
Riga	Apr. 21–May 4	7	.
St. Petersburg	Apr. 21–27	20	6
Spain: Almeria	Apr. 1–30	.	1
Barcelona	Apr. 27–May 3	.	1
Seville	Apr. 24–30	.	2
Valencia	Apr. 29–May 11	37	2
Turkey in Asia: Beirut	Apr. 14–May 4	45	.
Turkey in Europe: Constantinople	Apr. 29–May 12	.	17
Venezuela: Caracas	Apr. 1–30	3	.

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Original Articles.

THE MANAGEMENT OF GONORRHEAL RHEUMATISM.*

By EUGENE FULLER, M. D.,
NEW YORK.

BEFORE making a special study of this subject, I felt—as I expect most of the profession now feel—that gonorrheal rheumatism was a direct complication which could be associated with the later or declining stages of an acute infection; although the symptoms might be most acute, still they were often subacute. I also felt that after the urethral discharge ceased and the urine became clear or free from inflammatory evidences directly associated with the gonococcus, the complicating rheumatic symptoms always eventually disappeared, although the period of convalescence might be very tedious; and should I have seen a patient suffering from rheumatism which he had had for years, in a constantly progressive or relapsing form, I should not have thought of connecting such a chronic condition with a gonorrhea of perhaps so many years before that the youthful indiscretion had been largely forgotten. On the therapeutic side, about all I did I know was that gonorrheal rheumatism was not at all favorably affected by the salicylates, uric acid eliminants, or various drugs having beneficial effects when administered in connection with other forms of rheumatism. On this account, the disease was looked upon as a professional bugbear, and as one liable to damage rather than enhance a surgeon's reputation for skill.

With my further knowledge of the subject, I can but feel the time-honored term, gonorrheal rheumatism, to be a very unfortunate one, for the following reasons. In the first place, just what rôle the gonococcus plays in the production of this complication has not been determined. There is a strong suspicion in my mind that its part is a secondary one, and perhaps not even that. Then, from a clinical standpoint, the term itself handicaps and embarrasses the surgeon, especially in dealing with the chronic forms of disease. Fancy, for instance, the results attendant on a diagnosis of gonorrheal rheumatism in connection with a gentleman past middle age who has been happily married for years, and who occupies an established social, political, or religious position. In such cases, I use the term "absorptive" or "toxic" rheumatism, explaining that the systemic symptoms depend on the absorption into the system of a toxic element which originates from a septic focus, the elimination of which will free the system of the poisonous element, thus ensuring a cure of the rheumatism.

The foregoing explanation has also the merit of being a definition of the affection in relation not only to the chronic but also to the acute cases.

*Read at the eleventh annual meeting of the American Urological Association, New York, April 3, 1912.

My active study of and interest in this subject covers a period of somewhat over seven years, dating from December, 1904. At that time, I found in my wards at the City Hospital a young man with a very marked acute suppurative gonorrheal seminal vesiculitis. Complicating this condition, there also existed a most acute and extensive gonorrheal rheumatism. The man had been bedridden for four months with the rheumatism. A detailed report of this first case, together with three other similar ones, will be found in the June, 1905, issue of the *Annals of Surgery*, the communication being entitled: "The Relation of Gonorrheal Rheumatism to Seminal Vesiculotomy." As I had already at that time opened and drained the seminal vesicles on numerous occasions with marked benefit, and as the pathological condition of the seminal vesicles in this case demanded drainage, I felt that it would be a matter of interest to watch and observe what effect, if any, this operation would have in relation to the rheumatic complication. I was greatly surprised in this case to find that all pain had vanished from the joints twenty-four hours after operation, while at the end of five days all of the extensive swelling had disappeared from the joints and limbs.

Later extensive experience in connection with acute gonorrheal rheumatism uniformly showed exactly similar results, the rheumatism disappearing in the same rapid and complete manner observed in the first instance, after performance of seminal vesiculotomy. Coincident with my first above mentioned report, Dr. John Rogers announced his experiments with antigonorrheal serum, administered with the purpose of curing gonorrheal rheumatism. The idea of curing the affection with a series of serum or vaccine injections was certainly far more attractive to the profession and to the patients than was my operative procedure. Any one could use serum, while for my operation one would require to be not only a surgeon but also one who had skilled himself in the special technique required. I was accordingly left to pursue my operative investigations quietly while the eyes and attention of the profession were directed toward serums. Although wishing to give serums a perfectly fair trial, I could not, even at that time, feel that they would at best prove more than sporadically efficient. It was evident to me that a patient afflicted with gonorrheal rheumatism harbored a pathological focus from which, constantly or intermittently, a systemic toxemia occurred, a result of which was the existing rheumatism. If the serums accomplished what their advocates claimed, and neutralized or removed existing systemic toxemia, I did not see how they could be radically efficacious unless they could also and at the same time cure the pathological focus, this preventing, as does my operation, future systemic toxemia. If a pathological focus, as not infrequently happens, ends in resolution, either spontaneously or as the result of palliative forms of

treatment, then, of course, there would be a corresponding termination of the resulting rheumatism.

It is not unlikely that serum or vaccine treatment with the latter class of cases would be of benefit in hastening the disappearance of rheumatic attacks. I understand from a mutual professional friend who has discussed this subject with him, that Sir A. E. Wright of London is in accord with my views, and that he ascribes the indifferent results from serum or vaccine treatment in these cases to the fact that there exists a systemic focus of infection which by its repeated reinfections more than counteracts the injections administered. If the time ever comes when mastoiditis, for instance, no longer demands operative surgery, the disease being under the complete control of vaccines or serums, then, I take it, gonorrheal rheumatism will likewise be found amenable to the same forms of treatment. Until then seminal vesiculotomy will hold its place as the radical method of cure.

My early operative experience was, as already stated, in connection with the acute cases of gonorrheal rheumatism, wherein the causative seminal vesiculitis was also acute and well marked, the organs being swollen, infiltrated, and surrounded oftentimes by periseminal vesicular edema, while an active suppurative process was in existence in the sac cavities. With further experience, cases of more chronicity came under observation, there being, perhaps, a stiff ankle, knee, wrist, or other joint or joints. These joints, as a rule, were involved in a hard inflammatory exudation. Such joints oftentimes presented an appearance closely resembling tuberculous conditions. On clinical investigation it would be found that a gonorrheal or urethral discharge had occurred, perhaps a year or so before. Such a discharge might soon have ceased or might still be persisting as a slight gleet. Perhaps there would be a history of an acute attack of rheumatism two or three months after the onset of the discharge, the present condition persisting, or perhaps there had been no such antecedent attack, the existing involvements having come on insidiously and slowly progressively, commencing, perhaps, six months or a year from the time of the urethral attack, and not, very likely, until long after the patient had supposed his urethral inflammation cured. In this latter class of cases the seminal vesiculitis accounting for the rheumatism would not be nearly so acute as that found in the preceding class.

Another peculiar point, and one which at first caused me to hesitate before operating on numerous occasions, lay in the fact that the extent and grade of an existing seminal vesiculitis bore no fixed relation to the grade and extent of the resulting rheumatism. Thus one might find a very severe and extensive seminal vesiculitis in a case where the rheumatic affection was not extensive or of a severe grade; while in another case, where the rheumatic symptoms were very extensive and crippling, the seminal vesiculitis might very likely seem mild in character, the lesion consisting chiefly of a sclerous thickening of the sac walls, there being but little periseminal vesicular involvement and but a minor degree of intraseminal vesicular catarrh. Then, again, there would be many cases wherein the grade and extent of the rheumatism seemed to correspond with that of the seminal vesiculitis. Experience has shown me, however, that the removal of an existing seminal vesiculitis through seminal vesiculotomy regardless of its apparent grade or extent, will be followed by the disappearance of the rheumatic complications, whatever they may be.

Then, finally, there comes a third and most interesting class of cases, the extent of which I have not yet fathomed, although I am actively studying the subject. These consist of cases in which neither a preceding gonorrhea nor a genitourinary complication has been considered, or probably even thought of, as having any relation to the existing disability. Hitherto few of these cases have come to me as a genitourinary surgeon, for the reason just referred to, that no one supposed they belonged to my department of medicine. For most of them I am indebted to my service at the City Hospital, where the courtesy shown me by those visiting in other departments, combined with the active assistance of an interested house staff, has enabled me to have transferred to my division material originally admitted to orthopedic or general surgery, to general medicine, to neurology, and sometimes even to ophthalmology.

Thus there might be chronically stiffened joints without any effusion, associated with contracted tendons and marked muscular atrophy. The spinal vertebræ and the associated muscles might be rigid and immovable, together with a fixation of the ribs, the classical picture of supposed arthritis deformans being presented. In such cases, oftentimes there was also a fixation of the cervical vertebræ, so that there was no rotation of the head. The jaws might be so fixed and locked that nothing but fluid food could be taken. The muscular atrophy might be so marked in connection with rigid joints and tendons that a diagnosis of progressive muscular atrophy or some other form of spinal lesion had previously been made. The joints, instead of being stiff and without effusion, might represent an opposite condition, there being great effusion and the joint capsule, especially the knee, having been thereby so stretched as to make it very loose and flail-like. Iridochoroiditis or some other insidious exudative process of the eyeball might exist, of so severe a grade as to cause or threaten blindness. A much longer recital of clinical conditions could be given to represent the pictures often seen illustrative of this affection in its multiple chronic phases. Still, the present recital ought to be sufficient to put the investigating surgeon on his guard.

In getting a clinical history in these cases one would very likely get a report of a gonorrhea perhaps twenty years before. In some instances there would be no history, or perhaps remembrance, of such a past condition. In one case which first came under my observation in its rheumatic incipiency almost twenty years ago, and which I have had under observation ever since, I am positive there never was a gonorrhea, the seminal vesiculitis being caused apparently by the streptococcus.

That the above described group of very chronic conditions really belongs to the same class as the acute rheumatisms already considered, I have proved, first by discovering the coexistence of seminal vesiculitis, generally in a most sclerous form, and then by curing the disorder through the performance of seminal vesiculotomy, thereby eliminating the focus of infection which caused the systemic toxemia. It is not to be expected that the same rapid and striking cure follows operation in the old chronic and severe cases as in the acute ones. Secondary muscular atrophy and joint adhesions are, of course, left after the chronic toxemia has been eliminated, and the surgeon has in the postoperative convalescent period of these cases

practically the same problems to deal with which he has in convalescence from fractures of long standing where there coexist like conditions of muscular atrophy and of joint and tendon adhesions. At a suitable period after resolution in connection with the fracture has taken place, massage and passive joint manipulation is prescribed. So in these postoperative rheumatic cases, there comes a time when massage and passive joint manipulation is most essential. Formerly, however, I inaugurated such postoperative treatment much sooner than I now do. I find it a mistake to make use of these treatments before the last fraction of the toxemia has been eliminated, otherwise an inflammatory reaction may ensue. Formerly, also, at the time of the operative anesthesia, or within a few weeks after operation, I forcibly manipulated stiffened joints and limbs, vigorously and with the use of considerable power, breaking down joint and ligament adhesions, thus restoring normal movements. Now, however, I consider such vigorous treatment during the toxic period to be inadvisable. I find it best to leave joints and muscles alone for a period of two months after operation, allowing the patient to make such progressive use of them as he may see fit. In cases not of the severe grades the progressive use of the parts made by the patient himself will very likely by the end of two months have been found to be all that was necessary. At the end of such time, however, manipulative treatment, if indicated, will do much in hastening the restoration of joint function. Such manipulations should not be too severe, especially at the start, and should be administered by one who has had training or experience.

In my early operative experience, much more frequently than at present, I noticed a month or thereabouts after operation some temporary rheumatic recrudescence of symptoms, all such evidences having promptly disappeared after operation. I found such recrudescences to correspond to the closure externally of the wound. It was evident to me that the closure in these instances had been premature and before all toxemia had been drained from the deeper parts. Consequently I made it a point not to remove my external drainage tubes for ten days or until such time as the deeper wound had thoroughly drained and granulated. Such conditions having been attained before the external wound is allowed to close, there will be no such recrudescence. The operative technique and management of seminal vesiculotomy will not here be considered. For such information reference is made to the author's article, "Relief of Urinary and Genital Conditions Through Surgery of the Seminal Vesicles," MEDICAL RECORD, October 30, 1909.

I have often been asked regarding the bacteriological findings in connection with the work now being considered. It would be of much interest and probably of value in determining the exact bacterial or toxic agency concerned in the causation of this form of rheumatism could there be an examination of smears taken from the intraseminal vesicular contents on the opening of the sacs. I have found this impossible of accomplishment except in a very few instances, for the reason that the seminal vesicles when opened are not exposed to view, the sense of touch being the guide, and, as the path of the wound is deep and narrow, the smear carrier introduced, guided by the finger, comes in such contact with blood and serum on its introduction to and withdrawal from the sac cavity that subsequent smear findings can, at best, be far from accurate or satisfactory.

Owing to the positive claims of cures which are just now beginning to appear from the use of electricity applied to the prostate or seminal vesicles, it seems necessary to give some notice to the subject. As there is no evidence at all that electricity in any of the multiple forms in which it has been applied has been found curative in any variety of sepsis, or has power to destroy germ proliferation or to free the natural cavities of the body of inflammations or their resulting exudates, it does not seem worthy of belief that this agency, on impartial investigation, will be found of potent or general value in this connection. This is not the first time that electricity has proclaimed herself a cure for a surgical disorder. She has done so, and loudly, many times, only to be many times discredited. Twenty-five or so years ago her champions announced that stricture of the urethra in all its forms could be quickly absorbed and cured by electricity. Very many wonderful statistics of cures were published to support these claims. Investigations thoroughly discredited these as well as similar claims made some years later of cures by the Fort method. Then, in the early stages of gynecological surgery, in connection with ovarian tumors and extrauterine pregnancy, the claim of electricity, supported by the usual array of cures, was again raised. Now anyone trying such treatment for such disorders would, to put it mildly, be considered most unethical. Again, in the early days of prostatectomy, the Bottini method was resurrected as a simple cure free from danger and far preferable to prostatectomy. Here again the claim has been found wanting and the method has been discarded. Seminal vesiculotomy is a new procedure, and, while the profession are considering it, it seems only natural that electricity should do as she has done so many times before under similar conditions, namely, put in her claim of ability to beat the knife. Electricity, barring possibly the *x*-ray, in her attempts to displace surgery, has run a poor second to Christian Science. Electricity as an aid to surgery has done much in the direction of the *x*-ray, in illuminating spaces otherwise inaccessible to sight and in allowing a cauterization of similar parts. I have, of course, profound respect for the accomplishments of electricity in the field of therapeutics.

In the article already referred to, which appeared in the MEDICAL RECORD October 30, 1909, I reported my first 126 cases of seminal vesiculotomy. Of these 35 represented cases of rheumatism. Since then I have performed seminal vesiculotomy 125 more times, so that at present my total operative cases number 251. Of these last 125 cases 87 represented rheumatism. With most of these the rheumatism, acute or chronic, was of a very severe grade, and it was for the relief of the rheumatism only that seminal vesiculotomy was performed. A minority of the cases had other clinical symptoms due to seminal vesiculitis coexisting with rheumatism as a reason for operation. In this last series a much larger proportion represented rheumatic conditions than pertained to the first series. This is largely because rheumatism is the clinical symptom of seminal vesiculitis which usually, by incapacitating an individual, brings him to hospital, and in my experience at the City Hospital, when those suffering from rheumatism see the rapid

cures resulting with little postoperative discomfort in those who have been subjected to seminal vesiculotomy, there is such a scramble for operation that no time has to be wasted in persuasion. Out of 251 cases there has been no mortality, so argument against the operation on that score cannot be very impressive. In my last series the results with rheumatic cases have been uniformly good. I attribute the better results in the second series to a more thorough performance of the operation and to improved postoperative details. I expect shortly to prepare a paper in which more attention will be given to certain features, especially clinical ones, that I have not here had space to include.

252 Lexington Avenue.

FACTS OF MODERN SCIENCE AND THEIR VALUE IN THE PREVENTION AND CURE OF DISEASE.

By HERMANN HILLE, Ph.D.

CHICAGO, ILL.

HON. MEMBER S. W. MISSOURI MEDICAL SOCIETY.

Strange as it may appear, there are well-established facts in modern science which seem to be almost completely ignored not only in the estimation of food values and the manufacture and preparing of foods, but also in the prevention, alleviation, and cure of disease. I have reference to the facts about the mineral constituents of food and of the human organism, and their functions in the processes of life.

In the middle of the last century a number of investigators of more than average ability, among them Justus v. Liebig, F. W. Beneke, Jakob Moleschott, Carl Voit, and others, recognized and emphasized the vital importance of the mineral salts in physiology and pathology of living organisms. For the benefit of those who have not access to the writings of these methodical and profound thinkers, I take the liberty of quoting a few passages from their writings.

Liebig: "The indispensable agents of the organic processes are the incombustible constituents or the salts of the blood. If it be true that these substances take a conditioning and necessary part in the processes of transforming the constituents of food into constituents of the body, then it is self-evident that no food, in which these materials are lacking, can sustain life; that all foods in order to possess full nutritive value must contain these materials in the proportions favorable for the formation of blood, and that we can deprive food of its blood-making power if we deprive it of these agents. In all processes in the animal organism, digestion, blood making, respiration and metabolism, the mineral* constituents, or the salts which are constant components of the blood, the muscles, the tissues and all of the organs, as well as of food, take a very essential, in many cases a directing, part; only by their co-operation do the nutritive elements of the foods of man, and the fodder of animals, receive the faculty to serve for the sustaining of the organic processes, and therefore they ought to be taken into account in the explanation of these processes."

F. W. Beneke, a distinguished clinician and pathologist of Marburg, in his celebrated book, "Grundlinien der Pathologie des Stoffwechsels," writes: "The mineral constituents, which through the food are supplied to the organism and enter into the composition of the body building material, up to a short time ago, have been so underrated in their importance and even at the present time are still so little taken in account, that one cannot forcefully enough draw attention to the fault which lies in this neglect. Just as these constituents are of the most far-reaching importance for all formation and growth in the vegetable kingdom, so too for the animal organism they are partly the most necessary conditions of all growth, partly the most indispensable agents of the processes of life. Without the presence of phosphates and sulphates no proteins are formed in the vegetable kingdom, and in an unsuspected way the phosphates take part even in the dissolving of the plant proteins; without the presence of alkali carbonates no vegetable acids, no sugar, no amylum are formed. In the animal organism, however, a large portion of the mineral constituents of the vegetable is utilized in the formation of the skeleton and the soft cellular structures, and another portion serves essentially as agents for all those processes which include the nutrition of the existing and the gradually retrograding metamorphosis of the introduced food constituents.

"It is almost trivial to remark that the bony structure of man cannot be formed without the supply of a certain quantity of earth phosphates, and still it often appears as though in medical practice this fact were never given any thought. Without potassium phosphate no blood corpuscle is formed, without the presence of alkaline bases the oxidation of vegetable acids in the organism is but partially accomplished, without the presence of sodium chloride the processes of diffusion in the body would be entirely different from what they really are; without phosphoric acid as highly important a combination as the glycerinophosphoric acid could not possibly be formed. But notwithstanding the indubitable certainty concerning these things, they are but to a small extent taken into account in medical practice. Powerful agents, like iodine, arsenic, mercury, quinine, etc., are extensively used as remedies, but the fate of the organism so far as it depends upon the integrating mineral constituents is apparently left entirely to benevolent Nature, without considering that she, too, notwithstanding all her benevolence, through certain conditions is limited in her ability to act, and that oftentimes one can accomplish the most rational cure by eliminating those conditions, namely, in our case, *by endeavoring to* reestablish mineral equilibrium.*"

Jakob Moleschott in one of his books, entitled "Der Kreislauf des Lebens" (Circle of Life), says, as nearly as I am able to give it in English: "The fabric and the life sustaining powers of the organs are dependent upon the necessary quantity of the mineral constituents. Real bone is as impossible without calcium phosphate, as gristle is without cartilage salts, blood without iron, or saliva without potassium chloride."

*In most publications the mineral elements and their combinations in the vegetable, animal, and human organism are designated as the "inorganic" components of the system. This entirely arbitrary and misleading expression is contrary to the facts of Science, and I have, therefore, taken the liberty of substituting "mineral" for "inorganic" in all of my translated quotations. While it is true that at the present time chemistry is unable to distinguish between inorganic and organic forms of elements and their combinations, the time is not distant when this distinction will be clearly made and defined.

*Literal translation from the German text: "bring back into the correct proportion the disturbed equilibrium of the mineral constituents."

Much corroborative evidence might be quoted from other sources, and all that these men have so ably expressed thirty and more years ago applies with equal force to-day, so far as personal observation and statements of contemporaneous authorities go.

Of the most recent and modern authors, Drs. Albu and Neuberg of the University of Berlin, in their highly recommendable little book, "Physiologie und Pathologie des Mineralstoffwechsels," Berlin, 1906, write as follows: "As little as scientific medicine at the present time acknowledges the importance which the salts deserve in the physiology of nutrition, just as little does it appreciate also the role which they play in the genesis and evolution of disturbances in nutrition and of anomalies in metabolism. * * * *Let us draw attention to the far-spread error that the small quantities in which the mineral substances occur in the organs, the blood and tissue juices, make them of little importance in the economy of the body. This is a fallacy!* That smallest quantities of the same are often capable of producing quite characteristic physiologic and pathologic effects upon the organism, is sufficiently known from the experiences in human and experimental pharmacology! Although from the small percentage of minerals in the body a small need may rightfully be deducted, nevertheless the importance of this need must not be underestimated, and just as erroneous, therefore, is the far-spread, quite arbitrary assumption, which may be found in almost every text-book, that this relatively small need of minerals is usually in the food of man not only fully met, but even surpassed. In the case of a healthy person this certainly is true; it is the very reason why he remains healthy. But disturbances in the metabolism of the minerals occur as frequently as those of organic substances, and the former are of no less influence upon the vital processes than the negative balance in the metabolism of proteins, fats and carbohydrates. Were the supply of mineral salts always sufficient there would occur no anomalies in mineral metabolism, of which there are so many different and often very grave ones. To-day it must therefore be taken as fact that with otherwise fully sufficient nutrition a grown organism perishes within a few weeks if the supply of mineral salts in the food is insufficient. After quick elimination of the circulating salts the body forcibly, as it were, retains but a minimum, which, however, does not suffice to retard death from 'mineral starvation.' How much the organism suffers from mineral starvation has been clearly illustrated by experimental observations with starving animals and above all by the well-known experiments with the professional fasters Cetti, Breithaupt, and Succi, on whom the very considerable changes of mineral metabolism were well observable. The designation of the mineral salts as 'Nutritive Salts' received its full justification through the fact that the renewed supply of salts in the food is capable of preventing death from mineral starvation, or of removing the already inaugurated health-destroying consequences of salt deficiency. From another recently acquired point of view the physical conception of the processes of nutrition and metabolism, and of the physiological functions in general, the salts of food, in an indirect sense, possess absolutely a 'Nutritive Value.' It has been shown that the salts are by no means unessential and passively carried along accompaniments of the organic foodstuffs; on the contrary, they play an eminently active role in the assimilation of the total food and especially the organic foodstuffs. Although in a quite different way from the latter the salts too are carriers of energy which in the body is transformed into motion. This knowledge is one of the ripest fruits which the application of modern physical chemistry in physiology and medicine has produced."

It would fall outside the scope of this paper to enter into an explanation of the laws of modern physical chemistry, therefore suffice it to say that the osmotic pressure of salt solutions is one of the forms of energy stored up in the minerals, and that the osmotic analysis of the blood, body juices and liquid foods, as well as of the secretions and excretions of the organism, has shed additional light upon the functions of the internal organs and the processes of metabolism.

If this subject prove of sufficient interest to my audience I shall take great pleasure in making the laws underlying and governing osmosis, and the methods employed in osmotic analysis, the subject of another paper.

For the purpose of this paper it is sufficient to quote again Albu-Neuberg as follows: "The absorption of the nutritive salts into the circulation represents a labor which is in direct proportion to the difference of the osmotic pressure between the food contents of the digestive tract on the one side and the blood and lymph on the other. These differences must be adjusted in order to keep constant the tone of the blood, the immutable physiological magnitude of which has been proved necessary for the conservation of life. This equalizing of the differences in the osmotic tension can be accomplished in no other way than through currents of motion in the liquids coming in contact with each other. By no means can all motions of liquids, which occur in the animal organism, for instance in resorption and secretion, exclusively be referred to osmotic processes. But the latter in almost all physiological processes of the organism take a greater or smaller part, which we are able to determine far more accurately than other physical and physiological forces which are active in the organism like 'diffusion' and 'filtration,' and above all the 'vital force,' which appears to regain a larger space in the views of modern physiology."

In briefly stating the total present knowledge of their physiological importance, the minerals apparently have to perform in the body the following tasks: (1) They are cell and tissue builders; they take part in the formation, growth and reconstruction of all tissues of the organism in different degrees. (2) They bring about the osmotic tension in the cells and tissues, in the blood and other body juices, and thus are indirect carriers of energy. (3) They act as "catalysers" in a large number of chemical processes in the organism. They, for instance, act as carriers of oxygen in the processes of oxidation. They cause those transformations of proteids in the cell protoplasm which are inseparably connected with their functions. (4) They are the agents of the autochthonic toxin and anti-toxin forming processes which unceasingly are going on in the living protoplasm, balancing each other by their partial antagonism. (5) They probably bring about a large portion of the so-called intermediary processes of metabolism, particularly in the glandular organs. Everywhere they regulate disintegration and assimilation of organic substances."

In Hammarsten's Text-Book of Physiological Chemistry, fifth American edition, New York, 1908,

we find the following: "Those bodies are designated as food which have no injurious action upon the organism and which serve as a source of energy and can replace those constituents of the body that have been consumed in metabolism or that can prevent or diminish the consumption of such constituents. We have learned by direct observation and a wide experience that besides the oxygen, which is necessary for oxidation, the essential foods for animals in general, and for man especially, are *water, mineral bodies, proteins, carbohydrates,* and *fats.* The food may be quantitatively insufficient, and the final result is absolute inanition. The food may also be qualitatively insufficient or, as we say, inadequate. This occurs when any of the necessary nutritive bodies are absent in the food, while the others occur in sufficient or perhaps even in excessive amounts."

Russell H. Chittenden, Professor of Physiolog. Chemistry, Yale University, in "The Nutrition of Man," page 3, writes: "Indeed, electrolytes are perhaps the substances that put life into the proteids of the protoplasm and it is truly important for the integrity and functional power of living cells that the proportion of mineral constituents therein be kept in a constant condition of quality and quantity."

Dr. Hans Köppe of Giessen in his paper, "Die Bedeutung der Salze als Nahrungsmittel" (The Importance of the Salts as Food), read at the 68th meeting of German Naturalists and Physicians in Frankfort o/M., said: "On the contrary, we have to consider the salts as food, indeed, for through them, or their solutions, the organism is supplied with *Energy,* which, thanks to van t'Hoff's theory of solutions, can be measured, and whose effects in the organism can be studied. We now know that under favorable conditions a solution of mineral salts can render considerable labor because of its 'osmotic pressure.' This labor, however, is of a different kind from that of the proteids, carbohydrates and fats; while the energy of these materials, measured in calories, is transformed into heat, the energy of salt solutions expresses itself in modes of *Pressure* and *Motion,* and is measured in terms of atmospheric pressure."

Part of the Energy with which we supply the body through the salts, is used for the absorption of food.

"In a totally different light appear now the mineral waters when viewed with regard to the laws of osmotic pressure: Not only do they deserve our attention as carriers of a specific energy, but especially on account of the presence and the relative proportions of the large number of *different* salts. Even though they occur only in very small quantities, they are nevertheless the cause of highly important qualities of the mineral waters. The action of mineral waters is due to their contents of neutral, *i.e.* not dissociated, molecules on the one hand, and the number and kind of the dissociated Ions on the other. One must not forget that the cause of a disease can rarely be traced to one single agent, or to the lack or altered metabolism of one mineral alone. Therefore the application of that one substance alone cannot cure the disease. All of our natural food products, vegetable or animal, contain a large number of elements. So do all of our mineral waters, in some of the best known of which have been found as many as 26 elements."

"The mineral constituents of the human organism and of foods occur in two distinct forms: (1) One portion of the salts is firmly combined with the combustible substances of the body in the organized structures and as integral portions of the blood and juices. Those are the real body salts. (2) Another, very much smaller, portion is simply dissolved in the juices. These are the salts which are either set free by the disintegration and oxidation of the combustible substances in the organism, or have combined with the products of decomposition."

Experimental proof of the vast importance of the "Nutritive Salts" for the organism has been furnished by a large number of investigators, a few among whom are J. Forster, C. Voit, Bunge, Kemmerich, Hofmeister, Hardy, Pauli, E. Overton, Hamburger, Köppe, Bredig, Loeb, Grützner, Russell, E. Voit, Hober, Goldberger, Heidenhain, Wallace and Cushny, Schade, v. Noorden, etc. Above all, the classical and celebrated animal experiments by Forster, deserve mentioning here, because they so clearly demonstrate two most significant facts, viz.: (1) Animals cannot live with an insufficient supply of "mineral salts." (2) Death occurs sooner in mineral starvation than in complete starvation. Or, in other words, proteins, carbohydrates, and fats not only cease to be food when deprived of the mineral food salts, but become actual poisons.

Animal tests have also demonstrated the fact that *inorganic* minerals, added to demineralized food, cannot take the place of the food minerals; while they retard death, they are unable to prevent it.

Much more corroborative material could easily be added, but the foregoing would seem to represent abundant evidence for the purpose and the scope of this paper.

FACTS

Briefly recapitulating, modern science has established these facts:

1. Of all the vital processes and activities of the human organism, not one is possible without the mineral constituents.
2. The mineral elements and salts are generators of Energy.
3. The nutritive salts are of equal importance with the other essential constituents of food, viz., oxygen, water, proteins, carbohydrates and fats.
4. The mineral elements and salts in true organic form are indispensable foods without which the human organism cannot exist.
5. Mineral Starvation causes serious disturbances in the vital processes and activities of the human organism. Or, expressed in simple language, Mineral Starvation causes disease and death.
6. Mineral Starvation causes death in a shorter time than does complete starvation.
7. Most diseases are caused by the lack, or altered metabolism, of more than one mineral.
8. All natural foods and mineral waters contain a large number of elements. In some as many as 26 elements have been found.
9. By far the larger portion of the mineral constituents of the human organism and of foods are in organic form.

CONCLUSIONS

The foregoing facts of modern science, if they have any meaning at all, compel to far-reaching conclusions, viz.:

1. The primary cause of disease, from a purely physical viewpoint is chiefly mineral starvation.
2. Minerals in inorganic form cannot be utilized by the human organism as directly and effectually as can true organic minerals.
3. Foodstuffs not only lose their food value, but become actual poisons in proportion to their loss of mineral bodies. Or, in other words, the more we

deprive natural foodstuffs of their mineral portion, the more do we deprive them of nutritive value and convert them into poison.

4. Mineral starvation causes disturbance in the vital processes and activities of the human organism, reduces the supply of vital energy, pollutes the blood, body juices and tissues, and thus prepares a soil in which the omnipresent parasites thrive and multiply with little interference.

Unfortunately for the well-being and health of the individual and the human race, the manufacture of foodstuffs, as well as of medicines, has been tending more and more to isolation of chemical entities and our modern methods of "refining," "purifying," and "improving" the foods, which Nature so abundantly furnishes, deprive the natural, wholesome food products of most of their mineral constituents and thereby reduce their real food value to a minimum. The human organism receives but a small fraction of the nutritive salts which Nature evidently intended it to have, and the inevitable result is mineral starvation and its dire consequences in the shape of malnutrition, general debility, anemia, indigestion, tuberculosis, rachitis, pernicious anemia, decayed teeth, gout, carcinoma, appendicitis, and other "modern" diseases.

A few examples will be sufficient to demonstrate this incontrovertible fact: The average grain of wheat contains 1.75 per cent. of mineral bodies. The finest patent flour contains only 0.44 per cent. of mineral bodies, which is only one-fourth of the quantity contained in the whole wheat. Unhulled rice contains 4.41 per cent. minerals, while polished rice, the kind we buy in every grocer's store, contains only 0.39 per cent., or less than 1/11 the quantity. Raw, brown sugar contains 1.97 per cent. minerals, while the most refined sugar contains 200 times less, viz., 0.01 per cent. In view of these facts is it any wonder that disease is the normal condition of our age and civilization, and that perfect health is the very rare exception?

Application.—1. The food minerals can no longer be ignored wherever the health and well being of the individual and of the human race are concerned, for our health depends as much upon a sufficient supply of mineral bodies as it does upon a sufficient supply of pure air, fresh and pure water, proteins, carbohydrates and fats.

2. A rational, scientific estimation of the value of foodstuffs, and the needs of the human organism, must take into account *all* of the "necessary nutritive bodies," viz., air, water, mineral bodies, proteins, carbohydrates, and fats. The now prevailing calorific standard of food value, which measures only the heat units produced in the combustion of proteids, carbohydrates, and fats, and completely ignores the mineral bodies, is not only woefully inadequate in the light of modern science but constitutes a menace to the health and life of the human race.

3. Rational scientific therapeutics can no longer ignore the mineral bodies. In the cure, as well as the prevention of disease, they must be given a more prominent place. To be consistent with the facts of modern science the physician can no longer be content with combating the outward, or secondary expressions of disease alone. He must also remove its primary cause, viz., *mineral starvation*. Prof. Albert Robin, a clinician of Paris, France, years ago, has drawn attention to the fact that mineral starvation is the primary cause of tuberculosis. His findings have been corroborated by Gaube, Ader, Dimitropol, Boureau, and, in this country, by Dr. John F. Russell of New York City, who is treating cases of tuberculosis with marked success upon the basis of mineral starvation.

4. One of the most important duties of chemistry at the present time is to find a rational and scientific distinction between inorganic and organic forms of matter.

The foregoing facts of modern science, and the conclusions to which these facts compel, are illuminating the path along which a reformation of existing conditions in the manufacture of food, in the standard of food values, in therapeutics, and in chemistry must and will eventually be accomplished.

REFERENCES.

1. Liebig, J. v.: "Die organische Chemie in ihrer Anwendung auf Agrikultur und Physiologie." Braunschweig, 1840.
2. Liebig, J. v.: "Chemische Briefe," 4th Ed.; 2, 31 and 32 letter, Leipzig and Heidelberg, 1878.
3. Liebig, J. v.: *Annalen*, Vol. 62, page 257.
4. Beneke, F. W.: "Grundlinien der Pathologie des Stoffwechsels," Berlin, 1874.
5. Moleschott, Jakob: "Der Kreislauf des Lebens."
6. Albu-Neuberg: "Physiologie und Pathologie des Mineralstoffwechsels," Berlin, 1906.
7. Senator, Zuntz, Munk: "Bericht über die Ergebnisse des an Cetti ausgefuhrten Hungerversuches," *Berl. Klin. Wochenschr.*, 1887, page 428; Virchow's Archiv, Vol. 131; Suppl. 1893.
8. Muller, Fr.: *Zeitschr. für Klin. Medizin*, Vol. 16, 1889.
9. Luciani, L.: "Das Hungern," Hamburg u. Leipzig, 1890.
10. Hammarsten, Olof: "Text-Book of Physiological Chemistry," 5th American Edition, p.p. 715 and 734.
11. Chittenden, Russell H.: "The Nutrition of Man," p. 3.
12. Köppe, Hans; "Die Bedeutung der Salze als Nahrungsmittel." Giessen, 1896.
13. Forster, J.: *Zeitschr. für Biologie*, Vol. 9, 1873.
14. Voit, C.: "Über den Einfluss des Kochsalzes auf den Stoffwechsel," Munchen, 1860.
15. Bunge, G. v.: "Lehrbuch der Physiologie des Menschen," Vol. 2, 1901.
16. Kemmerich: *Pflügers Archiv für Physiologie*, Vols 75 and 79.
17. Hofmeister, Fr.: *Archiv für experiment. Pathologie u. Pharmakologie*, Vol. 24, 25, 27, 28 (1887-1891).
18. Hardy, B.: *Journal of Physiology*, Vol. 24, 1899.
19. Pauli, W.: *Münchener med. Wochenschr.*, 1903, No. 4.
20. Overton, E.: *Pflügers Archiv*, Vol. 92, 1902, and 75th meeting of Naturalists in Kassel, 1903.
21. Hamburger, H. J.: "Osmotischer Druck u. Ionenlehre in den medizinischen Wissenschaften," 3 Vols., Wiesbaden, 1902-1904.
22. Köppe, H.: "Physikalische Chemie in der Medizin," Wien, 1910.
Köppe, H.: *Therapeut. Monatshefte*, March, 1905.
23. Bredig, G.: "Anorgan. Fermente," Leipzig, 1901.
Bredig, G.: *Zeitschr. f. angew. Chemie*, 1898.
Bredig, G.: *Zeitschr. f. physikal. Chemie*, Vols. 31 and 37.
24. Loeb, J.: *Pflüger's Archiv*, Vols. 56, 60, 71, 75, 80, 87, 88, 91, 93 (1894-1904); *American Journal of Physiol.*, Vols. 3, 4, 5, 6.
25. Grutzner, P.: *Pflüger's Archiv für Physiologie*, Vols. 53 and 58.
26. Russell, John F.: MEDICAL RECORD, Nov. 27, 1909; Dec. 18, 1909; July 1, 1911.
27. Voit, E.: *Zeitschr. f. Biologie*, Vol. 16, 1880.
28. Hober, R.: "Biochem Zentralbl.," Vol. 1, 1903.
Hober, R.: "Physikal Chemie der Zelle und der Gewebe," Leipzig, 1902.
29. Goldberger, H.: *Zeitschr. f. Biologie*, Vol. 43, 1902.
30. Heidenhain, R.: *Pflügers Archiv*, Vol. 56, 1894; Vol. 62, 1896.
31. Wallace and Cushny: *American Journal of Physiology*, Vol. 1, 1898.
32. Schade, H.: *Zeitschr. f. experim. Pathol. u. Therap.*, Vol. 1, 1905.
33. Salkowski, E.: *Virchow's Archiv*, Vol. 53, 1871.
34. Noorden, v.: "Lehrbuch der Pathologie des Stoffwechsels," Berlin, 1893.
Noorden, v.: "Beiträge z. Lehre vom Stoffwechsel." Heft III, 1895.

Noorden, v.: *Berlin. klin. Wochenschr.*, 1894, No. 10.
Noorden, v.: XIV Kongress fur innere Medizin, Wiesbaden, 1896.
35. Lumn, N.: *Zeitschr. f. physiol. Chemie*, Vol. 5, 1881.
36. Wiley, H. W.: "Foods and their Adulteration."
37. Allen: "Commercial Organic Analysis."
38. Robin, Albert: *Archiv gener. de medecine*, May and June, 1894; April, 1895.
Robin, Albert: *Semaine Medical*, 1902.
Robin, Albert: "Compte rend. de l'Academie des Sciences," 132, 1901.
Robin, Albert: *Med. Klinik*, April 18, 1909.
39. Gaube, J.: "Compte rend. de la Société de Biologie," 46, 1894.
Gaube, J.: "Cours de mineralogie biologique," Paris, 1901.
40. Ader: "These de Paris," 1900.
41. Dimitropol: "Nature intime de la phthisie pulmonaire," Bukarest, 1898.
42. Roloff, F.: *Virchow's Archiv*, Vol. 40, 1869
Archiv f. Tierheilkunde, Vol. 5, 1879.
43. Stilling, H., and Mering, J. v.: *Zentralbl. f. d. Med. Wissensch*, 1889.
44. Ostwald, W.: "Lehrbuch der allgemeinen Chemie," Leipzig, 1903.
45. Nernst, W.: "Theoretische Chemie," 3. Edition, Stuttgart, 1900.
46. Cohen: "Vortrage uber physikalische Chemie fur Mediziner," 1901.
47. Hamburger, J. H.: "Osmotischer Druck und Ionenlehre in den medizinischen Wissenschaften," 3 Vols., Wiesbaden, 1902-1904.
48. Hemz, R.: "Handbuch der experimentellen Pathologie und Pharmakologie," Jena, 1904, Vol 1.
49. Koppe, H.: "Physikalische Chemie in der Medizin."
Koppe, H.: "Die Bedeutung der Salze als Nahrungsmittel," Giessen, 1896.
50. Hober, R.: "Physikalische Chemie der Zelle und der Gewebe." Leipzig, 1902.
51. Brasch, R.: "Die anorganischen Salze im menschlichen Organismus," Wiesbaden, 1900.
52. Goldberger, H.: *Zeitschr. f. Biologie*, Vol. 43, 1902.
53. Tigersted, R.: "Nagel's Handbuch der Physiologie des Menschen," Braunschweig, 1909.

416 North Kenilworth Avenue.

THE PRACTICAL VALUE OF THE WASSERMANN REACTION.

By D. M. KAPLAN, M.D.,

New York,

Director of Laboratory, Neurological Institute; Serologist to the Montefiore Home.

In reviewing the Wassermann reaction I shall dwell first on its theoretical development; second, on facts that justify its classification among phenomena of an immune nature in accordance with the side-chain theory of Ehrlich, and third, from the technical viewpoint and that of the practicing physician. In 1901 Bordet and Gengou discovered the phenomenon of complement deviation. As is well known, today a specific cause of disease such as the cholera, typhoid, or diphtheria bacillus is known as the antigen of the respective disease. The word has been used to designate the fact that the microorganism in question is capable of stimulating the susceptible infected animal to react specifically by producing in the serum of the said animal certain demonstrable substances called antibodies. In other words, the name antigen means antibody generator. It is needless to emphasize the fact that the specific qualities of the cholera antibody are entirely different from the specific reactions of the diphtheria or typhoid antibody, facts readily demonstrable in the testtube. From the teachings of Ehrlich such antigens and antibodies have certain positive chemotactic properties, in that they are capable of fixing complement (guinea-pig serum) when present in the same testtube under certain favorable circumstances. The chief requirement is that the same antibody present is to have the same specific antigen. The conception of a lock and the proper key for diagrammatic purposes can be easily remembered by those who make use of the phenomenon in a theoretical way only. The lock supposedly represents the antigen, and the key the antibody that will fit it. In order to lock such a system it is absolutely necessary for the key to fit. If it does not fit, no amount of power will cause the wrong key to lock. The amount of power required to turn the key and cause the system to lock is represented in the Wassermann reaction by one unit of complement (guinea-pig serum). In other words, in the process of locking, a definite amount of power is used up in the turning of the key; this same power in the form of one unit of complement is also used up in the process of binding or deviation experiments. In case the antigen and antibody do not fit each other, the introduced complement or, as in the lock and key experiment the power to turn it, is not used up, and when another antibody is introduced with an antigen that fits it, prompt union in the latter takes place. Figuratively, power is left over to lock systems that fit one another. In testing the serum of a patient we are looking for the key that will fit a known lock; the lock in this instance is a liver extract called antigen, the key corresponding to the antibody. Whether it will fit will be shown by the presence or absence of complement for systems that are known to fit one another. We assume that the syphilitic fetal liver extract is equivalent to the extract of *Treponema pallidum*. In case the patient's serum in question does contain the key or antibody we are looking for, the antigen or luetic extract will bring about a consumption of complement.

If the patient's serum does not contain the required antibody to fit our antigen no complement will be used up and it will remain in the testtube ready to act when a well fitting antigen-antibody mixture is introduced. This consideration closes the first part in the performance of a Wassermann reaction. The second part can be named "the search for uncombined complement." To ascertain this we make use of an indicator such as a hemolytic amboceptor capable of laking red blood corpuscles when complement is present. The red cells in this instance are sheep corpuscles and correspond to the antigen in the Wassermann reaction in the second part of the experiment. I have stated before that a substance is introduced which acts as an indicator; this is precisely what takes place when complement is present to complete the action of the subsequently introduced hemolytic amboceptor and sheep cells. The complement is in such an instance available for the completion of hemolysis, the red cells in the tube are laked and the mixture becomes transparent, signifying that the reaction is negative and that the complement was not used up in the previous test. Where there is no complement left over as in the case of syphilis, the red cells do not become transparent or hemolyzed, and the result is a positive Wassermann reaction. From a theoretical point of view the exposition of the Wassermann reaction as described seems to be in accord with the laws of phenomena as formulated by Ehrlich.

It is my object to render clear the incompatibility of certain practical facts with some of the theoretically fundamental laws that govern the Wassermann reaction. These incongruities are still defended by ingenious explanations of theoretical enthusiasts who are loath to accept the just criticisms

of practical workers. It is nevertheless a fact that many seemingly correct applications of the principles involved in the Wassermann reaction, critically and practically considered, have nothing in common with the laws governing immune processes. To begin with, if we are to consider the substance present in the serum of a luetic individual that is responsible for the deviation of the complement as a specific result of the invasion of the *Treponema pallidum*, we must compare it also with specific antibodies of other known diseases. Does the antibody of syphilis behave in as specific a manner as for instance the antibody of diphtheria or cholera? Again, is it possible to obtain complement deviation with diphtheria antigen (diphtheria bacilli) and sera obtained from patients suffering from a disease other than diphtheria? It is an established fact that this is impossible. Can the same be said regarding the biological principles of the Wassermann reaction? Considered critically from many personal observations and from the literature we find that the extracts from syphilitic organs that serve for want of something better as specific antigens, will cause the same phenomenon of deviation of complement with three or four diseases other than syphilis. Sleeping sickness, leprosy, scleroderma, certain jaundices, etc., all may cause the deviation of complement, i. e., positive Wassermann reactions. The contention that it is better to work with extracts from syphilitic human organs is also no longer defendable. The author and numerous other workers have used with satisfactory results extracts from beef livers and hearts as well as extracts from guinea-pig hearts. In clear cut cases of recent untreated lues I have rarely reported negative Wassermanns. As far as old syphilis is concerned, it might be advanced that there is no extract obtainable that will give more than about 60 or 70 per cent. of positive results with the Wassermann test. These facts clearly prove, first, that not only syphilis but other diseases as well are capable of giving rise to a positive Wassermann test, and second, that in order to get good working antigen it is not essential to use extracts of syphilitic fetal livers, nor extracts from human organs at all. In other words, the reaction considered from the standpoint of a specific antibody or antigen is not specific.

To explain the *modus operandi* of the Wassermann reaction from what has been said before, it is permissible to state that in syphilis of recent infection and less so in remote lues, as well as in some other diseases, substances of an unknown nature develop and circulate in the serum which are capable of preventing the laking (hemolysis) of the red cells in a hemolytic system. For the complete inhibition of hemolysis another substance is necessary which has been classed among antigens. This so-called antigen chemically considered belongs to the fatty acids or lipoids. I prefer to speak of this substance as the inhibitory extract. Neither in the patient's serum nor in the reagents used in the Wassermann reaction are we dealing with a biological test whose mechanism, as far as its relation to the teaching of Ehrlich is concerned, is only a conjecture and a lucky find. This closes the theoretical consideration of the Wassermann reaction.

In analyzing the practical side of the question laboratory men may be reminded of some peculiarities of a technical nature. It is very easy to discuss technicalities by memorizing text book expositions and literary descriptions. There are very few stumbling blocks with this very interesting and important test to those who are uninitiated or freshly graduated or who are only theoretical workers. The theoretical worker is the most dangerous adviser a practical physician can select. The greatest amount of harm hails from following the suggestions of men who do not possess sufficient bedside experience. These men working in experimental laboratories schedule results and come to conclusions from hearsay evidence, and are frequently substituting testtubes, chemicals, and animals for the history, symptoms, and the clinical course of a disease in human beings. It is very sad but nevertheless true that the opinion and verdict from such onesided workers is held in high repute by the physician who is too busy to work experimentally. These workers are scientists and therefore their opinion ought to be regarded as of greater significance than the bedside opinion. I wish to impress upon those who do serological work that it is not the putting together of the reagents that counts in the make-up of the experienced serologist, but his ability to judge the resulting end reaction. This degree of proficiency cannot be imparted by teachers, but must be acquired individually by the performance of very many tests, by making ever so many mistakes, and finally by cooling down in judging the value of the entire test for clinical purposes. It is well to remember in doing the test that the complement ought to be free from cells and not older than twelve or fourteen hours; the vessel collecting the blood should be clean and dry; and when the carotid of the guinea-pig is severed the esophagus should not be injured, as the gastric contents mixed with the serum will markedly diminish its complemental powers. The patient's serum should be observed critically for traces of a yellow color. Such sera often give a positive Wassermann reaction without the patient having been infected with lues.

The serum is best analyzed twelve to forty-eight hours after venepunction. If it is older than this positive results are plentiful, especially if the worker is using the Noguchi method. The standardization should be done the same day as the test. One should use three units of amboceptor instead of two, especially on rainy days, as during such weather hemolysis is very slow. The inhibitory extract should be used in one-quarter unit doses only. A genuinely luetic serum will inhibit even if four units of amboceptor are added, and will require often no more than an eighth of a unit of antigen. Finally, the confusing or uncertain end reaction should always be reported negative, bearing in mind that the clinicians were in the majority of instances capable of diagnosing syphilis without any laboratory tests. In our days, however, a syphilitic patient has a very poor chance for escaping detection. If the patient denies or if he does not know that he has syphilis, the physician finds many clues that tell him the cause of the trouble. If the physician is in doubt, the laboratory is sometimes helpful in deciding the question. That all three factors entering into the analysis of a patient should give no definite clue to the real cause of the disease is extremely rare indeed.

It is very important to be able to report correctly where the patient denies an infection and the doctor is unable to find vestiges of lues. I therefore advise extreme care in the interpretation of end reactions and to submit reports that are the result of a critical reading of Wassermann tests. It is in such instances that the serologist helps most and often harms most. Beginners will give a positive report when hemolysis is incomplete, and the experimenter who sends the verdict as weakly positive leaves the

doctor in the same position as before. I wish to call attention to the Noguchi modification. The only advantage I can see is the greater stability of the amboceptor. It must be borne in mind, however, that it takes four or five injections of human blood in order to produce it in the rabbit in sufficient strength, and that there are very few patients who will permit the withdrawal of their blood. This is an important item, as I had to ascertain for myself. Had it not been for the kindness of a few hospital directors I could not have performed comparative studies with this modification of the Wassermann test. It is not out of place to mention here the fact that the Noguchi reaction performed *lege artis* gives positive results in a not inconsiderable number of non-luetic patients. In a number of cases of chancroids and other clinical states this reaction was found to be positive, whereas the Wassermann was negative. Had it not been for this control these patients would have been innocently carrying the burden of a luetic treatment, and in subsequent illnesses, the fact that they were treated in a specific manner would influence the therapy of the prescribing physician. This exposition is made with the intention of conveying an idea as to the relative value of negative and positive Wassermann reactions. In view of two controls, such as the patient's history and the clinical status, a negative report can never do the harm that a positive result may cause in a similar case. In using the antihuman system this danger is too frequent to justify the use of this test without the use of the original Wassermann reaction as a control. It should be remembered by those who work with the Wassermann reaction that the sheep cells should not be older than twelve hours. The end reactions should not be read until the antigen interference control is completely hemolyzed. When submitting reports of a positive nature one should not include anything that is not unquestionably, completely inhibited. In case the laboratory knows that the patient has has syphilis reports of weakly positive if such be the case are permissible. Under no other circumstances is the serologist to report in such a manner, as he may stigmatize an innocent person, bearing in mind, as has been stated before, that a negative report in a luetic individual is by far not so serious an error as a positive report in a non-luetic individual. In the former sooner or later luetic signs will be discovered, whereas the latter, in view of the faulty analysis, has to suffer ever afterward. Eliminating all factors that can give rise to a positive Wassermann report, the laboratory worker in himself is by no means a negligible quantity. He very often indeed is not sure as to the meaning of a certain test, and very often is confronted by the clinician who recites a score of facts that make the positive report very shaky indeed. Then the laboratory genius parades the various causes for a positive result in non-luetic patients as a sort of repartee, but is far from admitting that he made a mistake. The intricacies of the Wassermann reaction are rarely discussed at medical meetings. It seems that workers in this line prefer to remain silent on this very important topic. Many serologists of small or large experience when speaking of the Wassermann reaction rarely obtain less than 100 per cent. of correct interpretations and with pride relate the wonderful disclosures their work has accomplished.

One need not emphasize the fact that in the laboratory there are no infallible methods, a fact which is most glaringly true of the Wassermann reaction. I make this statement, taking for granted that the worker is experienced. What a beginner is capable of reporting may be easily judged. I can recount an experience in which the same serum divided into three portions and analyzed by three different workers resulted in the following reports: The serologist with least experience said it was positive; next came the maturer worker who was not sure of its being positive or weakly positive; the last report was that the result was negative. As a matter of fact a very well known syphilographer made a negative diagnosis. Such instances are of daily occurrence and depend entirely upon the man who does the work. There is only one interpretation that the mature worker considers as important, and that is an unquestionable positive result; all other designations of weakly positive, or plus minus, or negative, carry no diagnostic significance.

In my own work I must say that many negative results were obtained in the case of individuals who had lues. This brings one to the practical side of the paper. This extreme was necessary to eliminate the chances of having non-luetic patients treated for syphilis. Even with this precaution and the careful report of results, about one-half of one per cent. of patients in whom lues could be excluded have been reported as positive. On the other hand it is not at all to be considered an error or poor technique when one reports negative result in cases of old tabes, treated cerebrospinal lues, and other meta or paraluetic affections of old standing, cases which have had prolonged antiluetic therapy. Such patients as a rule as a result of organic changes in their body fluids of autogenous origin, or as a result of treatment, give a negative Wassermann.

These results are plentifully reported in the literature in which one finds from 30 to 50 per cent. of negative results in tabes. This is not a technical fault but is to be considered as one of the peculiarities of the test. The same argument applies to the positive reactions obtained in leprosy and scleroderma. To defend the statement that a positive Wassermann reaction is impossible with scarlet fever is unscientific, and the result of enthusiasm and lack of conservatism. The serological worker instead of defending hypotheses ought to champion facts, and on suitable occasions when necessary admit his ignorance instead of speculating with unknown hypothetical quantities and qualities. This, however, need not diminish one's spirit for research; but unless something more palpable than the theory of the Wassermann reaction is obtained one ought to deal with facts and not with what a reaction is supposed to do. These facts should come from the clinicians, even if they prove to be contrary to the findings of the experimental worker. In the treatment of tabes the nature of the syphilitic process should be taken into consideration before therapy is instituted. In case the Wassermann reaction is negative it is best to leave the patient alone. Only when signs of an exudative nature are present should mercury or other antisyphilitic remedies be prescribed. The futility in treating the degenerated posterior columns in a tabetic needs no emphasis. It is my firm belief that the clinician is more often correct in making a diagnosis of syphilis than the laboratory, and only when he is unable in some rare instances to do so should the laboratory's verdict be taken into consideration. And then great caution will have to be exercised in accepting the result, especially when the result is positive; the reason for this skepticism has been given before. It must also

not be forgotten that a negative Wassermann reaction is perfectly feasible with a frank history of syphilis. This in the majority of instances is due to recent therapy and not at all infrequently to the recuperative and negativating forces of the organism. The remoter the initial lesion the less strong the resulting test, of course with the exception of paresis or other very persisting paraluetic conditions. It is self evident that before the patient is sent to the laboratory for a Wassermann he ought to be looked over as to his physical improvement, for reaction in very many instances becomes negative much earlier than the disappearance of the physical signs. If a patient presents himself at the office of a physician to ascertain whether he is free from lues, he can be assured only after a thorough clinical examination, resulting in negative findings, and a negative Wassermann in the blood.

It is not at all rare to hear of chancres cured with placebos without the subsequent development of secondary manifestations. The subjects of these mysteriously cured initial lesions giving a negative Wassermann reaction critically considered may never have had lues and bear the odium of this disease unjustly. I am sure many will recall instances of such a nature. I recall a case in which the patient related a history of having had some twenty years ago a suspicious sore on the glans. He showed absent knee jerks and mild sensory disturbances in the legs. The present complaint was uncertainty in walking and pains in the legs. The diagnosis made upon this superficial examination was tabes. The blood Wassermann was negative. The Wassermann reaction in the cerebrospinal fluid was also negative. There were no excess of globulin and no increase in the number of cells. Fehling's solution was promptly reduced. These laboratory data made the examining physician reconsider his original diagnosis, and a more thorough analysis of the physical status revealed that the patient suffered from multiple neuritis. He admitted drinking on an average twenty or more glasses of beer daily, being a beer brewery employee. This fact, however, was lost sight of in view of the history of a sore on the penis. It is quite possible that the sore was not specific. There are many who give similar histories, and become neurasthenics, simply because one who was not very well versed in the recognition and differentiation between specific and nonspecific ulcers diagnosed a chancroid as specific, and unwittingly made a syphilophobe out of a susceptible individual.

The trouble begins when such a neurasthenic in view of the symptoms and the history of a sore is diagnosed as a general paretic. The crowning feat to such a diagnosis is the positive Wassermann from a beginner. It is fortunate indeed that we have laboratory findings aside from the Wassermann reaction that tell us whether a patient has or has not paresis. Thanks to the stimulus of such workers as Plaut and Nonne we have been able to differentiate not only between luetic and non-luetic nervous affections, but between the different paraluetic nervous diseases with more than gratifying constancy. It seems to me that the dermatologist is the wisest manipulator of the Wassermann reaction, using the test 99 times out of a 100 as a therapeutic indicator only. The mystery surrounding the etiology of many nervous affections causes many unnecessary Wassermann tests to be performed, and as a result of faulty laboratory work or interpretation more than one individual has been wrongly stamped syphilitic. In the Wassermann reaction the stumbling blocks are many and can be overcome by experience and patience only. The beginner makes many nonluetic sera positive, the theoretical worker does the same to a lesser extent, and the mature worker fails to report many syphilitic sera as positive. The confidence that the general practitioner places in the Wassermann reaction makes the former two a menace to his patients and jeopardizes the doctor's private practice. The harm done by the experienced worker is comparatively mild, as sooner or later the clinician will find the true cause of the trouble. It is by far less harmful to err with a negative report on a luetic serum than render an innocent person uncomfortable with the knowledge of having been made syphilitic by the laboratory. In the pre-Wassermann days of some six years ago the physician in doubt would as a rule carefully reconsider his case, and if no diagnosis could be arrived at would consult a colleague who had an extensive experience in such cases. Today it is quite different. First, the commercial laboratories begin to manufacture the biological reagents necessary for the Wassermann test. Second, rapid, simple methods are being substituted, for the original Wassermann reaction, on the just-as-good plan. Third, inexperienced workers spring up like mushrooms after a rain and report what their limited knowledge tells them. The result is that an innocent person is often treated for syphilis and an insufficiently treated syphilitic is neglected. All this is due to the widespread fact that there is a test in the laboratory that can detect syphilis if present no matter how long ago, or when absent, that can exclude it. For the reasons above stated I am convinced that much harm has been done in the name of the Wassermann test, and it will take many papers of this nature before the patient and physician will rid themselves of the conception that the Wassermann test is the final court of appeal. To recapitulate:

1. The Wassermann reaction from a theoretical standpoint has very little in common with the side-chain theory of Ehrlich.

2. Technically, only unquestionably positive results are to be taken into consideration by the laboratory and by the clinician.

3. Practically, one should not consider a Wassermann reaction without obtaining a good history and a complete physical examination.

MERCURY IN SYPHILIS.

By WALTER S. REYNOLDS, M.D.,

NEW YORK

LATE CHIEF OF CLINIC AND INSTRUCTOR IN GENITOURINARY DISEASES, COLLEGE OF PHYSICIANS AND SURGEONS (COLUMBIA UNIVERSITY); FORMERLY PROFESSOR OF VENEREAL DISEASES, MEDICAL DEPARTMENT, UNIVERSITY OF VERMONT.

The remarkable effect which salvarsan has in causing a very rapid disappearance of some of the manifestations of syphilis has been abundantly demonstrated. But that mercury, so long considered the only specific for this disease, may act with equal promptness in some instances should not be overlooked. There are cases where salvarsan for some cause is contraindicated and where it is important to bring about a resolution of the lesions as promptly as possible; it is in such cases that we have in the older remedy a drug which, properly administered, will seldom fail in its results. It must be remembered, however, that if a rapid action is desired mercury must be administered in sufficiently large quantities, and the question as to the best method of introducing it into the system in sufficient quantity, and at the same time to obviate any bad effects,

is a question which is sometimes most perplexing.

There are a number of ways in which the absorption of mercury into the system can be brought about. Nearly every method has its advantages and at the same time some disadvantage which may render that particular mode of administration inapplicable in some cases. It is important, therefore, that everyone who is called upon to treat this disease should be familiar with the various ways of accomplishing the desired result and be able to select whichever form of administration seems most desirable. Not only are there a number of ways of administering mercury, but there are also many combinations of mercury with other chemicals, the majority of which, with the exception of arsenic perhaps, have no effect on the syphilitic process, but which render the mercury applicable to the various forms of administration. We have, therefore, not only to consider the method in which mercury is to be used, but also which particular preparation of mercury is best adapted to meet the indications.

The oldest method of using mercury is by inunction and is, in the estimation of many at the present time, one of the best ways in which it can be introduced into the system. In this method metallic mercury is employed, the official ointment being rubbed together with lard until the mercury is in a fine state of division. Other substances have been used in place of the lard, as cocoa butter, soap, etc., and in some instances are useful, but the ordinary mercurial ointment is generally used.

The objection most generally raised against the use of mercury in this way is that it is an uncleanly method and that it is uncertain how much absorption takes place. It has seemed to me that these objections are rather theoretical than real, for I have never had a patient object to this method when I have advised it, and I have been told by some that they enjoy the rubbings. It is always best to have the inunctions given by some one who understands how to rub the ointment properly into the body, but when this is not possible the patient can be instructed how to rub himself fairly well.

The amount of mercury which different individuals will tolerate varies greatly. It is, therefore, of the greatest importance that it should be prescribed in such a way that definite amounts are used for the rubbings each time. In beginning treatment 30 grains of the 50 per cent. ointment can be ordered in paraffin papers and one of the packages may be used every night or every other night. The amount can also be easily increased by adding a certain amount from one of the packages and in this way definite quantities are used each time.

In cases of generalized manifestations it is best to divide the body into regions according to the method of R. W. Taylor, each region being taken for successive rubbings, so that at the end of the course nearly the entire body has been covered. It is important that the area to be rubbed should be thoroughly freed from dirt and grease, otherwise absorption does not so readily occur and there is much more likelihood of dermatitis being set up. It usually requires from 20 to 30 minutes of vigorous friction to get the ointment well rubbed in, and if this is done only a faint grayish film remains on the locality where the ointment was applied.

In using inunctions great attention should be given to the condition of the mouth and teeth, as this will aid in the prevention of salivation. I prefer a tooth paste containing chlorate of potassium such as Bierdorf's. This is used with a soft brush two or three times a day. Attention to the condition of the bowels is also of great importance.

The following case—although a mistake occurred in the quantity used—illustrates the rapidity with which mercury may control the disease. A young man 24 years of age was referred to me on February 5 by Dr. S. Brady. There was an indurated lesion at the preputial opening, causing phimosis, and another mass could be felt on the inner surface of the prepuce. He stated that they had developed about December 20. There were no signs of a rash on the body and the inguinal glands were not markedly enlarged. Although no spirochetes could be found a diagnosis of chancre was made and he was placed on subpreputial irrigations of bichloride of mercury, 1 to 2000, as there was no indication of destruction going on under the prepuce, and a wet dressing of the same solution was kept applied externally. On February 12, or 54 days after the lesion developed, a rash appeared on the body. The initial lesions were healing and the prepuce could be partly retracted. He decided that he would prefer not to have salvarsan used, and he was therefore ordered twelve packages of 50 per cent. mercurial ointment containing 30 grains each, with explicit instructions as to the method of use, and he was also given a slip with the printed directions of the regions and the method of using the ointment. The following morning he returned with his entire body covered with the ointment and stated that he had used eleven of the 30-grain packages, or 330 grains in all the previous night. He was immediately ordered a very hot bath and a good scrubbing with soap, and the bowels were flushed out with a saline cathartic. On February 16 the rash had entirely disappeared. The gums were slightly tender, but there was no marked salivation, and he was feeling much better than he had previous to the appearance of the rash.

Intramuscular injections of various salts of mercury have been largely employed in the last few years and afford a very satisfactory way of administering the drug, many preferring it to other forms of administration. In some instances it may cause considerable pain, generally lasting for a comparatively short time. The pain is not always due to the form of mercury employed, for while using the same solution and in the same manner I have sometimes had patients complain of considerable pain and at other times of none at all.

The frequency with which the injections are given will depend upon the form of mercury used. If the bichloride of mercury (a soluble salt) is employed, the injections may be given two or three times a week and from one-eighth to one-quarter grain used for each injection. If a physiological salt solution is used as a menstruum the pain of the injection is considerably lessened. Salicylate of mercury is a favorite with many for intramuscular injections. It is an insoluble salt and is given suspended in an oily liquid. From one-half to two grains may be given about once a week. The above are the two salts of mercury probably most frequently used for intramuscular injections.

The advantages claimed for the use of mercury in this way are the certainty and promptness with which it can be introduced into the system and the fact that it is less objectionable to patients than the inunction method. The objection to the soluble salts, which are more rapidly eliminated, is that they must be more frequently administered. With the insoluble salts absorption is less rapid and there-

fore it is not necessary to repeat them so frequently. If salivation or other toxic symptoms should occur where the insoluble salt is being used this would be a decided disadvantage.

The injections are best given in the gluteal region, using a hypodermic syringe with a needle about one and one-half inches in length and of sufficient calibre to allow the fluid to flow freely. The site of the injection should be varied, alternating the right and left side at each injection as well as the point at which the needle is inserted. All precautions should be taken in regard to cleanliness and asepsis. Personally, I have never seen an abscess or any bad result follow this method of administration.

The internal administration of mercury alone has been largely superseded by the two former methods of administration. In the form of mixed treatment it is still undoubtedly employed to a large extent and is of considerable value. The disadvantage of this form of administration is that the amounts of the ingredients cannot be so easily varied, which is of considerable importance in many cases.

In the form of pill or preferably tablets, on account of their being more soluble, several compounds of mercury are employed. Given in this way and in full doses it is more likely to cause gastrointestinal disturbances than other forms of administration. It is necessary, however, in some cases to resort to this method of administration, but usually only as a temporary expedient.

We have two forms of mercury in combination: the mercurous salts, which are sparingly soluble and therefore less likely to act as poisons; the mercuric salts, more soluble and more active poisons. The hydrargyri iodidum flavum, mecurous iodide or protoiodide, may be given in one-fifth to one-quarter grain doses three or four times a day. This is the form most commonly employed. Hydrargyri iodidum rubrum, red mercuric iodide or biniodide, is given in doses of one thirty-second of a grain and increased gradually in amount. Tannate of mercury in one-half grain doses has been considerably employed by some with good results.

For internal administration in combination with potassium iodide, for the so-called mixed treatment, either biniodide or bichloride is used in doses of one thirty-second to one-sixteenth grain, with five to twenty grains of potassium iodide. Syrup of sarsaparilla compound, tincture gentian, or some of the digestive solutions, such as essence of pepsin, may be employed as a solvent. The following is a common formula:

℞ Hydrarg. biniodidi, 1/32 to 1/16 grain.
Potass. iodidi, 5 to 20 grains.
Syr. sarsaparillæ comp., q.s. ʒj.

The methods of administration by fumigation, by the rectum in the form of suppositories, by inhalation, by baths, and by introduction immediately into the blood current have all been used and in some instances may be employed, though these modes of employment are rarely necessary.

At the present time the treatment of syphilis is being more carefully studied than it has ever been heretofore, and this will undoubtedly result in great changes in many of our conceptions previously held.

With the discovery of the *Spirochæta pallida*, the recent cultivation and inoculation experiments of Noguchi, demonstrating conclusively that this organism is the cause of syphilis, the introduction of salvarsan in the treatment of the infection, and the Wassermann test as a method of diagnosis and for the purpose of determining the effect of treatment on the course of the disease, we must expect ultimately to be able to see a great improvement in our knowledge regarding the most efficient method. In the past we have been able to judge of the effect of treatment only by the clinical manifestations, but at present with the great advantages which these discoveries have placed within our reach we should be able to treat our syphilitic patients in a much more scientific and intelligent manner.

It is almost universally conceded that treatment early in the course of the disease is much more likely to bring about a cure, and there seems to be no reason now why treatment should not be begun as soon as a positive diagnosis is made. This is now possible in many cases of initial lesions by the aid of the dark field apparatus, the presence of *Spirochæta pallida* being proof positive of the nature of the lesion.

66 West Seventy-first Street.

MYOSITIS TRAUMATICA.

By MARK I. KNAPP, M.D., LL.B., LL.M.,

NEW YORK.

The case I am about to report is typical of a large number of cases which go the round of physicians and are the despair not only of their medical attendant, but also, and chiefly, of their own family. They suffer and suffer at times very violent pains without ever responding to any of the drugs praised and valued for their anodyne effect. Useless to say, that all sorts of diagnoses are made, ranging from malaria, nervousness, and rheumatism to even, as in the case here reported, a sclerosis of the spinal cord, for which the actual cautery was applied for an extended period and, this failing to effect any relief, an operation was actually urged in order to remove the supposed materia peccans from somewhere in the spinal cord. The stumbling block in these cases is the fact that they begin to misbehave just when, according to all our medical logic, the patients ought to feel most comfortable. Their misery, nay, agony, begins to appear some time after they have gone to sleep, and, while they get up with pain of varying intensity, such pain loosens up after a time and, as the day advances, they feel comparatively comfortable, only to go to bed to renewed misery. That paradox of pain during resting hours and comparative comfort while laboring, might have given impetus to some fanatic to expostulate sinful idleness and to exhort the propriety of constant labor. Now it is the back that hurts so much and is worse in the night and on getting up, and again it is in the shoulder or the nape of the neck or the muscles of some other part of the body. The almost natural and instinctive diagnosis made by the physician is muscular rheumatism, which diagnosis has in fact already been made by the patient himself, and who, as a rule, prides himself upon his intuitive medical skill. The positiveness with which many a "knowing" patient makes his assertion is, unfortunately too often, concurred in by the physician. In support of the rheumatic theory, the patient unhesitatingly states that he is verily a living barometer and that he can foretell the oncoming storm with unerring precision. Such about is the general picture of the malady. Internal and external medication is prescribed, and various remedies are tried until the patient becomes a wreck, justly decrying the medical art which failed to give relief.

The picture here drawn is unquestionably known to a great many of the profession who have battled with but have not conquered the apparently intricate problem.

The subject of this report is a male patient, 42 years old, a Russian, who came to this country some seven years ago and began to suffer soon after his arrival here. At home he was employed at the horse trade; here he is a presser. He complained of excruciating pain which was centered somewhere in the dorsolumbar region of the spine. He came to me through a friend of his, whom I had cured of a gastrointestinal disease; this friend supposed that all this patient's trouble likewise came from dyspepsia. As a matter of fact this patient did suffer from insufficiency of the pylorus and organacidia enterica. But, although organacidia enterica does mostly give pain in the lumbar region, which pain is due to the pulling of the distended intestine upon the mesentery and which latter in turn pulls upon where it is attached, the spine; yet the severity of the pain did not warrant the conclusion that it was entirely of intestinal origin. The pain in his spinal region began some two hours after he had gone to sleep, became of an excruciating character and of a severity which prompted the patient to qualify it as "cramps." He could not remain in bed and had to assume a semireclining position in bed or on a chair and get as much sleep in such awkward position as he could. During the day his pain eased up somewhat, notwithstanding his arduous labor as a presser. Thus he suffered for seven long years. At first he was treated for a cold, and, after suffering for one and a half years, he thought, or he was made to think, the New York air was not up to Russian standards, and, as for reasons of his own, he did not wish again to come into the fond embrace of the Muscovite, he went to England to be under the protecting wing of his brother. But he came back, as he could not be reconciled to the idea of an operation, which was advised him in England. After his return he was treated for neuralgia, for consumption of the spine, for kidney trouble, for a sprain, for nervousness, and finally for rheumatism, and was treated with the actual cautery. When he came to me he was suffering quite severely and was despondent. Yet, notwithstanding his very long suffering, he was quite well the fourth day after I began the treatment. That miraculous cure was accomplished by a very novel treatment, a treatment which suggested itself to me then for the first time. I simply had the patient remove his mattress from the bed, put it on the floor, and had the patient sleep on the floor instead of in the bed. Having worked such wonders in this case I applied the same heroic (!) treatment to several clinic patients, who had their pains located variously in the back, shoulder, etc. My students, who are present in the clinic with me, were somewhat nonplussed as to an explanation for such curious procedure, but I held them in suspense for an explanation of the peculiar therapy until they heard of the excellent result from the patients themselves at their subsequent visit to the clinic, or, possibly, at the visit following. As a rule, the patients came with the diagnosis of long-standing rheumatism or neuralgias of some sort. Of course, in order to impress the patient I had to resort to some local applications without which I doubt whether the patients would have followed my advice. So I gave the first patient some soap liniment locally; to the other patients I gave whatever happened to occur to me at the moment.

And now, what is the cause of the suffering? The peculiarly heroic treatment applied by me and the almost instantaneous cure at once preclude the assumption of the presence of any very severe pathological condition. Yet those patients had suffered, suffered severely, and in the first case, here reported, the patient had suffered for seven long years. The cases of which I speak here are not the only cases I have seen of this type, but these are the first cases in which I applied floor sleeping as a remedy.

My view is that the pain is caused by hyperextension, or by prolonged extension, or by both, of the muscles severally involved, whether the muscle involved be the sternocleidomastoid, or the trapezius, or the longissimus dorsi, or the quadratus lumborum, or any other muscle of the arm or leg. This hyperextension and prolonged extension of the muscles is produced by faulty posture in bed, whether due to the faulty arrangement of the pillows or the sagging down of the cheap bedspring under the weight of the gluteal region of the patient. In any of these conditions the corresponding muscles are put on the stretch for a long time and, as I assume, a myositis results. The assumption of a myositis being present is, I believe, justified, although I hardly think that it could ever be pathologically demonstrated by section or autopsy, as this condition is not fatal. There are present the pain, subjective and objective, and the diminished movement of the respective muscles, which, I hold, justifies the diagnosis of an inflammatory condition. One may experiment on himself the effect of extreme and prolonged extension. Let him attempt to keep his arm fully extended and at right angle to the body and he will soon find out how long he could keep it up; I doubt if it can be done by any one for fifteen minutes. Whether we attempt to stretch the muscles voluntarily and fail to keep it up because of the pain, or whether the muscles are put on the stretch for some hours involuntarily by faulty posture during sleep, the result is the same pain—pain due to over and prolonged stretching of the muscles; it is a trauma which produces the pain, the resulting myositis is of a traumatic origin. It is not systemic, it is not constitutional, it is not due to any infection nor to continuity of an inflammatory condition of a neighboring organ; the pain is due to violence and, it is immaterial whether the violence is intended or not; we are dealing not with an active but a passive traumatism.

After the first patient got well, but still sleeping on the floor, he came to me one day again complaining of pain. On questioning, I found that his wife had taken pity on him and put an extra pillow under the small of his back. He felt better the next day after the pillow had been removed.

Of course, we can easily understand that such traumatism, persisting for any extended period, is bound to leave some bad effect upon the sheath of the muscle or the muscle itself. However, with the disappearance of the cause the effect gradually disappears.

The therapy consists in finding out the specific faulty posture and in correcting it. If the pain is in the lower portion of the spine, and the bedspring is at fault, then order another, unyielding bedspring; and if the patient cannot afford it, have him remove his mattress to the floor or put wooden boards into the bed and remove the bedspring. If the nape of the neck is affected, the chances are that the head is very much flexed upon the chest during sleep by

a faulty arrangement of the pillows under the head or by too many pillows under the head. Arrange the pillows so that the head is not flexed during sleep. In case the shoulder joint is affected, remove some of the pillows from under the joint, allowing the arm to fall down slightly during sleep. Pain in the hip, knee, or ankle joint may likewise be due to overstretching of the corresponding muscles, which also will be cured magically by readjusting the posture.

Whether the patient may be intrusted with the actual diagnosis immediately or at all depends entirely upon the intelligence of the patient. An intelligent patient will appreciate the correct diagnosis so much better if the treatment is first instituted. He can be intrusted with the actual facts after a few days, when he is beginning to get well and will have gained confidence. The non-intelligent patient is always a study and can rarely see, much less understand, the relation between cause and effect. Reasoning is excluded here, but he will obey a mandate if sufficiently peremptory in its character.

Under no condition must we forget the local applications; we must have the psychical adjuvant. It makes no difference what is used, but something must be used. We are in duty bound to delude the patient for the patient's welfare. The patient does not understand pathology and will not at once be able to follow medical reasoning.

616 Madison Avenue.

WHAT SHOULD THE GENERAL PRACTITIONER KNOW ABOUT DISTURBANCES OF MOTILITY OF THE EYE?

By JOHN R. HICKS, M.D.,

NEW BRIGHTON, STATEN ISLAND, N. Y.

To answer this question in the words of the opthalmologist would be to explain one of the most, if not the most intricate and scientific chapters in medicine and surgery. It not only comprises what one may study about the eye, but it covers almost the entire field of medicine and surgery of the brain. Without the assistance of the ophthalmic surgeon, the location of all brain tumors, and the diagnosis of brain disease in general are often difficult or nearly impossible, a hasty diagnosis often leading to serious consequences both to the patient and the physician. It is my intention to present to the general practitioner a description of the conditions which are met with in your daily practice, in regard to which the practitioner frequently says to the parents of the unfortunate child: "Don't worry about your child's eyes; the eye just turns in a little bit and the child will outgrow it after a while." That "after a while" in nearly every case never comes, and the physician has left upon his hands and conscience a most disfiguring affection, one which destroys the usefulness of the boy and the beauty of the girl, and one which interferes materially with the whole development of the child from birth to adult life. The child grows, it is true, but with the "cross eye," it becomes shy, wants to be alone, and is teased and jeered at by other children, until life becomes a burden. Added to this is the inevitable lack of development which results, and the attendant backwardness in school work due to bad sight and the general effect on mind and body. Blind children develop slowly and the nearer the child approaches to blindness the less developed in mind and body will it be. One need not refer to the disastrous effects of ophthalmia neonatorum upon the eye and to its prevention. At the present time the physician is thoroughly versed on the subject of its prevention as well as of its treatment. I shall deal solely with "squint," known as "cross-eye," "cock-eye" and other names. I propose to try to show various sins of omission rather than sins of commission. For example, one may be dealing with a boy, small of stature, with rather large head, pale, more or less anemic, and although nine years of age, not even knowing his letters. One will notice at a glance that there is a marked squint in the left eye. This cross-eyed boy exemplifies the remissness on the part of many family physicians in that they are too eager to make light of this affection at its beginning. He often fails to realize the seriousness of this defect in a child until the sight may have been lost in at least one eye. Often these patients lose the sight in one eye when the other is defective, from not being able to focus upon the object with the affected eye, hence learning to disregard the image of the object and to become blind as a result. Nowadays we hear a great deal about the degenerative effects of adenoids and enlarged tonsils upon the child, while the presence of "cross-eye" goes unnoticed, although it is one of the most potent reasons for retarded development. Another example is seen in a boy who is now about 15 years old. Two years ago he was badly nourished, badly developed, shy and rather effeminate; backward in his studies, though naturally of good mind as subsequent events have shown. Now, after operation he is a bright, rather sprightly boy and is able to hold his position among his associates. There is no serious operation that the child consents to submit to so cheerfully as to this one for cross-eye, because he has so continuously experienced on account of this condition mortification at the hands of his companions. What girl would not submit to operation if approached properly? However, I have one family of seven (on my books), father, mother and five small children; the mother and three of the children are cross-eyed; she does not want them treated, to say nothing of an operation, because her family physician told her some years ago "the children's eyes will come around all right," though she herself has been cross-eyed since early childhood. Few deformities are worse, particularly in a girl. It is particularly important that our children both in school and before the school age should be examined for eye defects, and especially for different forms of squint. The examination of the eyes of children in the schools is most to be commended, for here often a defective vision with a resulting squint begins.

Turning to the anatomy of the eye, I need only call your attention rather crudely to its extrinsic muscles, as these are the ones most involved in the production of the manifest muscular anomalies. These comprise the several varieties of squint, namely, convergent or cross-eye, divergent, cock-eye or wall-eye, or that form in which the eyes goes outward, and vertical squint, or that form in which the eye turns upward or downward. The muscles concerned in the movements of the eye are four straight and two oblique. Roughly, the superior rectus moves the eye up and its action increases as the eye turns up and does have subsidiary action, as do some of the other muscles of the eye. The inferior rectus moves the eye down and its action increases as the eye turns out. The inferior oblique moves the eye up, adducts the eye, and moves it on

its vertical meridian out. The superior oblique moves the eye down, adducts it, and rotates it on the vertical meridian in. But in this paper I shall confine my remarks to the action of the external and internal rectus muscles, as these are the ones with which general practitioners have to deal. The external rectus muscle arises by two heads from the outer margin of the orbital foramen, from the ligament of Zinn and from the lower margin of the spheroidal fissure. It passes forward near the outer wall of the orbit to be attached to the sclerotic coat about three or four lines from the margin of the cornea on its outer side. The internal rectus arises from the inner margin of the optic foramen, the inner and lower parts forming a common tendon called the ligament of Zinn; from this origin it passes forward to be attached to the inner side of the sclerotic coat by a tendinous insertion about three or four lines back of the margin of the cornea. The internal rectus, with most of the other muscles of the eye, is supplied by the third cranial nerve, while the external rectus is supplied by the sixth cranial nerve. It is seen from the varied actions of these extrinsic muscles of the eyes that when they are interfered with, some form of squint must result. This at first may be latent but there often comes a time when Nature refuses to overcome this defect and there results a permanent squint (The non-hygienic surroundings of the child often combine to bring about this condition.) It is certain that we see cross-eye more often in poor, badly fed, badly nourished children than in the children of the well-to-do classes. There must be more reason for it than the mere fact that they have a congenital predisposition to it or that they are born far-sighted. Coordination of the muscles in the eye must take place just as it does in the muscles of the other portions of the body, or imperfect results will follow. Lack of proper nutrition of the muscles of the eye acts just as it does in the case of other muscles of the body. One muscle being better supplied with blood than another will have more perfect action. So, too, lack of nutrition and improper hygiene disturb the action of the nerves and nerve mechanism, leading to lack of development. It also affects the quality of action of the muscles and nerves of the eyes, which in turn affect the other organs and functions of the body.

While I have not made a thorough investigation of the association of adenoids and enlarged tonsils to the predisposition to squint, I believe that there is an indirect connection between them and a consequent interference with development. These points are interesting to consider from a specialist's standpoint, if not from that of a general practitioner. The association of eye movements, according to the necessities of the case, is regulated by association centers of a higher order than the nerve nuclei which enervate the muscles; they enervate certain muscles or a group of muscles of one eye simultaneously with those of the other. The internal rectus of one eye may be set in action synchronously with that of the other eye so that a movement of convergence takes place, or it may act in conjunction with the external rectus of the other eye, so that both eyes turn in the same direction. If these muscles do not act simultaneously and with the same power some form of squint results, with double vision, confusion of objects, and resulting deleterious effects upon the child's development and advancement. Orientation is the ascription of objects seen to the place where they actually belong. The objects in the external world form images upon the retina and by being transferred to the normal brain by normal tracts definitely enable us to locate objects in the outer world arranged side by side just as their images are upon our retinæ, but only in reverse order. This process of determining the place of external objects which is learned by experience is called projection of the retinal images outwards. We are thus informed with certainty in regard to the position of objects in relation to each other; and also we can assign the object to its correct position in space. Not until we do this can we have any conception corresponding to the real state of things; we must also have a true conception of the position of objects with reference to our own body and of the position which the eyes occupy in the body. This orientation then is accomplished by virtue of the sense of equilibrium, by muscular sensations which originate in the muscles of the eye and which inform us of the relation of the position of our eyes to that of our body. By orientation we are able to recognize the absolute position in space of any object we see. It is not necessary to point out the importance of this in the development of a child, as one of the first signs of development and intelligence is the determination of the position of objects in space and the nature of the object as determined first by sight and after by a sense of feeling, perception, muscle sense, etc. As a result of correct orientation we see with both eyes at once but one object, as the image is made in symmetrical points upon the retina and by projection is located upon the same point in the outer world; hence, are seen single, giving binocular single vision. Suppose there is interference with this normal single vision, then we have binocular diplopia which appears when one eye deviates from the object of fixation. If the eye deviates inward, then there is a convergent squint forming two objects instead of one; hence diplopia results. With one eye the object is seen in the right place, but with the squinting eye it is seen in the wrong place, giving either two objects or leading the patient to conclude that the object has been displaced to the left, so that in this case the orientation is not correct and the whole mosaic of retinal images (if the left eye is the squinting eye) is located in space too far to the left, because the patient is misinformed in regard to the position of the eye in his head. One can readily imagine that when a child sees double images he either stops trying to see or else learns to suppress the vision in the squinting eye, which leads to blindness in that eye because the image from the squinting eye is less distinct and more easily disregarded. One can readily see the effect of defective vision from muscular defects, nerve defects, or errors in refraction which often accompany these defects of muscle movements and actions.

The causes of squint are numerous, periostitis of bones, birth injuries, fractures, gunshot wounds, various poisons, etc., but it is not the purpose of this paper to discuss these causes, as they lie rather more in the domain of the general practitioner. It is in my province to correct the squint as much as is possible. In these cases of squint other manifest symptoms occur which lead to their recognition and correction. Those beginning in young children without manifest cause, and developing in school children during the periods of development, are the ones to which I have specially called attention. However, I wish to sound the warning that in older people the most frequent causes of paralytic squint are syphilis and diabetes. I may add alcohol and

rheumatic conditions. The causes of these squints which begin in early childhood may be mentioned and are spoken of as disturbances of equilibrium of the muscles, in contradistinction to paralytic cases of squint. Among these causes are feebleness of one of the pairs of muscles, which may depend upon anatomical conditions, such as the size of the muscle, whether feebly nourished from bad or insufficient food; the way the muscle is inserted; the size of the eyeballs and their distance from each other. Myopic eyes are usually large and more difficult to move, hence, during the early school days divergent squint often follows myopia or nearsightedness. Children are not born with myopia or nearsightedness; they develop it as the result of improper methods of living. Kindergarten work and too close application at school are among the most frequent causes, and, given a child, the shape of whose head and the position of whose eyes favor myopia, it requires only the above conditions to develop the latter, followed by a divergent squint. This is an important reason for the examination of the eyes of school children. Enfeeblement of the muscles of the eye may follow any of the exhausting diseases, including rickets and infantile scurvy.

The functional causes of these non-paralytic squints in the young are very important for practitioners to remember; they arise from abnormal innervation of the muscles occurring in the above-mentioned conditions, or from the relations between accommodation and convergence. These two functions go hand-in-hand in the normal eye, but if an eye is in an abnormal condition of refraction, either myopic or hyperopic, the amount of accommodation changes accordingly, and while the eye may adapt itself for a while to the changed conditions, this often is not the case, and one or the other forms of squint may result, greatly to the detriment of the child. It is these cases we most often have to deal with as practitioners of medicine. How can one recognize these disturbances of the muscular power of the eye before the actual cross-eye or squint begins? Muscular asthenopia begins at some stage of these disturbances, and if we pay attention to the beginning symptoms, whether one or more, we are apt in a short time to find our diagnosis correct, as evidenced by a squint or tendency to backwardness of the child at school, or by the fact that the child does not want to go to school. In reading the eyes hurt or there is a headache, or there may be an attack of vomiting which is often attributed to indigestion. Objects grow indistinct and often the child tells the teacher she is unable to see them, but when examined for distance vision on the card she may read at 20 feet the normal line, or even better than normally. In this case the teacher may rebuke the child, or the family physician may tell the mother "there is nothing the matter with her eyes; she is only nervous and she will outgrow it after a while." Nevertheless, the child will continue to complain of headache, indistinct vision or double vision, and a burning sensation in the eyes. She will have red lids, and will suffer from nausea and vomiting. She will fall behind in her studies and will finally develop a hatred of school and near work, with resulting squint, to be followed by bad effects upon the mind and body and loss of vision in the squinting eye. For these reasons blind eyes are very often found to deviate out or in. Sight is diminished in these eyes even before the squint begins, so one should not wait for the latter. I may add in the words of Fuchs, one of our greatest authorities: "In exceptional cases it happens that children with strabismus gradually cease to squint as they grow up, and lose their strabismus about the age of puberty. But the eye that previously deviated is left with its sight permanently weakened and accurate binocular vision is never restored."

Now, these conditions may be prevented, as follows: (1) One should pay attention to the child's complaints of its eyes and head and heed other symptoms which one cannot account for. (2) One should attend to the complaints of the mother or older members of the family and not look upon them too lightly. (3) Eye examinations of all school children should be made at stated intervals, for this year a child may have normal vision, but next year a squint, or an error in refraction may occur. (4) Particular attention should be paid to the school room as to light, position of child when studying and distance from the blackboard; and to the nourishment of the child while attending school, the kind of food and its quantity. (5) Hygienic instruction at home should be given to the mother and child. (6) The child should be referred for treatment when necessary by one skilled in this work. It is not in the province of this paper to mention and describe the operation or the special treatment for the condition known as squint or cross-eye. I believe if more attention is paid to this important matter by physicians and those with authority over children, one of the most difficult subjects in medicine will be made simpler, at the expense of one of the most interesting conditions with which the specialist has to deal. At the same time there will be eliminated to a large degree one cause for backwardness and degeneracy in our school children, and the children who cannot or do not go to school. But if the defect is once acquired, whether the child shows degeneracy or not, no surgical procedure is accompanied with better results to the patient and more satisfaction to the specialist, than the operation for curing strabismus.

50 Westervelt Avenue.

EXOPHTHALMIC GOITER, WITH REPORT OF A CASE.*

By M. B. GORDON, M.D.,

BROOKLYN, N. Y.

On September 22, 1910, I was called in emergency at midnight and found the patient, Mrs. S. M., age 38, with a temperature of 99°, respiration 36, pulse 130, irregular, intermittent, barely perceptible. I gave hypodermic injection of nitroglycerin and digitalin gr. 1/100 of each and ordered tincture of strophanthus ♏iv, sparteine sulphate gr. ¼ by mouth every four hours, ice bag to the precordium, and absolute rest. In about an hour, I was called again and found the pulse worse, breathing shallow, dyspneic, and patient in a semi-comatose condition. Her pulse responded to stimulation and gradually became stronger and the intermittences became fewer, breathing improved, and precordial pain diminished. Further examination showed anixous facies, dry coated tongue, pulsation in vessels of neck, bruit heard. Goiter on both sides of neck, exaggerated on left side due to presence of a sebaceous cyst. Heart sounds irregular, murmur obtained with both sounds and heard all over the chest, tachycardia present. Lungs negative except for harsh, rapid, shallow breath-

*Read before the New Utrecht Medical Society Feb. 2, 1912.

ing. Slight exophthalmus present with Dalrymple and Stellwag's signs. A history of exophthalmic goiter for the past seven months was obtained, the patient being under thyroid treatment and accounting for her acute attack by her having taken two thyroid tablets instead of one as directed by her physician. Uranalysis made the next day showed specific gravity 1021, amber, turbid, large amount of sediment due to urates and phosphates, sugar absent, albumin present to slight amount. No microscopical examination was made.

The patient was kept in bed and put on a fluid diet with plenty of water, stimulation was given when necessary, and in a few days the albumin had disappeared, the urine was clearer, heart sounds were regular, and a systolic murmur at the apex which was transmitted to the left could be made out.

On October 6 she came to my office and complained of having had cold sweats for about a week. This was amenable to belladonna treatment. The thyroid had not been given since her attack and she was instructed to continue with the strophanthus and tincture of nux vomica. I did not hear from the patient from this date up to August 10, 1911, when she called at my office very much improved in appearance, stouter and looking more robust. She complained, however, of a choking sensation in her throat, her pulse was 120, of high tension, heart beat regular and murmur still present, while the murmur in the neck was more marked than previously. I put her on a diet and advised rest and recommended the simple life; she, however, did not take my advice, for on August 27, 1911, she was seized with an acute attack of cardiac palpitation caused by her walking against the wind and by her having taken a swim in Rockaway. She rallied from this, but on September 8 she said that she had had fever every evening for the past week, accompanying diarrhea and vomiting. On examination, her temperature was 102° (os), pulse 120, fairly good quality, lungs negative, abdomen negative except for a tenderness on left side, no headaches. This condition continued for a week without improvement and it was decided to send her to the Jewish Hospital of Brooklyn.

I am indebted to Dr. William Lintz for the following data of her stay in the hospital. Patient entered on September 17, 1911. Her condition was as outlined above, her temperature was on admission 101°, this never rising above 102°, and coming down to normal for the first few weeks, after which it became septic in nature, showing fluctuations between 104° and 100°. Pulse at the start was between 92 and 112 and occasionally higher, at one time running up to 130. Respirations were between 20 and 30. In a few days after admission her extreme abdominal pain was gone, but she complained all the time of cardiac palpitation, headache, anorexia, weakness, and extreme nervousness. Blood pressure was generally between 130 and 140, though at one time it came down to 90. Several blood examinations were made, but they all were found normal—there was no leucocytosis at any stage of the disease. Urine showed traces of albumin at times, otherwise normal except for a few white blood cells which were found microscopically and which were probably due to an existing leucorrhea.

She was given codeine sulphate, gr. ¼ t.i.d. Atropine sulphate, gr. 1/100 t.i.d., then thyroidectin antithyroidin, and Rogers-Beebe serum were tried in turn, but were of no avail. The nervous condition was becoming worse, patient being irrational for days at a time. The temperature assumed a septic type and it was decided that surgical interference was called for. Dr. William Linder operated, ligating the thyroid artery on the left side, this being followed by an amelioration of the symptoms for about two weeks, when the pulse and temperature shot up, the irrational condition became exaggerated, languor and stupor set in, and the patient finally died in coma, on November 10, 1911.

Although exophthalmic goiter was described as far back as the eighteenth century by Morgagni, it is still a condition that pathologically we know comparatively little about and of which we have still a good deal to learn. It has also been called Graves' disease and Basedow's disease, following the description of the condition by these men. The name exophthalmic goiter is not pathologically correct, as the condition may exist without either the goiter or the exophthalmos. Hyperthyroidism has been suggested by Charles Mayo, but this also is not correct, as in some stages of the disease, hypothyroidism exists.

The etiology is obscure, due to its relation to the pathology. It has been traditionally accepted that fright, worry, and a preexisting nervous state are etiological factors. This may be explained in that the severe mental shock has produced a change in the nervous system, this exciting the condition which was latent up to that time. Iodine medication will sometimes have the same result. Infectious diseases predispose toward it. Some observers think that it is frequently found in tuberculous patients. Though cases have been observed in families, the consensus of opinion is that heredity and family history play no part in the etiology. Climate and locality may have some effect, as may sex, for it is found to be more frequent in women than men in the proportion of eight to one. The age limit is between 16 and 40, though cases have been reported in childhood.

The modern opinions as to etiological factors are dependent upon the ever-increasing pathological knowledge of the thyroid gland and its function. Beebe seems to think that the condition is due to a pathological degree of activity stimulated by a hormone which is furnished by the thyroid gland. Marine believes that "hyperthyroidism is induced by a lack of some essential secretion of the thyroid, considered as a complex substance, and in the effort to restore this, an excess of some component part of the secretion is produced to a toxic degree."

I shall not go into the minute pathology of the disease, as the theories expounded by different men vary in many particulars, but it has been definitely accepted that the thryoid gland during the disease is the seat of a parenchymatous activity in which there is an increase in the number of cells in the alveoli and also in the number of alveoli. This may or may not be accompanied by an increase in the size of the gland itself. There is an increase in the cell secretion, with resulting symptoms of hyperthyroidism. This process may lead to a degenerative change in the parenchyma with loss of secretion or hypothyroidism shown by myxedematous symptoms, or as MacCarty has shown, it may revert to a simple goiter with an amelioration of the symptoms. This may occur at any stage of the disease; in fact, a diseased thyroid shows both processes occurring in different portions of the gland, so that hypothyroidism and hyperthyroidism may be had at the

same time. With the stage of hypothyroidism there are generally secondary changes in the heart, kidneys, and liver.

All who have investigated the thyroid during the disease agree that the amount of iodine in the gland is less than normal, but then Reid Hunt claims that there is more iodine in the blood, as its elimination is slower than usual.

The symptoms vary from cases in which all the classical symptoms are seen to those in which just two or three are manifested. According to Mayo there are two groups (1) those of a simple goiter without any symptoms of hyperthyroidism, and (2) those in which hyperthyroidism symptoms are the main features. The general symptoms are sweating, anemia, emaciation, vomiting, diarrhea at times.

Tachycardia is a cardinal symptom, palpitation and arrhythmia are seen in advanced cases. Goiter is not always present. When it is, it may be either unilateral or bilateral. Exophthalmos is not a constant symptom. The other eye symptoms are:

Dalrymple—widening of the palpebral fissure.

Stellwag—staring without winking.

Graeffe—lagging of the lids with eye movements.

Möbius—insufficiency of accommodation at near point. These may or may not be present, they are not pathognomonic of Basedow's disease, as they are found also in myocardial changes and in chronic Bright's disease.

Tremor is a characteristic symptom; nervousness, neurasthenia, even mania, may be present. Stupor and coma are usual terminal conditions.

The temperature is generally normal, but in acute cases it may assume a septic type, running between 104° and 102°—this is probably due to the toxemia produced by the overacting thyroid.

Occasional albuminuria and a transient glycosuria are often found. The blood is practically normal, though a mild anemia may be shown. Pigmentation of the skin and increased perspiration are prominent symptoms.

The diagnosis is difficult in mild cases or in those which present one or two symptoms. Tachycardia, increased perspiration, rapid emaciation, characteristic tremor, are warning signs, and, associated with eye symptoms, are practically pathognomonic.

Formerly this was considered a purely medical disease, but the work of Kocher, Ferguson, and the Mayos proclaims it as one of the future fields of surgery. Some surgeons claim that surgery is the best treatment. This may be true in the early cases, but when symptoms of hypothyroidism are present and secondary changes in the heart, liver, and kidneys are manifested, surgery obviously cannot be of much benefit. Surgery, according to Zapffe, of Chicago, is contraindicated in cases associated with cardiac lesions and in long-standing cases with extreme nervous disturbances.

The operation consists in either ligating the superior thyroid vessels or extirpation of the gland, depending upon the condition of the patient and the stage of the disease.

C. Mayo in mild cases, and in severe cases with secondary changes, does a simple ligation of vessels, nerves, and lymphatics at the upper pole, using linen ligature. This may be followed by the removal of one lobe and the isthmus later if deemed necessary. He thinks three-fifths of the gland may be removed without any untoward effects. Others think that more than one-half the gland should be removed in severe cases only. In ligating the superior thyroid artery, the vascularity of the gland is limited and the amount of poison taken into the system is reduced. Mayo uses ether as an anesthetic preceded by morphine sulphate gr. 1/6-1/4, atropine gr. 1/120, twenty minutes before the operation. Where ether is contraindicated, cocaine is used locally, this being preceded by scopolamine gr. 1/200 fifty minutes before the operation. Mayo's results are 70 per cent. cured, the mortality with ligation 3.7 per cent., with extirpation 3.9 per cent. Kocher had a mortality of 3.5 per cent. in 3,460 operations; all of the surviving patients were benefited, 83 per cent. being cured. These figures compare very favorably with the results following medical treatment.

The medical treatment consists in drugs and organic therapeutic agents in addition to hygienic measures. Physical and mental rest is absolutely essential, but it is difficult to enforce this rigidly in the present strenuous mode of life. The patient should be encouraged to have as much sleep as possible, taking a two to three hour afternoon nap when practicable. Exercise should be interdicted in those cases where cardiac lesions are present; in the milder cases it may be permitted, the amount being regulated and dependent upon the effects on the system. The diet depends upon the individual, overeating should not be indulged in, but enough should be taken to prevent underweight. Hydrotherapy is of some benefit. The heart condition should be watched and where a stimulant is necessary, strophanthus or strychnine may be given, as they have been found to be preferable to digitalis, due to the latter's effect on the stomach. For the sweating belladonna is very efficacious. Iodine and the iodides have been used in the treatment; the *x*-ray, electricity, and mental suggestion have also been tried.

In organotherapy, the thymus gland has been given, due to the belief that the thymus enlargement found in exophthalmic goiter is compensatory. Thyroid gland and thyroid extract are given in both stages—in hyperthyroidism to lessen the need for compensatory hypertrophy of the thyroid and in hypothyroidism to make up for the lessened secretion. Preparations from the serum and from the milk of thyroidectomized sheep are given. They all act in the same way, by neutralizing the excess of thyroid secretion in the system. Beebe and Rogers use a serum which is obtained by injecting the nucleoproteid and thyroglobulin from thyroids removed at operations, into rabbits. Time alone will tell of the efficiency of this class of remedies.

Iodine Fumigations in Gynecology.—Reynes states that this method gives excellent results in all uterine affections which may be treated per vaginam, like ulcerous metritis of the cervix, cervicitis, or granulomatous metritis. It is also useful for the disintegration of uterine cancers, after scraping the superficial layers of the tumor. Iodine vapors may also be introduced directly into the uterus. The author is employing this treatment with success in cases of postabortal metritis. The modus operandi is very simple: After carefully swabbing the vagina and cervix, the author introduces into the vagina a small pledget of cotton wool dipped in iodoform, which has been passed in the flame of a spirit lamp, candle or match. The combustion of the cotton wool is instantaneous, and the heat of this combustion is sufficient to set iodine free, so that iodine vapors fill the vagina, which has been previously dilated with a speculum. A deposit of iodine soon takes place in the vagina and on the cervix. Another method consists in heating the tube of an insufflator, insufflating iodoform, and bringing free iodine into contact with the diseased part. None of these methods requires any special apparatus.—*Progrès Médical.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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SEWAGE POLLUTED WATER SUPPLIES IN RELATION TO INFANT MORTALITY.

AT first thought there does not appear to be any close connection between water contaminated by sewage and infant mortality. When, however, the matter is given more earnest attention the relationship between polluted water and certain diseases to which infants are especially prone is obvious. Many infants are fed artificially, most of those, in fact, whose mothers work in factories or at other forms of labor away from home. Cow's milk is then the staple food of the infants, and in places in which there is a polluted water supply the milk will not long escape contamination, and infants may be expected to suffer from diarrhea and enteritis.

Dr. Allan J. McLaughlin, Passed Assistant Surgeon, Public Health and Marine Hospital Service, is the author of a paper in Public Health Reports for April 26, 1912, in which he invites attention to the excessive prevalence of diarrhea and enteritis of children in certain cities and towns which have a polluted water supply. He also points out that there is generally a parallelism between the curves for typhoid fever and enteritis in the winter months, suggesting that water is a factor in the prevalence of both. McLaughlin hopes that attention called to these conditions will result in the cooperation of practising physicians and local health officers and will effect two things, viz., (1) Investigation of deaths in the group classified as diarrhea and enteritis; (2) a wider use of municipal laboratories, especially in the diagnosis of typhoid fever and dysentery. A study of the intestinal discharges of children presents more features of importance in the problem of infant mortality than any other branch of investigation. McLaughlin concludes that statistics seem to show that the reduction in the general death rate, which has been called the Mills-Reincke phenomenon, when present, is due in greatest measure to the reduction in those diseases which are grouped under the heading of diarrhea and enteritis of children. To what extent an improved water supply is a factor in the reduction of the general death rate it is difficult to say. However, this much can be safely affirmed, that in practically every instance, in addition to a lessened number of deaths from typhoid fever, the substitution of a safeguarded for a polluted public water supply results in the saving of many lives from diseases which are not reported as typhoid fever. It certainly must be more than a coincidence that the death rate among infants from enteritis rises *pari passu* with the degree of contamination of a water supply, and points to the inference that the winter and spring mortality from the complaint is due to the water.

The subject is a fitting one for close investigation, and as McLaughlin says, the best way to probe the matter thoroughly is by the wider employment of municipal laboratories by practising physicians, especially in the diagnosis of typhoid fever and examination of the discharges of sick children. It is possible also that typhoid fever itself, and particularly the paratyphoid affections, attack infants with greater frequency by far than is generally believed. In recent years typhoid fever has been diagnosed on several occasions in infants and, perhaps, one or other of the paratyphoid fevers, if carefully looked for, would be found to be even more common. The relationship between infant mortality and sewage polluted water supplies is undoubtedly close.

THE TUBERCULOSIS SANATORIUM.

A COMMITTEE appointed by the Chancelor of the Exchequer to report on the preventive, curative, and other aspects of the tuberculosis problem, in order that the Government and local bodies in the United Kingdom might be guided in making or aiding provision for sanatorium or other treatment, has made an "interim report," which should be of equal interest in this country. Sanatoria have now for many years been building among us; and *pari passu* there has been much controversy over these institutions and some opposition to them.

This interim report is emphatically in favor of the tuberculosis sanatorium, insisting only that buildings erected or adapted for this use shall be unpretentious, and economical as regards both construction and management. It is not to be inferred that the committee means all consumptives should be confined in such institutions. On the contrary, it is recognized that the treatment of many patients in their homes and by their family physicians is not only possible, but oftentimes preferable. What is insisted on is that *all* persons afflicted with tuberculosis shall have treatment, to which end sanatoria shall be provided; herein we find but a paraphrase of the slogan of the New York State Charities Aid Association, "No uncared for case of tuberculosis after 1915."

One must indeed realize that sanatorium treatment is impossible for even a great number of consumptives. Those now in existence can accommodate but five per cent. of the present sufferers from this disease. Obviously the rest have to be treated in their own homes and by their own physicians, and very many among those who seek advice early and are obedient patients do recover in their own homes. The committee urges also that dispensaries be provided, not only for the prevention and the cure of tuberculosis, but also to serve as receiving houses, centers of diagnosis, for the education of physicians and as general information bureaus. It is recognized in this interim report that sanatorium

treatment has not always fulfilled expectations. Reasons for disappointment are that cases are not early enough diagnosed; that the public is ignorant of the significance of the incipient symptoms, and of the need of prompt treatment; that unsuitable cases are admitted and given continued treatment to the exclusion of favorable cases; that the patients do not get proper care after leaving the sanatoria; that the sanatoria are not always manned by physicians expert in this special work. The abatement of these objectionable conditions should largely increase the efficiency of the sanatorium.

LITERARY GENIUS AND MANIC-DEPRESSIVE INSANITY.

The insanity of genius is a phenomenon of which the literatures of every country and of every epoch have furnished abundant examples. So eminent have been the names inscribed in the literary hall of fame and of madness, that apparently no writer can dare to aspire to literary distinction without running the risk of submitting to psychological dissection by the alienists. In many instances it is no longer a question as to whether a certain genius was insane or not. The modern query is: "From what form of insanity did he suffer?"

In a thesis on the manifestations of manic-depressive insanity in literary genius, Eva Charlotte Reid (*American Journal of Insanity*, April, 1912) presents an interesting study showing that this type of insanity was the form most common among literary geniuses. The alternations of elation and depression, of frenzy and despair, of mania and melancholia, are frequently discerned in the writing of some of the most illustrious contributors to the world's literature. Among these are mentioned Goethe, Alfiere, Lucretius, Rousseau, George Sand, Tasso, Samuel Johnson, Chatterton, De Quincey, Swift, Keats, Charles and Mary Lamb, Coleridge, Cowper, Ruskin, Burns, Parkman, and Poe. Evidences of mental degeneracy in the antecedents or of abnormal mental manifestations in early life are cited in connection with allusions drawn from the works of these writers to show that they were victims of manic-depressive insanity. The author seeks to explain that this very infirmity was the motive force that impelled them to devote their lives to literature. "With an emotional instability which raises him to the pinnacle of exaltation one day and plunges him into the depth of despair the next, his industry must be spasmodic." He is unable to adapt himself to his surroundings. "In his literature he finds an outlet for all his abnormal feelings and passions. Here he pours forth, under various guises, his rapturous joys and fears, his dreams of bliss and his dread of impending calamity. The manifestations of his abnormal mental condition, which are denied him in actual life, find an outlet in poetry and fiction, under the guise of literary and poetical inspiration."

CATTLE TRYPANOSOMIASIS.

So far as modern medical research is concerned the greatest progress has of late been made, perhaps, in the field of tropical medicine. We have frequently noted that the conquest of the tropics by the white man has been really the conquest of tropical diseases. When malaria was the scourge it formerly was, certain parts of the tropics were more or less uninhabitable by white people. The same may be said of yellow fever to a lesser extent. Both of these dread diseases have been so greatly eliminated and robbed of their terror by methods of prevention founded upon a correct knowledge of their origin, that they no longer deter persons of the Caucasian race from living and living in health in regions near or in the Torrid Zone. Investigations as to the cause of other tropical diseases have resulted in an accumulation of facts on the subject that augur well for their ultimate extermination. F. M. Sandwith, in the first of the Gresham lectures delivered in London in February, 1912, and published in the *Medical Press and Circular*, April 3, 1912, deals with cattle trypanosomiasis and the early history of sleeping sickness. It appears that since the days of early travelers in Africa the tsetse fly has been a menace of the greatest magnitude to natives and white men alike. The tsetse fly and its ravages were referred to frequently by David Livingstone who, as a skillful and highly intelligent medical man, was one of the first to give an accurate description of the fly, the manner in which it injected its poison, the symptoms of infection of domestic animals thereby, and the post-mortem appearances. Major Bruce's later investigations proved that cattle trypanosomiasis is caused by the trypanosomes he found in the blood of the affected animals, and not in healthy ones, and that this trypanosome is conveyed by a particular tsetse fly, either from wild game, in which the trypanosome occurs as a comparatively harmless parasite to domestic animals, to which it is deadly, or from sick to healthy animals. However, although the means of dissemination has been discovered, as yet there has been no practical result from these investigations. No preventive measures have been devised and no certain cure for the disease has yet been found.

THE VALUE OF MEDICAL STATISTICS.

Undoubtedly the value of medical statistics is greatly overlooked by the average military or civilian surgeon. From all points of view and especially from that of public health and preventive medicine, vital statistics are desirable and even necessary. In the *Military Surgeon*, May, 1912, First Lieutenant Sanford W. French, Medical Corps, U. S. Army, draws attention to this fact. He points out that medical statistics in general, and venereal statistics in particular, do not appear ever to be taken seriously by either military surgeons or civilian practitioners. In the Army, according to this witness, there seems to be a great lack of uniformity in the method of properly recording all cases admitted to treatment or the sick list. This lack of uniformity is to some extent due to the fact that it is a matter for pride so to conduct the medical department of a regiment as to show as small a loss as possible from sick and wounded, but for comparison and the formulation of statistics, uniformity is necessary, which seems only obtainable by more stringent regulations in regard to the admission of sick and wounded and the recording of all cases unfit for duty. A similar condition is said to exist as regards venereal statistics. At some posts all venereal cases which come under observa-

tion of the medical officer are recorded, whether the patient is retained in the hospital for treatment or is treated while performing his duties. At other places men are treated for venereal diseases and their cases are not recorded unless their condition actually requires them to be in bed in the hospital. French argues that if statistics are to be of any value whatever, they should show the actual state of affairs in all cases, at all times and at all places. Obviously, statistics are worse than useless if they are cooked, or if they are not kept accurately and uniformly. That medical statistics are valuable when properly kept requires no argument in proof, and thus the plea made by French for such statistics is both cogent and timely.

The History of the Sleeping Sickness.

In the Gresham Lecture delivered in London in February (*Medical Press and Circular*, April 3, 1912), F. M. Sandwith gives an interesting history of the early accounts of the sleeping sickness. The earliest mention of this disease is in a book by one John Atkins, a naval surgeon who wrote of the "physical observations on the coast of Guinea." This work was published in London in the year 1742. Dr. Winterbottom, a colonial surgeon, was the next to write on the matter in 1803; he gave his experience of the disease as he saw it along the Bight of Benin on the west coast of Africa. Another colonial surgeon, Robert Clarke, wrote a fuller account in 1840 from observations he had made at Sierra Leone, and since then many English and French physicians have written concerning the malady. All were agreed that the disease was confined to certain areas. Dr. Corré a French naval physician, wrote regarding his observations in 1876, attributing the disease to a kind of ergotism or scrofula and to the moral condition of the people Corré, like all the earlier writers, asserted that none but blacks ever had the disease. Dr. C. Mense, a German author reported in 1906 that the number of deaths from sleeping sickness in the Congo within ten years amounted to at least half a million. The first scientific commission sent from Europe to investigate sleeping sickness was sent by the Portuguese Government. It is believed that Europeans have been mainly responsible for the spread of the malady. Henry Stanley is thought to have unwittingly helped to carry sleeping sickness from the center of the Dark Continent to districts where it had never beetn known. Now it is to be found in various regions of Africa and has actually decimated parts of the country which before had been healthy and prosperous—Uganda, for example. Recently much has been learned with regard to the disease, but it is as deadly as ever, and is undoubtedly the worst scourge of Africa at the present time.

The Senile Heart Again.

The death by heart-failure of General J. W. Duncan, commanding the Department of Texas, again brings up the question of overstrained hearts. He was only 58 years old, and had been apparently in perfect health. He was sick only a few days but did not have heart power to resist it. If many more such deaths occur, they will raise apprehension that all the experienced army officers will collapse or die in the first few weeks of an actual war. The situation will be rather serious if not alarming. They are national resources which deserve conservation.

News of the Week.

Cancer Research.—A fresh impetus has been given to cancer research in New York recently and broader fields have opened up for the workers on that baffling problem. The appointment of Professor F. C. Wood to be director of Cancer Research in Columbia University, working under the George Crocker Special Research Fund, as announced last week, will permit the observation of cases in St. Luke's Hospital where Dr. Wood has a special service for scientific study and the laboratories of which are also under his directorship. The opportunities for clinical study have heretofore been quite inadequate, and this combination of forces will be sure to be advantageous. This need of clinical study has also been recognized by a "well known scientist" who prefers to remain anonymous, in his gift of $100,000 to the General Memorial Hospital as an endowment for the maintenance of twenty beds for cancer patients. These beds have been placed at the disposal of the workers under the Collis P. Huntington Fund of Cornell University Medical College, who will thus have an unequaled opportunity for the bedside study of the disease. Three volumes of the results of laboratory experimentation have already been issued by the Huntington Fund, and it is to be expected that this larger opportunity will lead to correspondingly greater returns.

Deaths from Plague.—From Tien-Tsin, China, comes a report of two deaths from plague, the cases having the pulmonary symptoms which marked the serious epidemic in Manchuria last year. The international conference at Mukden which investigated that epidemic decided that while this form of the disease was invariably fatal within six days, its spread could be successfully checked by isolation of the victims.

Cartwright Lectures.—Prof. Dr. Ludwig Pick of the University of Berlin who will deliver the Cartwright lectures of the College of Physicians and Surgeons, New York, on November 7, 8, and 9, 1912, has announced the following subjects: 1, Some pathological-anatomical findings of hypophysis diseases and their practical value. 2. Modern views of the tumors of the nervous tissue. 3. Pathological anatomy of true and false hermaphroditism in man. The lectures will be given in the New York Academy of Medicine.

American Medical Editors' Association.—The forty-third annual meeting of this association was held at Atlantic City, June 1 and 3, 1912. Papers were read as follows: "Science in Personal Journalism," by T. D. Crothers, Hartford; "The Province of the Editor in Medical Journalism," by W. B. Snow, New York; "Commercialism," by C. F. Taylor, Philadelphia; "Research Work in Life Insurance Medicine," by Frederick L. Hoffman, Newark; "Shifting Medical Conditions Confronting Medical Journalism," by E. A. Ayers, New York; "Medical Journalism from a Disinterested Standpoint," by Albert E. Stern, Indianapolis; "What Doctors Read and Write," by Erwin Reissman, New York; "Independent Medical Journalism and the Task of the Independent Editor of To-day," by W. J. Robinson, New York; "Differential Diagnosis Between the "Write-up" and an Honest Article on a New Remedy," by H. S. Baketel, New York; "Book Reviews," by Arnold Snow, New York; "Subscription Getting," by G. Strobach, Cincinnati; "How the Medical Press can Cooperate with the Manufacturers for the Proper Introduc-

tion of New Materia Medica Science and Brands of the Same to Commerce," by F. E. Stewart, Philadelphia.

The following were read by title: "The Advisability of Newspapers and Magazines Having Medical Editors on their Staffs," by Edgar A. Vander Veer, Albany, N. Y.; "False Values in the Practice of Medicine," by H. Edwin Lewis, New York; "Eugenics in the Medical Magazines," by C. H. Hughes, St. Louis; "The Medical Editor of a Daily Newspaper, His Duties and His Educational Opportunities," by A. S. Burdick, Chicago; "Medical Expert Testimony," by R. B. H. Gradwohl, St. Louis; "State Board Examination Questions and Answers in Medical Journals," by Hills Cole, New York; "Laboratory Experiments versus Clinical Experience as a Method in Determining the Therapeutic Value of a Remedy," by John W. Wainwright, New York; "Anonymous vs. Personal Journalism," by Charles A. Wingerter, Wheeling, W. Va.; "Medical Journalism in Years Gone by," by W. A. Young, Toronto, Canda.

The election of officers resulted as follows: *President,* Thomas L. Stedman, New York; *First Vice-President,* Edgar A. Vander Veer, Albany, N. Y.; *Second Vice-President,* G. Strobach, Cincinnati; *Secretary and Treasurer,* Joseph MacDonald, Jr., New York.

The annual banquet was held at the Marlborough-Blenheim on the evening of Monday, June 3. Dr. Walter M. Brickner of New York was toastmaster, and addresses were made by Dr. Abraham Jacobi, President of the American Medical Association; Dr. Rupert Blue, Surgeon-General U. S. Public Health and Marine-Hospital Service; Mr. F. L. Hoffman, Statistician of the Prudential Insurance Co. of Newark; H. H. Snedeker, Esq., of the New York Bar; Dr. George E. Butler of Chicago, Dr. E. A. Ayers of New York, and Dr. James P. Warbasse of Brooklyn.

New Tuberculosis Ward.—The new ward for tuberculosis patients at the City Hospital, Providence, R. I., was formally opened on May 28.

To Combine Relief Work.—The Association of Infants' Milk Stations in New York is preparing a plan for the formation of a central society to be known as the Baby Welfare Association, in which shall be combined every organization in the city having anything to do with infants, all the regular milk stations, the hospital dispensaries, the day nurseries, etc. In this way it is hoped that all overlapping of effort and consequent waste of money will be avoided.

Doctor Fined.—A physician of Montclair, N. J., was recently fined $180 by the Montclair Department of Health for failure to report nine births at which he had attended.

Dog Famine.—The Provost of the University of Pennsylvania has complained to the Mayor of Philadelphia that the Medical Department of the University is unable to obtain dogs for class demonstration purposes because of the stringent regulations which have been enforced by the Women's Pennsylvania Society for the Prevention of Cruelty to Animals. Some of the class demonstrations toward the end of the year had to be omitted because of the impossibility of obtaining animals.

Smallpox at Quarantine.—The steamship *Kursk* which arrived at the Port of New York recently was found to carry two cases of smallpox, and was detained at Quarantine. The patients were both children, one in the cabin, and one in the steerage. A large number of passengers were removed to Hoffman Island for observation.

Shaw on Vivisection.—At the annual meeting of the Anti-Vivisection Society of London, England, recently, Mr. Bernard Shaw made a violent attack upon vivisection and vivisectors. He likened the claim that it was necessary to experiment on dogs in order to discover the cause of distemper to a possible claim that in order to discover the cause of the foundering of the *Titanic* several ships must be loaded and sunk in the Atlantic, apparently overlooking the fact that if the causes of that disaster were as obscure as are the causes of distemper, certain of his fellow countrymen would now be in a more enviable frame of mind.

Ambulances Wrecked.—An ambulance of St. John's Riverside Hospital, Yonkers, N. Y., was struck by an automobile while answering a call recently, and the surgeon in charge, Dr. Pratt, was seriously injured, the driver slightly injured, and the ambulance badly smashed. On June 4 an ambulance of the Harlem Hospital, New York, was struck by a Third Avenue car at 112th Street, and considerably damaged. Surgeon Charles McKinley suffered contusions of the shoulder and shock.

Gifts to Charities.—By the will of the late Edwin B. Foote of Brooklyn, N. Y., the New Haven Hospital of New Haven, Conn., and the Presbyterian Hospital of New York each receive the sum of $153,575. The bequest to the former institution is made in memory of the testator's father and is to be known as the Edwin Foote Memorial Bequest for the Endowment of Free Beds in Perpetuity. The New Haven Home for Aged and Destitute Women receives a like sum in memory of the testator's mother, Julia A. Foote.

Sir William Bennett of London, England, has placed at the disposal of the London School of Tropical Medicine the sum of £10,000 bequeathed to him by the late Lord Wandsworth for the purposes of medical research.

By the will of the late Thomas E. McVitty of Bryn Mawr, Penn., the sum of $5,000 is bequeathed to the Children's Seaside Home at Atlantic City, N. J., and the sum of $5,000 to St. Christopher's Home for Children in Philadelphia.

By the will of the late Helen B. Roberts of Philadelphia the sum of $5,000 is bequeathed to the Polyclinic Hospital, for the endowment of a free bed in the name of her husband, Caleb C. Roberts, a former trustee of that institution. It is stipulated that the bed shall be used for patients of her son, Dr. John B. Roberts. The sum of $1,000 is bequeathed to the Aid Association of the Philadelphia County Medical Society.

Fire in Flushing Hospital.—A fire in the two-story brick annex used as a kitchen for the Flushing Hospital, New York, on June 7, was extinguished by the nurses and orderlies on night duty before the arrival of the firemen. But little damage was done to the building and none of the patients were alarmed.

Death Rate Low Again.—During the week ending June 1 there were in New York City fewer deaths than during any other week of this year. The total number was 1,275 and the death rate per thousand was 12.86, while in the corresponding week of 1911, the total number of deaths was 1,334 and the rate was 13.96. Of the entire number of deaths, 94 were due to violence, 170 to heart disease, and 166 to tuberculosis. The other causes were as follows:

measles, 22; scarlet fever, 21; diphtheria and croup, 15; whooping-cough, 6; typhoid fever, 4; cerebro-spinal meningitis, 7; digestive diseases, 154; influenza, 3; bronchitis, 12; lobar pneumonia, 92; diseases of the kidney, 80; diseases of the nervous system, 55; all other causes, 431.

Martyr to Science.—Professor Lanfranchi of the University of Parma, Italy, who for the last four years has been conducting experiments on animals in the effort to obtain a cure for sleeping sickness, has himself contracted the disease and is reported to be in a serious condition.

School Medical Examiners in Philadelphia.—Dr. Walter S. Cornell, chief of the School Medical Examiners of Philadelphia, in a report to Director of Public Health and Charities Neff, states that the quality of the medical examinations made in the public schools in that city has improved greatly during the past year, while the cost of the work has been somewhat diminished. The number of defects discovered in pupils during the year has increased to 15,500. The number of nurses assigned to the schools has increased from 8 in 1911 to 22 in 1912, and the number of schools covered by nurses from 42 to 113. While 487 school visits were made in 1911, 1,325 were made in 1912, and the home visits increased from 551 to 1,042. Investigation has shown that about 35 per cent. of the children in the public schools are for one reason or another over the age of the grade in which they stand, and that 90 per cent. of these begin to advance and take their position with normal children as soon as they are fitted with proper glasses.

Jefferson Medical College.—Dr. William M. Sweet has been elected clinical professor of ophthalmology, and Dr. Hiram R. Loux, professor of genitourinary diseases in succession to Dr. Orville Horeait, who recently resigned.

Dr. William M. Walsh, formerly of the United States Public Health and Marine-Hospital Service, has been appointed superintendent of the Philadelphia Hospital for Contagious Diseases, succeeding Dr. Willard Morgan, resigned.

Dr. John F. Winn of Richmond, Va., who for several years has filled the chair of clinical obstetrics in the University College of Medicine, was recently elected professor of obstetrics by the board of trustees of that institution.

Dr. Philip L. O'Hanlon of New York, for the last fifteen years a coroner's physician in this city, was appointed a police surgeon by Commissioner Waldo on June 6.

Dr. Harvey W. Wiley has declined the office of chairman of the Board of Health of Boston offered him by Mayor Fitzgerald of that city.

The Medical Staff of the Jewish Maternity Hospital gave a dinner on May 25 to Dr. A. J. Rongy in honor of his appointment as attending gynecologist to the Lebanon Hospital, New York

Graduation Days.—The College of Physicians and Surgeons of New York on June 5 graduated eighty-five students with the degree of doctor of medicine, the exercises being held in common with the other departments of Columbia University on the University grounds at 116th Street. The address to the graduates was delivered by President Nicholas Murray Butler of the University, who also bestowed the degrees.

On the same day at the annual commencement exercises of the New York University, eighty students of the University and Bellevue Hospital Medical College received the degree of doctor of medicine. The following prizes were awarded: Valentine Mott silver medal to Francis Arthur Glass of New York; bronze medal to Harry B. Eisberg of New Jersey; Glover C. Arnold surgical prize to Cornelius John Tyson of New York.

The commencement exercises of Cornell University Medical College were held in the college building in New York City on June 7, when President Schurman of the University conferred degrees upon eleven graduates. The following prizes were awarded by the Dean: Whiting prizes in otology, first, to David Nye Barrows of New York; second, to Robert D. Schrock of Decatur, Ind.; John Metcalfe Polk Memorial prizes, first, to Chester H. Waters of Clinton, Iowa; second, to Robert D. Schrock; third, to Edwin S. Ingersoll of Rochester.

On May 29 diplomas were awarded to thirty graduates of the Women's Medical College of Philadelphia at the annual exercises, the address to the graduates being delivered by Dr. J. J. Walsh, dean of the Medical Department of Fordham University, New York.

Sixty-four students were graduated from the Medical College of South Carolina, Charleston, on June 3, at the eighty-third annual exercises.

The Medical School of the University of Texas bestowed the degree of doctor of medicine upon forty-six graduates at the exercises held in Galveston on May 31, and twelve students in medicine were graduated by the Wisconsin College of Physicians and Surgeons of Milwaukee on May 25.

At the Army Medical School, Washington, graduated thirty-eight physicians in Memorial Continental Hall on May 31, the graduates receiving the grade of first lieutenant in the United States Army Medical Reserve Corps. First honors were awarded to William B. Meister of New York, who received the Hoff memorial medal.

At the Boston University School of Medicine eighteen students were graduated on June 3.

At the commencement exercises of Jefferson Medical College held June 3 the medical degree was conferred on 148 graduates. The valedictory address was delivered by Dr. Thomas McCrae, recently elected Professor of Medicine, who spoke on Post-Graduate Education. The Degree of Doctor of Science was conferred on Dr. W. W. Keen, emeritus professor of surgery in Jefferson, and on Dr. J. W. Holland, emeritus professor of chemistry; that of Doctor of Laws on Dr. J. Solis-Cohen, honorary professor of laryngology, and that of Doctor of Public Health on Dr. Joseph S. Neff, director of Public Health and Charities of Philadelphia.

At the annual commencement of Hahnemann Medical College of Philadelphia on June 6 the Degree of Doctor of Medicine was conferred on thirty-five graduates.

At the annual commencement of Temple University of Philadelphia on June 6 the Degree of Doctor of Medicine was conferred on twenty graduates and the Degree of Doctor of Laws was conferred on Dr. J. Solis-Cohen, honorary professor of laryngology in Jefferson Medical College.

The medical degree was conferred upon seventy-one graduates at the commencement of the Medico-Chirurgical College of Philadelphia on June 7. The oration was delivered by Dr. Louis C. McMurtry, professor of abdominal surgery in the University of Louisville.

Philadelphia Medical Club.—A reception was given on June 7 to Dr. Abraham Jacobi, president of the American Medical Association; Dr. J. A.

Witherspoon, of Nashville, president-elect; Dr. Alexander R. Craig, of Chicago, secretary, and Dr. James Tyson, president of the Medical Society of the State of Pennsylvania.

American Dermatological Association.—At the thirty-sixth annual meeting of this association held in St. Louis on May 23 to 25, the following officers were elected for the ensuing year: *President*, Dr. Isadore Dyer, New Orleans; *vice-president*, Dr. D. W. Montgomery, San Francisco; *secretary treasurer*, Dr. James McFarlane Winfield, Brooklyn. The next meeting of the association will be held in Washington, D. C.

South Dakota State Medical Association.—The largest convention in the history of the association was held in Mitchell on May 24 and 25, when the following officers were elected: *President*, Dr. Charles E. McCauley, Aberdeen; *vice-presidents*, Dr. Frederick A. Spafford, Flandreau, and Dr. Fred Treon, Chamberlain; *secretary-treasurer*, Dr. Robert Douglas Alway, Aberdeen. The next meeting will be held in Vermilion.

State Medical Society of Wisconsin.—At the annual meeting held in Wausau on May 21 to 24, the following officers were elected: *President*, Dr. Arthur J. Patek, Milwaukee; *vice-president*, Dr. Charles Allen Armstrong, Boscobel.

Ontario Medical Association.—The following officers were elected at the meeting held in Toronto on May 22: *President*, Dr. Charles F. McGillivray, Whitby; *vice-presidents*, Dr. A. T. Shillington, Ottawa; Dr. Alexander Taylor, Goderich, and Dr. W. T. Parke, Woodstock; *secretary*, Dr. F. A. Clarkson, Toronto; *treasurer*, Dr. J. H. Elliott, Toronto.

Franklin County (Vermont) Medical Society.—At the annual meeting in St. Albans on May 29 officers for the ensuing year were elected as follows: *President*, Dr. Stephen W. Paige, St. Albans; *vice-president*, Dr. G. S. Clark, Montgomery Center; *secretary-treasurer*, Dr. Waldo J. Upton, St. Albans.

Minnesota Homeopathic Institute.—The following officers were elected at a recent meeting: *President*, Dr. A. E. Booth, Minneapolis; *vice-presidents*, Dr. L. A. Williams, Slayton, and Dr. E. L. Mann, St. Paul; *secretary*, Dr. Ethel E. Hurd, Minneapolis; *treasurer*, Dr. Margaret Koch, Minneapolis.

California State Homeopathic Medical Society.—At the meeting held in Sacramento on May 22, the following officers were elected: *President*, Dr. W. J. Hawkes, Los Angeles; *vice-presidents*, Dr. C. L. Tisdale, San Francisco, and Dr. Mary M. Cronemiller, Sacramento; *secretary*, Dr. Guy E. Manning, San Francisco; *treasurer*, Dr. T. C. Low, Los Angeles.

Manitoba Medical Association.—The annual meeting was held in Winnipeg on May 21 and 22, when an interesting clinical program was presented. The election of officers resulted as follows: *President*, Dr. J. S. Matheson, Brandon; *vice-presidents*, Dr. S. C. Bier, Brandon; Dr. T. R. Ponton, Macgregor; *honorary secretary*, Dr. Joseph Halpenny, Winnipeg; *honorary treasurer*, Dr. R. F. Parke, Winnipeg; *executive committee*, Dr. A. F. Walkey, Portage la Prairie; Dr. W. Bigelow, Brandon, and Dr. James McKenty, Winnipeg.

Missouri State Medical Association.—The annual meeting, held in Sedalia, ended on May 23 with the election of officers as follows: *President*, Dr. Robert M. Funkhouser, St. Louis; *Vice-Presidents*, Dr. J. S. Wallace, Brunswick; Dr. Harry S. Crawford, Harrisonville, and Dr. J. N. Baskett, Hannibal; *Secretary*, Dr. Edward J. Goodwin, St. Louis; *Treasurer*, Dr. J. Franklin Welch, Salisbury.

Harvard Medical School.—Class day exercises were held by the 1912 class of the Harvard University Medical School on May 25. The class, consisting of fifty graduates, is the first to complete the whole course of four years in the new college buildings on Longwood Avenue, Boston.

Certify Druggists.—The New York County Medical Society at a recent meeting authorized its president to appoint a committee of ten to meet a similar committee from the New York Pharmaceutical Association and confer on a plan for certifying pharmacies in the city.

Heaviest Man Dead.—Chauncey Moran, reputed to be the heaviest man in the world, died recently in Elwood, Indiana, aged 45 years. Up to his last illness Moran weighed 853 pounds, and had been for many years an attraction at Barnum & Bailey's circus.

Rabies Warning.—Commissioner Huson of the Department of Agriculture has issued a statement showing that in New York State ten towns and one village are now under quarantine for rabies, and that the disease is prevalent to a marked degree in Erie, Genesee, Wyoming, and Queens Counties.

Illinois State Medical Society.—The following officers were elected at the annual meeting held in Springfield on May 22 and 23: *President*, Dr. Charles Joseph Whalen, Chicago; *Vice-Presidents*, Dr. Samuel E. Munson, Springfield, and Dr. Watson H. Curtis, Wilmington; *Secretary*, Dr. Edmund W. Weis, Ottawa; *Treasurer*, Dr. A. J. Markley, Belvidere.

Obituary Notes.—Dr. William M. Gay of Talladega, Ala., a graduate of the Georgia College of Eclectic Medicine and Surgery in 1881, and a member of the Alabama State and Talladega County Medical Societies, died at his home on May 25, after a long illness, aged 65 years.

Dr. J. S. Heflin of Locust Grove, Ga., a graduate of the Oglethorpe Medical College of Savannah in 1870, died at his home on May 9, aged 65 years.

Dr. Thomas B. Rider of Hot Springs, Ark., a graduate of the Atlanta Medical College, Georgia, in 1887, died at Rye Patch, Nev., on May 19, aged 53 years.

Dr. Josiah R. Bromwell of Washington, D. C., a graduate of the University of Maryland, School of Medicine, Baltimore, in 1871, and a member of the American Medical Association and the Medical Society of the District of Columbia, died at his home on May 25, aged 69 years.

Dr. Mark T. Dodge of Troy, Me., a graduate of the Medical School of Maine, Portland, in 1891, and formerly a member of the State Legislature of Maine, died at his home after a long illness on May 18, aged 61 years.

Dr. Alvan J. Rosenberry of Benton Harbor, Mich., a graduate of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, in 1880, and a member of the American Medical Association and the Michigan State and Berrien County Medical Societies, died at his home recently, aged 61 years.

Dr. William M. Hoff of Farmersville, Mo., a graduate of the Missouri Medical College, St. Louis, in 1884, died at his home on May 20, aged 60 years.

Dr. Elmer Ellsworth Briggs of Santa Rosa, Cal., a graduate of the New York Homeopathic

Medical College and Hospital in 1893, and a member of the American Medical Association and the California State and Sonoma County Medical Societies, died suddenly while performing an operation in the Santa Rosa Hospital, on May 15, aged 51 years.

Dr. Elizabeth J. T. Gould of East Orange, N. J., a graduate of the Woman's Medical College of the New York Infirmary for Women and Children, New York, in 1873, died at her home, on May 24, aged 69 years.

Dr. Aquilla Nebeker of Philadelphia, Pa., a graduate of the Eclectic Medical College of Pennsylvania in 1870, died at his home, on May 27, aged 69 years.

Dr. Albert Moore Shoemaker of White Haven, Pa., a graduate of the University of Pennsylvania, Department of Medicine, Philadelphia, in 1900, and a member of the American Medical Association and the Pennsylvania State and Luzerne County Medical Societies, died at his home on May 18, aged 34 years.

Dr. George Weisle, retired, of Williamsport, Pa., a graduate of the University of Pennsylvania, Department of Medicine, in 1864, died at his home of apoplexy, on May 20, aged 68 years.

Dr. Lewis C. B. Yorgey of Pottstown, Pa., a graduate of the University of Pennsylvania, Department of Medicine, in 1873, died at his home of apoplexy, on May 21, aged 61 years.

Dr. Ernest W. Pinson of Cross Hill, S. C., a graduate of the Louisville Medical College, Kentucky, in 1890, and a member of the South Carolina State and Laurens County Medical Societies, died at his home after a long illness, on May 18, aged 43 years.

Dr. John Arthur Irwin of New York, a graduate of the University of Dublin, Ireland, in 1875, and of the Royal College of Surgeons, England, in 1876, and a member of the British Medical Society, the London Obstetrical Society, the Royal Medical Society of England, the New York Academy of Medicine, and the Medico-Surgical Society, died at his home of cirrhosis of the liver, on June 1, aged 59 years.

Dr. Chester Rowell of Fresno, Cal., a graduate of the Cooper Medical College, San Francisco, in 1870, and a member of the California State and Fresno County Medical Societies, mayor of Fresno, a regent of the University of California, State senator for three terms, and a former member of the State Board of Health, died in Los Angeles on May 23, aged 67 years.

Dr. Beverly MacMonagle of San Francisco, Cal., a graduate of the Harvard Medical School in 1876, a member of the American Medical Association, the California State and San Francisco County Medical Societies, the American Gynecological Society, the American Surgical Association, and the Western Surgical Association, and formerly chief surgeon at the Children's Hospital, San Francisco, died in Paris, France, where he had gone in search of health, on May 22, aged 57 years.

Dr. Carey Fenton Marshall of Lynn, Mass., a graduate of the New York University Medical College in 1879, died at his home on May 31, aged 57 years.

Dr. Thurman L. Wagner of St. Louis, Mo., a graduate of the University of Illinois, College of Medicine, in 1903, died at the home of his parents in Wabash, Ind., on May 28, from the effect of *x*-ray burns, aged 35 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

KING OPENS THE ROYAL SOCIETY OF MEDICINE'S NEW BUILDING—TROPICAL MEDICINE—MEDICAL SOCIETY'S ANNUAL MEETING AND ORATION—SELECT COMMITTEE ON PROPRIETARY MEDICINES.

London, May 24, 1912.

The King, accompanied by the Queen, opened the new building of the Royal Society of Medicine on Tuesday afternoon. That event has been the leading topic of talk among doctors all the week. Fine weather favored the occasion and set off the façade of the society's new home. At a quarter to four exactly the sound of cheering from the dense crowd outside, mingled with the strains of the national anthem, announced the arrival of their majesties. They were received by the president (Sir H. Morris) and other officials and conducted to the great hall, which is named after the late Dr. Robert Barnes and is capable of seating 500 persons. On reaching the dais the president read a loyal address expressing the appreciation of the society and profession of the interest evinced by their majesties in the health of their subjects, and the means of curing and preventing disease. It pointed out that the society was founded in 1805, but attained greater stability by the charter granted in 1834 by King William IV, who declared himself "and his successors if they should think fit" patron of the society. Pride and pleasure was expressed that these had so thought fit, and that now his gracious majesty has become patron. A supplementary charter granted in 1907 enlarged the scope of the society by authorizing the enrolment of other allied societies and changing the name of the Medical and Chirurgical to the Royal Society of Medicine. That charter ordained that females might be elected Fellows and appointed to offices equally with males. The address concluded with an expression of gratitude for the honor conferred upon the Fellows and the profession at large.

The King in reply expressed pleasure in opening the building, and confidence in the work of the profession, as none could doubt that medical science has revealed new securities for life and health during recent years and that improved public health is mainly due to discoveries made by medical men in this and other countries, and further to the guidance given by the profession to civil authorities and the precautions against the spread of disease thereupon enforced. His majesty then formally declared the building open and the royal party were conducted through its chief departments for an inspection. The floors of the lecture halls are sloped to facilitate the watching of demonstrations. In the basement is the storeroom for books, and here the honorary librarians showed how special shelves had been installed, which can be moved to accommodate volumes of various sizes. The plan interested the King, who contrasted it with the management of the British Museum, and after experimenting with the mechanism congratulated the librarians. Thence the King and Queen went to the library proper on the first floor; it is 110 feet long, 27 wide, 18 in height, and has an annex for periodicals. There are 100,000 volumes in the collection, the shelves running from floor to ceiling, and a gallery giving easy writing access. The tables are movable and a novel scheme of lighting them

has been adopted so as to dispense with the flexible wires, which are always in the way and apt to get broken. Contact is made through the legs and the tables can be moved without interrupting it. The King tested the working and accepted a model of the invention, which I learn is that of the secretary.

The royal signatures were then affixed to an emblazoned page prepared in the obligation book for this occasion. The King also signed the usual form which follows an election sign. Copies of the history of the society were presented and an adjournment to the tea room closed the proceedings.

The London School of Tropical Medicine is pressing forward for further extension. For this purpose a special committee is being formed on which Mr. Chamberlain, who did so much towards founding it when Secretary for the Colonies, has agreed to be a member, and his son, Austin, will be chairman. Sir Patrick Manson, Sir T. B. Crosby, Lord Mayor, and some others have agreed to serve when the full committee is formed, for which purpose a meeting will be held as soon as possible after the Whitsun recess. The cost of extending the school and hospital is roughly estimated at £100,000, towards which there is only in hand £4,500, raised at the recent meeting at the Mansion House. It is hoped to increase the laboratory accommodation so as to provide room for 100 students instead of 55, the present outside capacity.

It is intended to appeal for £100,000 to provide for endowment, new buildings, research and a nursing home for sufferers from tropical disease.

As to Lord Wandsworth's legacy, it has been arranged that the Seamen's Hospital Society shall act as trustee, handing the revenue to the school to be used for a scholarship. The scholar is to be nominated by the school committee and approved by the Seamen's Hospital committee; the tenure to be for two years, with a possible extension for another year. Failing a suitable candidate, the revenue will be used for some definite research in tropical medicine. The scholar will be required to present a report on his work not later than two months after the expiration of each year.

The Medical Society of London, which is older than the R. S. M., is in fact our senior society, dating from 1773, held its annual meeting and conversazione on Monday evening. Among those present was the Lord Mayor of London, Sir T. B. Crosby, M. D., the first medical Lord Mayor, and who was made an honorary Fellow of the society. The rare books, prints and manuscripts of this old established and still flourishing society were on exhibition. Some of the prints illustrated the house of Dr. Lettsom, one of the founders, and among the books was one of the few extant copies of the work of Servetus, who is said to have anticipated the discovery of the circulation of the blood. Sir Watson Cheyne, F. R. S., has succeeded Dr. Mitchell Bruce in the presidency of the society, and the vice-presidents for the ensuing year are Sir D. Ferrier, F. R. S., and Drs. William Ewart, Percy Lush and A. E. Barker.

The annual oration of the society was delivered by Mr. Bland-Sutton, who took for his subject, "Fertilization in Relation to Pathology." In a closely reasoned discourse he pointed out a number of pathological phenomena which present a certain degree of analogy with the imperfect development seen in some cases in which artificial fertilization has been experimented with.

The committee appointed by the House of Commons to investigate and report on proprietary and so-called patent medicines, has already heard witnesses testify to facts about the histories and sale of those products which are well enough known to the profession, and which it is well the public should be made aware of. The government licenses the trade and derives considerable income from the stamp duty. This stamp has been regarded by many ignorant persons as a guarantee by the government of the value of the preparation, or a certificate of the truth of the advertisements. This has been denied by some, but already it has come out that the government changed the words on the stamp to prevent deception. Notwithstanding the enormous sale of these quack remedies, the Home Office representatives have informed the committee that very few complaints have reached them, and the officials do not interfere so long as the wording of the advertisements is not indecent or suggestive of illegal practices.

At one sitting Dr. Nestor Tirard gave evidence as to the British Pharmacopœia, which is revised from time to time under the authority of the General Medical Council. The last revision was in 1898 and a new issue is in preparation. He would wish it to be more frequently revised. He would approve that any so-called secret medicine containing a scheduled poison should have the amount of that poison stated on the label. That might safeguard the public against the danger of changes of strength. It did not matter about the full formula for there was no real secrecy about them to medical men. They could all be analyzed. When some proprietary article obtained so much vogue as to be used by medical men, a corresponding formula was put in the Pharmacopœia, not because there was any discovery or skill in mixing the ingredients, but that those who prescribed it might have it of constant strength. The origin of these proprietary medicines was almost always the prescription of a medical man which was advertised by some one else.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

MEETING OF THE ONTARIO MEDICAL ASSOCIATION IN TORONTO.

TORONTO, June 1, 1912.

THE thirty second annual meeting of the Ontario Medical Association was held in Toronto on May 21, 22, and 23 last. A new departure, in so far as arrangement of programme is concerned, has been taken by the officers of the association. Instead of all the time during which the meeting is held being devoted to the reading of papers, only the first day is given over to paper reading, the greater part of the other two days being employed in clinical demonstration. The plan seems to be decidedly good. At many meetings time is wasted, the word is used advisedly, by the reading of a multitudinous number of papers. The audience is frequently bored, or those who know what to expect absent themselves and the reader of the paper often either faces a yawning, uninterested assembly or is confronted with empty benches. Therefore it is wise to have a few good papers read by able men and to employ the remainder of the time in practical demonstrations varied so as to meet the requirements and tastes of all sorts and conditions of physicians and surgeons. If attendance be a criterion of the popularity of a meeting then assuredly the recent meeting in Toronto must have been immensely pop-

ular. The papers were read in the Medical Building of the University in one or other of the large lecture rooms, and these rooms were crowded. When the addresses of the President, Dr. Herbert O. Bruce, of Dr. Carell, and Dr. Crile were delivered the large lecture room in which the session was held was filled to overflowing.

On the first day in the morning a symposium on Graves' disease was held in which Dr. W. T. Connell of Kingston, Dr. Marquis of Brantford, Dr. Olmstead of Hamilton, and Dr. Shillington of Ottawa took part. In the afternoon the address in medicine by Sir William Aldren Turner was delivered in his absence by Dr. Fotheringham. The title of the paper was "Some Aspects of Neurology in General Practice." With regard to hysteria and to Freud's main hypothesis that the repressed complexes are invariably of a sexual character, Turner said, "It is difficult at the present time to express an opinion upon the value of Freud's view upon hysteria. He has revived the oldest doctrine of the disease, its sexual origin, but upon a physiological basis. In reintroducing the sexual element as the sole factor in hysteria and allied neuroses he has opened the flood gates for a veritable torrent of criticism. He has been attacked vigorously by his opponents and as strenuously supported by his disciples and admirers. Any criticism, however, of Freud's view ought to separate the hypothesis which he has enunciated, such as his conceptions of conflict, expression and the influence of the subconscious mind, from the method of psychoanalysis, by which he has arrived at his conclusions. There is a strong body of opinion against the universal application and acceptance of the sexual origin of hysterical symptoms. Moreover, his views upon the 'conversion' of a repressed idea into the physical symptoms of hysteria would require some further explanation than has yet been given."

Referring to psychotherapeutics Turner points out in view of the generally accepted psychical origin of all hysterical symptoms, as well as those of the closely allied psychoneuroses, such as the mental symptoms of neurasthenia, morbid fears, obsessions, and the like, it is not unnatural that the present day methods of treating those conditions should consist in the main of psychical measures.

The Röntgen rays find little application in diseases of the nervous system. It was at one time thought that they might be of value in the location of tumors within the cranial cavity. This has not been found of any real value. They are, however, of decided value in the diagnosis of morbid conditions of the bony tissues, surrounding the central nervous system, especially with reference to pituitary and other lesions at the base of the skull. A minor, but at the same time, interesting observation, has been made from their universal application in all cases of muscular atrophy affecting the small muscles of the hands. It has been found by *x*-ray photographs of the neck in many of these cases, occurring especially in young women, how frequently the presence of an additional or cervical rib is the cause of the muscular atrophy, and how satisfactory the recovery may be after the removal of the accessory piece of bone. In cases of neurasthenia, accompanied by gastritis and enteroptosis, the examination of the size, shape, position and motor action of the stomach and intestines may be easily and satisfactorily made by tracing the course of a bismuth meal through the digestive tract by *x*-ray examination. Too much importance cannot be given to this method of examining a portion of the body whose functions have so far not been open to a closer examination than could be obtained through abdominal palpation.

Regarding the effect of the bromides in the treatment of epilepsy, Turner after an experience of some 16 to 18 years, during which time he has prescribed for several thousands of epileptics in all stages and varieties of the malady, can without hesitation say that the influence of the bromides upon epileptic convulsions is both variable and uncertain. In a certain proportion of cases, amounting to about 25 per cent., so much benefit is derived that the attacks are either permanently or temporarily arrested. It is probable that the spontaneously curable cases are found in this group, cases which in the view of some writers are arrested not in consequence of, but in spite of the remedy. The curable types of epilepsy are recognizable early in the disease, and in them Turner considers the early and persistent use of small doses of the bromides most essential. In a second group of cases, amounting to a further 25 per cent., some improvement is derived from the administration of the bromides, mainly in the direction of lessening the frequency and severity of the fits. In the remaining group, amounting to about 50 per cent., the bromides either have no influence at all upon the fits or are actually deleterious. It is therefore obvious that about half the number of epileptics derive no benefit from the administration of the bromides, from which it might be argued that those salts are of little, if indeed of any, use in the treatment of epilepsy. On the other hand there is the 25-50 per cent. which derive great benefit from these drugs including the 10 or 12 per cent. which are cured. Turner holds that it is an error to say that the bromides are of no use in the treatment of epilepsy. If 50 per cent. of the cases derive some benefit from the administration of these drugs, then all cases of recent origin should be given the benefit of the remedy for a time.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

A THREATENED INVASION OF PLAGUE—MANILA MEDICAL SOCIETY — ACROMEGALY — SPRUE—FAILING WATER SUPPLY — TYPHOID FEVER.

MANILA, P. I., April 11, 1912.

DURING the past week the Philippines have been most seriously threatened with an invasion of pneumonic plague from Hongkong. The S.S. *Loonsang* arrived in Manila on April 2 and reported that a death had occurred in a Chinese member of the crew. The first evidence that there was anything seriously wrong was when the man fell over dead. Twelve hours before his death he had complained of some pain in the lower part of his chest at the site of an injury he had received some years before as a result of a blow. The body was brought to Manila and an autopsy was made about 36 hours after the man had died. Nothing very unusual was found. Apparently it was a simple case of pneumonia of the lower lobes and scarcely sufficient to account for the death. Cultures were, however, made and guinea-pigs inoculated and it was soon learned that the disease was actually pneumonic plague.

A second case occurred on the S.S. *Zafiro*. This vessel passed the maritime quarantine inspection on the evening of April 4. On account of the experience had on the S.S. *Loonsang*, the medical examination of the personnel was made very carefully.

but no cases of illness were detected. On the morning of April 6 it was reported that a death had occurred among the Chinese crew. Upon investigation it was found that the cook for the Chinese crew had prepared the evening meal on April 5, and that he was seen about the decks as late at 10 P. M. on the same date; the next morning when the usual 6 o'clock breakfast was not ready and search was made for the cook, he was found dead in his bunk. The body was cold and rigor mortis had already set in. This case was immediately autopsied; the only macroscopic change noted was a congestion of the lower lobes of the lungs, with some slight inflammation of the bronchi. Smear preparations made from the spleen showed bipolar staining organisms. No definite anatomical diagnosis could be made which would account for the death, but laboratory investigations finally showed this case also to have been pneumonic plague.

The diagnosis in each case was confirmed by Drs. Strong and Teague, both of whom were members of the International Plague Conference which took place in China last year. These cases are of unusual interest in that the last death must have taken place at least five days after the probable exposure.

The S.S. *Loonsang* was promptly remanded to Mariveles quarantine station, where the necessary disinfecting measures were carried out, and at this writing, seven days after the disinfection took place, no other cases have appeared. The same measures were carried out with the S.S. *Zafiro* and up to this time, three days after the disinfection was completed, no further cases have occurred. It is evident that under these conditions it is quite possible for plague to be introduced into the country in a most insidious manner without rats actually having been concerned in the transmission. Another interesting feature in connection with the case on board the S.S. *Zafiro* is the fact that this vessel was thoroughly fumigated with sulphur for the destruction of rates and vermin before leaving Hongkong, and that upon the refumigation of the vessel at Mariveles no rats or other vermin were found.

The regular monthly meeting of the Manila Medical Society took place in the amphitheater of the College of Physicians and Surgeons of the University of the Philippine Islands at 8:30 P. M. on April 1. A well marked case of acromegaly in a Filipino was presented by Drs. Musgrave and Sison. Another case of multiple aneurysm was presented by Drs. Sison and Gutierrez.

A paper entitled "Sprue as a Place Disease" by Dr. G. I. Cullen was read by Dr. R. E. L. Newberne. In this paper Dr. Cullen stated that upon a small island near Catbalogan, Samar, he had observed that many of the Americans, and these are generally school teachers and their families, who went to the islands, in the course of a few months developed sprue. In all, he stated that he had seen six cases; he did not claim that he had sufficient evidence to prove that sprue was a place disease, but merely wanted to report these facts which had come under his observation. In the discussion which followed the trend of the opinion was to the effect that from the facts available no satisfactory deductions could be drawn.

Owing to the unusual dry season which has prevailed in the Philippine Islands during the past five months, and owing to some serious leaks which have developed in the Montalban reservoir, the water supply for the City of Manila has become insufficient to meet the demands and Manila is once more confronted with the necessity of using a supply that is obtained from the Mariquina River, upon the banks and drainage area of which there live over 10,000 persons whose sewage and other refuse finds its way almost directly into the river.

In view of the fact that such excellent progress was being made in reducing the death rate in Manila, and since the records so far obtained this year bade fair to exceed anything which has been attained since American occupation, it is indeed unfortunate that a return to the use of polluted water has again become necessary. Plans are under way to dispose of the night soil in the Mariquina valley temporarily by the means of public midden sheds. Regulations have also been issued prohibiting the bathing of persons and animals in the Mariquina river. In view of the fact, however, that the persons who live along the banks consider it their inalienable right to bathe and use the river in any such manner as they please, these regulations are most difficult of enforcement and are probably more honored in the breach than in the observance.

From a public health standpoint it is most interesting to note that two weeks after the use of this water was begun, the average daily mortality has risen; formerly it was about 22 per day, whereas now it has already risen to 28 per day. This makes additional concrete proof of the great importance of a proper water supply, especially for cities.

The danger to Manila is considerably increased by the fact that typhoid fever has become more prevalent in the Philippines, and if the Mariquina river should become infected an epidemic would arise which would not only cause great havoc among the residents of the City of Manila but would no doubt be the beginning of an infection which would spread widely throughout the provinces of the Philippine Islands.

Progress of Medical Science.

Boston Medical and Surgical Journal

May 30, 1912.

1. Medical Impressions of America. C. K. Austin.
2. Causes for Failures in Treatments of Chronic Joint Diseases, and Some Suggestions How Greater Successes Can Be Attained. H. W. Marshall.
3. Open-Air Rooms. J. Lee.
4. Open-Air Rooms in Springfield. R. B. Ober.
5. Open-Air Rooms. H. D. Chadwick.
6. Maintenance of Isolation Hospitals. W. C. Hanson.
7. What Happens to Patients Released from State Sanatoria? A. S. MacKnight.
8. The Relation Between State and Local Health Authorities. F. G. Curtis.
9. Work Treatment for Consumptives. A. T. Cabot.
10. Fracture of the Greater Tuberosity of the Humerus by Muscular Action in a Child. W. P. Coues.

1. **Medical Impressions of America.**—C. K. Austin of Paris, France, records the impressions he gathered during a visit to his native country, the United States, after an absence of twenty-six years. What impressed him most were the high standard and excellence of the hospitals. The admirable features of the New York hospitals are ranged under four headings: (1) A marvelous organization and team work, (2) a gift for discerning the practical side of everything, (3) scrupulous cleanliness, and (4) the earnestness of everyone concerned. One of the serious defects of the hospitals is the short and intermittent service of many of the attending physicians. There is also an unusually great predominance given to laboratory work as against a possible lack of consideration for clinical examination of the patient. There is one special branch of medicine which has shot far ahead in America and which is still in its infancy abroad, namely, orthopedics, and particularly the statics

of the pelvis and foot. The author notes that as a class American physicians are awkward speakers in public.

7. **Patients Released from State Sanatoria.**—A. S. MacKnight investigated carefully the later history of twenty-seven patients discharged from State sanatoria in Massachusetts since December, 1910. The investigation disclosed the fact that 9 were known to be living, while 10 had died since leaving the institution and 8 were at large without any knowledge of the fact by a local health authority. Of the 9 persons known to be living, 3 are now inmates of a State sanatorium, while each of the remaining 6 is careless as regards the spread of infection. A striking fact which the investigation disclosed is that each patient returned from the State sanatorium as "an arrested case" was found on physical examination either in an advanced or moderately advanced stage of the disease. The investigation further disclosed the fact that persons are discharged from State sanatoria to go whither they may. They sometimes return to their original place of residence, or they may seek new domiciles in the same city. They may never return to their original location, but may go to other cities or even other states. In any event it appears that no person or organization is responsible or assumes responsibility for the care and conduct of patients discharged from a State sanatorium. It is a fact that most of the 27 patients investigated on leaving the sanatoria have been found to be careless in their personal habits, especially as regards the prevention of the spread of the disease among well persons. They have thus failed to profit by the instruction received at the State hospitals.

10. **Fracture of the Greater Tuberosity of the Humerus by Muscular Action.**—W. P. Coues reports a case of this condition in a child twelve years of age. He notes that fracture of a part of the upper humeral epiphysis is very common; when, added to this, the condition is caused by muscular action alone, it becomes extremely rare. But few cases are recorded. Ossification begins in the upper epiphysis of the humerus by three centers, one for the head, one for the greater, and one for the lesser tuberosity. Bone is deposited in the epiphysis as early as the first year. The separate bony centers begin to merge together, forming the solid epiphysis at about the sixth year; the greater tuberosity is the last center that becomes solid. The epiphysis is completely bony at puberty. Union of the upper epiphysis with the shaft does not take place until about the twentieth year of age. Separation of any one of the centers of ossification of the humeral head by fracture of the cartilage uniting them is possible, but unheard of.

New York Medical Journal.

June 1, 1912.

1. The Upright Position in Ether Operations upon the Nose, Throat, and Other Portions of the Head. T. R. French.
2. The Value of Warmed Anesthetics. J. T. Gwathmey.
3. Intravenous Administration of Phenolsulphonephthalein for Ureter Catheter Study of the Renal Function. E. L. Keyes, Jr., and A. R. Stevens.
4. Unfounded Beliefs Concerning Insanity. M. Allen Starr.
5. A New Principle in the Politzer Vaporizing Method of Administering Anesthetics. R. C. Coburn.
6. Abdominal Distress in Children beyond Infancy. LeG. Kerr.
7. Tonsillotomy or Tonsillectomy. E. Danzieger.
8. The Drop Method of Administering Ether with Special Reference to a New Combination Inhaler. H. A. Sanders.
9. Anesthetics in the Borough of Manhattan. A. M. Hellman.

1. **The Upright Position in Ether Operations upon the Nose and Throat.**—T. R. French states that with the patient in the upright position the surgeon can do his work better since he is accustomed to this position of the patient in his everyday practice. A better view of the fauces can be obtained. There is less shock and less disturbance to the patient because less ether is required to maintain narcosis when the sitting position has been attained. This is due to the diminished blood pressure in the vessels of the head when the body is in the upright position and under the influence of a general anesthetic. There is also a relatively small amount of blood lost. This is an item of considerable importance in operations upon the very young, the aged, the feeble, and the cachectic.

2. **The Value of Warmed Anesthetics.**—By J. T. Gwathmey. (See MEDICAL RECORD, May 18, 1912, page 964.)

3. **Intravenous Administration of Phenolsulphonephthalein.**—E. L. Keyes and A. R. Stevens have employed this method of administration in the study of renal function with the following results: The amount of the drug output seems to be little if at all influenced by oliguria or polyuria. The phenolsulphonephthalein percentage agrees as closely as ever with the urea in centigrams (urea percentage multiplied by c.c. of urine). The "delay," *i.e.* the interval between the injection of the drug and its appearance in the urine varies widely. Thus in fourteen "normal" kidneys the "delay" varied from two to nine minutes, averaging 4.5 minutes. Yet among thirty-eight "diseased" kidneys no less than twenty-eight showed a delay within the "normal" limits and fourteen of them below the "normal" average, while in two the drug actually appeared in the urine of the diseased kidney, respectively, one and two minutes, before it appeared from the sound one. But the most striking feature of the "delay" is that it may be approximately equal for two kidneys whose function differs widely. Hence the "delay," whether absolute or relative (as between the two kidneys), is peculiarly misleading and should be taken into consideration only for the purpose of estimating the time at which to begin collecting specimens for phenolsulphonephthalein estimation. When employing intramuscular injections of phenolsulphonephthalein, several times the authors were chagrined to find that kidneys, which excreted high percentages of phenosulphonephthalein without cystoscopy, excreted only traces of the drug during an hour when the ureters were catheterized. This inhibition has not occurred after intravenous injection. Indeed so rapid is the output of phenosulphonephthalein after intravenous injection that accurate readings can almost invariably be obtained in from ten to fifteen minutes after appearance of the color in the urine. Yet the authors feel that enough inhibition may result from cystoscopy to invalidate precise conclusions as to the normality or abnormality of the kidneys from the percentages of phenolsulphonephthalein excreted by ureter catheter even when intravenous injection is employed. Roughly speaking, however, an excretion of one per cent. in one minute for the first ten or fifteen minutes is normal.

7. **Indications for Tonsillectomy.**—E. Danziger states that the indications for enucleation of the tonsils in children are: (1) Cases of buried tonsils in which the pillars and the plica envelop the tonsils almost entirely. Such tonsils are of no use, as they will not take up bacteria with the ingested food, nor will they be able to empty their crypts in a secondary tonsillitis from nasal or buccal infection. (2) In cases of small atrophic tonsils which cannot be removed, partly on account of their size, and in which the microscope shows large defects in the epithelium of the crypts, sometimes its complete disappearance. (3) In cases of suspected tuberculosis of the tonsils. (4) In adults, recurrent attacks of circumtonsillar abscess call for enucleation as the only guarantee against future attacks. (5) Malignant affections are self-evident indications for this operation. To make the age of the patient an important factor for the choice of operation is not logical, as the microscope shows the existence of the crypts at all ages, with the same production and diapedesis of lymphocytes, even if there is an increase of connective tissue. That the total enucleation of the tonsils does not always accomplish the desired results

has been shown by Finger, who has demonstrated that in quite a number of cases new lymphatic tissue may develop from the lymphatic tissue back of the tongue. As another drawback of the total extirpation of the faucial tonsils, one has to consider the deleterious effect of this procedure on the voice especially of singers and public speakers.

Journal of the American Medical Association.

June 1, 1912.

1. The Practitioner, the Profession and the Medical Organization. L. W. Littig.
2. Contribution to the Surgery of Bones, Joints and Tendons (concluded). J. B. Murphy.
3. A Case of Myoclonia Occurring Only After Rest or Sleep. L. Pierce Clark.
4. The Surgical Importance of the Parathyroid Glands and Closely Allied Lymph Nodes. N. Ginsburg.
5. A Device for Moving Patients. F. F. Simpson.
6. Typhoid Vaccination and the Widal Reaction, with Report of a Case Which Failed to Show a Positive Widal After Three Successive Vaccinations. A. Maverick.
7. A Method of Outlining the Thyroid Gland. M. S. Woodbury.
8. Toxemia and Eclampsia in the New-Born Babe. E. V. Davis.
9. Recent Advances in the Treatment of Pulmonary Tuberculosis by Air, Food and Rest. L. Brown.
10. The Occurrence of a Positive Wassermann Reaction in Cases of Lead Poisoning. C. W. Field.
11. A Simple Stain for the *Spirochæta Pallida*. R. Tunnicliff.
12. Transplantable Tumors of the Fowl: A Neglected Material for Cancer Research. P. Rous, James B. Murphy, and W. H. Tytler.
13. Another Tonsil-Forceps; One of the Operative Difficulties Removed. G. P. Marquis.
14. Hematuria from Tuberculosis of a Patent Urachus. Operation Followed by Septic Rash. Recovery. H. E. Pearse and E. L. Miller.
15. A Case of Gunshot Wound of the Pregnant Uterus. A. W. Tucker.

3. Myoclonia Occurring Only After Rest or Sleep.—L. Pierce Clark presents the history of a case of myoclonia occurring in a college student, aged 24, in whom the legs were convulsed only after sleep or resting. There was no direct hereditary history of nervous disorders in the parents, so far as known, but of the other children of the family one was an epileptic and the other of "highly nervous temperament." The symptoms had been observed since infancy and appeared to be without any obvious cause except as mentioned, but were made somewhat worse after excessive indulgence in coffee and alcohol. The author states that this is a case of classic myoclonic contractions of unknown origin, aside from possible obscure hereditary causes and slight injury at birth, which afflicts the patient largely if not solely after rest and only during that physiological period in which normal tension of muscles is brought about, as in walking or standing. Contrary to the usual ideas, myoclonic contractions often do occur during sleep or part waking. This condition, together with many of the allied spasms, such as tics and habit spasms, are intimately dependent on physiological alterations of muscle-tone, which in the last analysis is intimately bound up with an integral part of the function of the cerebral cortex and is one more link in the proof of the cortical origin of the disease.

4. Surgical Importance of the Parathyroid Glands.—N. Ginsburg discusses the possibility of the removal of the parathyroids by confusing them with the closely contiguous lymph nodes and the dangerous consequences that might result when removing one or more lobes of the thyroid. The lymph nodes are numerous in the region of the thyroid, and the positive recognition of a parathyroid by its separate arterial twig no longer holds true since numerous lymph nodes are similarly provided with vessels springing from the inferior thyroid artery. This is especially true in the case of the small pretracheal lymph nodes lying just below the lower poles of the lobes of the thyroid gland.

8. Toxemia and Eclampsia in the Newborn.—E. V. Davis calls attention to the danger of the transmission to the newborn infant of the toxemia of the eclamptic mother. The child may be stillborn or asphyxiated, or may die in a few hours from convulsions. A certain number, however, of greater resistance survive, but these seldom fail to show some results of the mother's disorder. If, as the result of the care given to them by the obstetrician, they survive, they often go to swell the number of weaklings. A large number of them become cases of icterus neonatorum. A certain proportion of them may be relieved and their lives saved by careful attention to the elimination of the toxin through the bowels and the kidneys. The author believes that it is a mistake to put the child immediately to the mother's breast, and advises in preference the employment of a healthy wet-nurse. She has some faith in small divided doses of calomel and bicarbonate of soda, with an initial dose of castor oil and plenty of sterile water to flush the bowels. Weakened solutions of fennel or chamomile with a little sugar for a few days are also favored, and if the temperature rises, two or three drops of sweet spirits of niter to establish the urinary excretion. Overdosing should be avoided, especially of calomel, as bowel hemorrhages are not uncommon. The milk of the toxic mother contains toxic ingredients and is the cause of infantile indigestion and its results.

9. Air, Food, and Rest in the Treatment of Pulmonary Tuberculosis.—By L. Brown. (See MEDICAL RECORD, April 27, 1912, page 831.)

11. Stain for Treponema Pallidum.—R. Tunnicliff in studying cultures of *Treponema pallidum* has found that the organism stains readily, usually in two or three seconds, with a 10 per cent. mixture of a saturated alcoholic gentian-violet solution in 5 per cent. phenol. The smears may be fixed in the flame, although no fixation is necessary. The stain is also useful for staining fresh material and for phagocytic experiments. A very thin smear is essential for obtaining a satisfactory stain of fresh material. For phagocytic experiments the stain is left on about three minutes; the smear should not be fixed by heat; after washing and drying, the leucocytes are stained with Leishman's or some other suitable stain.

14. Hematuria.—H. E. Pease and E. L. Miller report a case of hematuria from tuberculosis of the patent urachus. The diagnosis was made first of an infected tuberculous cyst of the abdominal wall and it was excised. The operation was followed by a septic scarlatiniform rash, but the patient did not have the other symptoms of scarlet fever. Hematuria followed six days after the operation. Cystoscopic examination showed that the blood came from an opening in the bladder fundus, and on the eighth day following the first operation they again opened the abdomen through a mid-incision from the navel to the pubis, opening up the old cavity and extending into the space of Retzius. The wall of the incised cavity appeared infected. The open end of the patent urachus was found and this organ was excised, taking a portion of the mural peritoneum with it, down to the bladder fundus, where the heavy cord-like tubular structure widened and fused. The cord and bladder fundus for an inch on all sides of the opening were removed, and the bladder-wall was infolded and closed with catgut sutures. After closing up the wound, the patient did well and the hematuria did not reappear.

The Lancet.

May 25, 1912.

1. Fertilization in Relation to Pathology. J. Bland-Sutton.
2. The Clinical Diagnosis of Malignant Disease of the Body of the Uterus. T. Watts Eden.
3. The Surgical Treatment of Aneurysm. H. G. Barling.
4. The Early Diagnosis and Treatment of Epilepsy. E. F. Buzzard.
5. Linea Atrophicæ, Achilioriduria and Typhoid Fever. J. C. F. D. Vaughan.
6. A Probable Effect of Control of Milk-Supply upon Infantile Mortality from Tuberculosis: Evidence Obtained in Manchester Regarding the Question. S. Delèpine.

1. Fertilization in Relation to Pathology.—J. Bland-Sutton states that while the spermatozoon is the most easily identified of all the varieties of the epithelial cells, the human virgin ovum has no specific characters, being

usually recognized by its situation in the reproductive tissues. If one knew the force which impels the spermatozoon to seek the ovum many facts would be plain in pathology. In this connection there is cited the selective power of the embryo of the liver fluke for the pond snail. This embryo has been tested with all the common forms of pond and river snails, but it refuses all except occasionally very young specimens of *Lymnæa peregra* and in this development is arrested at an early stage. A good example of disturbed metabolism leading to changes in the sexual glands and in the secondary sexual characters, is that known as parasitic castration, discovered in 1887 by Geard. When the male spider crab is parasiticized by the sacculina, the former undergoes an extraordinary transformation and acquires the external characters of the female crab. The sequel is even more remarkable, for when the parasatic barnacle leaves its host the crab recovers, and in the case of the male crab which has assumed female characters, the testis not only regenerates but becomes a true hermaphrodite gland capable of producing ova and spermatozoa. At an early stage in its development the human embryo is hermaphroditic. Vestiges of the male reproductive organs are present in the female and many vestiges of the special female organs exist in the male; some are present in the gonad itself, whether it be an ovary or a testicle. It is an interesting fact that in the male spider crab the testis, under the influence of parasitism, can produce ova. Although there is an enormous distance between crustaceans and man, these observations do bear on those rare instances in which dermoids arise in the testicle, for these remarkable tumors in men and in horses, though usually described as testicular, really arise in the ovarian vestiges known as the rete testis.

2. **Clinical Diagnosis of Cancer of the Body of the Uterus.**—T. W. Eden states that cancer arising in the body of the uterus is a clinical entity, differing from cancer arising in the cervix in its relative infrequency, in attacking women of a lower degree of fertility and of a more advanced age, and in showing no special relation to poverty and insanitary conditions. The initial symptom of cancer of the body of the uterus may be merely a bloodstained discharge, thin, watery, and odorless, the blood content being at first slight and intermittent. Later the amount of blood lost becomes larger and continuous, with occasional irregular hemorrhages of a definite, but seldom of a profuse, character. Still later pain is superadded to these symptoms; the pain is seldom severe, and shows this common characteristic of the pain of malignant disease, that at night it is as bad as, or worse than, in the daytime. Profuse hemorrhage rarely occurs in either carcinoma or sarcoma of the uterine body before the terminal stages are reached, and in many cases not even then. As regards the changes discoverable in the body of the uterus it is noted that as a rule the only change which can be discovered is a moderate degree of enlargement of the body of the uterus. As a rule the cervix is found to be healthy. In earlier cases, on the other hand, where the symptoms have been of very brief duration, or where, although there is bleeding, definite enlargement is not made out, curetting for diagnosis is the proper course to pursue. When the operation is done under such circumstances the condition will often prove to be innocent. When curetting is done in this way for diagnosis the whole of the scrapings should be carefully collected, and placed immediately in about an ounce of normal saline solution to which one or two drops of 40 per cent. formalin may be added. In the differential diagnosis there are only two conditions which one needs to consider, namely, senile endometritis and uterine fibrosis or chronic metritis. Senile endometritis occurs at much the same time of life as malignant disease of the uterine body, for it is essentially a postclimacteric affection. The prominent symptom is, however, a purulent and usually offensive discharge; bleeding is often entirely absent, and when present is never considerable. Uterine fibrosis or chronic metritis differs from malignant disease both in its general incidence and in the kind of hemorrhage to which it gives rise. As a rule, the subjects of this disease are considerably below the age of uterine cancer, and as menstruation has not ceased the prominent symptom is menorrhagia; in severe cases irregular losses also sometimes occur, and altogether the hemorrhage is a good deal more than is usually the case with cancer. A leucorrheal discharge is commonly present in the menstrual intervals, but there is no admixture of blood, nor does the discharge show any tendency to become offensive. The history is prolonged and the advance of the symptoms very slow. The uterus is generally enlarged, though not so much as in cancer; its shape is normal and its consistency unusually hard.

British Medical Journal.

May 25, 1912.

1. Fertilization in Relation to Pathology. J. Bland-Sutton.
2. The Influence of Age and Type of Patient upon the Course and Treatment of Appendicitis. W. Billington.
3. The Operation for Acute Appendicitis: Primary Closure of the Abdominal Wound. J. G. Andrew.
4. A Clinical Lecture on Early Diagnosis and Operation in Appendicitis. J. H. Dauber.
5. Cases of Perforations of the Stomach and Duodenum. By R. L. Spittel.
6. Rupture of the Abdominal Wall, Postoperative and Spontaneous. A. G. Stewart
7. Strangulated Omental Hernia with Few Symptoms: Report on the Specimen from Mr. A. Z. C. Cressy's Case. R. Parker.

1. **Fertilization in Relation to Pathology.**—By J. Bland-Sutton. (See page 1155.)

2. **Age and Type of Patient in Appendicitis.**—W. Billington believes that delay in the treatment of appendicitis is dangerous and unjustifiable in the case of children under 12, and adults over 40. Operation should follow immediately when a definite diagnosis of acute appendicitis has been made in these two classes of patients. The reason for this statement is not that many of these patients may not recover without operation, although the percentage of such recoveries is considerably below the average of all cases, but that the mortality associated with late operation is so great. In other words, if the disease progresses, and it is much more likely than usual to do so, many patients will die in spite of late operation. One reason why a higher proportion of children diagnosed as suffering from appendicitis develop dangerous complications is probably due to the fact that the milder forms of the disease are more often overlooked than in adults. Attacks of abdominal pain, vomiting, and bowel disturbance are very common in young children, and catarrhal appendicitis is easily, and probably frequently, overlooked. In elderly people acute appendicitis manifests peculiarities which may lead to error. The course of the disease is very insidious. The symptoms and objective evidence furnish no certain guide to what is going on inside. The temperature, pulse, and general condition often induce a false sense of security, which is rudely disturbed too late. It is not unusual to see a man lying comfortably in bed with a comparatively slow pulse, and an almost normal temperature, who expresses himself as not feeling ill, and who yet has a gangrenous appendix and a rapidly spreading peritonitis. In the elderly, as in children, the pathological condition is more often such that spontaneous recovery is impossible. It is common, even at an early stage, to find the appendix gangrenous in almost all its length and with little or no evidence of an attempt to localize the infection. This probably accounts for the fact that the early reflex symptoms are so little marked.

3. **Primary Closure of the Abdominal Wound in the Operation for Acute Appendicitis.**—J. G. Andrew favors this procedure in preference to drainage, when the

offending organ has been efficiently removed. The risks supposed to be associated with primary closure of the wound are as follows: (1) A peritonitis which has been confined to a circumscribed area around the appendix might become general. In the author's opinion, if the resisting powers of the tissues themselves be not sufficient to prevent extension of the peritonitis drainage will not help them. (2) Extension of the septic process may occur along the colon or into the pelvis, and a subdiaphragmatic abscess may form as a result of the former and a pelvic abscess as the result of the latter. Each of these conditions may happen, but each has happened when free drainage has been employed. (3) A localized abscess may form at the appendix region itself. This can, however, be treated as in the primary lesion. (4) Infection of the wound may occur. The advantages of primary union are so apparent that they need not be elaborated. The possibility of subsequent hernia is reduced to a minimum. The formation of a fecal fistula is not encouraged.

4. **Early Diagnosis and Operation in Appendicitis.**—J. H. Dauber contends that when the diagnosis of this condition has been made recourse to operation should follow as surely as night follows day. Appendicitis is what every medical man should be constantly on the lookout for; 90 per cent. of all acute abdominal emergencies are due to mischief in the appendix. It is infinitely commoner than ruptured gastric ulcer, acute pancreatitis, impacted gallstones, or strangulated bowel. The pain in the beginning is not always localized in the appendix region, but may be referred to the umbilicus or elsewhere in the abdomen. There may be nausea, there may be a rise of temperature and an accelerated pulse, but there nearly always is as a constant symptom tense rigidity of the right rectus. This is the key to the situation. It is nature's effort to protect a sick appendix. This rigidity in conjunction with two or more of the recognized classical symptoms should make diagnosis no very difficult matter. In women it is not always easy to differentiate chronic appendicitis from chronic right tubal or ovarian mischief, but these are chronic cases, and careful examination per abdomen and per vaginam may help one, but the author has seen several cases where even at the time of operation, and subsequently by pathological examination, it was quite impossible to say whether the appendix or the right tube and ovary were first affected. Both appendix and tube have been matted together, both inflamed and involved in a similar infective process. It is safe, perhaps, to conclude that if the opposite tube is normal the mischief arose in the appendix, but if both tubes are the seat of pyosalpinx or salpingitis then it is probable that the appendix became involved secondarily. It has been said that he gives twice over who gives quickly, and Dauber paraphrases in saying that the surgeon confers a double benefit upon his patient who operates quickly as soon as appendicitis is diagnosed.

6. **Postoperative Rupture of Abdominal Wall.**—A. G. Stewart states that rupture of the abdominal wall is a postoperative sequel of which little mention is made in the textbooks of surgery, although it is not a very rare occurrence. He refers to the cases in which the approximated edges of the abdominal wound completely separate, and the intestines are extruded through the opening, and not to the common presentation of a knuckle of bowel after removal of a drainage tube. It is most commonly found after suppuration, and frequently after a stitch abscess which burrows among the muscle. It would appear that the omentum, in addition to its many other uses, tends to prevent such an accident. In a series of experiments on cats, Wilkie found that when sepsis developed after abdominal operations, 5 per cent. died from rupture and prolapse of the viscera; where, however, he had removed the omentum, 85 per cent. died from prolapse. He therefore advises that when an abdominal wound has been exposed to infection the omentum should be spread out behind it before suturing up the abdominal wall. Other causes of abdominal rupture are the too early removal of stitches and the too great hurry in giving the patient up after operation. The accident frequently occurs in stout individuals, and in those debilitated, for example, by carcinoma. Straining for any reason, such as postoperative vomiting, bronchitis, or tenesmus, tends to favor the accident, while, lastly, the employment of catgut as an abdominal suture is said by the author to favor its production.

Berliner klinische Wochenschrift.

May 27, 1912.

Anemia Splenica Cured by Splenectomy.—Klemperer and Mühsam report what the former terms an illustration of the finest advances of the present day, accomplished by the resources of medicine and surgery combined. The diagnosis was made through refinements in our knowledge of medicine and the cure effected by a major surgical operation. The patient was in a miserable condition from anemia and emaciation and had a large splenic tumor. It was necessary to exclude the presence of leucemia and aleucemia which was done in part by study of splenic puncture fluids. The diagnosis therefore appeared to be Banti's disease, a term to which Klemperer objects, preferring that of splenic anemia. Concerning the intimate nature of the affecttion nothing definite is yet known, but futile attempts were made to determine whether the splenic tumor could have a syphilitic or lymphomatous component. The blood was normal save for the diminished erythrocytes. There was some tumefaction of the liver. The patient grew worse and since in true Banti's disease extirpation of the spleen has saved life this operation was performed with complete success. The outcome depends entirely on a correct diagnosis, for had the tumor been due to aleucemia or syphilis or some other forms of splenomegaly the operation would of course have been contraindicated. Only the fact that the general state was due to the splenic affection made the complete recovery of the patient the natural result.

Antibiosis of Cancer and Leprosy.—Soegaard, who showed not long ago that for Scandinavia at least lepers almost never become cancerous, has extended his researches into the autopsy records of leprosy throughout the world. The same antagonism seems to be everywhere apparent, and he seeks to explain it as follows: Leprosy is a typical chronic infectious disease characterized by progressive suppuration and eventually visceral degeneration (amyloidosis) and marasmus. There is a notable percentage of enteritis, severe and obstinate in character. Sepsis, pyemia, and erysipelas menace the patient. Despite all this bad predisposition the leper readily throws off the attack of the microorganisms, causing these complications, and he seems often to acquire immunity to them. Leprologists state that wounds of a leper readily heal. This fact has been attributed to the great rapidity with which leprous blood coagulates. The latter is believed to contain about four times as much fibrin as normal blood. Whatever the nature of these blood changes they must be of such character as to render it almost impossible for cancer to make headway against them. The patient who develops cancer is as the author has elsewhere shown one who has very often been highly resistant throughout his life to the attack of ordinary pathogenic germs. That there is any natural antagonism between the two diseases does not follow, for others who have developed immunity as a result of chronic suppuration would perhaps be equally able to resist cancer.

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

Walls of the Arteries.—While taking the pulse, the examiner should always note whether there is any thickening or degeneration of the radial or temporal arteries. In some unaccountable way, the precaution is often omitted notwithstanding its importance.

Full distended vessels with a moderately high blood pressure sometimes give rise to the impression that the walls are thickened. A simple way to eliminate this error is to subject the brachial artery to sufficient pressure to bring the pulsations at the radials to an end. This is effected by forcibly squeezing that artery between the finger tips under one side of the lower end of the biceps muscle and the thumb under the other. The vessels then being empty, it is an easy matter to ascertain if the walls are thickened.

Another point of importance is to examine the radials and temporals on both sides. It is not uncommon to find one radial almost normal and decided thickening in the other.

The presence of thickening or degeneration in any of the vessels should lead to rejection by the examiner. Examiners make the statement too frequently that "the arterial walls are no thicker or harder than is usual for a man of his age," when they are reporting on applicants over 50 or 55 years old. This statement will always call for criticism, as a life insurance company which does not write policies adapted to substandard risks only accepts applicants without pathological changes at any age.

Varicose Veins. Varicose veins are of no importance ordinarily and reference to them may be omitted from the report in mild cases. If they are marked or extensive, however, the condition should be fully described, and it should particularly be made clear as to whether or not there is any involvement of the veins other than those below the knee joint and whether a proper supporting apparatus is used. The examiner should also look for evidence of present or recent ulceration.

The Heart.—The examination of the heart is often a difficult matter and will be of little value unless a full exposure of the chest is secured in accordance with the scheme and diagram presented in a previous section on "General Methods in the Physical Examination." When this precaution is fully observed, not only will the ear be assisted in detecting obscure murmurs, but it will also be impossible for the examiner to be deceived into hearing the systolic murmur which may be produced by a vigorous action of the heart against a thin chest wall covered by a thick underwear or a starched shirt.

It is imperative that the place of examination be one in which there is complete freedom from noise or distraction, as the most acute ear may fail to detect a faint murmur or to differentiate a functional from an organic murmur under unfavorable conditions.

It is difficult to localize the different valvular areas and sites of cardiac murmurs if immediate auscultation with the unaided ear is employed, and on account of this objection as well as on the grounds of delicacy and cleanliness, the examiner should always use a stethoscope for the examination of the heart.

It is the purpose of the writer to confine these remarks to the practical points which are especially applicable to examination for life insurance and to direct the attention to the most common of the so-called functional murmurs which frequently have to be differentiated from those depending on an abnormal condition. The reader is referred to the text books for a complete account of diagnostic methods.

One procedure, fairly well known but not often resorted to, for timing a heart murmur may be recommended. An examiner not infrequently experiences trouble in definitely deciding whether a murmur is systolic or diastolic, and in such a case he may gain assistance by comparing the time of the murmur with the pulsation in the radial or carotid artery. If the murmur occurs simultaneously with the pulsation in the arteries, it is probably systolic; if it is heard in the intervals between the pulsations it may be regarded as diastolic.

A few examiners have the conviction that some applicants with heart murmur are good risks in view of the apparently slight involvement of the valves and of the good physical condition otherwise. The position of the companies in this respect should be plainly understood. It is unquestionably true that a few subjects with defective valves attain great longevity, but it must be kept in mind that the requirements of the companies are based upon the great law of averages and that individual cases can not be recognized except when they are being rated up, especially as there is no reliable way of selecting the few who are going to survive the others. The average death rate among applicants with defective valves is so heavy, notably so after the age of 50, that it is difficult to impose an adequate rating on their lives.

Companies which confine their business to standard risks will decline all applicants indiscriminately when the heart sounds indicate a departure from the normal. The guarantees in endowment policies are so liberal that the loading in them is not sufficient to cover the hazard in cardiac lesions. Those companies, however, which write substandard policies are interested in the character of the murmur and the situation of the valve involved, as they are inclined to consider each case on its merits and rate up the risk according to the prognosis of the particular form of heart disease in question. Every examiner will, therefore, be expected by the substandard companies to have a clear conception of the various cardiac areas and to furnish a definite description, so that the rates can be adjusted at the home office. No examiner can gauge the exact condition existing by the intensity of the murmur; a serious condition may be indicated by a faint murmur, and, on the contrary, a loud murmur may arise from a slight lesion.

Judging Nutrition by Abdominal Fat.—Oeder has made numerous measurements of the thickness of abdominal fat, lifting up a fold of the skin near the umbilicus and using a compass for telling its size. He thinks that such measurements give a good indication of the general state of nourishment of individuals, and advises that standard average figures should be obtained in this fashion for three groups: thin, normal, and fat persons. The actual measurement in centimeters should likewise be given.—*Medizinische Klinik*, No. 17, 1910.

Book Reviews.

PRACTICUM DER PHYSIOLOGISCHEN UND PATHOLOGISCHEN CHEMIE. Nebst einer Anleitung zur anorganischen Analyse für Mediciner. Von Dr. E. SALKOWSKI, Prof. o. h. an der Universität, Geh. Med.-Rat und Vorsteher der chemischen Abteilung des Pathologischen Instituts zu Berlin. Vierte vermehrte Auflage. Price 8 marks. Berlin: Verlag von August Hirschwald, 1912.

For many years Salkowski's little book has been regarded as one of the most useful of the many laboratory guides. In most concise form, it contains an unusual amount of information, and the successive editions have kept it well up to date. The present one has been enlarged by the addition of two sections, one on the quantitative determination of the ferments, and the other on the quantitative methods employed in studying autolysis. The changes in the body of the book do not appear to have been very numerous, and in some instances rather important procedures of recent date have not been included. For instance, the use of benzidin is not mentioned among the blood tests, the Schlosing method is the only one described for determining ammonia in urine, although it requires two to three days, and is inaccurate even at that, no reference is made to the centrifugal methods for determining the fat content of milk, the only urea methods given are the antiquated Liebig method, and the troublesome one of Morner and Sjoqvis, etc. None the less, the book is most valuable and deserves a place in every biochemical laboratory.

BLAIR'S POCKET THERAPEUTICS. A Practitioner's Handbook of Medical Treatment. Based Upon the Most Authoritative and Practical Methods and a Rational Treatment of Symptoms. Containing many means not commonly mentioned in the textbooks, and a plan for the solution of the vexed question of drug dosage. By THOS. S. BLAIR, M.D., Neurologist, Harrisburg (Pa.) Hospital; Author of "A Practitioner's Handbook of Materia Medica" and of "Public Hygiene"; Member American Medical Association, etc. Price $2.00. Philadelphia: The Medical Council Co., 1911.

THIS pocket volume contains a condensed account of some of the methods of treatment. The main novelty in the work is the author's plan of suggesting the size of the dose of a medicine by the size of the type in which it is printed. For example, when the author would use aconite in large doses, "ACONITE" appears in large type; when he would suggest moderate doses, "aconite" is printed in ordinary type; and when small doses seem to be indicated, *aconite* is printed in italics. To the reviewer this novelty seems to be a most treacherous pitfall; for, besides having to recall the pharmacopeial dosage of a given preparation, the user of this work will have to remember in addition whether Blair has it printed in caps, lower case, or italics. The opportunities for mistakes in dosage are thus increased. This is, however a personal opinion; and there may be physicians who are capable of using this method to advantage. The book has much in it of worth, and the personal element is quite prominent; the articles on hysteria and gynecological headaches and reflexes (for example) are refreshing and valuable. The book is printed on thin paper and contains quite a number of misprints and misspelled words.

PRACTICAL ANATOMY. The Students' Dissecting Manual. By F. G. PARSONS, F.R.C.S. (Eng.); Lecturer on Anatomy at St. Thomas' Hospital and at the London School of Medicine for Women; Examiner for the Fellowship of the Royal College of Surgeons of England; formerly Hunterian Professor at the Royal College of Surgeons of England; and Examiner at the Universities of Cambridge, Aberdeen, London, and Birmingham; and WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S. (Eng.), Lecturer on Anatomy at the London Hospital; Examiner at the Royal College of Surgeons of England and at the Universities of London and Bristol; formerly Hunterian Professor at the Royal College of Surgeons of England. In two volumes. Price $2.40 each volume. New York: Longmans, Green & Co.; London: Edward Arnold, 1912.

IN size and general appearance these volumes are much like Cunningham's Practical Anatomy, but it will be found that they do not contain quite so much as the older work. The authors do not slavishly follow in the fashionable path, but dare to think for themselves. In the preface they say: "The question of nomenclature has given us much anxious thought, and we have come to the conclusion that the time is not ripe for the exclusive adoption of the revised anatomical nomenclature. We do not dare, for instance, to send a student to the wards understanding that the radial nerve is a structure in the upper arm when, to his surgeon, it is a structure in the forearm." The work commences with some general hints on dissecting and then follow the same general plans as other works on the same subject. The only fair way to test a book of this kind is to work with it for a term in the dissecting room; this we have not done. Each volume is indexed separately. This, we think, is a mistake. There should be an index to the complete work at the end of each volume. And books intended for laboratory or dissecting room use should be so bound that they will readily lie open at any given place.

PELLAGRA. An American Problem. By GEORGE M. NILES, M.D., Professor of Gastroenterology and Therapeutics, Atlanta School of Medicine; Gastro-Enterologist to the Tabernacle Infirmary, Atlanta Hospital, and Atlanta Antituberculosis Association; Attending Physician to the Tabernacle Infirmary Annex (for Pellagra). Atlanta, Ga. Illustrated. Price $3.00. Philadelphia and London: W. B. Saunders Company, 1912.

A MALADY which has been known for two centuries, which has been reported and more or less studied for 150 years, which has been found in more than half the States of the Union, and whose etiology is still unknown, may well be termed "a problem." Further, it is a problem which concerns every physician and every citizen, especially in the South. The present volume is the latest contribution to the subject, and in a general way it may be said to be quite up to the standard of the previously published volumes and papers on pellagra. We miss, however, the splendid bibliography which was a feature of Lavinder and Babcock's volume. We do not like the look of "erythema multiforma" and "lupus erythemata"; and the first sentence on page 138 is somewhat remarkable in its construction. The book represents the author's contribution to the study and possible solution of "the problem," and it is commended to the attention of other students in the same field.

DIE RÖNTGENDIAGNOSTIK DER MAGENKRANKHEITEN. Von Dr. M. FAULHABER, Privatdozent an der Universität Würzburg. Mit 28 Abbildungen im Text. Price per volume (8 parts) 10 marks; single parts, 2 marks. Halle: Carl Marhold, 1912.

FAULHABER says that three symptoms permit us to make the diagnosis of gastrectasy by means of the *x*-ray:

(1) Increase in size of the organ. (2) Retention of food. (3) Visible pathological peristalsis. Before discussing these three cardinal symptoms Faulhaber gives the classical *x*-ray picture of gastrectasy caused by a pyloric stenosis that had been in existence for years. If such a patient is given a Bismuth meal in the morning in the fasting condition it will be found that only the lowest part of the stomach is filled in the shape of a very broad and low semilunar area. Its upper level is nearly horizontal and sometimes straight. One particularly characteristic peculiarity is the fact that the semilunar area projects markedly to the right. We distinguish therefore nothing of the pylorus nor of the body of the stomach. Above this bismuth crescent there is no air but an intermediate layer consisting of masses of retained food which are always present in these cases, and for this reason the bismuth layer does not show a sharp and mobile upper boundary. There is only very little air in these stomachs; only a small flat air bubble is usually visible directly below the diaphragm.

The book is a very useful one and can be highly recommended.

RAPID CALCULATION AND MILK MODIFICATION CARD. By JAMES HERBERT YOUNG, M.D. Boston: F. H. Thomas Company, 1912.

THIS handy device consists of a celluloid envelope open at the top, into which are inserted a series of celluloid cards containing tables of figures. These figures may be seen through small windows in the envelope, which are cut out in columns marked respectively fat, proteid sugar, and whey. The cards contain tables suitable for mixtures of 20, 32, 40, and 48 ounces respectively. Thus to obtain any desired percentage of fat, proteid or sugar, or any required number of calories, or to determine the percentage of sugar contained in any given amount of whey, all that is necessary is to move the appropriate card up and down in the envelope until the given figures appear at the small windows, when the figures in the various columns may be read off at a glance. The device is a most simple and convenient one, and should prove of value to both the pediatrist and the general practitioner.

Society Reports.

AMERICAL MEDICAL ASSOCIATION

Sixty-third Annual Meeting, Held at Atlantic City, N. J., June 3, 4, 5, 6, and 7, 1912.

(Special Report to the MEDICAL RECORD.)

SECTION ON DISEASES OF CHILDREN.

(*Continued from page 1122.*)

Wednesday, June 5—Second Day.

DR. ISAAC A. ABT OF CHICAGO IN THE CHAIR.

The Menace to the Young Child of the Common Infectious Cold.—Dr. THOMAS SOUTHWORTH of New York brought out the fact that besides the injury of the cold itself upon the development of the child, it frequently caused otitis, pneumonia, sinus infections and interference with nutrition. He thought that the lack of appreciation of the injurious effects of colds was partly due to the terminology and that if bacteriological investigation could determine a proper classification they would be understood and guarded against. He believed that the most prolific source of infection in young children was from visitors and other members of the family, while in older children the kindergarten, the school, trains, and hotels were largely responsible.

Dr. ENGLISH of Summit, N. J., said that a certain number of colds were caused by the influenza bacteria which produced a prostration, an effective remedy for which was iron and sodium and caffeine benzoate in moderate doses every hour.

Dr. ZAHORSKY of St. Louis thought that most acute diseases of the upper respiratory tract were due to germs communicated by others. He said that he thought that the term "grippe" was better for this class of infection than the term "cold."

Dr. MCCLANAHAN of Omaha said that in nursing mothers he had cautioned against coughing and sneezing near the child, and even the protection against her breath by the use of a mask or handkerchief. In a series of eleven cases that had developed nephritis he found five giving no other etiological factor than a common cold.

Dr. SCOTT of New York said that he did not believe that the cold required so much emphasis as the fact that it prepared the way for the invasion of other bacteria which are more or less universally present.

Dr. MCCLEVE of California said that in his practice he treated the well as well as the ailing members of the families, using as his remedies of choice hexamethylenamine and benzoate of soda. He said that in one tuberculosis sanatorium he had heard it reported that when one inmate had a cold a vaccine from his excreta was prepared and inoculated into the others.

Dr. KERR of Brooklyn said that most healthy children carried numbers of germs which, after a cold, found a field of invasion, therefore precautions were necessary. He deplored the practice of housing in, without fresh air, the child with a cold. He believed that if one exposed to infection had plenty of fresh air he would be more apt to throw off the symptoms. He did not believe that the temperature of the air was of importance because all air reached the lungs at uniform temperature through the act of breathing.

Dr. SEDGWICK of Minneapolis reemphasized the necessity of eliminating the idea of simple colds from these infections in order to educate the laity to a realization of their danger.

The Properties, Uses and Indications of the Various Carbohydrates in Infant Feeding.—Dr. HENRY DWIGHT CHAPIN of New York presented this paper, stating that this general term referred to a chemical combination of carbon and water. He said that its function was to supply carbon which would liberate energy and heat when oxidized. In infant feeding there were five forms of carbohydrates used, namely, starches, dextrines, maltose, saccharose, and lactose. He thought that some required cooking and predigestion for proper assimilation: others could be taken directly into the blood and the form should be determined by the findings of each individual case.

Dr. DOUGLAS of Detroit said that his experience had been that children would digest a definite amount of casein, irrespective of the addition of corbohydrate. He believed in the addition of starch in its solid form as soon as the child would take it.

Dr. GRIFFITH of Philadelphia called attention to the fact that the feeding of normal infants was simple, while adjustment of foods to sick children required skill and care.

Allergy to Common Foods: 1. Idiosyncrasy to Hen's Eggs.—In reading this paper Dr. OSCAR M. SCHLOSS of New York brought out the fact that idiosyncrasy to hen's eggs was far more common than is usually supposed. He said that while single symptoms might present in many cases, it was not uncommon to have them all in a single case. He had found the general symptoms to be first gastrointestinal, then cutaneous, and, lastly, general. He said that the recent experimental work on anaphylaxis seemed to indicate that the underlying cause of the idiocynerasy was protein sensitization or hypersusceptibility of the patient. Experiments showed that the blood of these patients produced a reaction capable of sensitizing guinea pigs to egg white. The condition might be inherited or acquired. In his cases he had succeeded in establishing complete immunity by the careful administration of small quantities, gradually increased until any amount could be tolerated.

Dr. MILLER of Atlantic City said that his daughter had shown an idiosyncrasy, but in her case it was only for the yolk of the egg—the white causing no disturbance. He had therefore come to the conclusion that there was some poisonous alkaloid present. He thought that the symptoms were much like those of ptomaine poisoning.

Dr. DENNY of Brookline, Mass., reported a case in which there was not only gastric disturbance, but local disturbance from application to the lips. A child of two, in his practice, had been made violently ill after eating but a mouthful of egg. At another time an egg shampoo was used on the same child's head, with an immediate swelling of all parts of the skin that the fluid touched. She had since been gradually immunized so that she could tolerate egg.

Dr. ZAHORSKY of St. Louis thought that possibly a test of idiosyncrasy could be made by rubbing egg upon the lips, but in view of Dr. Schloss' finding that all did not show the cutaneous infection, doubted its reliability.

Dr. DOUGLAS of Detroit thought that care should be exercised when one had determined to alternate a milk diet with egg, to first determine that there was no such idiosyncrasy.

Dr. RICH of Detroit had noticed a similar anaphylaxis in the milk of nursing mothers. He cited a case of an infant five days old which presented the clinical picture outlined, and which when put on barley water recovered, to renew her symptoms when put back to the breast.

Dr. ABT of Chicago called particular attention to the violence of the symptoms, saying that it was usually by accident that the cause of the clinical picture was attributed to this idiosyncrasy.

Dr. SCHLOSS in closing said that he had not before heard of a case in which the yolk of the egg produced the condition and the white did not. He could not explain the variation. He could offer no explanation of the symptoms presenting in the case of the disturbance from mother's milk, no work having been done upon that subject.

Tuberculosis of the Mesenteric Glands in Infants.—Dr. FRITZ B. TALBOT of Boston concluded from his studies and observations that tuberculosis in the young was almost uniformly of the glands. The mesenteric glands being so intimately connected with digestion, when they became diseased they disturbed the normal digestive process. He thought that if a sufficient number became diseased they formed a wall through which the fat could not pass, and it was thrown off in the stool. He therefore advanced the idea that where large amounts of fat were taken in the food a secondary intestinal indigestion might result, whereas if fat was removed from the food the child would improve. He thought the food should be regulated according to stool findings and in all conditions where the disease had progressed to the point of checking the lymphatic system, fats should be withdrawn and their place supplied by carbohydrates.

Dr. DENNETT of New York wished to know if postmortem any of his cases showed lung lesions.

Dr. JOHNSON of Grand Rapids thought it unwise to say that because fats appeared in the stools an obstruction had occurred. He thought that without question in conditions where the liver was involved there would be poor fat absorption so that it would be unwise to argue backward from that to a diagnosis of tuberculosis of the glands.

Dr. PISEK of New York thought that children suffering from malnutrition would also show poor absorption of fats, and their reduction would improve the condition of the child.

Dr. TALBOT in closing said that only two cases came to autopsy and they showed rather remarkable findings, nor-

mal lungs, and unmistakably tuberculous glands. It was said that this study was not of metabolism, but of clinical observations coming in routine hospital service. In making the usual examinations of the stools they happened to see the fat coming through in the stools of many cases, notably in all jaundice cases, but they did also find it in these cases of tuberculous peritonitis. He called attention to the fact that many tuberculous children were fed cod liver oil and olive oil and said that in the light of these examinations he thought it had practice.

The Caloric Requirements of Bottle-Fed Infants.—By Dr. ROGER H. DENNETT of New York. He said that the percentage designation of food proportions was misleading, it being better to get into the habit of thinking in calories. He said that while caloric needs differed in normal, atrophic, and very fat babies, still careful record keeping would enable one to determine the minimum number of calories on which a baby would gain in weight. He showed a number of charts from his practice showing that approximately 120 calories were the average food requirement.

Dr. PISEK of New York disagreed with the method of caloric feeding, saying that the object of feeding was to obtain growth.

Dr. TALBOT of Boston thought that the variation in the food properties of cow's milk discounted to a certain extent the findings shown by such charts. He thought that both percentage and caloric measures should be used in determining the proper amount of food, but that in every case the needs of the particular infant should be the guide. He said that in his practice he had fed as high as 160 calories per kilogram, while on the other hand he had had an infant thrive on 80 or less.

Dr. DOUGLAS of Detroit said that these findings were not applicable to babies that had been damaged by feeding, and urged the necessity of explaining diet requirements to mothers to get their cooperation in feeding properly and in not too hastily changing foods.

Dr. MORSE of Boston called attention to the fact that every food should be adapted to the individual child.

Dr. CHAPIN of New York said that mere calories had nothing to do with the feeding of the child, that 120 calories of something that would produce no growth at all could be given. Therefore growth was the criterion.

Dr. DENNETT in closing said that the idea he intended to convey was the addition of caloric measurements to percentages. He thought that the fat content in different samples of cow's milk would be so small that when divided as it was in infant feeding there would be nothing that could really be taken into consideration. One of the charts showed a baby weighing but six pounds at two and one-half months of age, which had come up nicely under this method. He thought that there would be few whose nutrition would be below this point.

The Relation of the Infant Welfare Movement to Pediatrics.—Dr. THOMAS B. COOLEY of Detroit showed the scope and importance of this movement in relation to preventive medicine. He considered its most important development the education of mothers, prospective mothers, and young girls in the care of themselves and children. He called attention to the grave danger of the work being taken over too soon by the health departments before standards had been set or dignity given it. His plea was for the cooperation of pediatrists and the absolute necessity for their affiliation with the welfare associations.

Dr. DOUGLAS of Detroit said that the pediatrist is the only one who is capable of directing the public on this subject upon lines that will not need to be reversed in a short time.

Dr. PISEK of New York said that he had been actively engaged in this work in New York. He thought that for some time it should be in the hands of private philanthropists, and that with the cooperation of social workers and pediatrists the work could be mapped out in a way to be carried on successfully by the health boards when the public had been educated up to it.

Dr. HILL of Philadelphia called attention to the "Baby Saving Shows" now going on in Philadelphia under the direction of the leading pediatrists. He said that the interest shown was remarkable and indicative of possibilities for great good.

Dr. JOHNSON of Grand Rapids said that since their exhibits and instruction of prospective mothers the mortality of infants had decreased 55 per cent. last year from the mortality of the five preceding years.

Dr. KERR of Brooklyn lamented the fact that the pediatric societies had not the standing they should have, and feared from this report that the health departments would too soon undertake entire supervision of the work.

Dr. HOWE of Albany said that the health departments had no desire to undertake the work, save under the guidance of pediatrists, and said that there was far more danger of the pediatrists not taking the interest in it that they should.

Dr. MCCLEVE of California said that the statement in the paper that the milk philanthropy had not been productive of good should not go unchallenged. He said that the feeding was the very first consideration, therefore pure supplies of milk were the first step in child welfare.

Dr. HARRINGTON of Milwaukee said that in their city the work had been started by a social worker in August, 1911, and had proven very successful, showing a decrease in infant mortality in the one district in which it was carried on of over 60 per cent. He said that it had been since put into the hands of a physician with a visiting nurse to look after home conditions. He called attention to the practice of newspapers of giving birth records, thus furnishing patent-food manufacturers with mailing lists for their samples, and thought that if the custom was common the postoffice authorities should look into it. He called particular attention to the necessity of the physician undertaking such work being a sociologist.

Dr. ZAHORSKY of St. Louis said that he thought the difficulty would be in getting pediatrists to agree on any rules for feeding, care, etc.

Dr. COOLEY in closing said that he did not intend to convey the impression that there were few competent pediatrists, but there were too few of any sort who would undertake this work, as had been shown by the inability of the promoters of the work to get them. He said that in his statement that milk philanthropy was a failure he meant that the giving of pure milk, without instructions as to how to keep it clean, how to prepare, and how to administer it, which came under education, had been a failure. He thought that there would be no difficulty in getting pediatrists to agree on a diet for normal children, that when controversy crept in it was in the case of sick infants, and that was a matter for determination in each individual case.

The Value of the Social Service Department to the Children's Dispensary.—Dr. MAURICE OSTHEIMER of Philadelphia read this paper, showing that as a result of their work many conditions deemed incurable by parents had been either cured or greatly improved. He said that within twenty-four hours after a child had been to the dispensary the social service department nurse visited the home to investigate conditions—sanitation, housing, hygiene, food, illness, work, etc. She saw that all the physician's advice and orders were understood and carried out; left diet lists, corrected abuses or bad habits; and sent the child back to the dispensary. If there were other illnesses in the family she referred them to the hospital. If necessary she helped some to sanatoria, or open-air schools, and secured open-air positions for those who needed them. He said that she worked closely with the Children's Home and Aid Society, often securing wet-nursing-mothers for babies with inanition. By this plan the mortality, especially during the summer, had been greatly reduced.

Dr. FUSSELL of Philadelphia called attention to the marvelous results produced by this work in Philadelphia. The particular feature, he said, was the visiting nurse, who looked into all the conditions, and followed up cases, instructing in care and hygiene. He said that no nurse was expected to recommend any measures of treatment, or in any way to interfere with the work of the physician, but where she found patients with conditions that needed attention, she saw that they got to the physican, who, in turn, recommended them to the proper department for treatment. He said that the nurse visiting the homes acted just as much in conjunction with the physician as any well trained nurse in private practice would do.

Dr. COOLEY of Detroit called attention to the fact that a physician practising among the poor was just as much obliged to be a sociologist as he was to be a physician.

Dr. MILLER of Atlantic City said that in his town (and in some others) proprietary food manufacturers kept two nurses in the town to go and instruct mothers in the preparation and use of their foods, and he thought physicians should discourage such practices, as he knew of quite harmful results accruing.

Dr. DOUGLAS of Detroit thought that physicians were not at fault in that matter, nor that medical teachers were at fault, but that the students themselves did no appreciate the importance of infant feeding and that other professors did not impress it upon them.

Dr. OTHEIMER in closing merely re-emphasized the point that the chief function of the nurse, after the educational

feature was the reference of cases to the physician, she herself not attempting to give medical advice.

Some Reasons for Surgical Failures in Children.—Dr. LeGrand Kerr of Brooklyn read this paper emphasizing the difference between the understanding of surgical success on the part of the laity and the surgeon. He thought that if more careful examinations were made, more consultation with the pediatrist to determine previous illnesses and physicial conditions the diagnoses would be more exact, therefore results better. He thought that the assistants often hindered more than they helped because they were either too interested, paying more attention to the surgeon than to their own work or not interested enough, or not well trained. He said that the anesthetist, too, was frequently not looked upon as a coworker, merely as a tool, and that he did not have an opportunity to do the best for the patient possible because he could not adapt the anesthetic to the patient merely giving what was designated in the quantity desired. He said that until these various procedures, all necessary to surgery, were reconciled and harmonized results could not be what they should and that parents would not be satisfied with a surgery that did not fully equip a child for normal childhood.

Dr. Neff of Kansas City said that the matter of the child's previous history was important. He said that among his cases operations had been done without his knowledge with indifferent results that could have got along much better if he had been consulted as to the child's general condition and previous illnesses.

Dr. Spinney of New York said that under anesthesia the patient was being given a most potent drug, and that unless this was realized by the physician and the anesthetist and every precaution to have it given just right, and evenly balanced, good results could not be produced. He thought that possibly there was as much danger from toxemia as from cyanosis.

Juvenile Psychasthenia.—Dr. Tom A. Williams of Washington, D. C., read this paper. He showed by the cases cited that psychasthenia was a condition characterized by the presence of obsessions. Contrary to the theory of Janet that it did not occur in children, he he had found it in many cases evidenced by morbid fears, mental disorders and day dreaming. Analysis of these cases showed that the psychological mechanism in childhood was the disturbing factor. He traced many analyses of cases in adults to neuroses in childhood. He believed, contrary to Freud, that bodily harm played a more important rôle than sexual excitement. He cited a case of an adult the cure of which occupied a period of eighteen months, due to wrong education of childhood. He thought that dreams did not play as important a part as had been attributed to them, believing that he could get at all of the conditions which they would show much more quickly and easily by direct methods. Pediatrists did not appreciate the importance of the study of these cases, and from the text books imagined them to be very complicated and difficult, while as a matter of fact they were not. He said that merely a common sense view needed to be taken of them, and a little study of the workings of the child mind, which he said he had found far more easily understood than the adult because they were more frank and open. In the two cases of children cited first he saw them each but once for half an hour and was able to make the diagnosis. The other, the boy of thirteen, was much more difficult, but even in this case he saw him but four times for half-hour intervals. He emphasized the necessity of studying these cases just as one would a disordered stomach, applying the treatment to the individual case.

Thursday, June 6—Third Day.

Dr. Thomas S. Southworth of New York read the report of the executive committee recommending the election of Dr. Henry Dwight Chapin of New York as chairman, Dr. J. M. Miller of Atlantic City, vice-chairman, Dr. Frank C. Neff of Kansas City, Mo., secretary, and Dr. Charles Douglas of Detroit for delegate. Upon motion duly made, seconded, and carried the report was accepted.

Methods of Estimating Kidney Function.—Dr. Richard M. Smith of Boston read this paper showing that the functionating powers of the kidney could be determined by the excretion of salt, protein, and iodine, but that the amount of water eliminated was no criterion to go by. Even in normal individuals, he said, there is a large variance in the quantities of water eliminated. He thought that the elimination of urea was valuable, but on account of the difficulty of determining it it was hardly practical. He had employed the test which, by the introduction of phenolsulphonephthalein into the body, enabled him to determine kidney function and from this knowledge make a differential diagnosis in many obscure cases and often an accurate prognosis.

Influence of Climate on Summer Diarrhea of Infants.—Dr. L. T. Royster of Norfolk, Va., read this paper giving statistics showing the relation of mortality and morbidity curves to heat and humidity curves in some twenty-eight cities of the United States from which he determined that when humidity was great a day or two later will show marked increase in the death rate. He had found, however, that ill effects of heat and humidity in white children were cumulative, so that often deaths during the fall months were attributable to excessive humidity in the early summer months. In negro children he thought that almost invariably the death followed in a day or two after the increase in humidity. He advanced his findings to show that humidity did play a part in the production of these conditions and urged the gathering of more careful statistics than were at present possible.

Dr. Hoobler of New York called attention to the fact that while in individual homes conditions of heat and humidity were not readily changed, in hospitals they might be. In gathering data on ventilation problems he had found that as humidity went up the blood pressure went down which he thought might account for some of the deaths from summer diarrhea.

Dr. Pisek of New York thought that unless heat retention in the infant was understood the troubles of the days preceding the hot spell would multiply. He had found the greatest humidity at three o'clock in the morning and after hot waves had placed infants upon substitute diets with marked lessening of gastric disturbances. He thought that the prime factor in reducing mortality was the education of mothers.

Dr. Schwartz of New York said that their death rate frequently went to seventy-one in a single day after a hot wave. He thought that the deaths were due to loss of body moisture because in zones where there are not extremes of heat and cold there is practically no summer diarrhea.

Dr. Rawlings of El Paso, Tex., said that although their humidity was very low, and rainfall but about ten inches during the year, they had a great deal of gastrointestinal disturbance. He thought that they secured best results by removing the children to a higher altitude.

Dr. Hillway of Cincinnati said that the study of summer diarrheas in hospitals, and gathering of such statistics would hardly give a fair estimate of conditions. He thought that visits to tenament homes were necessary to an understanding of the contributing factors. He said that heat produced increased peristalsis and diminution of the functionating power of the stomach, because of the stimulating effect of heat upon the emotions.

Dr. Butterworth of New Orleans said that their greatest humidity was in May and that April, May, and June showed the greatest mortality, although the hottest months were August and September. He said that going farther south he had found freedom from gastric disturbance during the rainy seasons, and that in his practice sending such children to the seashore, where the humidity was even greater, proved beneficial, so that he thought other factors played as important a part as humidity.

Dr. Zahorsky of St. Louis emphasized the necessity of studying morbidity rather than mortality. He thought that the increased death rate during humid periods was due to the fact that many bottle-fed infants are below par and that the heat aggravated the symptoms.

Dr. Johnson of Grand Rapids said that in experimentation in hospitals severe cholera infantum had been produced by steadily increasing the heat and humidity of the ward.

Dr. Douglas of Detroit said that he had been educating mothers to reduce the food about 25 per cent. during the hot periods, giving more cool water to children, with very good results.

Dr. McCleve of California said that except for the narrow strip between the mountains and the ocean the humidity in that State was very low and the heat extreme, but that summer diarrhea was practically unknown. This he attributed to the almost complete outdoor life of the inhabitants.

Dr. Cooley of Detroit called attention to the necessity for more careful gathering of statistics which would include all contributing factors to this troublesome disorder so that a correct determination of its etiology might be arrived at.

Dr. Parke of Birmingham thought that the wide variation in symptoms also led to confusion. He said that in London they did not know any such severity of symptoms as was seen in the southern states, therefore their findings could be of little value here.

Dr. ROYSTER in closing the discussion said that he had not contributed this investigation as showing the direct cause of the disorder, but merely to start an investigation as to what part heat and humidity did play. He said that in PHOENIX, Arizona, where the average temperature was 108 and the humidity was about four degrees, the mortality was very low—among a population of 20,000 about one a month. He agreed that the work of the German investigators could not be applied in this country because of the different climatic conditions. He thought that radiation had something to do with producing the conditions because children from inland sent out on boats in an almost moribund condition came back at night freshened and better in every way. He said that he had noticed difference in the discharges from year to year: one year watery, the next typically diarrheal, etc.

Effect on Later Development of Severe and Prolonged Illness in Infancy.—Dr. THOMAS D. PAGE of Birmingham gave a set of skiagraphs of the wrists of a series of children showing almost uniform under development of the bony structure even in children who were taller and heavier than average children of their age. He concluded, however, from his investigation that this condition could not be called uniform because some children showed even advanced bony development.

Dr. PISEK of New York called attention to the necessity for measurements in children from two to five years of age, the lack of such tabulation often handicapping the physician.

Exophthalmos in Scorbotus.—Dr. L. R. DEBUYS of New Orleans presented photographs and skiagraphs of an infant with marked displacement of the left eye outward, forward and downward, swelling of both legs below the tibia, and all the typical indications of scurvy in which a diagnosis of rheumatism had been previously made. He administered antiscorbutic treatment and orange juice with marked improvement. He called attention to the necessity for therapeutic diagnosis in these cases.

Dr. MCCLANAHAN of Omaha said that in his practice he saw an average of four cases a year, all coming in from the country, and all of which were variously diagnosed by other physicians. He said that most of his cases presented gingivitis. He had noticed hematuria as a common symptom, which often confused the diagnosis.

Dr. BUTTERWORTH of New Orleans called attention to the lack of education in differential diagnosis among physicians which would admit of a diagnosis of rheumatism being made in such cases.

Dr. DEBUYS said in closing that the English clinicians paid more attention to urine examinations which accounted for the frequency with which they mentioned hematuria as a symptom.

Anesthesia by Pharyngeal Insufflation.—Dr. FRANK W. PINNEO of Newark, N. J., said that the elements of ideal anesthesia were quick, tranquil induction, even maintenance, prompt, complete recovery and no sequelæ. He thought that these conditions had not maintained generally on account of the intermittent giving of the anesthetic which was partly due to the fact that in nose and throat surgery the operator and the anesthetist used the same field. By the use of an instrument which he demonstrated the anesthetic could be given through a mouth tube, a nasal tube, or nasal catheter, according to the requirements of the case. He advised a sequence of anesthetics to produce best results and an even temperature of from 84° to 87°, which with the heating device of the apparatus could easily be maintained.

Dr. GWATHMEY of New York said that since the practice of heating ether for administration much better results had been obtained. He thought that shock in children was almost invariably due to loss of body heat. He thought that for children the chloroform and ether sequence was best and said that very nice results might be obtained by starting to anesthetize during the child's nap, so that it would not struggle against the anesthetic.

Dr. WOOLSEY of New York said that the extreme susceptibility of children to toxins was an important consideration. He thought that many bad results from either anesthesia could be attributed to the fact that its action produced an obstruction in the thorax so that the child was not thoroughly anesthetized or the anesthesia evenly maintained.

Dr. PINNEO in closing said that he did not advocate nitrous oxide in children on account of the small air spaces. He thought that chloroform in sequence did not show the mortality statistics that plain chloroform did, so that he considered it the anesthesia of choice in children.

The Relationship Between Tuberculous Infection in the Child and Clinical Tuberculosis in the Adult—Dr. F. M. POTTENGER of Monrovia, Cal., considered this a lymphatic disease present in nearly all children before the fifteenth year. Even where it was discovered, he believed that the clinical symptoms presenting in adults could be directly attributed to old lesions of childhood. He thought that early infection afforded quite an immunity against further inoculation. He believed that the early recognition of its presence, and proper handling of tuberculous manifestations in children, offered the best preventive yet known against tuberculosis of adults, and for the ultimate eradication of the disease. He thought that tuberculin testing of children should be far more common and that all giving a reaction should be most carefully watched, if not put upon protective treatment.

Dr. AM ENDE of New York said that in his work he used the Moro test because it was simple. He said that where he found a reaction he put the child upon a formula of one part quinine and one-fifth iodoform, adding creosote and other remedies as indicated in individual cases and had had good results.

Dr. KNOPF of New York thought that the Moro test did not amount to much, and said he did not think that any of the tuberculin tests were very accurate. He said that in children over five there was almost universal reaction to von Pirquet, which would indicate that approximately all children did at some time have tuberculosis. He thought that the intensity of the reaction was a valuable diagnostic aid. Where it was violent, the disease was active, and where it was less active it was latent. He emphasized the desirability for constant examination of school children and thought open air schols should be the rule rather than the exception.

Dr. VON RUCK of Asheville, N. C., said that few children of tuberculous parents seen in their institution did not show evidence of infection. He said that they treated chiefly with tuberculin but were soon to introduce a vaccine which, if it proved as successful as the tests had, would present an immunization against tuberculosis as positive as the vaccine virus against smallpox.

Dr. HANSE of Lakewood, N. J., thought the leucocyte count an aid in diagnosis. He thought that tuberculous children usually showed a high percentage of mononuclear cells. He said that even where tuberculin therapeusis was used the other treatment and hygiene should not be overlooked.

Dr. RITTER of Chicago thought that in infants of from six months to two years the Moro test was by far the best. From three to ten years he used the von Pirquet and in older people the subcutaneous. He said that a successful tuberculin should represent all of the antibodies of the disease, because it was not known which were present in individual cases.

Dr. STOLL of Hartford, Conn., said that he used tuberculin both diagnostically and therapeutically. He thought that the delicate child which did not react should have just as much attention as the robust child which did, because he presented a better field for infection upon exposure.

Dr. MCKEE of Philadelphia said that he started his cases upon 1-10000 milligram of tuberculin biweekly, using the old tuberculin, and gradually increased the dose.

Dr. POTTENGER in closing said that the most important point in the treatment was the early diagnosis and that any method which substantiated it should be used. He thought that no one should use but one test, because patients who responded to one test would not to another, so that he used several tests in suspected cases if the first one gave a negative reaction. He emphasized the desirability of familiarizing one's self with one tuberculin and using it, rather than attempting to use several and doing it indifferently.

An Automatic Device for Reading Systolic and Diastolic Blood Pressures in Children.—Dr. B. RAYMOND HOOBLER of New York presented this device which by mechanical means gave the correct blood pressure, without the danger of the physician being misled, as he often was, with the use of his fingers or ears. He said that great difficulty had been experienced in reading blood pressure in children by means of tactile pressure over the radial artery or by means of auscultation over the brachial artery. The device which he presented consisted of a double cuff, one to fit below and the other above the elbow. The lower cuff was attached to a modification of a Fedde's pith-ball indicator, so that when pulsation was permitted to pass under the upper cuff it was recorded by means of the lower cuff and was shown by the oscillation of the pith ball. He said that in very small children the leg could be used as well as the arm, by merely calculating the 10 per cent. difference normally present in limb pressure. Through the use of his instrument he said that the findings were standardized and that the readings would be found to approximate very closely those of the Erlanger sphygmomanometer.

Effect of Cold Air on the Blood Pressure of Tuberculous Children.—Dr. B. Raymond Hoobler of New York read this paper, also showing that from his tabulated cases tuberculous children carried a very low pressure, but by removal to cool out-door air it was raised ten, twenty, or thirty degrees. He thought that this furnished additional argument in favor of open-air treatment. He said that the more advanced the case the lower the blood pressure fell and the more increased it became upon removal into open air.

Dr. Potenger of Monrovia, Cal., asked if the doctor had taken pressure in tuberculous children other than pulmonary. He wished to know if other than the pulmonary cases showed the same reduction in blood pressure. He said that if the lowered pressure was due to toxins then the non-pulmonary should show the same condition. He believed that the lowered pressure might be attributed to the fact that the diaphragm was interfered with so that it did not act normally, and he thought that this would also account for the pallor of tuberculous children, many of whom are not anemic. He thought that the effect of cold air was physical and that no conclusions could be drawn from it. He said that well children might show the same rise in blood pressure.

Dr. Ritter of Chicago said that he had recently reported 400 cases of analysis of blood pressure in tuberculous children and adults and asked the doctor if he had compared the pressure taken sitting, standing, and reclining. He said that in his cases he found that where the blood pressure was high in the reclining position the pulse was rapid, there being a difference of ten points between the three positions in blood pressure and six points between the pulse rate in the three positions.

Dr. Hoobler in closing the discussion said that he had presented only pulmonary cases and that the blood pressure had all been taken in bed. He said that this tests on well children showed that the rise in blood pressure when they were taken into the open air was not nearly so great as in the tuberculous.

The Diagnosis of Enlarged Bronchial Glands.—Dr. Henry F. Stoll of Hartford, Conn., read this paper and said that in his experience there were often no symptoms by which the condition could be diagnosed. Any of the symptoms might be present in a case, or all might be absent, but he considered the interscapular whispered bronchophony the most universal and the most valuable sign. He thought, however, that even here there was possibility of error because this might be caused by a dilated left auricle or an aneurysm of the aortic arch. He had found that paravertebral dullness was often present when neither vertebral, sternal, or parasternal dullness could be detected. He emphasized the necessity for extremely light percussion or the vibration would mislead its interpretation. He said that the *x*-ray usually presented a shadow in the first and second right interspaces to the right of vertebræ.

Dr. Ritter of Chicago wished to know if the doctor placed any dependence upon the Smith sign.

Dr. Potenger of Monrovia, Cal., thought that enlarged glands were more common than supposed. He said that while he had always held to the opinion that infection took place in the air passages, recent writings showed that if the gland was traced back to the part of the lung it drained a definite focus would be shown. He said that unless one percussed very lightly he soon lost his perception for slight sounds and so was less likely to interpret indistinct findings.

Dr. Muller of Atlantic City said he had found the Smith's sign misleading, and that in its early stages, of only slight enlargement of the gland one not experienced in these cases could not make a diagnosis.

Dr. Pisek of New York said that this condition could only be diagnosed by most careful attention to physical signs and that all suspected cases should be submitted to *x*-ray.

Dr. Hoobler of New York wished to know where the line was drawn between anatomical and clinical tuberculosis. He thought that no tuberculosis should go unattended to.

Dr. Stoll in closing said that the Smith sign seemed to occur so often in healthy children of stocky build with short necks that he did not use it as a diagnostic feature. He said that in adults intrathoracic goiter would give the dullness, weakness, and vasomotor instability that was present in tuberculosis so that the differential diagnosis was hard to make. He said he could not say what sized gland would produce the first sign of dullness but he had noticed that often the dullness seemed to be in excess of the enlargement shown by the *x*-ray.

The Hypodermic Injection of Hematinics in the Treatment of Anemia in Children, with Report of Cases.—Dr. H. Lowenburg of Philadelphia gave his results in a number of cases in which he had used a combination of hematinics upon which he based his opinion that results depended upon the character of the preparation. He said that citrate of iron did not always produce uniform results, that arsenic sometimes produced nausea so that the preparation should be varied according to the needs of the individual. He laid stress upon the need for absolute asepsis and for injecting the fluid into the deep tissue to avoid pain and swelling. He concluded from his experiments that small doses gave as beneficial results as large and that the toxic effect was noticed almost immediately.

Dr. Zahorsky of St. Louis had noticed frequent vomiting when a dose of $\frac{1}{24}$ of a gram was given so that he had given not more than $\frac{1}{4}$ to $\frac{1}{2}$ grain to young infants. He had also had rise in temperature to 99° or 102° in his cases but had noticed no especial harm from either of these symptoms.

A Demonstration of a Graphic Milk Chart.—Dr. Charles Henry Smith of New York demonstrated a chart by means of which the caloric and percentage values of foods could be determined for any milk modification. He said that the chart was based on 4 per cent. top milk, the straight lines of the chart indicating sugar and protein values of the food, dotted lines the calories. He had worked out the chart from his own practice and presented it as a means for obviating lengthy figuring to find out what milk modifications to make for the needs of each case.

SECTION ON PRACTICE OF MEDICINE.

Thursday, June 6—Third Day.

Cardiospasm with Sacculation of the Esophagus with Special Reference to the Persistence of the Sac.—Dr. Jesse S. Meyer and Dr. R. D. Carmen presented this communication which was a study of four cases of cardiospasm which had come under their observation since they had reported their series of ten cases two years ago. Since that time they had been able to observe three of their cases for periods of four years or more, and five cases ranging from one to three years, and this had enabled them to verify the beliefs previously expressed that even after complete stretching and paralysis of the cardia, it was questionable whether any of these patients in whom sacculation existed would be found entirely free from symptoms; they would always have to exert more or less care in the amount and character of food taken, and the manner of ingesting it. Without exception these patients who had been followed stated that their condition was much better than prior to treatment, yet they had to exert care in eating. The reason for the persistence of symptoms had been clearly shown by them to be due to the persistence of the sacculation, which seemed to undergo but little shrinkage after the spasm had been overcome, and to the consequent loss of the normal peristalsis of the lower third or two-thirds of the esophagus. They had made observations to determine to what extent the normal esophagus could be stretched and in no case were they able to inject into the intragastric bag within the esophagus more than 40 to 60 c.c. They believed that spasm was the primary condition and sacculation the secondary and that the earlier the condition was recognized the more complete would be the cure. They also described their method of determining the presence and size of the sacculation by means of the stomach tube and intragastric bag.

Adhesions and Constrictions of the Bowel: Their Demonstration and Clinical Significance.—Dr. G. E. Pfahler of Philadelphia presented this paper, choosing this subject because its importance was being recognized by a large number of writers. After reviewing the literature of the subject, describing his own *x*-ray work, and exhibiting charts illustrative of the various conditions for which adhesions were responsible, the writer concluded as follows: 1. Localized peritonitis resulting in adhesions was a common condition, and while it must often be present without producing symptoms it was a pathological condition that should be considered in all obscure abdominal cases. 2. Constriction of the bowels might be permanent or temporary. The permanent constrictions were liable to be due to adhesions or carcinoma and had been demonstrated by a number of roentgenologists in many cases. 3. Temporary constrictions might or might not be present during an examination, but the condition which would give rise to such obstructions would be present and could be demonstrated. 4. Colonic loops, particularly affecting the sigmoid, was a condition that might produce repeated temporary symptoms and had been found associated with the group of periodical "sick-headache" cases. 5. The cases of "colonic loop" that the writer had been able to

study so far had been too few to enable him to draw definite conclusions, but pointed the way to the conduct of many chronic cases.

The Value of Serial Radiography in the Diagnosis of Gastroduodenal Lesions.—Dr. Lewis Gregory Cole of New York presented this communication. After considering the types of stomach, types of gastric peristalsis, systole and diastole of the stomach, and the various types of caps (or first portions of the duodenum) he stated that the differential diagnosis of carcinoma from adhesions or hour glass stomach was very important. In extensive cases this might be made with great accuracy, and many inoperable cases might be saved the shock of unnecessary exploratory operation. Even in early cases the radiologist could differentiate between the malignant and non-malignant lesions with about the same degree of certainty as could the surgeon at an exploratory operation, without microscopical examination of the specimen. It was more conservative, however, for the radiologist to state the character, location, and extent of the adhesions and leave the practitioner or pathologist to determine the cause. If there was any radiographical evidence of malignancy, surgical interference was indicated, regardless of whether or not the symptoms were severe enough to justify such a procedure. If there was no evidence of malignancy the cases grouped themselves into three classes: 1. Adhesions with or without dilatation of the stomach, accompanied by symptoms sufficiently severe to indicate surgical procedure. 2. A definite lesion without sufficient symptoms to justify surgical procedure. 3. Definite radiographic findings, with obscure but prolonged symptoms, referable to the right hypochondrium. Dilatation of the stomach resulting from pyloric obstruction or from atony might be recognized by other methods of examination.

A New Method of Treatment of Ulcer of the Stomach.—Dr. J. W. Weinstein of New York read this paper. He stated that his method for the treatment of ulcer of the stomach was a combination of various remedies proposed at one time or another for the treatment of this condition. The diet was original; the other measures were not. This method did not require a stay in bed; the patient was allowed to go about his business as usual, but hard work was forbidden. His experience with the method had been confined solely to the chronic type of ulcer. The most of the cases treated belonged to that type of ulcers known years ago as hyperacidity but which had been shown conclusively to be ulcers. This class presented the syndrome of pain, heart burn, belching, and sour eructations coming on one hour or more after meals, and with these this method had been a most pronounced success. As to the diet, the patient might take white bread, zwieback, toast, soda biscuit, corn flakes, farina, cream of wheat, potatoes (mashed only), eggs (soft boiled, hard boiled if they agreed), cream, cream cheese, butter (in plenty), sugar, fish (boiled only), raw or stewed oysters, baked apples (without skin and core). The patient might drink water, milk, buttermilk, zoolac, fermillac, vichy, weak tea (in moderation only), cocoa. The articles forbidden were: any other food, all fried foods, all seasonings, except the least bit of salt. Meats and broths were excluded because they stimulated gastric secretion. This diet must be strictly adhered to for four weeks, when easily digested soups and meats might be added. Fried meats were forbidden and all the coarser portions of the meat, sinews, tendons, burnt or charred portions should be avoided. Soups and broths should not contain vegetables of any sort. To cure the ulcer he gave bismuth; the subcarbonate given once a day, in the morning on an empty stomach, had proved most satisfactory. The patient must not have anything for an hour afterward. He had found it expedient to cleanse the digestive tract once a week by the administration of a dose of castor oil to remove the bismuth which had a tendency to accumulate. To check the flow of hydrochloric acid, he gave atropine in doses of one grain three times a day or extract of belladonna in doses of one-fifth of a grain. In addition he gave an alkali in the form of magnesium oxide in varying doses, according to the condition of the bowels. For patients who did not do well on this plan he gave, instead of the belladonna and the alkali, olive oil in doses of one or two tablespoonfuls ten or fifteen minutes before meals. The stasis of food, if it existed, was met by lavage of the stomach seven hours after the meal. If there was but little food present once a week was sufficient, but if there was considerable food present, it should be done twice a week. The motility of the stomach should be determined in every case before starting the treatment. The last step in the treatment was the application of wet compresses to the stomach every night. This course of treatment was carried out for eight weeks and the patient was questioned every week as to whether he carried out the instructions. The results had been very satisfactory and all of his cases had been of long standing, dating back as long as fifteen years and had taken treatment at the hands of a number of practitioners. The great value of the method was in its simplicity and the lack of sacrifice on the part of the patient.

Comparative Studies in Cancer and Normal Tissue Ferments.—Dr. Walter W. Hamburger of Chicago read this paper. He said that several investigators had devised new biological tests for the diagnosis of malignant disease, which while they differed in minor detail were all based on the supposed activity of proteolytic or peptolytic ferments contained within the cancer cells. A widespread divergence of opinion as to their clinical value had been expressed. Hence they had directed their research toward the ferments themselves and had devoted their preliminary work to the development of an adequate biochemical technique. After reviewing the problems presented by the literature on the subject and showing sources of error, the writer described his methods and concluded as follows: 1. The ferments of cancer tissue, upon which the glycyltryptophan and less well known biological tests were based, belonged to the group of ereptases. 2. The ereptases of cancer tissue could not be distinguished in their ability to split peptone and form tryptophan from the ereptases found in normal tissue, blood serum, saliva, mother's milk, pleuritic and ascitic fluids, and leucocytes. 3. It appeared likely that these several ereptases were identical and that the ereptases of blood serum, leucocytes, saliva, and other body fluids were derived from the fixed tissue cells. 4. Compared quantitatively, most cancer tissue contained less ereptase than normal kidney (dog) and normal liver (dog) although slightly more than normal spleen (dog) and distinctly more than blood serum (various animals). 5. While blood serum contained relatively less ereptase than most tissues, the last trace of serum must be removed if one wished to work solely with the tissue ferments, and to accomplish this they had found that it was necessary to subject it to repeated washings.

Diverticulitis of the Large Bowel: Clinical Review of Twenty-seven Cases.—Dr. H. Z. Giffin of Rochester, Minn., read this paper. He said that a detailed analysis of the symptoms and physical findings had not yet been made in a group of personally observed cases, and it was with the idea of determining whether or not a more or less definite clinical picture presented itself that this review was made. From January 1, 1902, to January 1, 1912, twenty-seven cases of diverticulitis of the large bowel were operated upon at St. Mary's Hospital and studied clinically and pathologically. This number included only those cases in which the operation was done primarily for this condition. In the light of their findings it seemed that a probable clinical diagnosis of diverticulitis of the sigmoid could be made in certain cases. The points in evidence which would favor a diagnosis of the chronic proliferative type of diverticulitis were as follows: (1) The absence of those shadows of malignancy in the general picture; (2) a tendency to obesity and the maintenance of good nutrition; (3) a long history of attacks of low abdominal pain localized in the left lower quadrant; (4) a history of the former formation of a mass and its subsequent disappearance; (5) a failure to obtain a more or less continuous history of the frequent passage of macroscopic blood in the stools; (6) the demonstration of vesical fistulæ which, upon cystoscopic examination, appeared to be inflammatory, and (7) the failure to demonstrate malignancy positively by sigmoid examination. In carcinoma of the lower bowel there was usually an early loss of flesh. Pain was not a prominent complaint until obstruction advanced and the mass was often found before pain was complained of at all. Tenderness to pressure was a late finding. In their experience carcinoma of the sigmoid had been only seven times as frequent as diverticulitis. The other inflammatory forms of perisigmoiditis could not be positively differentiated. A diagnosis of appendicitis in cases of transposition of the viscera should not be difficult. If nonrotation of the colon existed, a radiographic or fluoroscopic examination after a bismuth meal would be necessary. It should not be forgotten that a pelvic tumor might be a sigmoidal tumor and the possibility of diverticulitis was to be considered. Pelvic inflammatory disease might be very closely simulated. Diverticulitis should be carefully considered in the diagnosis of all tumors of the left lower abdominal quadrant and of the pelvis.

The Prognosis in Cases of Albuminuria with or without Casts.—Dr. Theodore B. Barringer, Jr., of New York read this paper which was based on a study of 396 men, residents of New York, who were insured during 1900 and 1901. As far as the ordinary physical examination could

determine, they were normal at that time except for the presence of serum albumin in the urine, with or without casts. At the time of the examination these 300 men were divided into groups; the first, numbering 115, showed albuminuria without tube casts; the second group, numbering 203, showed albuminuria and a few hyaline casts; the third group included 53 men showing albuminuria and a few granular casts. The men with albuminuria and granular casts showed an increasing incidence in each decade, until, between forty and fifty years they were four times as frequent as between twenty and thirty years. The men showing albumin alone were five times more frequent before the twentieth year than afterwards. During the summer of 1911, seventy of these men were examined again. The deaths in the original group of men numbered twenty-five. This mortality was decidedly high. A study of the causes of death and of conditions found at the second examination in those living led to the following conclusions: 1. Renal albuminuria, without casts, was most frequently found in young adults. It was exceptional for it to be a symptom of incipient nephritis. It was rather to be regarded as an evidence of generally lowered resistance which predisposed to tuberculous infection. The mortality among these people was higher than among normal subjects. 2. Cases of albuminuria with a few hyaline casts had no particular age incidence. The mortality in this group was also above normal. 3. People with albuminuria and granular casts showed much higher mortality than normal people and a much greater tendency to renal and arterial disease than either of the preceding groups. 4. Whatever the urinary findings, age was a factor in prognosis, young people having the most favorable outlook as regarded the possibility of an ultimate nephritis.

Hunger Pain.—Dr. ALLEN A. JONES of Buffalo read this paper. After defining hunger pain as a sensation of gnawing distress coming on several hours after meals, varying in intensity and accompanied by impatience and irritability of temper, he stated that it was not the accompaniment of any constant or invariable chemical state of the stomach. As a rule hydrochloric acidity was high, but even low degrees were often found. Hunger pain might be associated with gastric ulcer near the pylorus, and the location of the ulcer had much to do with the incidence of the pain in its relation to the ingestion of food. If it was in or near the fundus, or proximal to the antrum pylori, some degree of discomfort or actual pain followed soon after eating. In cases with gastric ulcer, near or at the pylorus, or with pyloric irritability and spasm due to hyperchlorhydria, the pain was usually well localized to the pyloric region of the stomach, but in cases having organic stricture the pain was more generally distributed over the gastric area and it often extended to the region of the cardia. When the latter was the case the pain supervened sooner after eating than in the case of ordinary hyperchlorhydria and was more apt to be accompanied by vomiting which gave relief. The reason food ingestion gave rise to temporary relief in case of ulcer at the pylorus was probably that its alkaline constituents neutralized and its proteid elements combined with hydrochloric acid. The nature of the ingesta had a large influence upon the incidence of pain, bland articles of diet giving a longer respite from pain. While hunger pain was a rather constant result of gastric ulcer, it should be remembered that gastric ulcer not infrequently existed without pain and hemorrhage might be the first symptom of its presence. Instances had come under his observation where achylia gastrica was accompanied with hunger pain. It might be a symptom of acid gastritis and was also occasionally found in catarrhal gastritis. It was also present in gastrectasia and was quite often found in gastroptosis, enteroptosis, or nephroptosis. In hyperorexia, or parorexia, the sensation of hunger might become so intense as to amount to actual pain. Not only did late postprandial gastric suffering result from a variety of chemical and nervous disorders of the stomach, but it was found in cases with disease of other abdominal organs. Most common among these were pathological conditions of the gall-bladder and appendix. The treatment of the symptom should be guided by a consideration of its cause and might consist of the regulation of the diet, the giving of alkalies and gastric sedatives, the observance of proper rest, the wearing of a suitable abdominal support, the administration of tonics, the employment of lavage or operative measures as the case might demand. In conclusion the writer emphasized the need of careful consideration and study of the patients afflicted with this symptom.

The Treatment of Pulmonary Tuberculosis by Compression.—Dr. MARY E. LAPHAM of Highlands, N. C., read this paper in which she described the methods of applying nitrogen compression in cases of tuberculosis. The safest method was that of Brauer, which consisted in making a tree incision, retracting the tissues, and examining the surface of the pleura. If this was smooth and glistening and the motions of the lung beneath were seen, the pleura was pierced with a Solomon catheter and the nitrogen turned on. After calling attention to the dangers resulting from mistakes in the introduction of the needle, the writer said that this method was applicable to cases in which all other methods had failed, when symptomatic and tuberculin treatment could not arrest the tuberculous process. The contraindications were any complication sufficient in itself to inhibit recovery and too great an involvement of the other lung. In typically successful cases the results were spectacular. The temperature fell, the cough lessened, the tubercle bacilli disappeared, and the patient gained in weight and strength. Cases with high fever, drenching night sweats, profuse purulent expectoration, profound cachexia, and exhaustion were saved as by a surgical operation. The method was being used by the best men in Europe. About six hundred cases had already been reported, all advanced and hopeless cases, and 40 per cent. of recoveries had been secured. The causes of failure were not in the method but in the inability to use it. The pleural surfaces might be so adherent that a pleural cavity could not be formed. If recovery did not follow the patient was usually much improved.

The Intensive Treatment of Syphilis.—Dr. HOMER F. SWIFT and Dr. ARTHUR W. ELLIS of New York presented this communication. They stated that the Wassermann reaction had been in use long enough to definitely establish its place as an indicator of efficient treatment. While a single negative reaction did not mean that a patient was cured, a positive reaction certainly indicated the presence of spirocheta in some part of the body. In latent syphilis within three years of the time of infection, 75 per cent. showed a positive reaction. A study of figures made it probably safe to conclude that 50 per cent. of all patients with syphilis were insufficiently treated. The use of the reaction and autopsy findings showed that less than 50 per cent. of syphilities treated with mercury were cured. The advantages of an early diagnosis of syphilis could hardly be overestimated from the standpoint of protection of the community; early diagnosis, and, hence, early treatment of the disease decreased the danger of the spread of the disease. This paper emphasized the importance of making an examination for the spirocheta and warned against the use of local antiseptics in suspicious ulcers until after a diagnosis had been made. The dark field microscope was the best instrument for this purpose and it was regrettable that so many colleges and hospitals were without this instrument. In discussing the relative values of the Wassermann reaction and the determination of spirocheta in initial lesions, these writers stated that when the initial lesion was young the spirocheta were most easily demonstrated, but as it became older the conditions were less favorable, and the serum reaction was more valuable. This did not mean that the examination for spirocheta was not of value late in the primary stage. The serum reaction was also useful as an indicator of the extent of the invasion. The probability of a rapid abortive cure had become almost certain, provided the treatment was properly carried out. It had been their experience that cases treated before the appearance of the Wassermann reaction remained negative. If the disease was allowed to reach its second stage, the difficulty and time of cure was increased threefold. Since the combination of salvarsan and mercury had come into use, the relative number of "cures" had materially increased. The use of salvarsan alone had resulted in a large percentage of relapses. In order to carry on a successful campaign against syphilis the attitude of the public must be changed. Syphilis was one of the most poorly treated of all diseases, one of the reasons for this being the exclusion of the patient with syphilis from the majority of our hospitals. Statistics from a number of hospitals illustrated the attitude toward this disease. The syphilis of to-day was not usually the pox of the older writers, but its nervous manifestations were increasing and the burden of caring for the paretic fell on the public. This was the result of the short-sighted policy of failing to provide adequately for the treatment of the disease in its early stages. All that remained to conquer the disease was a universal recognition of the efficiency and importance of the recognized methods of treatment and an opportunity in the wards of our hospitals to apply them.

Election of Officers.—*Chairman*, Dr. Jarvis Barlow of Los Angeles, Cal.; *Vice-Chairman*, Dr. Thomas McCrea of Philadelphia; *Secretary*, Dr. Roger S. Morris of St.

Louis, Mo., *Member of the House of Delegates*, Dr. Joseph A. Capps of Chicago; *Alternate Delegate*, Dr. Alexander Lambert of New York.

THE SCIENTIFIC EXHIBIT.

Exhibits.—A feature of unusual interest was the scientific exhibit, held in the balcony of the hall of registration, under the general direction of Dr. Frank P. Wynn of Indianapolis. Among the most interesting of the exhibits were the following: The U. S. Bureau of Animal Industry had a number of excellently mounted specimens showing especially the lesions of cysticercus and tuberculosis in animals. From the Army Medical Museum were specimens illustrating tropical diseases—notably leprosy, pellagra, and amebic dysentery—and various bone injuries, and an historical collection of stethoscopes. In another section was a collection of photographs, made during the joint investigation of the U. S. Bureau of Fisheries and of the New York State Institute for the Study of Malignant Disease, illustrating various specimens of so-called fish cancer. The Harvard Medical School sent a collection of photographs by Dr. F. B. Mallory of cases of leprosy, yaws, keloid, and phagedenic ulcers, and also a number of beautiful photomicrographs illustrating various pathological processes and forms of trypanosomiasis. A noteworthy exhibit was one from the Mt. Sinai Hospital, New York, containing a number of hearts showing the lesions of bacterial endocarditis. Dr. J. Shelton Horsley of Richmond, Va., showed a collection of mounted specimens illustrating blood-vessel suturing. A number of fine photomicrographs and *x*-ray pictures were sent from the Mayo Clinic in Rochester, Minn. The Medical Missionary Society's Hospital of Canton, China, had on exhibition a collection of 1,100 urinary calculi which had been removed from the natives in that institution. There were also many interesting exhibits well repaying study sent by the New York Lying-in Hospital, the U. S. Public Health and Marine-Hospital Service, the Indiana University School of Medicine, the Jefferson Medical College of Philadelphia, the American Association for the Conservation of Vision, and a number of other societies and institutions.

Demonstrations.—In connection with the exhibit demonstrations were made on several days as follows: 1. Demonstrations Relating to Syphilis: (*a*) Laboratory Phases, by Dr. Hideyo Noguchi, New York. (*b*) The Visceral Lesions of Syphilis, by Drs. William H. Welch, Baltimore, and Joseph McFarland, Philadelphia. (*c*) The Bone Lesions of Syphilis, by Dr. D. S. Lamb, Washington, D. C. 2. A Series of Hearts Showing Bacterial Endocarditis, by Dr. E. Libman, New York. 3. Experimental Endocarditis, by Dr. E. C. Rosenow, Chicago. 4. Experimental Nephritis, by Dr. M. H. Fischer, Cincinnati. 5. Experimental Intestinal Anastomosis, by Dr. W. D. Gatch, Indianapolis. 6. Malaria and Amebic Dysentery, by Dr. W. M. James, Canal Zone.

ASSOCIATION OF AMERICAN PHYSICIANS

Twenty-Seventh Annual Meeting, Held in Atlantic City, May 14 and 15, 1912.

(Special report to the MEDICAL RECORD.)

Tuesday, May 14—First Day.

DR. J. G. ADAMI OF MONTREAL IN THE CHAIR.

President's Address.—Dr. J. G. Adami believed that Canada should be congratulated because of his election to the presidency of the Association of American Physicians. Many years had passed since its beginning, and there were many men who stood high in the profession who should be enrolled among its members but who were not. The Royal Society of London, the New York Academy of Medicine and other representative bodies required conditions for entrance that were severe, but made entrance a worthy object of ambition representing the best of the medical profession. This was a matter that, in his opinion, should be looked clearly in the face, and they all should look back and see what they had accomplished during the past few years. Should not meetings be held more than once a year? Should they not do what they could to have a special building set apart for international and other congresses in Washington, similar to that which Great Britain had for various medical societies? This was a question that had been raised time and time again, and the authorities in Washington should see to it that there was provided a place for these various medical meetings. Dr. Adami suggested that this matter be taken up by the council. Only one member had fallen from the ranks during the past year, Dr. John H. Musser of Philadelphia.

Amendment to the Constitution.—This was offered at the meeting of May 10, 1911. *Resolved:* That Article II of the constitution be amended so as to read: The number of active members shall be limited to one hundred and sixty. *Resolved:* That a by-law be adopted to read as follows: This increased limit of membership of one hundred and sixty shall be attained by adding not more than five new members in any year, in addition to such as are elected to fill vacancies occurring in the usual ways, until the total membership reaches one hundred and sixty. This resolution was seconded and carried.

A Clinical Study on the Effects of Sleep and Rest on the Blood Pressure.—Dr. HARLOW BROOKS and Dr. JOHN CARROLL of New York presented this communication. After an explanatory introduction, a brief statement was made of the fall in blood pressure occurring during sleep under physiological conditions; they discussed the drop which occurred during sleep in patients with medium blood pressure, as well as the drop that occurred in patients with low or sub-normal blood pressure. They discussed the variations that occurred after sleep in patients with high blood pressure, and they made interpretations of these variations from the physiological drop. What factors apparently altered the drop and the time of occurrence? Was there a normal blood pressure curve? Did artificial deepening of sleep accentuate the drop of blood pressure? Did rest produce the same changes in blood pressure as sleep? Might the drop in pressure occurring after sleep be utilized therapeutically? They had found that the night pressure was lower than the day pressure. In the work a stiff leather cuff was used. Very neurotic patients were not included in this report. They divided their patients into three classes, those in which the systolic pressure was between 110 and 170, those in which it was less than 110, and those in which it was above 170. In 68 patients the pressure was about 142.5; in 30 there was a low pressure, about 100. More careful studies should be carried out before any real conclusions could be reached regarding these blood pressures.

Dr. THEODORE C. JANEWAY of New York said that the fall in the systolic blood pressure was not synonymous with the fall in the mean blood pressure; an excessive fall corresponded with a fall in the mean pressure and was largely due to the diminished size in the pulse wave during sleep. An early drop occurred during the first hours of sleep. Surprising effects were often observed from simple physiological rest when combined with hospital care; he had seen a drop of 100 mm without any other therapeutic measures. Rest in bed, regulation of the diet, and other measures would cause a great reduction in the blood pressure; but when the patient was up and about there would be an increase. Mental rest was very important in these cases.

Dr. JOSEPH L. MILLER of Chicago believed that mental rest in these cases was as important as the rest that followed when these patients slept.

Observations on the Effect of Various Forms of Respiration.—Dr. DAVID L. EDSALL of St. Louis made a report upon the studies of the extent of apparent and real ventilation with different types of breathing. He told of the marked differences in effort required in accomplishing the same extent of ventilation and the same intake of oxygen and output of carbon dioxide and, bearing upon this, he gave some points in the treatment and upon the use of respiratory stimulants. He also gave some observations upon the relation between acapnia and shock. Especial emphasis was laid upon the use of morphine in cases of respiratory distress, this agent producing such great improvement when there was a failing respiration.

The Study of Respired Air in a Case of Cyanosis without Dyspnea.—Dr. C. H. HOOVER of Cleveland reported the case of a man, fifty years old, who had been under his observation for two years and who always had been during that time cyanotic. He had chronic bronchitis and emphysema with a moderate myocardial disease. There was a pronounced cyanosis without dyspnea. The cyanosis was not dependent upon any impairment of the mass movement of the blood. The volume of respired air was eight liters per minute, and it was poor in carbon dioxide and relatively poor in oxygen. The alveolar air was rich in carbon dioxide and relatively poor in oxygen. Further experiments had shown that, in spite of an abundant tidal air, the ventilation of the pulmonary infundibula was impaired. This patient had never had asthma and never had had evidences of any trouble with the pulmonary artery or pulmonary vessels. He did have bronchitis and emphysema.

Dr. Theodore C. Janeway of New York asked if the patient had a polycythemia.

Dr. Hoover replied that he had, but it was slight.

Dr. S. J. Meltzer of New York asked if the cyanosis was very extensive.

Dr. Hoover replied that it was, even the tongue being cyanotic.

Organic Matter in the Expired Breath, and Its Significance.—Dr. M. J. Rosenau of Washington, D. C., said that the presence of organic matter in the expired breath had been denied, but experiments had proven that there was organic matter in the expired breath, protein matter as well as albuminous and probably in a colloidal suspension.

A Comparison of Physical Signs and X-Ray Pictures of the Chest in Early Stages of Pulmonary Tuberculosis.—Drs. Henry Sewall and S. B. Childs of Denver, Colorado, presented this communication. Variations in the characters and distribution of the voice and whisper as heard through the stethoscope were considered as the most delicate of all evidences of physical changes within the thorax. There were two sources of the vibrations producing voice, the viscera and the chest wall (mural vibrations). The vibrations of the latter were damped by pressure with the stethoscope. Whisper sounds were due wholly to visceral vibration. The normal character and distribution of these auscultatory signs and their change in disease were referred to. The earliest Roentgenographic sign of tuberculosis was probably indicated by evidence of increased vascularity in the picture. The skiagram usually showed physical changes where physical examination detected abnormalities.

Dr. William P. Northrup of New York presented an x-ray picture of a case in which there were only an irregular temperature and running ear with no other symptoms. No autopsy was allowed.

The Effect of Digitalis and Digitalis-Like Substances Localized Chiefly in the Right Heart.—Dr. John Auer of New York said that lethal doses of digitalis preparations and strophanthin caused in rabbits a total, or almost total, loss of irritability of the heart ventricles. On immediate autopsy the heart was usually found quiescent and strongly dilated; mechanical and faradic stimuli caused no contractions. (Orfila, Stannius.) If the heart was excised and split open, the endocardial surface of the right ventricle would be found to show considerably more resistance to the finger nail than the left ventricle, and this resistance might be so pronounced in the right ventricle that the muscle felt like connective tissue. This toughening of the muscle fibers was most pronounced in the columnæ carneæ, especially the trabeculæ near the tricuspid valve. The corresponding endothelial surface of the left ventricle offered but little resistance to the finger nail which easily dug into the muscle tissue; the papillary muscles at times showed some resistance. The same effect was also observed in the hearts of rabbits which had succumbed acutely in serum anaphylaxis. In normal rabbit hearts this difference between the two ventricles was never encountered. Microscopical examination of digitalis hearts revealed no striking difference between the right and the left ventricles. Substances with a digitalis-like action, therefore, seemed to exert, at least in lethal doses, a more profound action on parts of the right ventricle than upon the left. Digitalis compounds should be exhibited with great caution.

The Symptoms of Sudden Obstruction of the Coronary Arteries.—Dr. James B. Herrick of Chicago reported some experimental work done in which it was shown that obstruction of a coronary artery or one of its larger branches was not necessarily immediately fatal. The continuance of the heart beat depended upon the existence of functionating anastomosis between coronary vessels, and proof of this anastomosis was shown by dissections, pathological findings, animal experimentation, and clinical phenomena. The symptoms of obstruction that was not quickly fatal were given and verified by a report of cases. Numerous clinical observations had shown that obstruction of the coronary arteries, in a very large percentage of the cases, was not necessarily followed by sudden death, and numerous cases were on record in which there was a clinical history followed by autopsy. Two years ago Dr. Herrick saw a man, fifty-five years old, who had always been in good health. He was suddenly seized with a very severe pain in the epigastric region, high up. His stomach was washed out but the pain continued and morphine was administered. After about three hours the pain subsided, but he only lived fifty or sixty hours after. The post mortem showed an obstruction of the left coronary vessel. The most striking symptoms in this case were the initial pain, the collapse, the feeble pulse, the very little dyspnea, the slight cyanosis, and a clear mind until the end. The heart tones were remarkably feeble; there was a rather confusing hyperresonance over the chest. There was a certain amount of edema of the lungs which accounted for the presence of numerous rales.

Dr. E. Libman said he had been in the habit of classifying the lesions one generally met in the coronary arteries as follows: Besides the recent thromboses and embolisms there were cases with partial or complete obstruction by plaques. These were specially to be found in men who had been heavy cigar smokers. If the occlusion by the plaque was incomplete, it might be made complete by a thrombus. In some cases the symptoms were due to a narrowing of the orifices of the arteries by plaques due to atherosclerosis, or by puckering. Some cases with closure of the coronary artery lived not only for weeks but for months. They presented a remarkable facial appearance from which the diagnosis could in some cases be adduced. They had a peculiar dirty ashen color: Sansom referred to it as "a leaden overcast" (but he believed it to be due to disease of the aorta itself). It was valuable to recognize the condition, when possible, because such patients were apt to succumb at any time, and particularly after operative procedures. The observations of Dr. Herrick on pericarditis following attacks of angina were of great interest. Kernig has described such cases under the name of epistenocardial pericarditis, and ascribed to this condition the febrile reaction which sometimes came on after attacks of angina pectoris.

Experimental Studies on Pneumococcus Infection in Animals.— Dr. A. B. Wadsworth of New York read this paper. He said that virulent pneumococci when studied in the test tube, and as compared with many other bacterial species, were exceptionally insusceptible to both bacteriolysis and phagocytosis—the two processes by which the body rids itself of the infectious agents of disease. Virulent pneumococci in the body tissues were also insusceptible to the action of most of the immune sera with which attempts had been made to cure the infection in both man and animals. Yet recovery took place spontaneously in both animals and man. In order to determine why it was that the significance of pneumococcus immunity was so strikingly manifested in the recovery of man from lobar pneumonia, and the action of the blood sera of immunized animals on the pneumococcus so singularly inadequate in the test tube and in the treatment of infection, the following series of experimental studies were undertaken. These comprised: Studies on the action of dead pneumococcus cultures on animal tissues; on the action of immune sera on the pneumococcus; on the action of elevated temperatures on the pneumococcus; on the action of hyperthermy on pneumococcus infection, and finally studies on the action of immune sera on pneumococcus infection and of the mechanism of recovery from pneumococcus infection.

In general it was found that the dead pneumococcus cultures failed to incite disease processes comparable with those seen in active infection, but that an adaptive tissue reaction was incited which rendered the animal immune and gave rise to the well-known agglutinative, precipitative, lytic, and opsonic activities in the blood serum. From the study of the action of immune sera on the pneumococcus under ordinary conditions it was found that the insusceptibility of the pneumococcus to bacteriolysis and phagocytosis was due to the exceptional virulence, adaptation, and growth of this organism. But in the tissues both lysis and phagocytosis took place and the activity of the pneumococcus was therefore inhibited or neutralized in some subtle manner. The thermal limits of pneumococcus growth were found to approximate very closely temperatures often attained by the pneumonia patient and the bactericidal action of the immune sera at these temperatures was greatly exalted. These significant results were further supported by those obtained in the study of the effect of hyperthermy on pneumococcus infection by which it was shown that although the animal organism might be injured, the activity of the infectious agents might be markedly inhibited during the hyperthermy under certain conditions, the most important of which was the presence of an active protective mechanism in the tissues. Finally it was found from the results of the study of the action of immune sera on pneumococcus infection that the curative action of antibacterial and antitoxic sera obtained by the immunization of animals with dead virulent pneumococcus cells and with culture filtrates free from bacterial cells was slight, whereas sera obtained from animals immunized with virulent living cultures possessed marked curative action inducing crisis. In the mechanism of such recovery the neutralization of the products of the pneumococcus, whether toxins or endotoxins, was found to be

the dominant determining factor to which the destruction of the bacteria, whether extracellular by bacteriolysis or intracellular by phagocytosis, was incident.

Clinical Experience in the Drug Treatment of Edema.—Dr. Joseph L. Miller of Chicago reported the failure of diuretics to affect the nephritic kidney as shown by their action in experimental nephritis. The same is true in man; the use of drugs in edema, digitalis, strophanthine intravenously, calomel, theocin, and Fisher's solution sometimes failed to produce the expected effect.

Dr. E. Libman of New York said that when the agents discussed by Dr. Miller did not cause diuresis, he was accustomed to try some of the older diuretics and often a striking result was obtained. He recalled a case treated by Dr. J. Rudisch ten years ago with oil of juniper, a drug that must be used with great caution. The patient was waterlogged for months and all the ordinary diuretics had been used. The juniper caused so marked a diuresis that the edema entirely disappeared, and the patient was doing well when seen several months later. In several cases he had seen splendid results from the use of the infusion of apocynum. He usually gave it by rectum, diluted with water. He asked Dr. Miller whether he had tried the various remedies in conjunction with the Karell diet.

Complete Permanent Heart Block in Auricular Fibrillation Following the Use of Digitalis.—Dr. Albert E. Taussig of St. Louis said that in auricular fibrillation digitalis slowed the pulse by producing partial heart block, thus interfering with the passage to the ventricles of some of the very numerous and irregular auricular impulses. In some cases, if the digitalis was pushed, complete heart block might result, with the establishment of the very slow, regular rhythm characteristic of this affection. Ordinarily this condition of complete heart block was temporary and ceased a few days after the administration of digitalis was discontinued. It might happen, however, if there was an organic lesion interfering with the conductivity of the bundle of His, that the administration of digitalis was followed by the establishment of a complete and permanent heart block, possibly because the drug gave the *coup de grâce* to the already diseased bundle.

Clinical and Pathological Observations on Subacute Bacterial Endocarditis.—Dr. E. Libman of New York read this paper. He said that during the course of a study of eighty-nine cases of subacute bacterial endocarditis (so-called chronic malignant endocarditis) evidence was obtained that persons with this disease could spontaneously overcome their infection and that the lesions on the valves might heal in part or entirely. This was shown by the following observations. In seventy-five cases blood cultures were made, and in sixty-nine the endocarditis coccus (*Streptococcus viridans*) was found, and in four the influenza bacillus. In the cases which were examined post-mortem the endocardial lesions were quite characteristic in the cases in which the mitral valve was infected. There was marked involvement of the left auricular wall; there was a great tendency for the development of vegetations on the chordæ tendineæ, and the latter often became brittle and were ruptured. While these observations were being made two cases came to post-mortem examination which had clinically been supposed to be instances of cardiac disease with uremia. In these hearts there were present lesions like those found in subacute bacterial endocarditis, but in a healed state. In the kidneys of these cases Dr. Behr found the glomerular lesions which are believed to be characteristic of cases of subacute bacterial endocarditis, and which had thus far been found by the speaker only in the cases in the group which were due to the endocarditis coccus. Later, at the autopsies in some cases of the condition they were wont to call "chronic endocarditis with fever," lesions of the aortic valve were found in which there were no bacteria. These lesions consisted of organized vegetations with calcareous infiltrations. The characteristic lesions were found in the kidneys. Altogether they had observed eleven times bacteria-free healing or healed lesions of subacute bacterial endocarditis. The cases in which they had found bacteria in the blood and which they could follow up all succumbed. In one case of influenzal endocarditis the bacillus was found five times in the blood. Four later cultures were negative, and the patient died within a few months. There was unfortunately no autopsy. It was remarkable then that there should be so many cases in which the bacterial infection was overcome without its being discovered. The explanation that seemed the most likely was that in such cases the bacterial infection was of short duration, and the patient did not feel sick enough to see a physician, and that if he did he was not put to bed. The patients who overcame their infections before they were seen presented at least four clinical pictures: 1. They developed a chronic nephritis and died of uremia. 2. They presented the clinical picture of "chronic endocarditis with fever." 3. This group presented a clinical picture that seemed to have been entirely overlooked. They developed a remarkable brown color of the face (to which he wished to draw particular attention), sternal tenderness, palpable spleen, slight rises of temperature, and the evidences of a valvular lesion. The subsequent history of such cases was unknown. 4. They had a valvular lesion with marked anemia and died from exhaustion alone, or combined with decompensation. Whether cases could recover entirely and have only the valvular lesion which they had before they were affected by subacute bacterial endocarditis could only be determined by further studies and possibly by complement fixation tests. All of the cases in which the blood cultures were positive and which they were able to follow up succumbed. Those that spontaneously recovered from the infection must have had an infection of short duration. This was, however, more fully discussed in the full paper. It was remarkable how little the cardiac murmurs changed in the course of this disease, and how little the walls might increase in thickness. Dr. Libman had generally ascribed this, at least in part, to the fact that the recent lesion involved the walls of the auricles and the chordæ tendineæ rather than the valve itself. He did not intend to have it appear that he believed that sternal tenderness was pathognomonic of this disease. Sternal tenderness occurred in pernicious anemia, in all systemic diseases of the bone marrow, and in some other conditions. What he wanted to bring out was that when one saw a patient with a valvular lesion and the sternum was tender, and particularly if there was some pigmentation of the face, he should examine the case further and observe it, and see whether it was not a case of subacute bacterial endocarditis in the bacteria-free stage. Not every case presented this symptom of sternal tenderness. This in itself would not be surprising, because its presence depended a great deal upon whether the patient was sensitive to pain or not. There were patients who were hyposensitive to pain and some almost insensible to pain; in these patients clinical pictures, of which pain was usually a component part, were incomplete.

(*To be continued.*)

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

Ophthalmic Myology. By G. C. Savage, M.D., 685 pages; illustrated; cloth. Second Edition. Published by G. C. Savage, M.D., Nashville, Tenn.

Lateral Curvature of the Spine and Round Shoulders. By Robert W. Lovett, M.D. 192 pages, with 171 illustrations; cloth; price $1.75 net. Second Edition, Revised and Enlarged. P. Blakiston's Son & Co., Publishers, Philadelphia.

Le Laboratoire du Praticien. By Louis Niclet. 32 pages; illustrated; paper; price 3 francs. First Part. A Poinat, Publisher, Paris.

The International Medical Annual. 1912—Thirtieth Year. 654 pages; illustrated; cloth. E. B. Treat & Company, Publishers, New York.

Manuel d'Histologie Pathologique. By V. Cornil and L. Ranvier. Vol. IV. Part I. Third Edition. 832 pages; illustrated; paper; price 45 francs for both volumes. Librairie Felix Alcan, Publishers, Paris.

Manuel d'Histologie Pathologique. By V. Cornil and L. Ranvier. Vol. IV. Part II. Third Edition. 809 pages; illustrated; paper; price 45 francs for both volumes. Librairie Felix Alcan, Publishers, Paris.

A Pocket Formulary. 10th Edition—Revised. By E. Quin Thornton, M.D. 288 pages; leather; price $1.50 net. Lea & Febiger, Publishers, Philadelphia and New York.

An Index of Symptoms. Fourth Edition. By Ralph Winnington Leftwich, M.D. 451 pages; cloth. William Wood & Company, Publishers, New York.

What to Do in Cases of Poisoning. By William Murrell, M.D., F.R.C.P. 11th Edition. 283 pages; cloth; price $2.00 net. Paul B. Hoeber, Publisher, New York.

Medicolegal Notes.

Presumption as to Sanity.—Sanity being the normal and usual condition of mankind, the law presumes that every person is sane; hence the State in a criminal prosecution may rely upon such presumption without proof relative thereto. But when the defendant in a homicide case produces sufficient evidence to raise a reasonable doubt of his sanity the law then imposes on the State the burden of establishing the sanity of the defendant, the same as any other material fact necessary to warrant a conviction; and if, upon consideration of all the evidence in the case, the jury have a reasonable doubt that the defendant at the time of the commission of the act charged was mentally competent to distinguish right and wrong, or to understand the nature of the act he was committing, he must be acquitted.—Adair *v.* State (Okla.), 118 Pac. 446.

Granting Authority to Refill Prescription.—A complaint alleged that the defendant was a physician and was employed to cure the plaintiff, and in the course of his duties prescribed heroin. After the plaintiff, a woman, had taken this for about two months, the druggist refused to refill the prescription without special authority from the defendant, and the allegation was that the defendant "carelessly and negligently" instructed the druggist to refill the prescription whenever the plaintiff wanted it and did not revoke this for more than a year after, and that the plaintiff, being ignorant of the deleterious effect of the drug, continued to get the prescription refilled and to use it for 14 months thereafter, whereby she was seriously injured in body and mind. It was held that the question of the defendant's carelessness or lack of skill would depend wholly on whether he ordered the drug to be taken too often or in too large quantities, or directed or knowingly or negligently permitted her to continue its use as prescribed for too long a period. But as to these points the complaint was silent. It is one thing to give medicine in an improper manner, another thing to give it too often, another thing to give it in too large quantities, and still another to direct or permit its use to be too long continued. The proof which would meet one of these charges might be essentially different from that necessary to meet another. The defendant had a right to know which of these acts constituted the negligence charged. If it was claimed that the taking of the drug for 14 months in the smallest quantity and at long intervals is necessarily injurious, the complaint should have alleged the fact. It did not aver that the defendant did not instruct the plaintiff not to continue its use so long or inform her that the long-continued use of the drug was likely to be injurious. It was held that the complaint was defective on special demurrer and judgment for the defendant was affirmed.—Billesbach v. Larkey, California Supreme Court, 120 Pac. 31.

Testamentary Capacity—Deathbed Will.—In a will contest where the will was made while the testator was on his deathbed in a hospital after he had been told by the physician in attendance on him that he was about to die, the subscribing witness to the will testified that the testator was at times stupid and at other times his mind seemed to wander, and that when not aroused he paid but little attention to his surroundings, but when aroused he was rational and fully understood what was going on around him, and that on the evening of the execution of the will he talked intelligently with his attorney as to the disposal of his property. It was held that this evidence was sufficient to show that the testator possessed testamentary capacity at the time he made his will, as he had apparently sufficient mental capacity to comprehend the nature and character of his property and the objects of his bounty, and the fact that he was suffering from disease and about to die at the time he executed the will would not avoid it.—McCoy v. Sheehy, Illinois Supreme Court, 96 N. E. 1069.

Employer's Obligation for Employee's Medical Expenses.—Where a contract of employment fixes the wages of an employee at a specified rate, and authorizes the deduction of a specified monthly sum for a hospital fund, and it is provided by the employer's hospital fund association by-laws that all employees shall be members of the association and entitled to receive the benefits including medical attendance, there is an obligation on the part of the employer to pay medical expenses incurred by an employee injured during his employment. It is not necessary that the employee should give the employer formal notice of the injury or ask for a physician if the employer, who does not maintain a hospital, knows of the injury.—Jackson v. Pacific Coast Condensed Milk Co., Oregon Supreme Court, 120 Pac. 1.

Medical Items.

Combined Tuberculosis and Syphilis of the Larynx.—St. C. Thomson reports the case of a woman, aged 43, who had no physical signs in the chest, but the Wassermann was positive, and tubercle bacilli had been found in the sputum. The larynx showed the deposits of tubercle and syphilis each in a typical form. The interarytenoid space was infiltrated, and both cords infiltrated and abraded, and there were "mouse-nibbled" ulcers on both ventricular bands. The epiglottis was swollen with deposit, and there was a punched-out ulcer in front of each arytenoid.—*Proceedings of the Royal Society of Medicine.*

Treatment of the Three Main Symptoms of Gastric Ulcer.—M. Leper states that these symptoms are hemorrhage, vomiting, and pain. The treatment of the first is the most important part of the treatment of gastric ulcer. The essentials of this treatment are: Complete rest in bed, ice per os or in local applications, hot recta' injections, and drugs. In subacute hemorrhages perchloride of iron or bismuth salts may be useful; but adrenalin, chloride of calcium and gelatin are certainly better and may be given per os with excellent results in all cases of hemorrhage. Ergotin, ergotinin, or adrenalin hydrochloride may be given in hypodermic injections; their action is rapid but temporary and often there is a recurrence of hemorrhage soon after their use. Horse serum or normal saline solution are also useful, the former in hemorrhages of long duration where there are distinct modifications of the blood, the latter in profuse or prolonged hemorrhages to make up for the loss of fluid of the system. Gelatin solution may also be tried hypodermically, but it seems to be less used nowadays than some years ago. The food must be as bland as possible, and Leper is distinctly in favor of the old-fashioned milk diet for at least four weeks; however, when the hemorrhage cannot be checked rectal feeding must be tried. Vomiting must be checked by external means and cold applications (ice, ether, etc.), since the analgesic mixtures taken per os are likely to cause vomiting. Alkaline powders are very often of great value and generally well borne. For hypodermic injections, a mixture of atropine and morphine gives excellent results in most cases. Nitrate of silver may also be of use, but it is likely to give an extra stimulus to the mucous membrane of the stomach which is already so irritable.—*Progrès Médical*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended June 7, 1912.

YELLOW FEVER

Places	Date	Cases	Deaths
Brazil: Rio de Janeiro	Apr 7-30	1	1
Great Britain: Liverpool	May 14-18	1	..
Convalescent on S. S. *Gladiator* from Cabedello, detained at Port Sanitary Hospital			
Mexico: Merida	May 3-25	1	1

PLAGUE

China: Hongkong	Apr 14-20	66	55
Dutch East Indies: Province Kedhiri	Jan 1-Mar 21	28	24
Madiven	Jan 1-Mar 2	53	49
India: Rangoon	Mar 1-31	65	63
Indo-China: Saigon	Apr 16-22	15	8
Japan: Formosa	Apr 14-20	13	11
Kobe	May 8	1	..
From S. S. *Panama Maru* from Hongkong.			
Mauritius	Mar 22-28	7	5
Persia: Reshire	Feb 6	2	..
Senegal	May 29		Present
Siam: Bangkok	Mar 24-Apr 30		3
West Indies: Grenada	May 2-7	1	1

SMALLPOX

Arabia: Aden	Apr 16-22	1	1
Argentina: Rosario	Feb 1-29		1
Brazil: Rio de Janeiro	Apr 14-20	1	
Canada: Fernie	May 19-25	1	
Montreal	May 19-25	2	
Ottawa	May 19-25	1	
Quebec	May 19-25	4	
China: Hongkong	Apr 14-20	16	8
Great Britain: Bristol	May 12-18	1	
India: Rangoon	Mar 1-31	222	66
Indo-China: Saigon	Apr 16-22	5	
Italy: Palermo	May 5-11	9	3
Japan: Formosa	Apr 14-20	1	
Kobe	May 7	1	
From S. S. *Manchuria* from Hongkong via Shanghai.			
Mexico: Juarez	May 19-25	1	1
Mazatlan	May 15-21		3
Mexico	Apr. 7-20	45	23
San Juan Bautista	May 25	2	
San Luis Potosi	Mar. 17-23		1
Portugal: Lisbon	May 5-11	9	
Russia: Riga	May 5-11	2	
Warsaw	Mar. 17-30	23	7
Siam: Bangkok	Mar. 24-Apr. 20		106
Spain: Barcelona	Apr. 28-May 13		1
Cadiz	Apr 1-30		2

[1]Bulletin Quarantenaire d'Egypte, Jan. 21-May 9, 1912.

Medical Record

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Original Articles.

AN EPIDEMIC OF EPITHELIOMA (MOLLUSCUM) CONTAGIOSUM, WITH SOME NEW OBSERVATIONS CONCERNING THE "MOLLUSCUM BODIES."

By M. B. HARTZELL, M.D., LL.D.,

PHILADELPHIA.

PROFESSOR OF DERMATOLOGY IN THE UNIVERSITY OF PENNSYLVANIA.

ACCORDING to the statistics of the American Dermatological Association, molluscum, or better epithelioma contagiosum, comprises a little more than one-sixth of one per cent. of all diseases of the skin observed in America, and only a slightly larger proportion—one-fifth of one per cent.—is seen, according to Crocker, in the hospitals of London. From 1896 to 1900 inclusive only eleven cases of this disease were treated in the Skin Dispensary of the University Hospital, and in four of these ten years not a single case was seen. In 1907 there were seven cases, in 1908 there were twelve, in 1909 there were six, while in 1910 no less than twenty-one cases were recorded in the dispensary in the course of a few months. Practically all the cases seen in these four years were from a common source, viz., a large institution for young men. Owing to the sudden increase in the number of cases from this source it was decided to examine the entire student body in order to learn just what proportion was affected, but after examining 345 it was found to be impracticable, for various reasons, to continue with the examination. Of the 345 examined seventeen, or about 5 per cent., were found to have the disease; but owing to the hurried way in which it was necessary to make the examinations, chiefly on account of the very limited time at our disposal, a certain number of cases in which the lesions were small and few doubtless escaped detection, so that the proportion of cases was probably somewhat larger than these figures would indicate. If the same proportion held good in those not examined, and it probably did, there must have been at this time no less than 250 to 300 cases in the institution. In addition to those treated at the dispensary a small number from the same source were seen in my office, and a considerably larger number were treated by other physicians in various parts of the city. From the foregoing it will be seen that the epidemic was very extensive, amounting to some hundreds of cases spread over a period of four years.

Apart from its extent and duration, this epidemic presented some interesting and unusual features. The eruption was practically confined to the covered parts of the body—in not a single instance, as I recall, were there any of the tumors upon the hands or face; they were upon the trunk, especially the posterior surface, and upon the arms, the lower extremities escaping entirely. The number of lesions present was in most cases large, amounting to scores, while in a considerable number there were hundreds of them. In a few instances the little tumors were arranged in a line, the inoculation evidently having taken place in a scratch. They were for the most part unusually small, the largest being no larger than a split-pea, while the greater number were the size of a pinhead, and instead of being flat, as is usually the case, they were quite acuminate. A large number of the patients complained much of itching, indeed, the eruption was commonly spoken of as an itch, and the skin often bore unmistakable evidences of this itching in the shape of many small excoriations and blood crusts where the tops of the lesions had been torn off by scratching. In a few cases the tumors were quite red and inflamed from the beginning, surrounded by a rather circumscribed inflammatory halo such as is often seen about the bites of insects, and the small central opening was so minute as to require the closest examination to be seen at all. These lesions resembled acne papules so closely that in one case at least, in which they were of this inflammatory type upon the back, the true nature of the disease was not at first recognized, having been mistaken upon a cursory examination for acne.

There is apparently but little doubt that the contagion was conveyed from one to another in this epidemic by the bath towels used in the gymnasium. Proceeding upon this theory every student found with the disease was excused from further attendance upon the gymnasium exercises until cured, and especial care was taken that the gymnasium towels, instead of being laundered en masse as it were, should be laundered in such a way as to ensure that each towel should receive a thorough boiling. The result of these simple precautions seemed to amply confirm this theory of the manner of the transmission of the disease, for with their adoption there was an immediate falling off in the number of new cases; and during the past year I have seen but a single case in a student and that was not a new one, but had existed for a year or more, its long duration being accounted for by the fact that, the number of lesions being small and unattended by any annoying symptoms, nothing had been done for it.

The agency of the bath in communicating the affection has been recognized by a number of observers, among them the late Dr. Radcliffe-Crocker and Sir Jonathan Hutchinson. The former has reported a number of such cases under his own observation, and the latter noted that all his male patients were in the habit of going frequently to Turkish baths where, in his opinion, the gloves and towels were the medium of contagion. In one of

*Read before the College of Physicians of Philadelphia, April 4, 1912.

Crocker's cases, a woman who was in the habit of taking a Turkish bath every day in her own home, the source of the infection was traced to her son, who had contracted the disease from his schoolmates and had infected the bath. In Damascus the

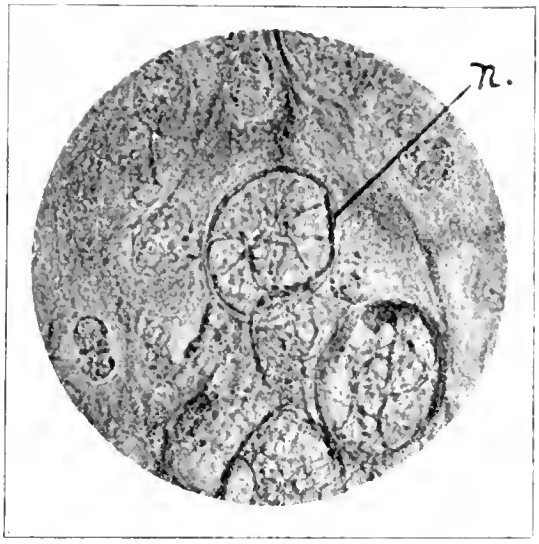

Fig. 1. Cell (c) of the first variety, with nucleus (n) flattened out into a thin curve and pressed against the inner cell wall.

malady is called by an Arabic name which means "the itch of the bath" (Norman Walker).

In the treatment of the cases observed in this epidemic a number of local remedies were tried, among them a lotion of formalin, one or two drams to the pint of water. This lotion seemed to be effective in several cases, as the lesions disappeared to a considerable extent, but it commonly set up such a dermatitis that its use had to be suspended from time to time until this subsided. Upon the whole the most effective application was pure carbolic acid applied with a pointed match-stick or wooden toothpick by boring into the central opening of each tumor. A single application of this kind was usually sufficient, the tumor becoming inflamed and soon disappearing.

In connection with the treatment of this malady it is of interest to refer to an observation made by Kistyakovski. This author found that a number of molluscum tumors present on a young man with syphilis became inflamed after intramuscular injections of mercury given for the syphilis and then disappeared. In view of the well-known fact, however, that inflammation with disappearance of the tumors sometimes takes place spontaneously further observations are necessary to prove the curative influence of mercury thus employed. Sakurane has quite recently reported five cases cured by the internal administration of a decoction made with the grain of *Coix Lacryma*, a remedy long employed in Japan in the treatment of molluscum. In four of these five cases the lesions disappeared in from one to two weeks. In four other cases in which the same treatment was employed, but which were not included in the report because they could not be followed up by the author, the disease was said to have likewise disappeared.

The appearance of the tumors is usually so characteristic that their nature is readily recognized, but occasionally they present such variations from the usual type, both as to size and appearance, as to lead to error in diagnosis. Pringle observed a case in which the lesions, situated upon the scalp, resembled rodent ulcer; and some years ago I had a case under my own care in which a single lesion on the forehead at the margin of the hair was mistaken for epithelioma of the ordinary type and excised; subsequent examination of sections made from it revealed the error in diagnosis. Although usually insignificant in size they may in rare cases reach very large dimensions. Walter Smith has reported a case in which there were many tumors, one of which was three inches in diameter; and Laache has described one in which the tumor, situated upon the occiput of a woman fifty-six years old, was the size of two fists. When the disease attacks the mucous membrane, as it may do, although rarely, the chances of error in diagnosis are greatly increased. Abrahams, at a meeting of the Dermatological Society of London, described a case in which, in addition to many lesions upon the skin resembling lichen planus, the tongue was the seat of large white patches resembling leukoplakia which were shown to contain molluscum bodies.

The mode of transmission, although probably usually indirect, through the intermediation of baths, towels, etc., is in some instances due to direct contact, as when the mother's breast is inoculated by contact with lesions on the cheek of her nursing infant. In view of the difficulty which always attends the attempt to inoculate the disease experimentally this mode of transmission must be rather infrequent; but a most remarkable example of what was probably direct inoculation has recently been reported in the Westminster Hospital Reports for 1909. In seven cases under the care of a particular member of the staff of the hospital infection of operation wounds with molluscum occurred, the operator being found subsequently to have molluscum tumors on the hand. In all of these cases the tumors were situated in the scar or its vicinity, and had appeared in from six to nine months after operation.

In the vast majority of cases the disease is, without doubt, acquired through contact, immediate or mediate, with another individual, *i.e.* it is of human

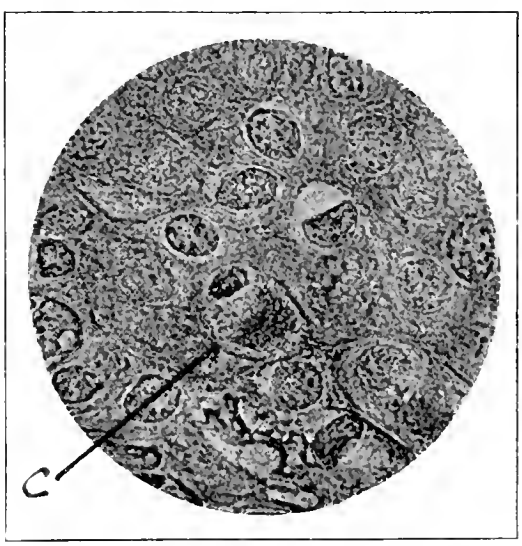

Fig. 2. Cell (c) of the second variety with polar nucleus and filled with a felt-like mass of fine fibrils.

origin, but there is reliable evidence to prove that it is occasionally of animal, and more particularly, of avian origin. Its occurrence in the domestic fowls, such as the chicken, turkey, goose, and in pigeons and other birds, is well established; and a

few apparently well authenticated ex... of transmission from these to human beings ... be found in literature. Salzer has reported the case of a young woman with molluscum of the lid ... which he believed was acquired through feeding pe... ns

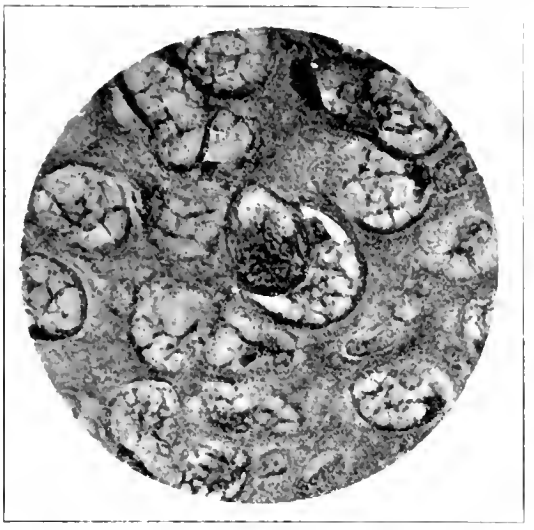

Fig. 3.—Cell of the second variety, partly within a cell of the first kind.

affected by the malady which existed as an epidemic among them and proved fatal to many of the birds. Sir Jonathan Hutchinson has reported a case, also occurring in a young woman, in which the affection was traced to a pet dog. Heller, commenting upon this case, thinks it should be accepted with some reserve, since, according to him, molluscum contagiosum does not occur in mammals; but the nature of the tumors on the dog seems to have been well established by microscopical examination. Constantinides has described an affection similar to molluscum contagiosum as occurring in horses in Greece, the tumors having an anatomical structure similar to that of human molluscum. Jürgens, in performing some inoculation experiments with avian molluscum, infected himself, getting a tumor on the thumb. Czoker succeeded in inoculating the comb of a fowl with human molluscum, but Török and Tommasoli failed in their attempts to transmit it to rabbits and hens.

Although the affection is usually a trivial one in the human being, it has a very extensive literature, attracting attention largely because it is one of the few examples, if not the only one, of an epithelial neoplasm definitely known to be the result of an infection, although the actual demonstration of the infecting agent has thus far not been accomplished. The nature of the peculiar cells found in the interior of the tumors, the so-called molluscum bodies, has long been the subject of lively discussion. At first they were regarded as parasitic organisms, and some observers, the chief of whom is Neisser, still so consider them, but most investigators regard them as epithelial cells derived from the rete mucosum which have undergone some form of degeneration. According to Unna they are only hyaline or colloid prickle-cells, while C. J. White, who has quite recently studied the histopathology of the malady in a most painstaking and thorough manner, thinks that the change in the cells "is not a colloid or hyaline degeneration, but rather an extraordinary metamorphosis of rete cells into keratin;" and this author also expresses the belief that no one has yet succeeded in demon... ny parasite in the tumor.

During the course of this ... four tumors were removed from as many dif... subjects for microscopic study, three of them ... fixed and stained in the usual way, while the ... th, an unusually small lesion just barely visible, was fixed and stained according to the method of Levaditi. The study of the first three gave results which differed in no essential particular from those obtained and described many times by other observers, but the fourth, which was found to be situated in a lanugo follicle, gave histological pictures which, besides exceeding in clearness and sharpness anything which I have hitherto seen, revealed some new and interesting features which I shall describe with some detail.

In the area occupied by the molluscum bodies it was easy to distinguish three quite distinct varieties of cell. First, and most numerous, occupying the central portion of the tumor, were many large, round, and irregularly rounded bodies with double contoured walls and segmented contents, the walls and the lines separating the segments being stained a deep brown and presenting on careful focusing under a high power a finely beaded appearance. (Fig. 1.) In most of these cells the nucleus was still preserved, although usually much distorted, and was always situated eccentrically; in many of the cells it was flattened out into a thin concave disc closely applied to the inner cell-wall as if it had been forcibly driven against the wall by some force within the cell. The finely beaded appearance of the cell-wall and of the lines dividing the cell-body probably represented the remains of the so-called prickles seen in profile which are normally present in the cells of the rete. Even the oldest of these cells, those occupying the upper part of the tumor nearest the central opening, which in sections stained with the usual stains present a homogeneous appearance, still showed distinct segmentation. The second form of cell (Fig. 2), far less numerous than the first, more deeply situated, and often lying in the midst of apparently normal epithelium, was

Fig. 4.—Cell of the third variety.

oval in shape, had a thick laminated wall, and contained an oval nucleus always situated at one pole of the cell where there was always more or less of a cavity, the remainder of the cell being filled with a felt-like mass composed of very short and fine

fibrils. In a few sections some of these oval cells were found lying partly within another cell of the first form (Fig. 3), an observation which, so far as I know, is new. The third and smallest variety of cell (Fig. 4), of which only a few examples were seen, was a perfectly oval body with a distinct double wall, entirely filled with a mass of fine fibrils in which no nucleus could be discovered; but all the cells of this variety were so deeply stained that it was extremely difficult to make out details satisfactorily. This apparently represents a form of cell which has not been described before in this disease (Fig. 4).

In conclusion, it may be regarded as quite certain that the large cells first described are epithelial cells which have undergone some form of degeneration peculiar to this disease, but I do not regard the nature of this degeneration as at all definitely determined. The other forms of cell which I have described are probably also degenerated rete cells, but the evidence for this seems to me much less convincing than in the case of the first variety of cell, and therefore other possibilities are by no means excluded.

A CONTRIBUTION TO THE STUDY AND SURGICAL TREATMENT OF OBLIQUE INGUINAL HERNIA.*

By FRANZ TOREK, A.M., M.D.

NEW YORK.

SURGEON TO THE GERMAN HOSPITAL AND THE NEW YORK SKIN AND CANCER HOSPITAL; ADJUNCT PROFESSOR OF SURGERY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

THE operations for inguinal hernia, as practised at the present time, seem to indicate that a certain anatomical factor has been either overlooked or disregarded. I refer to the following: In every case of oblique inguinal hernia one will find that the hernia has forged its way out between the vas deferens and the vessels of the cord, so that at the internal ring the vessels are situated above the sac and the vas deferens below. This relation of the structures is a constant one in oblique inguinal

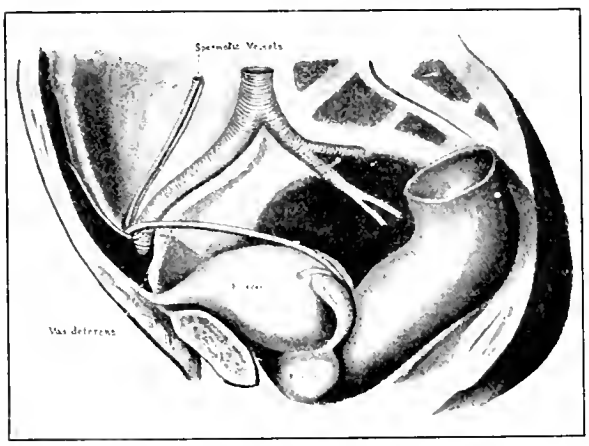

Fig. 1.—(After Spaltehlz.) Internal inguinal ring seen from within. Lateral view. Notice how the spermatic vessels and the vas deferens meet at an angle forming a wedge between them. The illustration shows the relation in the normal state; if there is an oblique inguinal hernia, the vas deferens and the blood vessels are separated at the internal ring by the interposition of the sac, and the ring is larger.

hernia. A little farther forward the vas and the vessels are found united, forming the cord; but at the internal ring they lie apart, and the sac, or at least a portion of it, is situated between them. In their intraabdominal course the vessels come down from above, while the vas comes up from below, and in the normal condition they unite at the internal ring to form the cord (Figs. 1 and 2). This

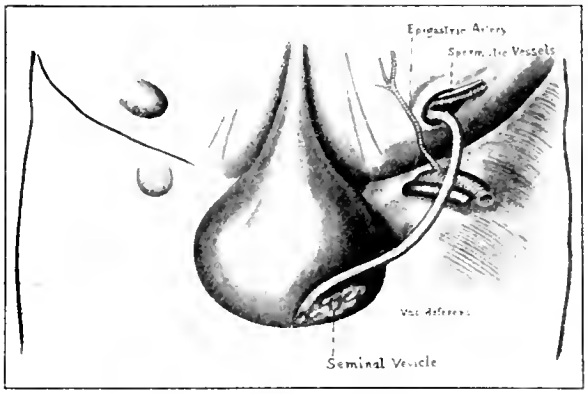

Fig. 2.—View from behind to show the same relations as Fig. 1.

union is found undisturbed where there is no hernia and also where there is a direct hernia, whereas in oblique hernia the above-mentioned interposition of the sac between vas deferens and blood vessels is found. Let me say, parenthetically, that quite a number of surgeons do not seem to be aware of this relation of the structures, although they may have operated in a great many cases of hernia. The reason is that they are not in the habit of dissecting the structures out to a sufficiently high point to demonstrate it. Anatomically we might differentiate indirect from direct hernia by stating that the former emerges between vas deferens and vessels, while the latter does not.

Considering the anatomical points mentioned, is it not natural to investigate whether the relative position of these structures can in any way be a contributing cause in the production of oblique inguinal hernia? Let us see. The vas deferens and the vessels of the cord, before they are joined, lie in planes which meet at an angle at the internal inguinal ring (Figs. 1 and 2), thus rendering them readily capable of being wedged apart. This enables a loop of intestine or a piece of omentum by repeated pressure against the internal inguinal ring to wedge itself in between vas and vessels which, owing to the angle at which they meet, render more effective the downward progress of any smooth, pliable tissue that is forced against that spot.

Admitting this reasoning to be correct, we would also have to allow that the persistence of this relative position of vas deferens and blood vessels after an operation for inguinal hernia may be a cause for recurrence. This consideration has, as long as seven years ago, impelled me to modify our otherwise excellent method of treating inguinal hernias in such manner as to do away with this wedge formed by the vas and the vessels.

The latter object is attained very simply by refraining from bringing these structures out together, but leaving them separate, or even separating them a little further, before the deep row of sutures, that which unites the internal oblique and transversalis muscles with Poupart's ligament, is placed. The vessels, thus, are made to come out at the highest possible point, while the vas will be found to emerge most naturally at a point two centimeters or more below the vessels, so that at least three stitches, a centimeter apart from one an-

*Read before the Surgical Section of the New York Academy of Medicine, May 3, 1912.

other, will separate these structures (Fig. 3). The remaining sutures are inserted below the vas deferens, down to the pubes.

The procedure just described constitutes the essential part of my method of operating in inguinal

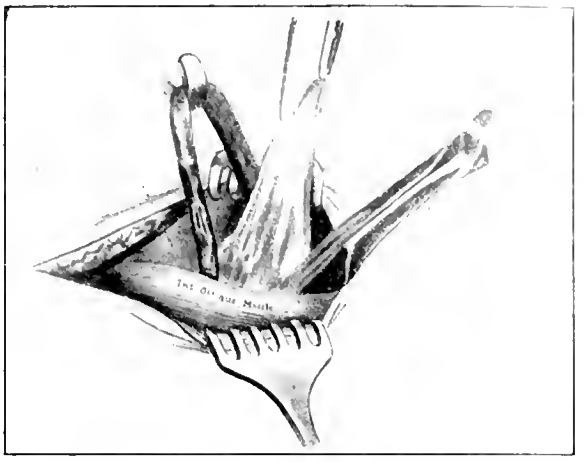

Fig. 3.—Left oblique inguinal hernia. The sac emerges between the spermatic vessels and the vas deferens. For the sake of clearness in the illustration the separation of the vas from the vessels has been carried farther down in the direction of the testicle than usual.

hernia. The other points in which it may or may not vary from the methods pursued by others are not essential, and it must be left to the individual operator what kind of stitch he will employ, what method of tying the sac he will select, and whether he gives preference to chromicized catgut, kangaroo tendon, silk, linen thread, or silver wire, etc. Nevertheless, I believe it proper to describe the complete operation, as I perform it, not only in its essential principle, but in detail.

The same incision as in Bassini's operation is made through skin, superficial fascia, and aponeurosis of the external oblique in a direction corresponding to the course of the fibers of the latter. The incision through the aponeurosis of the external oblique, or rather the separation of its fibers, is made to terminate below in the external inguinal ring. The lateral, lower edge of the divided external oblique is now seized and reflected outward and downward, and Poupart's ligament is thoroughly and completely exposed down to its insertion at the pubic bone. Then the other edge, the upper, medial edge of the divided aponeurosis, is retracted upward and inward and dissected off the underlying tissues far enough to expose the edge of the internal oblique and transversalis muscles and the conjoined tendon. As these structures must be sutured later on to Poupart's ligament, their edge is at once dissected free at this stage of the operation. Next the sac is separated from the cord in the usual manner, with this difference only, that in the upper part of the cord the vas is separated from the vessels, the dissection being continued up to a point where the above named relation of vessels, sac, and vas is evident (Fig. 3). If a surgeon, unaccustomed to this method of dissection, will at first separate the sac from the cord in the usual way and will then proceed to separate the vessels and vas from each other until the mentioned relative position is evident, he will find, as a rule, that after doing so, the sac will be liberated to a higher point, sometimes a much higher point, than it was before, a circumstance which will at once impress him favorably, even apart from any other worth that my operation may have. According to Halsted's principle the size of the cord is diminished. I do this, however, not by resecting some of the veins, but by removing all unnecessary connective tissue and fat from its upper part, and often by resecting the cremaster. If then we have nothing left but the vas and the vessels, the cord will take up very little room. The sac is now opened and its contents dealt with as usual. If the neck of the sac is small, it may be ligated in the customary manner; but if it is large I prefer the employment of a purse string suture of silk. The suture begins and terminates on the peritoneal surface, so that, when the purse string is tied, the knot will lie on that surface. If the purse string is properly inserted and placed high enough, the peritoneal surface will be smooth and free from any dimple, a result which cannot be claimed after the ordinary manner of tying. The sac is now cut off, but the ends of the purse string are not cut off until we have convinced ourselves that there is no bleeding from the stump of the sac, and that we may safely drop it.

Now we proceed to the closure of the inguinal canal in three layers. The first, which is the important one, unites the internal oblique and transversalis with Poupart's ligament. It will be remembered that by our high dissection the cord was at the top divided into two parts, the vessels above and the vas deferens below. The vessels are now made to emerge at the uppermost portion of the wound, and a suture is placed beneath the vessels, as close to them as possible (Fig. 4). The sutures are placed about a centimeter apart, rarely closer. The vas is allowed to come out at the place that seems to be most direct for it, which will usually be found to be beneath the third, sometimes beneath the fourth or even fifth suture, depending on the size of the hernia. Sutures are placed all the way down, the lowest one so close to the pubes that the needle, as it picks up Poupart's ligament, almost or actually grazes the bone. Not infrequently one cannot get any conjoined tendon to unite to Poupart's ligament at the lowest part. In that case the sheath of the rectus is taken instead. It can usually be drawn over without opening it. In

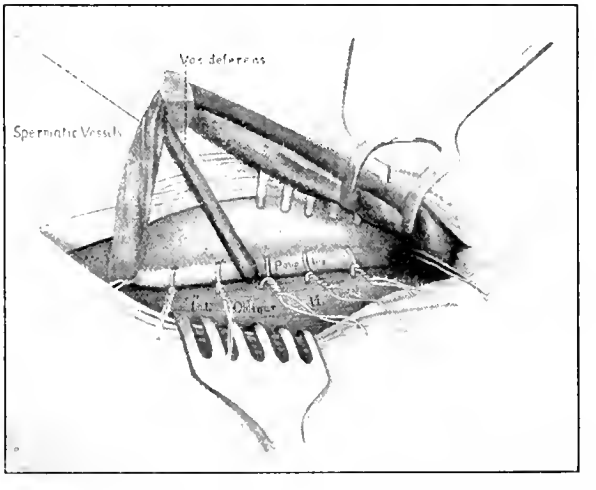

Fig. 4.—Closure of the deep layer. The internal oblique and transversalis muscles have been united with Poupart's ligament by silver wire sutures. Three of these separate the vas deferens from the spermatic vessels.

a few cases I have taken a small flap of the sheath and turned it outward and downward to be attached to Poupart's ligament.

When one sees how, after a thorough dissection, the vessels emerge from the internal ring at the

top and the vas deferens below, it seems natural to ask oneself, why in the world the vas should be displaced in such manner as to be carried high up on the posterior aspect of the abdominal wall, simply to be carried down again under a more superficial

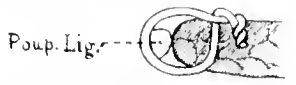

Fig. 5.—Diagram to show how the cut end of the silver wire is imbedded into the muscle.

layer. Possibly it is the awkwardness of thus displacing the vas that has induced some surgeons, perhaps intuitively, to discard all displacement of the cord whatever and has influenced others who do displace the cord against carrying it to the highest possible point and in favor of inserting a stitch above the cord,—a sort of compromise between displacing and not displacing it. I never place a stitch above the cord, and to any one who performs the operation according to my method of separating the vas from the vessels, the ease, one might almost say spontaneity, with which the vessels can be brought out at the uppermost end of the deep layer, will at once be apparent, so that the desirability of introducing a suture above the cord will not suggest itself.

As I have already indicated, I do not wish to be dogmatic on the kind of suture material, but personally I prefer silver wire. Individual silver wire sutures are recommended, not a continuous suture, much less a filigree network. The muscles and Poupart's ligament are brought together by the silver suture only to the point of close apposition; the structures are never squeezed tightly together, as by doing so one might cause localized necrosis. Silver wire lends itself particularly well to the task of bringing the tissues into good approximation without strangulation, for, as soon as the silver wire has been twisted, we know that the adapted tissues will stay where they were laced. This cannot be said with equal force of other suture material, where the knot may give a little. In tying the knot with catgut or similar material we are apt to draw it a little tighter than necessary for approximation, as we fear it may loosen somewhat; and this little extra pull may be just enough to produce a slight degree of strangulation. It may appear out of place to deal at such length of so small a point as the introduction of a suture, but we must remember that we are bringing into apposition tissues which do not tend to unite very kindly. On the one side we have the smooth muscle fasciculi; on the other, the still smoother Poupart's ligament, and even if we were to roughen them artificially they would not offer ideal conditions for the prompt formation of a firm union. Anything therefore that will help to make union more certain is worth while.

I use a No. 26 silver wire or one slightly stronger. The silver wire is twisted about four half turns and is cut off to leave an end about one-eighth to three-sixteenths of an inch long. This end of wire is bent by the aid of forceps to the medial side, so as to lie on the muscle; then the distal half of it is bent a second time, so as to embed the point of the wire in the muscle (Figs. 5 and 6). This puts it with certainty out of harm's way, and it cannot hurt the structures of the cord.

Much has been said for and against the use of silver wire. I may say that I am not a friend of the silver filigree network, several specimens of which I have had to remove from patients, because they were broken, and the sharp ends stuck out through the skin; in one case they even stuck inward against the hernia which the wire net was intended to cure, but which had recurred. If a silver filigree is introduced into so flexible and movable a part of the body as the abdominal wall, its meshes are subjected to frequent changes of position; the net will be alternately bent and straightened again, a condition which predisposes the wire eventually to break. Not so in the case of an interrupted wire suture. The single silver suture with its small twist takes up very little room and becomes thoroughly encapsulated. It readily follows all changes of shape of the abdominal wall. I have been able to convince myself of the thorough encapsulation of the silver sutures in one of these operated patients who returned to the hospital eleven weeks later on account of acute appendicitis to which he succumbed, and upon whom an autopsy was performed. Dr. R. McCready kindly dissected out for me the parts concerned in the operation for hernia, and we saw that the silver wire sutures were imbedded in a very firm tissue, making the task of exposing them quite difficult. This observation influenced me even more strongly in favor of the use of silver wire. While it is doubtlessly true that the only object of the suture is to hold the tissues in apposition until they have united, we must admit that there are different degrees of union, from a very firm union down to an exceedingly loose one. The presence of the foreign body, the silver wire, is the very thing that incites the tissues to produce so firm a fibrous material; an absorbable suture never does it to the same extent. Of course, when this firm union has been established, we have no further use for the silver wire; but who would think of removing it, when we know that it is not in the way and does no harm.

Only once did I have to remove a silver suture which presented directly under the skin at the upper end of the incision; it showed unmistaken evidence of carelessness in operating. Although I was not present at the operation, which was performed by a member of the house staff, I am nevertheless sure that the technique was faulty, for, when I removed the stitch, I found the cut end of the wire pointing straight forward toward the skin. It had not been bent down in the manner which I have described.

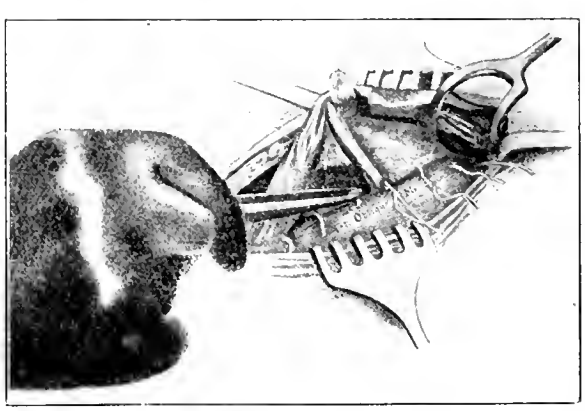

Fig. 6.—The upper two stitches are finished; the ends of the silver wire have been embedded in the muscle. The third suture has been cut, and its end is being turned over across the muscle.

When the suture of the first layer has been completed, the cord, including both vas and vessels, is placed on the structures forming the deep layer, and the aponeurosis of the external oblique is closed over it with a continuous catgut suture, allowing

the cord to emerge at its lower end. This is [illegible] second layer of sutures. Lastly, the skin is s[illegible] forming the third layer.

The after-treatment does not differ from that [illegible] other operations for hernia. The patients are [illegible] tioned to refrain for about half a year from such gymnastic exercises as alternate squatting and [illegible] ing, or horseback riding, or similar postures that put an extra strain on the inguinal canal.

Now, as to the results of the operation. Between six and seven years ago, while the method was still in its formative stage, I paid little attention to the closure of that part of the wound below the exit of the vas deferens, at the pubic end of the wound; in fact, I occasionally omitted closing the lower part altogether. Although none of these cases had any recurrence of their oblique hernia, one of them developed a direct hernia at the place where no stitches had been put in. It manifested itself as a slight bulging, so small that the patient declined to have anything done to it. Since that experience I have been practising the method as described in this article, including the closure of the deep layer down to the pubes, and have had no recurrence except in the following case in which, I am sure, you will grant that the failure was not due to the method I have presented to you. The case was one of very large sliding hernia of the left side, which had recurred several times after previous operations. Around the sac there had formed an enormous amount of adventitious tissue which I detached extensively in order to remove it. When I became aware that I had to deal with a sliding hernia, and that the sac could not be resected, the unfortunate idea struck me to use this tissue as a pad to help holding in the hernia. Such a method, permit me to say, is in direct violation of my principles of clean dissection and removal of all unnecessary tissue in this operation, and what could have induced me in this instance to depart from those principles I don't know; but, at any rate, I pushed this large amount of badly nourished tissue up against the replaced sac. An infection of that tissue with the formation of a large abscess and extensive necrosis resulted, and it took four and one-half months until the wound was definitely closed. This patient has a small recurrence which must be ascribed, not to the method, but to the infection and tissue necrosis, the consequence, probably, of an error of judgment on the part of the operating surgeon. The patient, by the way, in this instance, is better pleased than the surgeon. He claims to feel vastly better than he did before the operation, and is one of my very grateful patients.

In the remaining 303 cases, operated at least one year ago, that I have been able to trace, there has not been a single recurrence, although the cases include a considerable proportion of very large and complicated hernias and also many that had been operated once or oftener by other surgeons and had recurred. In ten cases the operation was combined with removal of the appendix according to my method,* and in four I brought down the retained testicle at the same time, employing the method of orcheopexy described by me.†

Although I have been practising this operation for seven years, I have up to this date refrained from publishing it, as I wanted [illegible] to convince myself of its value. Now I am [illegible] freely certain that it is an improvement on the [illegible] method.

The more experience one gets, the [illegible] he is willing to ascribe his success in any [illegible] particular factor. Therefore, although I believe that the abolition of the wedge formed by the vas deferens and the vessels and the separation of these structures before putting in the deep sutures is of essential importance, I am not prepared to say whether the success is due mainly to this procedure or whether the high ligation of the sac, the purse-string suture in the case of large sacs, the careful preparation of the muscles and of Poupart's ligament, together with their exact approximation without undue tension, and the use of silver wire have something to do with the result, or whether, perhaps, it is the combination of all these points, that is responsible for the good results. I must say that I lean to the last-named assumption. At any rate, the results of this operation, which at first I employed only in the most unpromising cases, have been so uniformly good that I feel justified in bringing it to the notice of the profession and in asking them to give it a trial, if not in the simple cases, at least in those in which the outcome by the present customary methods seems doubtful.

1021 Madison Avenue.

*Torek: Combined operation for the removal of the appendix and the cure of right inguinal hernia. (*Annals of Surgery*, May, 1906.)

†Torek: The technique of orcheopexy. (*New York Medical Journal*, November 13, 1909.)

TRANSPLANTATION OF RIB FOR DEPRESSED DEFORMITY OF THE NOSE.*

By HAROLD HAYS, A.M., M.D.,

NEW YORK.

ASSISTANT SURGEON IN OTOLOGY, NEW YORK EYE AND EAR INFIRMARY, ETC.

About two years ago Dr. William W. Carter read a paper before the laryngological section of the New York Academy of Medicine, in which he described a method for the correction of depressed nasal deformities of the nose by the transplantation of one of the patient's ribs. He presented three cases, all of which were markedly improved in appearance by the operation. The operation has met with general favor, and in suitable cases is a radical advance over any other known method.

The depressed deformities of the nose, commonly termed "saddle-back," are usually congenital in origin, or due to disease of the bony and cartilaginous tissues (syphilis being the chief cause), or else due to some local trauma. Two cases I have seen recently were caused by the patient being struck on the nose by a baseball. Many of these cases can be corrected by simple plastic operation or by the injection of paraffin. However, where the bony framework of the nose has almost entirely or entirely disappeared it is well-nigh impossible to build up a "bridge" on which the tissues should rest, and the injection of paraffin in such cases is disastrous. All sorts of artificial bridges have been tried, made out of celluloid, metal, or even out of bone of some other animal; but in most instances, in the course of time, the bridge has given way. Therefore, this operation of Dr. Carter's has supplied a long-felt want, for one uses a homogeneous tissue, taken from the same person, and nourished by the same blood.

The young woman whose photographs are shown below consulted me some two months ago. She

*Case presented before the Laryngological Section, New York Academy of Medicine, March 27, 1912.

had a typical "saddle-back" nose. Examination showed a total destruction of the nasal bones and the septal cartilage. The tip of the nose was held down by cicatrices. She said that she had had no trouble with her nose until she was about fourteen

Fig. 1—Before operation.

years of age, when it gradually began to sink in. The process continued for about two years, and for the past six years there had been no change. The Wassermann reaction, much to my surprise, was negative.

I operated upon her at the New York Eye and Ear Infirmary on March 3, 1912. Figures 1 and 2* show her appearance before operation. An incision, three-quarters of an inch in length, was made between the eyebrows, with a slight concavity downward. This incision was deepened down through the subcutaneous tissues and a dull dissection made to the tip of the nose with a periosteal elevator, such as is used in work on the septum. The tissues separated very easily. The dissection was continued outward for some distance, so that

Fig. 3—Before operation; profile view. As no profile picture had been taken before operation, this photograph has been "doctored," but the deformity was even greater than here shown.

plenty of room was made for the insertion of the rib. The wound was then covered with a piece of gauze, dipped in a weak bichloride of mercury solu-

*The photographs were kindly made for me by Dr. Geo. S. Dixon of the New York Eye and Ear Infirmary.

tion. I then dissected out the ninth rib on the right side, taking about two and one-half inches from the sternal end. The dissection of the rib was a very simple matter. The periosteum was stripped back from the rib on both sides, as it is found that

Fig. 2—From a photograph taken nine days after the operation.

it is unnecessary to transplant the periosteum with the rib. A slight nick was made in the pleura, which healed over very nicely.

After the rib was removed it was split down its entire length and only the outer shell used. The medullary tissue was scraped out and the ends slightly rounded off. Unfortunately, at this stage of the operation I dropped the rib on the floor. I immediately had it washed in a weak bichloride solution, and then immersed for a few seconds in salt solution, all three of which procedures are distinctly detrimental to the success of the operation.

Attention was then paid to the original wound. An incision was made through the periosteum of the frontal bone and a dissection made between it and the bone for a distance of a half inch. The rib was then inserted down to the tip of the nose

Fig. 4—Same as Figure 2, profile view.

and the upper end slipped in between the periosteum of the frontal bone and the bone itself. When this procedure was completed it was found that the lower end did not quite reach to the tip, so that it would have been an advantage if I had allowed

myself another half inch of rib. The subcutaneous tissues were then united to the periosteum covering the rib and the skin united with a silk suture. The cosmetic result even at the time of operation was excellent. A dry dressing was applied over the wound on the face and a similar dressing applied to the chest.

The postoperative recovery was uneventful. For the first few days the face was swollen and extravasations of blood showed underneath the eyes. The patient had no temperature and was able to be out of bed on the eighth day. Figures 3 and 4 were taken on the ninth day after operation. The bone seems to be encapsulated in a sheath of connective tissue. The deformity has been entirely eliminated.

11 West Eighty-first Street.

A CASE OF BONE SYPHILIS MASQUERADING AS TUBERCULOSIS.

By LEONARD W. ELY, M.D.,

DENVER, COLO.

The following case is interesting from a number of different aspects. Doubtless it will seem instructive in various ways. To me it shows the importance of taking pains, of a knowledge of bone pathology, of an open mind, of scientific scepticism, and of other things.

The patient, a physician, 33 years of age, was referred to me in April, 1911. He had one child,

Fig. 1—Skiagram taken September 6, 1910. Observe the intact articular cartilage. In a tuberculous osteomyelitis of this extent the cartilage would be badly damaged.

had previously been in health, and denied syphilitic infection absolutely, then and later. Two years ago (from date of history taking) a painful swelling appeared in his left index finger. The swelling subsided, returned in about three months, and grew worse. Two months later the [illegible] was incised and was treated with wet dressings.

At this time the patient was under observation of some of the most eminent [illegible] he country, in one of our largest cities, a surgeon

Fig. 2—Skiagram taken February 7, 1911. Observe the new bone along the margin of the radius.

thought the disease clinically was syphilis, but the Wassermann test was negative, the von Pirquet test was positive, and a skilled pathologist reported, after examining some of the tissue, that the disease was tuberculosis. The finger was therefore removed, about six months after the onset of the disease.

A few weeks after the removal of the finger the patient began to experience soreness over the sternum, which grew worse, and a fluctuating swelling appeared. This never broke down. The examination of the lungs at this time was negative.

About three months after the amputation the left wrist and the left knee became involved, and became painful, swollen, and tender. These symptoms have persisted to date.

The patient affirms that the disease in the finger was located in the shaft, and under the microscope appeared as a periostitis. He gave up his practice, moved West, and traveled about in this section of the country seeking health.

Examination: The patient is in excellent general condition and walks with a decided limp, using canes. His forefinger is gone clean. The lower end of the left radius is swollen and decidedly sensitive to the touch, but the disease apparently does not involve the joint. Thickening is present over the sternum. The left thigh is two cm. smaller in circumference than the right, and the left calf 1½ smaller than the right. Sensitiveness can be elicited over the left internal semilunar, but no swelling of

the joint, sensitiveness of the synovia, nor fluid in the joint. Flexion is limited to about 80°.

Skiagrams showed an appearance typical of syphilis, the multilocular lesions, not involving the joint, pointed in the same direction, and the history was decidedly not that of tuberculosis.

A study of the radiograms will show that the bone condition had improved between the time of taking No. 1 and No. 2. This almost absolutely bars out tuberculosis. In joint tuberculosis in adults the morbid process is almost invariably steadily progressive until it destroys the joint.

Dr. Arneill, who referred the patient to me, rejected the diagnosis of tuberculosis, and, disregarding the Wassermann test, had another test done, which resulted positively. The patient was therefore put on intramuscular injections of salicylate of mercury, and began immediately to improve. All the symptoms in his knee disappeared, and the symptoms in his sternum also. The radius also grew much better, and the sensitiveness and swelling decreased. After a while the improvement ceased, and the case came to a standstill. Then the radius grew worse. Iodide of potassium was tried without avail.

On February 7, 1912, Dr. Markley administered a dose of salvarsan, and the patient immediately improved markedly. The radius decreased greatly in size and lost its sensitiveness.

March 10. The physical signs in the radius have almost disappeared. Dr. Markley administered a second dose of salvarsan, and the patient departed for his home, eastward, cured of his severe "bone tuberculosis."

Two things deserve mention in addition. The first is that the patient, while traveling about in the West preparatory to coming to Denver, had an afternoon rise in temperature. The second is that a thorough and careful examination of the many slides made from his amputated finger, on which the whole treatment of his case had been based, failed to reveal any sign whatever of tuberculosis.

520 Metropolitan Building.

NON-OPERATIVE TREATMENT OF STERILITY.*

By Sarah Jane McNutt, M.D.,

New York

In the treatment of sterility it is necessary to treat the special conditions that cause it, and in no department of gynecology is more persistent, patient work demanded. Insufficient treatment nearly always results in failure. When the patient first presents herself it is well to ascertain if there is difficulty about intercourse. Especially in those recently married, but even where the sterility has existed for years it may be discovered that there has never been any proper consummation of the act.

Notwithstanding the exceeding delicacy of these inquiries, there is rarely difficulty in getting definite answers which will enable an opinion to be formed.

It is necessary by questioning, to find out whether there is any sexual pleasure or desire, or the reverse, whether intercourse takes place too frequently or at reasonable intervals, or very seldom. If there be exhaustion of the genital centers from excessive sexual activity or masturbation, the latter should be discontinued and the cause of irritation that has induced the habit searched for and removed, which as a rule can be done. Frequent coitus should be discouraged.

The patient should be told that the most likely time for conception is immediately after menstruation. Exceptionally the time varies, and some may conceive later, or only just before menstruation. It would be well to suggest that the time of most desire, if recognized, should be selected.

Certain vicious practices play an important part in inducing sterility, and are unquestionably a fruitful cause in a large percentage of cases in inducing a chronic engorgement of pelvic tissues of a very stubborn type, not always yielding to the most wisely directed and thoroughly persistent treatment.

Some of these practices are the use of medicated douches immediately following intercourse, sponges inserted in the vagina, withdrawal, or use of condom. The treatment is the cessation of the practice, and the use of remedies to relieve the condition. In such cases where the sterility has been of long standing, a guarded prognosis for cure should be made.

The man may be wanting in power, or suffering from some other condition that prevents conception taking place. Several years ago a young woman came to the author to be cured of her sterility. She had been married 18 months, but had never conceived. Conditions were found which very readily suggested a cause, but when they were relieved pregnancy did not take place. Directions were given that the husband see a specialist. The microscopical examination showed that the semen did not contain spermatozoa. He had spent several months in Colorado for incipient tuberculosis, but had been pronounced cured.

Other cases are found where the spermatozoa are present but immobile, and are rendered active by tonic and invigorating general treatment to the man.

Examination.—After eliciting anything which can throw light on the possible cause of sterility, a regular pelvic examination should be made, in the ordinary way, noting first the condition of the external genitals, the skin and mucous membrane of the vulva, the hymen if ruptured, or if tough and unruptured, the meatus, the vulvovaginal glands, if vaginismus is present, if the vagina is normal, if the position of the uterus is correct, whether the uterus is movable or if there be any signs of previous pelvic inflammation, and what is its present condition; if the cervix is normal, conical, unusually small, if the os is closed or patulous, if it seems natural to touch or unhealthy; any tumors of the uterus or swelling of the ovaries or tubes, or tumors connected with them.

Treatment.—Urethral caruncles or vulvar vegetations should be removed or destroyed with other sensitive excrescences. In mild cases they should be tied off or cauterized under cocaine in the office; if severe they should be removed under ether.

If the hymen is intact or a condition of mild vaginismus exists, accentuated by fear, small pledgets of absorbent cotton saturated with a solution of cocaine (5, 10, or 20 per cent.) applied against the hymen, or where sensitiveness is present, cocaine vaseline applied direct will soon render the parts quite insensitive for complete examination, and enable us to discover if the pelvic conditions are normal, and will enable us at the same time to convince the patient that these remedies can be used as directed 15 or 20 minutes before coitus with entire relief of discomfort. In prescribing cocaine vaseline it is necessary to write for

*Read before the Women's State Medical Society at Buffalo, May 10, 1912.

the cocaine alkaloid, since cocaine hydrochlorate will not assimilate with oily preparations. The ointment can be ordered in a 1, 5 or 10 per cent strength. In mild cases these directions are sufficient for cure. Should the local condition be aggravated by more or less traumatism from frequent unsuccessful effort to have intercourse, a condition not infrequently seen, entire rest of the parts should be insisted upon, until with the use of soothing lotions or mild ointments the injury is removed, when the cocaine vaseline, or solution of cocaine, can be used with satisfactory results.

Should a tough unruptured hymen be found, it is not necessarily a cause for sterility, since patients have become pregnant where a tough hymen still existed and where the male organ has not gained an entrance to the vagina. Where menstrual fluid passes spermatozia can travel.

A tough hymen may be dealt with in the office by cutting or rupture after cocainizing the part. This treatment will frequently be sufficient in many cases where no vaginismus exists.

If the hyperesthesia of the vulva persists when the effects of the cocaine passes off or the hyperesthesia extends up into the vagina, or the vagina is abnormally small, thin glass dilators may be given to the patient with directions to pass them herself. One ought to be passed every day for a time, vaseline or some other lubricant being freely used—the solution of cocaine or cocaine vaseline if needed.

Some cases will not yield without more active treatment, and will be cured by stretching of the vulva and vagina under ether. Exceptionally cases are found that thorough dilatation under ether has not relieved, and severe neurasthenia has developed. Gibbons reports such cases relieved by the Paquelin cautery, lightly applied to the inner sides of the labia minora and all around the orifice of the vagina, and especially to the posterior fourchette, ascertaining the most sensitive points before giving the ether, so as to bear them in mind in applying the cautery.

Discharge.—It is especially important in looking for the cause of sterility to make sure if there be a vaginal discharge, and if present what its character. It may be non-irritating and simply due to engorged pelvic vessels, from the pressure of a constipated bowel, or some displacement of pelvic organs.

The treatment for these conditions will generally relieve the symptoms. Whatever the starting point of the catarrhal condition of the mucous membrane of the vulva, vagina, cervix, uterus or tubes, the more or less continuous secretion will often act in a toxic manner on the spermatozoa, probably due to the living organism it contains which is antagonistic to the spermatozoa, or it may render the implantation of the ovum impossible.

If a specially acid leucorrhea exists a simple vaginal douche of bicarbonate of sodium, a dram to the pint of lukewarm water once or twice daily, may be sufficient for its cure. The alkaline douche favors the vitality of the spermatozoa, and it has been found that where the sterility existed with an acid discharge, a single douche ordered immediately before coitus allowed conception to follow.

When the uterus seems to be the starting point of the discharge alkaline intrauterine irrigation should be tried. In stubborn cases it has been suggested that following the intrauterine irrigation (or without it—a probe loosely wound with cotton, which has a strong thread tied to the end of the cotton, farthest from the top of the probe, can be saturated with a solution of bicarbonate of sodium grams x or xx to the ounce [illegible], and if the canal is sufficiently open pa[illegible] the uterus; then one should slide off the [illegible]etting the thread extend half an inch out[illegible]he vulva. Direct the patient to remove the [illegible] drawing on the thread just before coitus, which should take place soon after its introduction [illegible]ct). A much safer method, however, is to [illegible] place of the cotton, several strands of lamp [illegible] o the uterus with very slender curved uterine forceps, or a narrow piece of sterile gauze. Where the secretions are acid, it would be well to see if alkalies internally are indicated.

Should the discharge be the result of a glandular endocervicitis or endometritis, vaginal douches followed by antiseptic intrauterine irrigation if there is no tubal disease and the os is patulous, should be given and followed by scarification of the cervix if the glands are involved. This treatment with knee chest tamponade to insure good drainage may entirely effect a cure.

Should the condition not readily yield to treatment, and there be profuse menstrual flow, thorough curettage under ether, with amputation of the cervix if indicated, should not be delayed.

Gonorrheal Sterility.—If with an irritable vaginal discharge, pus can be made to ooze from the urethra and vulva vaginal glands, it should be regarded with suspicion and should be examined for the gonococcus. Since men are responsible for 50 to 75 per cent. of sterile marriages, in all suspicious cases the wife should not be subjected to a course of treatment until the husband has been examined by a specialist. The absence of the gonococcus is not always diagnostic, however, as the germ disappears from the discharge after a time anyway.

A man who has had gonorrhea may by careful treatment be apparently cured, but the germ can live for years or indefinitely in a perfectly dormant state, and only after the abuse of stimulants or at the height of an orgasm can it be expelled into the vagina and produce an actively acute inflammation, and display its utmost malignancy.

Should the microscopical examination of the discharge discover the gonococcus in husband or wife, the treatment should be the local and general treatment of gonorrhea.

It is only in comparatively recent years that we have come to know how much men are to blame for sterile marriages, and this knowledge is largely owing to the work of Noeggerath, the leading authority 30 years ago, and when he sounded a warning declaring that the individuals with gonorrhea could remain infectors during a lifetime, he was regarded as an alarmist and his statistics of the frequency of this disease in married men as exaggerations. Recent attention has been called to the fact of the undeserved blame which women have been carrying for so many centuries, as being the chief factor when no offspring was forthcoming.

In all cases of sterility where the wife is presented for examination, it has been insisted that the husband should also submit to an examination. As a result it has been found that the man had venereal disease in about 80 per cent. of cases—in 25 per cent. of cases he was himself sterile through the infection of this disease.

Only too often, even at the present day, is the woman treated, operated upon, and otherwise maltreated and humiliated to correct her sterility, when the fault is exclusively with the man—a fact that cannot be too often repeated.

Cervical Conditions the Cause of Sterility.—If the examination reveals an infantile or a hyperinvoluted uterus the condition may be improved by galvanism, the sterilized negative electrode being passed into the uterus, and the positive attached to a broad pad placed upon the abdomen over the fundus; a current up to 50 milliamperes has been suggested by Hare for five minutes, two or three times weekly, and the uterus lightly massaged afterwards. Such treatment has been successful in enlarging the uterine body, and since it does, may increase the probability of conception. In cases of neurasthenic impotence a pad with the positive electrode over the fundus, and one with the negative attached, over the lumbosacral region to stimulate the genital centers by a mild current for 10 to 15 minutes two to three times a week, has seemed to be of nutritive value.

In a conical elongated cervix, more or less stenosed sterility has been overcome by the use of galvanism, the negative electrode being passed into the uterus, the positive placed over the fundus. The current should be only of sufficient strength to allow relaxation of the tissues. Treatment can then be readily made if the mucous membrane is not normal.

Hard rubber stem pessaries or tents should not be used. If the galvanism is not immediately effective, there should be no delay, but forcible dilation should be made with steel dilators, not in the office, however. The patient should be prepared as for a serious operation with antiseptic precautions, and it should be done under ether and the patient remain in bed until all sensitiveness has disappeared.

Displacements.—A displaced uterus, a frequent cause of sterility, should be replaced and held with pessary or tampon in a position to allow spermatozoa to enter the cervical canal. If the cervix is acutely anteflexed and low in the pelvis, so it presses on the floor of the vagina, helping to accentuate the flexion—a not infrequent condition—a tampon placed in the posterior cul-de-sac in the knee-chest position raises the uterus, and putting the uterosacral ligament on the stretch often helps to modify the antiflexion sufficiently to allow the canal to be patulous and permit pregnancy to take place.

Early last year a patient came to be cured of her sterility. She had one child six years old, and no other pregnancy had occurred. She was very constipated.

Examination showed a rather large uterus in forced retroversion, the fundus rather lower than the cervix, which was crowded up behind the sympathis, completely closing the os and preventing the entrance of the semen. The posterior cul-de-sac was entirely effaced and fundus pressed directly into rectum. It was comparatively easy to replace the uterus in its normal position; a small tampon pressed well up behind the cervix to stretch the fornix was sufficient to retain the uterus in the normal position.

The patient became pregnant almost at once, and was delivered in November, 1911, of a healthy child. The uterus had to be held forward for some time by tampons, to overcome its tendency to revert to its former position.

If the vaginal vault is shallow or illy developed, or the natural S shape of the vagina has been destroyed by the dragging down of the vaginal wall by a displaced uterus, or a lacerated perineum, making the vaginal floor an inclined plane down toward the vulva, it is highly important that this S shape should be re-lined or restored by stretching the vault by means of a ring pessary, or of a tampon introduced well behind the cervix in the knee-chest position.

Lacerations of the perineum should be repaired. "In these cases the patient should remain flat on her back after coitus, with the hips raised on a pillow to allow retention of the semen in the vagina, and to favor the formation of the so-called 'seminal pool,' also to permit the cervix to remain for a time immersed in the semen; if the spermatozoa are active they may readily find their way into the cervical canal and up into the uterus. One should remember in these cases to order a preliminary alkalin douche to favor the vitality of the spermatozoa." (McDonald.)

Salpingitis and ovaritis usually cause sterility by the adhesive inflammation displacing these organs, closing the abdominal end of the tube, thus preventing the entrance of the ova, or blocking the passage for want of ciliary movement. Much, however, can be done by proper treatment, as pregnancy has frequently occurred after systematic effort that has relieved the inflammatory condition, even in a gonorrheal inflammation, which most frequently leads to permanent sterility. The patient should be advised of the uncertainty of a cure for her sterility, but of the immediate need of getting rid of the inflammation. If she is willing to make the effort, the local treatment should be continued, so long as progress is shown, and there is a prospect of curing her, and while improvement continues an operation should not be advised, which will entirely destroy her hopes.

Where involvement of the tubes and ovaries occur, they should be packed up in the knee-chest position, higher than the uterus, to insure drainage and help establish better circulation. Painting the vaginal roof with Churchill's tincture of iodine, followed by glycerine tampons, of nonabsorbent cotton or wool, which should be small enough to be kept entirely up in the posterior cul-de-sac, well behind the cervix, and held there firmly by the operator's index finger while the patient rises up from the knee chest position straight on her knees, which will allow the cervix to grasp the tampon and hold it in place.

To prevent the tubes dropping back and refilling, the patient should never be without such tampon while the condition remains—two to three times a week will usually be sufficiently often to replace it—if not it should be introduced oftener.

If adhesions are formed, they are not infrequently separated or stretched by the tampon. A typical case came to the office in November, 1910. The inflammation followed a curettement some weeks after an early miscarriage. Her physician advised the removing of the tubes as the only hope of restoration of health. The patient was informed by me that if the present condition could be relieved, it would be only after patient, persistent work for a long time, and should such a result be obtained there could be no promise that pregnancy would occur, although it had happened in some other cases. She was anxious to make the effort and was rejoiced when, eighteen months later, pregnancy did take place, and early in January, 1912, a fine boy weighing ten pounds was delivered. The mother made an uninterrupted recovery, and since mother and child have done well. During the early months of pregnancy, however, the small tampon in the posterior cul-de-sac had to be continued, since evidently the inflammatory condition

within the tubes was quicker to disappear than the exudation in the surrounding tissues. The adhesions were sensitive if the increasing weight of the uterus was not taken off them by the tampon.

When the ovaries are small and impalpable, when severe dysmenorrhea or delayed irregular or scanty menstruation exists, often approaching menopause, the administration of lutein extract, one grain twice daily, has occasionally seemed of great value. Lutein has been used for several years at the Johns Hopkins' Hospital. There is a preparation which contains all the active principles of the ovary—the lutein, as well as the secretions of the Graafian follicles—besides the extract of the secretion of all the ductless glands. The parotid, spleen, pituitary body, spinal cord, and mammary gland are taken from the cow, the suprarenal and thyroid from the sheep, ovary and pancreas from the sow, thymus from the calf, and the orchic from the ram. Iron and arsenic are added. The cases of sterility in which I have used this method have been too few to establish definite conclusions as to the value of organotherapy, but in all cases tested the result seemed most gratifying, in appearing to establish an improved pelvic circulation, and to induce a feeling of general well being in the patient.

General Health.—In treating all cases of sterility one must never ignore the general condition of the patient. Systematic vices must be eradicated so far as possible, since many cases of sterility can be cured by general treatment alone. Repeated abortions indicating the possibility of syphilis must receive continued, persistent antisyphilitic treatment for at least two years. Anemia, malaria, struma, must all receive thorough treatment.

Tonics and hygienic measures, well regulated open air exercises, baths, suitable food, a spare diet to the plethoric, a more generous one to the poorly nourished—all must be systematically carried out, since it is found that an improvement in the general health has some important influences upon ovulation.

In cases where there is nothing wrong with the pelvis, it has been found to be a distinct advantage to have the wife go away alone for a time.

When other treatment has failed, artificial impregnation has been successfully accomplished by the introduction of the semen directly into the uterus by means of a syringe and tube, or by an intrauterine syringe alone.

265 Lexington Avenue.

THE CHEST INDEX IN PULMONARY TUBERCULOSIS.

By WM. NARINS, M.D.,

NEW YORK.

ASSISTANT ATTENDING PHYSICIAN GOUVERNEUR TUBERCULOSIS CLINIC

In going over the literature of the subject of chest measurements of tuberculous patients, one finds the view prevailing from the ancients until very recent times that the phthisical chest is flat, *i. e.* its anteroposterior diameter is relatively smaller than the similar diameter of a healthy individual.

Osler, commenting on the observations of Hippocrates and others, states that "undoubtedly the long, narrow flat chest, with depressed sternum is commonly enough seen in tuberculous patients." Strümpel and others speak of "the paralytic, pterygoid, or phthisical chest in which there is an abnormal flattening of the sternum and ribs" with consequent diminution of the anteroposterior diameter as common in tuberculous subjects, etc.

More recent observers, as Hutchinson and Niles, have, however, proved by actual measurements taken on chests of tuberculous patients that the tuberculous chest not only is not flat, but on the contrary is round, approaching more nearly the chest of the infant, whose anteroposterior and transverse diameters are nearly alike. In explanation of this rather startling observation, the theory is advanced that the tuberculous subject suffers from an arrest of development of the chest, causing it to remain in a more or less infantile state, which, as stated, is more nearly round than flat. These observers further claim that the apparent flatness of the tuberculous chest is merely an "optical illusion caused by the throwing forward of the shoulder girdle, giving the chest a sunken or hollow appearance."

Our own observations on 900 cases treated at the tuberculosis clinics of Gouverneur Hospital do not coincide with these latter views of the rotundity of the chest in tuberculosis, but rather tend to confirm the former view that the phthisical chest is more often flat than round. Measurements of our cases have been made on an imaginary plane passing through the level of the junction of the fourth costal cartilage and sternum.

The anteroposterior diameter divided by the transverse gives the ratio which one bears to the other, and is called the "clinical index" of the chest. From a number of observations made by several investigators of the subject the normal average adult chest index is placed at 70, so that A. P.: T.:: 70: 100. Some place the normal index as high as 80, others as low as 60, but if we were to group all cases between these extremes as normal, there would be very few others, and no occasion for this report; hence we decided to accept 70 as the normal chest index, allowing a variation of 2 either way as still within the normal limit, so that all chests with an index of between 68-72 were grouped as normal, those below 68 as below normal, and those above 72 as higher than normal. Several cases have been recorded with a chest index of 100, while the lowest index observed was 52.

In classifying our cases we have divided the positive, negative, and doubtful cases into separate groups, with a subdivision of each group into male and female, and of each subgroup into decades. Children up to 15 have been grouped separately because of the essential difference between the child and adult chest. The figures are as follows:

	Male	Female	Total
Positive	385	281	586
Negative	114	75	189
Doubtful	39	16	55
	Positive	Negative	
Under 15	34	36	70
Total number of cases			900

We find here a total of 385 positive male cases, of which 240 occur between the ages of 20 and 40, an age when tuberculosis is most common; of these 240 cases, 109 or 45 per cent. have anatomical indices below normal; 76 cases or 32 per cent. have anatomical indices above normal, while the remainder have normal anatomical indices (quite a predominance in the number of flat chests).

In the same table we have 100 cases occurring between the ages of 40 and 60. Of these only 33 per cent. are below normal, while 47 per cent. are above normal, the remainder being normal.

TABLE I.

Male Cases.	Average Expiration.	Average Inspiration.	Expansion.	Average Index.	Above Normal.	Normal.	Less Than Normal.	Total Cases.
15–20	77.1 c.m.	83.2 c.m.	6.1 c.m.	68.7	10	10	20	40
20–30	80.6 c.m.	86.1 c.m.	5.5 c.m.	67.2	32	28	65	125
30–40	83.2 c.m.	88.7 c.m.	5.5 c.m.	69.8	46	25	44	115
40–50	84.6 c.m.	89.0 c.m.	4.4 c.m.	66.2	31	15	29	75
50–60	84.2 c.m.	88.4 c.m.	4.2 c.m.	75.7	16	5	4	25
60–70	83.7 c.m.	87.7 c.m.	4.0 c.m.	82.5	5	2	.	5
General Average.	82.1 c.m.	87.1 c.m.	5.0 c.m.	71.7	138 35.8 per cent.	85 22 per cent.	162 42.1 per cent.	385

The greater number of high indices in this group, *i. e.* between 40 and 60, is easily accounted for by the frequency of emphysema occurring in these older patients.

TABLE II.

Positive Female Cases	Average Expiration.	Average Inspiration.	Expansion.	Average Index.	Above Normal.	Normal.	Less Than Normal.	Total Cases.
15–20	72.0 c.m.	77.7 c.m.	5.7 c.m.	67.6	6	9	9	24
20–30	76.0 c.m.	80.5 c.m.	5.5 c.m.	68.5	19	11	29	59
30–40	75.9 c.m.	80.0 c.m.	4.1 c.m.	70.5	25	20	21	66
40–50	76.5 c.m.	80.1 c.m.	3.6 c.m.	71.3	16	9	10	35
50–60	80.0 c.m.	83.5 c.m.	3.5 c.m.	76.0	9	3	3	15
60–70	89.2 c.m.	92.9 c.m.	3.7 c.m.	92.0	2	..	..	2
General Average.	78.2 c.m.	82.4 c.m.	4.2 c.m.	74.3	77 38.3 per cent.	52 25.8 per cent.	72 35.9 per cent.	201

Table II proves the same thing, though to a lesser degree. Of 201 positive female cases there were 125 between the ages of 20 and 40, and of these 50 cases or 40 per cent. were below normal anatomical index; 44 cases or 35 per cent. above, the remainder being normal. Between the ages of 40 and 60 we have a total of 50 cases, of which number 13 cases or 26 per cent. are below normal, 25 cases or 50 per cent. above normal, the remainder being normal. Adding the male and female positive cases together, we have a total of 580 cases, of which 305 occur between the ages of 20 and 40; of these 305 cases, 150 or 43 per cent. are below normal chest index, 120 cases or 32 per cent. are above normal, the remainder being normal. Between the ages of 40 and 60 we have a total of 150 cases, of which 40 or 30 per cent. are below normal, 72 cases or 48 per cent. are above normal, the remainder being normal.

In comparing these two sets of figures one is struck by the great number of flat chests occurring between the ages of 20 and 40, and the still greater number of round chests occurring between the ages of 40 and 60, and the inevitable conclusion one must reach is that factors other than the tuberculous infection *per se* are responsible for this variation. Emphysema, essential or compensatory, we believe to be the chief single factor responsible for the great number of high chest indices occurring between the ages of 40 and 60.

In a chest index study as here undertaken, it seems to us not unfair to divide the cases into two main groups, one between the ages of 20 and 40, when tuberculosis is most common and is apt to be uncomplicated by other factors, and another group between the ages of 40 and 60, when tuberculosis is not so common and is very frequently complicated by other factors tending to alter the chest contour, such as emphysema; for after all it is the tuberculous chest mainly, uncomplicated by anything else, which interests us most. And this is best exemplified by the young and adult up to 40 years of age; as we have seen, the flat chest predominates in these cases.

We now come to a class of cases that still further tends to disprove the high index theory of tuberculosis. This subdivision consists of children up to 15 years. No sex differentiation is made. If, as it is claimed, the tuberculous chest is round because of arrested development, certainly this group of cases, being in the period of development, ought to show it, whereas the contrary obtains in our series.

TABLE V.

Cases Under 15.	Average Expiration.	Average Inspiration.	Expansion.	Average Index.	Above Normal.	Normal.	Less Than Normal.	Total Cases.
Positive	64.0 c.m.	69.5 c.m.	5.5 c.m.	71.8	16 47 per cent.	4 12 per cent.	14 41 per cent.	34
Negative	61.3 c.m.	66.7 c.m.	5.4 c.m.	73.4	18 50 per cent.	6 16 per cent.	12 34 per cent.	36

Of a total of 70 cases, there were 34 positive with 16 cases or 47 per cent. above normal, and 14 or 41 per cent. below normal; the rest were normal. While of the 36 negative cases there were 18 or 50 per cent. above normal, and 12 or 34 per cent. below normal, the rest being normal. If tuberculosis arrests the development of the chest we ought to have a greater number of high chest indices among the positive cases than among the negative, whereas the contrary is true. In fact, we notice that the number of flat chests is greater among the positive than among the negative cases.

It may not be inappropriate to speak here of the positive cases between the ages of 15 and 20 years. These, too, may be regarded as in a more or less developmental period, and ought to throw considerable light on the subject. Of these we had a total of 64 cases, of which 16 or 25 per cent. were above normal; 19 cases or 30 per cent. normal, while 29 cases or 45 per cent. had a chest index less than normal. This last group of figures is very significant and argues strongly for the flat as against the round chest in tuberculosis.

The negative cases at our clinic have also been measured, with the following result. There were a total of 189 negative male and female cases, which for the sake of brevity will be grouped together:

Of these 100 cases, 104 were between 20 and 40, of which 40 cases or 38 per cent. were below normal; 38 cases or 37 per cent. were above normal, the remainder being normal. We notice among this

group of negative cases not quite so many flat chests as among the positive cases of the same ages, while the proportion of high index chests is somewhat greater than in the positive group.

chest expansion. We find that while a small number have a fairly good chest expansion of from 8 to 10 or even 12 cm., the majority are very poor and shallow breathers, having a chest expansion in

TABLE III.

Negative Male Cases.	Average Expiration.	Average Inspiration.	Expansion.	Average Index.	Above Normal.	Normal.	Less Than Normal.	Total Cases.
15–20	75.0 c.m.	81.2 c.m.	6.2	70.8	10	6	4	20
20–30	83.1 c.m.	89.8 c.m.	6.7	70.2	13	8	14	35
30–40	84.1 c.m.	89.8 c.m.	5.7	70.7	11	7	4	22
40–50	84.2 c.m.	89.4 c.m.	5.2	69.0	8	5	5	18
50–60	85.0 c.m.	87.0 c.m.	2.0	75.0	2	1	2	5
60–70	81.8 c.m.	85.0 c.m.	3.2	70.4	4	1	1	6
General Average.	83.3 c.m.	86.9 c.m.	3.6	72.6	48	28	41	117
					42.1 per cent.	21.9 per cent.	36 per cent.	

TABLE IV.

Negative Female Cases.	Average Expiration.	Average Inspiration.	Expansion.	Average Index.	Above Normal.	Normal.	Less Than Normal.	Total Cases.
15–20	74.5 c.m.	78.9 c.m.	4.4	68.8	3	2	4	9
20–30	79.5 c.m.	84.0 c.m.	4.5	68.0	6	4	2	12
30–40	81.3 c.m.	86.2 c.m.	4.9	70.3	6	7	2	15
40–50	81.0 c.m.	85.4 c.m.	4.4	73.5	9	3	6	18
50–60	78.2 c.m.	82.6 c.m.	4.4	70.4	4	1		5
General Average.	78.3 c.m.	82.8 c.m.	4.5	71.9	30	17	25	72
					40 per cent.	22.6 per cent.	33.3 per cent.	

Between the ages of 40 and 60 of the negative cases we had a total of 48, of which 10 cases or 33 per cent. were below normal, 23 cases or 48 per cent. above normal, while the rest were normal, which is about the same as in the positive group of the same age. Of the doubtful cases we had a total of 55, of which 30 cases were between the ages of 20 and 40. Of these 30 cases 10 or 40 per cent. were below normal, 7 or 23 per cent. were above normal, the remainder being normal, here also showing the relative increase in the number of flat chests as the possibility of tuberculosis increases. Between 40 and 60 there were 11 cases, of which 3 or 27 per cent. were below normal; 6 cases or 54 per cent. were above normal, the remainder being normal.

some cases as low as ½ cm., but mostly 3, 4, 5 or 6 cm., their breathing being mainly diaphragmatic and abdominal.

In summing up the value of the chest index as an aid in the diagnosis of pulmonary tuberculosis and attempting to explain the findings in our cases, which, by the way, do not agree with the findings of other observers, we must bear several things in mind.

We must remember first of all that (1) the chest in health is not always perfectly symmetrical and with a normal chest index; many departures from the normal occur that are not pathological, depending rather on the general physique of the individual, his occupation, racial characteristics, etc. (2) The class of patients treated at our clinic are mostly

TABLE VI.

Doubtful Cases Males.	Average Expiration.	Average Inspiration.	Expansion.	Average Index.	Above Normal.	Normal.	Less Than Normal.	Total Cases.
15–20	76.6 c.m.	82.3 c.m.	5.7	67.3	3	2	4	9
20–30	84.1 c.m.	89.3 c.m.	5.2	67.2	3	2	6	11
30–40	84.6 c.m.	90.0 c.m.	5.4	67.2	2	4	5	11
40–50	82.5 c.m.	86.9 c.m.	4.4	75.0	4	2	1	7
50–60	84.0 c.m.	86.0 c.m.	2.0	62.7			1	1
General Average.....	82.3 c.m.	86.9 c.m.	4.6	67.8	12	10	17	39
					30.7 per cent.	25.6 per cent.	43.7 per cent.	

TABLE VII.

Doubtful Cases Female.	Average Expiration.	Average Inspiration.	Average Expansion.	Average Index.	Above Normal.	Normal.	Less Than Normal.	Total Cases.
15–20	73.4 c.m.	78.2 c.m.	4.8 c.m.	70.7	2	1	2	5
20–30	78.5 c.m.	81.7 c.m.	3.2 c.m.	69.8	1	1	1	3
30–40	79.4 c.m.	84.3 c.m.	4.9 c.m.	71.9	1	2	2	5
40–50	82.0 c.m.	85.6 c.m.	3.6 c.m.	68.5	2		1	3
General Average. ...	78.3 c.m.	82.4 c.m.	4.1 c.m.	70.2	6	4	6	16
					37.5 per cent.	25 per cent.	37.5 per cent.	

The positive, negative, and doubtful cases between the ages of 40 and 60 all show the same thing, namely, a low percentage of flat chests and a high percentage of round chests, and we repeat here that we believe emphysema (essential or compensatory, or both) is responsible for this. There is one other thing we wish to speak of in connection with the chest measurement study, and that is chest expansion. All of our cases have had the circumferences of their chest measured during expiration and inspiration, the difference being the

Hebrews, many of whom are or have been tailors, and have now taken to some other occupation, such as peddling, only since they have ascertained their lung trouble. These tailors are always more or less in a bent over, cramped position while at work, which to a certain degree causes a flattening of the chest. (3) The emaciation consequent upon the tuberculous infection with its diminution of muscular and adipose tissue, does actually cause a flattening of the chest, especially in young adults unmarred by emphysema. Our forefathers in medicine, unequipped as we are

today with modern instruments of precision, but forced to depend on their sense of observation, had that sense keenly developed and they were not, apparently, in error when they stated that the tuberculous individual frequently has a flat chest.

Lastly, as a diagnostic aid, we may say that the chest index has not aided us materially in clearing up difficult or doubtful cases, and that while a majority of our cases had flat chests, not every flat chest should be taken as an indication of pulmonary tuberculosis.

309 Henry Street.

SURGERY FROM THE PEDIATRIC STANDPOINT

By LE GRAND KERR, M.D.,

Brooklyn, New York.

Pediatrist to the Methodist Episcopal, Bushwick, Williamsburgh and Swedish Hospitals; Consulting Pediatrist to the Rockaway Beach Hospital and Industrial Home for Children

Several months ago the writer was invited to witness an exploratory laparotomy in a child of three years. The question of diagnosis lay between that of tuberculous peritonitis as made by the surgeon and sarcoma as made by one less skilled in operative technique. During the procedure the operator made emphatic complaint about the low temperature of the saline solution which was being freely used in irrigation. Immediately following the operation there were removed from the child several protective towels and a gown which were all well saturated with the saline which had been more or less carelessly handled throughout the operation. Upon looking over the child's chart, it was noted by the writer that a bronchitis had existed for several days, although there was absence of any rise in temperature for a few days preceding the operation. Upon the strength of three facts, namely, the wet dressings, the bronchitis, and the general lowered nutrition of the child, the writer felt justified in expressing the opinion, when it was asked for, that the child would probably die within a few days of pneumonia. While this was not comforting to the operator, the prediction proved true in four days.

This experience is cited to emphasize the fact that while an accurate diagnosis of the existing pathological condition is most important, it is not all-important. There still remains another most important factor and that is this: what will be the probable outcome of the injury or the disease and what estimate can be placed upon the probable course and termination if an operative procedure is undertaken? In this instance these latter considerations were either ignored or reduced to a minor consideration. Is it not true that the tendency is for us to emphasize the importance of accurate diagnoses, and minimize other factors which are at least as important in conserving the morbidity and mortality among children? To appreciate fully what the final outcome may be often entails a close acquaintance with many facts which at first seem to have no direct bearing upon the disease or the injury. However, these may be such as to modify or entirely change the usual interpretation of symptoms.

Thus the nutritional state of the child is of great importance in any surgical disease or injury or when operative procedure is to be undertaken. The tendency has been to somewhat disregard the general condition and nutrition of the child and to give prime consideration to the disease or injury present and to look upon it mainly as a field for operative procedure in the endeavor to make a diagnosis or furnish surgical relief. Such an attitude does not give the surgeon or the child their best chances. Adequate surgical examination in childhood requires a previous intimate knowledge of the normal child at the various periods of its growth and development and without an intimate acquaintance with the morbid tendencies which are peculiar to each of these periods, the unstable equilibrium, the varied and irregular disturbances and peculiar reactions of the child will lead the surgeon into error. There is only one condition under which the surgeon can afford to disregard this, and that is, in emergency surgery.

To the child there should be portioned out every safeguard that an adequate surgical history can supply and the surgeon gains much and gives much, who takes cognizance of the child's organism as a whole. This broader view will aid in the discovery and relief of underlying conditions or the avoidance of unpleasant and sometimes fatal complications during a surgical procedure or convalescence.

This leads us to a consideration of the qualifications of the pediatric surgeon. Naturally the first requirement of the surgeon who hopes to deal efficiently with the surgical affections of children, is a broad clinical experience with surgical conditions and a perfection of technique which has been acquired through actual contact with many cases.

This very clinical experience will teach him that an operative procedure in the very young child requires more preliminary planning, more rapid operating, and infinitely more gentle handling than a similar procedure in an adult. To this knowledge which he already possesses of the details of scientific surgery he must add a further knowledge of and love for children.

There are two ways in which the surgeon may meet the requirements: First, by acquiring a sufficient knowledge of children and their diseases; something that cannot be entirely learned from books, but like his operative skill is acquired through years of experience, and, second, by making use of the trained pediatrist. In fact, if the operative precision and the courage of the skilled surgeon were more often coupled with the knowledge and judgment of the skilled pediatrist the surgical results to the child, as exhibited in diagnosis, treatment, morbidity and mortality, would be better than they are at present.

The writer would not be misunderstood as claiming that every so-called "surgical child" needs the attention of a pediatrist, but in a large number of instances a twofold proposition presents itself.

The attempt of the surgeon to cope with a surgical procedure with which he is entirely familiar in a being with which he is unfamiliar is often as disastrous as would be the attempt of the pediatrist to cope with a surgical procedure with which he is unfamiliar in a being with which he is entirely familiar.

It is well-nigh time that we appreciate and recognize the fact that quantitative considerations are not the only or the chief ones in the surgery of childhood. Recognizing the added difficulties of technique which are offered by the smaller tissues is not sufficient.

We have yet to deal with the larger problem of the entirely different response and reaction of the child's immature organism to injury, disease or infection. And this problem is not a settled one, for

*Read at a meeting of the Medical Association of the Greater City of New York, April 15, 1912.

with the different periods it is an ever-changing one, so that under some circumstances disease or operative interference are tolerated well and under some conditions, as in healing, the child has an advantage over the adult, while under other circumstances a minor interference or injury is fraught with real danger to life.

Further than this there exist during childhood certain factors which have no parallel in adult life. We might mention as types of these the status lymphaticus, the tendency toward early and severe shock from slight causes and the ramifying influences of rickets or other nutritional disease.

Status lymphaticus is greatly dreaded by surgeons and anesthetists alike. And why? Its indefinite etiology, its insidious symptomatology, and its sudden termination of life make it so. And yet if adequate surgical histories were taken it would often be shown that certain children who have been subjected to previous slight injuries have suffered intense shock which was out of all proportion to the injury received. Certainly such a history gives us a clue at least and also a strong and timely warning that any surgical procedure or the administration of an anesthetic will be unpleasantly dangerous. Just as soon as the immediate institution of some surgical procedure is made the paramount consideration in a child whether it is in need of it or not, there is brought into play other factors which may be made more serious by interference or which markedly influence the end results and finally force themselves to attention, although they are treated with scant consideration in the beginning.

It is not a common practice among surgeons to obtain any detailed history of the possibility of exposure to infection previous to an elective operation and as a matter of fact, many have admitted that they are not familiar with the lengths of the various incubation periods of the exanthemata to which children are so constantly exposed. And yet we have observed several serious and some disastrous results which could have been entirely avoided if such a history had been secured in time. It can be readily appreciated that the development of a disease like measles, scarlet fever, diphtheria, or pertussis closely following an operative procedure or occurring during convalescence will materially influence the results. And it is not alone that the complication is of itself serious, but all infections in children are more severe when there is the added depression which must be consequent upon any surgical procedure.

The writer recalls the case of a child with a mild pertussis, from which it had practically recovered. A chronic appendicitis existed and the surgeon insisted upon immediate operation. In this latter proposition he was absolutely right; a chronic appendicitis in a child can only be safely treated by appendectomy and under ordinary circumstances the right time to do it is as soon as it is recognized. But in this instance an unusual element existed; the child was of the neurotic type and was recovering from pertussis. No consideration was accorded to the fact that for several weeks after recovery a child with pertussis is very liable to experience more or less violent spasmodic coughing when something happens to depress it and this is most certain to occur in the neurotic child.

Shortly after the operation the depression of the child's system was such that the spasms of coughing became more and more severe and frequent and the abdominal wound was forced open. For several days the outcome was uncertain, and although the technique was perfect and viewed as a surgical proposition alone, the need for operation was present, a fatal termination was nearly the result, because there was a disregard for other factors.

It is not alone the presence or possibility of other disease being added as a complicating factor, but there are many children who come to the surgeon for the correction of a deformity, the removal of a slow-growing growth or an elective procedure, who are not in good physical condition to stand the ordeal well. These children are operated upon and they do not die. They recover, but what is often the result? The operative procedure suffers in repute because there is not the return to normal efficiency which the parents expected.

This could all be avoided by competent attention to these details before the operative procedure. Such cases leave the care of the surgeon supposedly cured and find their way into the care of some one else afterward and in the minds of the parents the operative procedure has proven a partial failure.

Even under conditions that are apparently entirely surgical the surgeon cannot safely feel the same security in his ability in cases occurring in childhood as he does in adult life. Take as an illustration of this the recognition of acute and chronic appendicitis in children.

In the former instance it is commonly diagnosed when it does not actually exist. This is probably so because the question of appendicitis is so constantly forced on our attention that it is usually the first thing thought of when the symptom of right-sided abdominal pain is presented.

And yet abdominal pain is one of the least important symptoms of acute appendicitis in children. Why give so much prominence to this one disease which causes abdominal symptoms and disregard those less common but just as important other diseases which are frequent in childhood? In looking over my records for the past year I fail to find but one instance in which acute appendicitis actually existed and was not diagnosed either tentatively or positively before my observation, while upon the other hand, there are sixteen instances in which it was positively diagnosed and did not exist. In twelve of the cases the condition present was right-sided lobar pneumonia, in two, an acute indigestion, in one, intestinal parasites, and in another an overdistended bladder. The large proportion of cases of lobar pneumonia should be noted. The writer has known of many of these cases being operated upon and a normal or nearly normal appendix found. Then within a short time the child developed a lobar pneumonia which was attributed to the anesthetic. These are instances of mistaken diagnoses; made because the fact is overlooked that in children the physical signs in the chest are not always necessary for the recognition of the disease. For these errors, however excusable they may be in any given case, the surgeon and not the anesthetist should assume the responsibility.

A large number of the cases of chronic appendicitis in children are unrecognized as such, but are designated as acute exacerbations of some chronic digestive disturbance or are lightly dismissed under the pleasingly popular misnomer of "bilious attacks." If these children were thoroughly examined between their attacks it would often be found that there is a thickening about the appendix which would clear up the etiology and suggest the only adequate measure of relief—opportune appendectomy.

The surgeon does not see many of these cases because the indefinite symptomatology does not emphasize the need of adequate surgical intervention. It is distinctly a problem for the general practitioner, for it is he who observes these cases before they suffer an acute attack, but we should all heed the warning: "Be suspicious of all so-called bilious attacks in children."

And so we might go on and recite experience after experience, but enough has been mentioned to emphasize the following facts. That inaccurate diagnoses in the surgical affections of children are more common than in adults and that incomplete diagnoses are the rule rather than the exception and that both of these are brought about by the lack of an intimate knowledge of children in general and the way in which they react to disease or injury. Now, while it is not so in every instance, yet it is a common experience that an accurate and complete diagnosis is essential to the institution of adequate treatment and that as a consequence children suffer in treatment from too much or too little surgery. The inevitable result is that as far as operative relief is concerned to the lay mind its results are questionable in children.

When an operative procedure is advised in childhood, and this applies with particular force to those of tender years, it is common to observe that there is inadequate preparation of the peculiar patient and his surroundings as is evidenced by the previous examination and observation; that there is inefficient operative care because no special attention is paid to the planning for rapid work, brief and skillfully administered anesthesia, the most efficient assistants and the maintenance of body heat, and last, but far from least, an unpleasant post-operative convalescence is commonly the end of an otherwise perfect procedure because the child has not been understood and safeguarded at every point.

Post-operative complications are not always directly due to the surgical procedure; a prolonged post-operative convalescence is rarely a surgical proposition. Some of our surgeons must realize that they are not fully competent to handle the whole problem because at some time during its course a definite surgical proposition forces itself as an issue.

The surgery of childhood is related to general surgery in about the same manner as the practice of pediatrics is related to that of general medicine. Old traditions and former methods still connect them in the minds of many, but the modern surgeon with all of his courage, skill and mastery of technique, occasionally needs the services of the trained pediatrist and the writer is firmly convinced that the morbidity and mortality among children would be materially reduced if we all gave a much larger place in our deliberations and activities to the broad-minded and widely knowledged general practitioner.

42 Gate Avenue.

A CASE OF DRY NECROSIS OF THE MASTOID CELLS.

By OSCAR WILKINSON, A.M., M.D.,

WASHINGTON, D. C.

On October 26, 1911, Miss A. H., aged 25 years, came to me complaining of terrible headaches, pain back of her eyes, back of her right ear, and at the base of the head. In order to eliminate any ocular association of these symptoms I corrected her error of refraction which consisted of myopic astigmatism; refraction,—50 cyl., axis 180, and at the same time corrected a degree of left hyperphoria. This relieved her of the frontal and basilar headaches, but she still complained of pain in the right ear and especially of pain in and tenderness of the right mastoid bone which was so severe as to cause nausea and vomiting and deprived her of sleep. The drum showed some scars of old perforations of which she gave a history of suppuration at times between the ages of 8 and 15 years but no suppuration had taken place for ten years. She had had this post-auricular pain on several occasions, it lasting for a month or six weeks before being relieved. For twelve months she had had some pain and sensitiveness about the mastoid, and had consulted one or two aurists in regard to this, and had received some middle ear treatment, but without obtaining relief.

I gave her calomel and saline laxatives and ordered ice and counterirritants, placed her in bed, gave her quinine, her temperature being 100° at about the same hour every day which led me to think it might possibly be of malarial origin. Her temperature varied from 98.6° to 100° for two weeks before the operation. I operated with some degree of hesitancy, owing to the fact that the pain and tenderness on pressure and enlargement of a few superficial lymphatic glands were the only symptom of inflammation of the mastoid. I expected to find sclerosis of the mastoid tip with an associated neuralgic condition with a possibility of pus in one of the cells.

On opening the mastoid, the external layer of the bone was found to be more brittle but not harder than the normal tip; there was an entire absence of oozing from the bone. I found the cells dry and friable, apparently as dry as those of a skeleton and much more friable. Not a drop of blood was found from the first chiseling of the first layer of the bone until the aditus ad antrum was reached. There was no pus in any of the cells.

Recovery was uneventful, the symptoms entirely disappearing after the operation.

1408 L Street, N. W.

Infantilism.—M. de Biehler states that infantilism is a condition in which there is an arrest of development and a persistence of childish characteristics, so that the person appears younger than he really is. There are two types of the disease, one in which the individual appears to be a little man instead of a child, with enlarged thorax and small pelvis, and no disproportion between the head and the body; the hairy and genital systems are undeveloped. There may be either anorchidism or cryptorchidism. There are lesions of the heart, vessels, thyroid, and sometimes the eyes. The nervous system is undeveloped and neuroses, hysteria, or chorea may be present. The second form is accompanied by the symptoms of myxedema, with insufficiency of thyroid and hypertrophy of the hypophysis and thymus. Radioscopy shows an arrest of development of the epiphyses and retardation of the points of ossification. Myxedematous infantilism is due to thyroid insufficiency. The thyroid has some influence on the development of the genital organs, and these are also diseased. In the first type the causes mentioned are anangioplasia, alcoholism, tuberculosis, bad hygiene, syphilis, and malaria. In dystrophic infantilism the ossification is normal; in myxedematous infantilism there are bony changes. Contraction of the pelvis and thorax are accompanied by arrest of development of the contained organs. There is no cure for infantilism; all that one can do for these children is to nourish and educate them and protect them from injuries.—*Archives de Médecine des Enfants.*

MEDICAL RECORD.

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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THE CONGRESS FOR GENEALOGY, HEREDITY, AND REGENERATION

THIS new movement as exemplified in the recent congress held in Germany appears from the interest excited in high scientific circles to be on a somewhat different plane from some of the movements in the interest of eugenics so-called. It embodies the scientific features of the latter but is thus far devoid of a propaganda, and is in fact avowedly committed to a purely scientific research. According to the brief report of the congress in the *Münchener medizinische Wochenschrift* for May 7, a representative body of medical men, scientists, jurists, and genealogists were assembled. To cite a few only of the names best known among the participants we quote Ostwald the physicist, Alsheimer the alienist, and Kurella the disciple of Lombroso. It readily appears that the chief if not the sole reason for the existence of the Congress is the desire to resubmit all our older learning concerning heredity to Mendelian tests. Nothing permanent can be done in the way of race regeneration until we can ascertain to what extent certain outcroppings are inevitable. Of what use to breed eugenically if a Mendelian recessive quality entirely unsuspected in the ancestry is to crop out in a child? Thus our family genealogies must be rewritten, and this can hardly be done in a day, and at best only in prominent families. But a system of records for future use can and should be set in action at once, in connection with public schools, insurance, the army, etc.

The newer movement is in entire sympathy with the Eugenic Movement in England and elsewhere so far as this is carried out along the lines proposed by Galton and his disciples. It would naturally be opposed to hasty and otherwise inadvisable attempts to regenerate the race before the accumulation of necessary data. Certain data from the past are available from the study of the ordinary records of parishes, etc., such as must form the basis of ordinary genealogical research. From these it appears at the outset that families like individuals do not bear prosperity well and deteriorate as their material resources improve, and also that the menace from mating of the unfit is not so great as it might at first thought seem, because here the death rate in the resulting progeny is phenomenally high.

PARASITISM OF THE DEMODEX FOLLICULORUM IN THE DOG

WHEN the demodex was originally discovered in the sebaceous follicles of the face it was very naturally supposed that it was responsible, in part at least, for the occurrence of diseases in those structures, notably comedones and acne. All attempts, however, to show pathogenicity were attended with failure and the conclusion was accordingly reached that the demodex was an absolute saprophyte. Later it was shown that acari practically not distinguishable from the demodex were pathogenic in the dog, and it became apparent, therefore, that differences in pathogenicity might depend on something widely removed from mere morphology, just as in the case of much more lowly organized forms of life.

There has recently been formed in Germany an admirable society for the study of comparative pathology, entitled the Vereinigung zur Pflege der vergeichenden Pathologie in which, possibly for the first time, the leading exponents of human and veterinary pathology in equal representation meet and discuss problems of the utmost importance for mankind—for man must depend largely for his welfare on the complete health of the domestic animals. In a session of this society held last November (*Berliner klinische Wochenschrift*, April 22), an ophthalmologist made the announcement that in trachoma it was possible to find the demodex in such an association that it must be held responsible for the production of some of the secondary effects of that disease. In other words, when the tissues of the eyelids had been sufficiently compromised by the disease trachoma, the parasite became equal to the production of certain lesions which would not have occurred in its absence, and which might consequently be looked on as specific. These lesions represented a perifollicular infiltration of the lanugo hairs and eyelashes.

In discussion Regenbogen stated that he saw annually about 400 cases of diseases in the dog due to the same parasite or one indistinguishable from it. Yet within these limits there were wide differences which appeared to show a very variable pathogenicity by the same species. These differences in pathogenicity very likely depend on differences in the parasite which can be discovered only by prolonged zoological studies. At present there seem to be gross differences in size and shape which may not be accidental. It is of significance clinically that the demodex of the dog has never yet been accused of causing disease in mankind.

THE REPRESSION OF VENEREAL INFECTIONS.

IN all countries of the world venereal affections directly and indirectly lay a heavier toll on the population than any other disease, perhaps, than all other diseases together. It is difficult, almost impossible, to estimate their effects upon mankind. All diseases, with few exceptions, are influenced by venereal infections and its manifestations are protean, insidious, and deadly. Such diseases may be rightly termed the greatest scourge of mankind. Up to re-

cent times, in Anglo-Saxon countries, the venereal infections have been blinked at. The dislike to face this issue squarely is attributed by Anglo-Saxons themselves to the natural reserve of a retiring people, by the inhabitants of other countries to hypocrisy, the wish to pose as more moral than other races. This national characteristic has its drawbacks and advantages. There is no need to blazon forth one's weaknesses or vices, but on the other hand it is folly to try to hide them and to refuse to recognize them, to the detriment of the race. However, in this country at any rate, there has sprung up a tendency to grapple with the matter boldly and no longer to allow self-consciousness and false modesty to work harm. It is freely acknowledged that the canker is at the root of the tree and the only sane course to pursue is to find out the best way to drag it out and as quickly as possible.

In the *Maryland Medical Journal* for May 19, 1912, Lieut. Col. Jefferson R. Kean, Medical Corps U. S. Army, discusses the question and argues that, since prostitution is at the bottom of the evil logically prostitutes should be subject to supervision. Of course, infected men spread disease as well, but certainly as a beginning the regulation of prostitutes should be proceeded with. Unfortunately, in this country of freedom there are strong prejudices against restriction of any kind, even if they be designed for the good of the majority, and women especially are averse to having members of their sex unfairly, as they claim, discriminated against. After all, however, venereal diseases are more widely spread by prostitutes than by any other agency and consequently it seems reasonable to devise and put into effect measures which will tend to prevent this mode of spread.

Kean points out that Norway, Denmark, Finland, Switzerland, and other countries have done away with inscription, casernation, and segregation, yet all are trying to bring about a sanitary supervision of the prostitutes by the health authorities in order to check the spread of venereal disease. In Germany, Austria, France, and elsewhere there is a gradual tendency to break away from the older, more purely police methods of "control" and to substitute sanitary supervision. Finally, Kean thinks that a fair and honest trial of the provisions of a law like the much belabored Page law would be a good beginning of such sanitary supervision, which should be administered without recourse to the police except in the case of those who resist the law. In all parts of America public opinion is aroused with regard to the menace of venereal disease, and it now remains for a widespread movement to be undertaken to fight the evil in a rational manner—whether in the way Kean suggests or not, at any rate in some way.

Interpreters at Ellis Island.

Attention has been called in a previous issue (April 13, 1912) to the necessity of having sufficient interpreters to enable the medical examiners at Ellis Island to converse with any or all incoming aliens, if the inspection for mental disorders is to be in any way effective. It was stated that it was foolish to expect the best qualified alienist to recognize insanity or feeblemindedness when he could not even talk with the person being examined. It was further pointed out that interpreters were needed not only on the primary line inspection but even more in the immigrant hospital and in the medical examining rooms, for the careful and detailed examination of suspects who have been detained. Conditions are still far from satisfactory in this regard, and there seems to be a lack of agreement as to the responsibilty for the appointment of the interpreters. The medical examiners are officers of the Public Health and Marine-Hospital Service, which constitutes a bureau under the Treasury Department. The immigration inspectors are employees of the Department of Commerce and Labor, and are charged by law with the duty of presenting the immigrants for examination and of providing suitable facilities for the conduct of that examination. The interpreters used now in the medical examination are furnished by the immigration officials of the Department of Commerce and Labor, and are sent for individual cases only. Often great difficulty is experienced by the medical examiners in securing any interpreters. The great prominence which has recently been given to mental disorders in aliens, makes it of pressing necessity that every assistance be given the medical examiners in their work. The Marine-Hospital Service has at the Ellis Island station twenty-one medical officers, of whom six have had special training in the diagnosis and care of mental disorders. These six competent alienists are handicapped seriously through inability to talk with many of the immigrants. The decision as to whether the Marine-Hospital Service or the immigration officials should provide interpreters is of purely administrative importance and should no longer interfere with removing this present handicap of the medical officers. The real question at issue is the effective enforcement of the restriction laws. The Marine-Hospital Service is doing good work, and it should be encouraged. It cannot work without facilities and the interests of the country demand that those facilities be provided.

A Double Singing Voice.

At a recent meeting of the Berlin Laryngological Society (*Berliner klinische Wochenschrift*, April 29) a man was shown by Scheier who was able to sing simultaneously in two voices. It was agreed that the phenomenon was absolutely unique. The subject was an opera singer who had long appeared in vaudeville as the "man with the double throat." His normal voice is a baritone of wide range. In singing he is able at will to accompany himself in a higher key. Thus far diplophonia has been regarded as a phenomenon which is purely pathological, and the case in question is the first known exception to this generalization. The singer has been examined by many well known laryngologists, but as yet no light has been thrown on the double voice production. The vocal cords redden during the act. In demonstrating his faculty he sings an air first in the normal, then in the double voice. Unfortunately, when the laryngoscope is in position for study the double singing is produced with great difficulty and the artist would not permit the use of cocaine. The possession of the double voice makes it easy for him to imitate various instruments. As this class of mimetics and also ventriloquists have already been studied profitably with

radiography the thought lay near to use this diagnostic resource in the present subject. The skiagrams showed enough to suggest to Scheier that the double voice was produced by the supraadaction of the vocal cords and epiglottis. Others have suggested that the extra voice might have been produced with the soft palate or ventricular bands. It is highly improbable that it can be produced by the vocal cords alone. As the vibrations cannot be seen their causation must remain conjectural.

Utilization of the Nitrogen of Inorganic Salts by the Animal Organism.

The recent successful demonstrations of the ability of the animal organism to form syntheses from the ultimate cleavage products of protein naturally have prompted the inquiry as to the possibility of utilizing the nitrogen of inorganic salts, notably of ammonia compounds, since similar substances are abundantly produced in the body as a result of catabolic activity. This research is being carried out extensively at the present time by Abderhalden and his students, and doubtless many other laboratories are taking up the subject, which is no less important from the practical viewpoint than interesting in theory. As the recent session of the German Congress for Internal Medicine (*Münchener medizinische Wochenschrift*, May 14) Gruefe announced that it was very probable as a result of his experiments that the animal body could utilize the nitrogen of ammonia and niter. This would not occur under ordinary circumstances but only when there was great nitrogen hunger, as in a rapidly growing puppy when placed on a carbohydrate diet. On several occasions negative N was brought up to equilibrium and even to retention with weight gain by feeding with salts of ammonium. It may not be easy to prove that the N is actually retained as albumin, *i. e.* that a synthesis up to blood albumin has occurred. It is possible that urea after it has been split off from food albumin is in part utilized—as has often been suggested—for if the body could utilize exogenous ammonia it ought also to be able to use its own urea.

News of the Week.

Libel Award.—A libel suit of interest to the medical profession has just been concluded in London with the award by the jury of damages amounting to $10,000 to Dr. Robert Bell, who had sued Dr. E. F. Blashford, director of the laboratories of the Imperial Cancer Research Fund, and the *British Medical Journal*, the former as the author and the latter as the publisher of an article entitled "Quacks and Quackery." The plaintiff charged, and the court very properly sustained his contention, that he was libeled in being accused of quackery and of preying on the credulity of the public in connection with his treatment of cancer by non-surgical methods.

Plague in Trinidad.—The State Department of June 14 received dispatches announcing the appearance of the plague at Port of Spain, Trinidad. Three deaths had occurred at that time.

Urge Bronx Hospital.—A recent report of the Committee on Public Health, Hospitals, and Budget, of the New York Academy of Medicine urges the necessity for the establishment in the Bronx of a hospital for contagious diseases. At present patients suffering from the contagious diseases must be sent to either the Willard Parker or the Kingston Avenue Hospital, Brooklyn. The erection of such a hospital has been opposed by the real estate owners in the neighborhood of the two sites owned by the Department of Health and available for the purpose, who propose the use of North Brother Island. This the committee opposes on the ground that the island is needed for other special hospitals. The rapid increase of population in the Bronx makes the speedy determination of the question desirable, and the committee urges that the money already appropriated by the Board of Estimate be used for the erection of such a hospital on a tract of land in the northern part of the Borough.

New Hospital Planned.—The Federation of Russian-Polish Hebrews of America has prepared plans for the erection of a hospital, to be known as the Beth David Hospital, on the northwest corner of Columbus Avenue and 113th Street, New York. The hospital will be an eight-story building and it is estimated cost about $150,000. The Federation has already established a temporary dispensary at Lexington Avenue and 115th Street, and this will be maintained until the new hospital is ready for occupancy.

Doctor by Aeroplane.—Dr. P. L. Alden of Hammondsport, N. Y., is perhaps the first physician to make use of an aeroplane as a quick means of transportation in answering an emergency call. The doctor was called from his home to Urbana, N. Y., to attend an accident case and made the trip across Lake Keuka in a hydro-aeroplane in record time.

Ban on Public Drinking Cup.—Kentucky is the latest State to fall into line, and on June 10 the public drinking cup was banished from within her borders, the recently enacted statute prohibiting its use becoming operative on that date.

Dr. Eugene Hoffman Porter, Commissioner of Health of the State of New York, received the honorary degree of Doctor of Public Health from Syracuse University at the commencement exercises held on June 12.

Dr. John B. Deaner of Philadelphia received the honorary degree of Doctor of Laws from Franklin and Marshall College at its recent commencement.

Death Rate in London.—During the past six years the health of London has greatly improved, the death rate having fallen 19 per cent, according to statistics recently published. It is computed that this means the saving of the lives of 28,000 Londoners each year. Typhus fever has been banished, smallpox is almost negligible, and the mortality from typhoid fever is very much decreased. On the other hand, however, it is stated that deaths from tuberculosis have increased from 26 to 33 per cent. and that infant mortality has increased 30 per cent.

Preventive Legislation.—Two bills recently introduced into the House of Representatives are designed to regulate the trade in habit-forming drugs. One proposes that the matter should be regulated by international agreement; the other provides for an internal revenue tax of five cents a pound on opium, chloral, and conobis, and a quarter of a cent a pound on cocol leaves. It further provides that importers and dealers in the drugs named shall register with the Commissioners of Internal Revenue, and that the former shall pay a license fee of fifty dollars, and the latter a license fee of ten dollars.

Medical Graduates.—Eighty-two students, two of them women, received the degree of Doctor of Medicine from the Maryland Medical College, Baltimore, on June 3, the exercises being conducted by

the Dean of the College, Dr. W. S. Smith. Congressman William Sulzer of New York made the address to the graduates.

Dr. Samuel J. Meltzer of the Rockefeller Institute, New York, was the speaker of the evening at the annual commencement exercises of the St. Louis University School of Medicine, on May 31, when seventy-six students were graduated.

The College of Physicians and Surgeons of Chicago graduated 145 students at its annual commencement on June 4. The class was presented by the dean of the college, and the degrees were conferred by the president of the University of Illinois, of which the college is a part.

Cornell Medical College.—The class of 1913 which was graduated on June 7 was the first to be sent forth since the college made the bachelor's degree a pre-requisite to the M. D. degree, and numbered only eleven, of whom two were women. Of these all but one has received a hospital appointment, four going to Bellevue Hospital, two to the New York Hospital, two to the Rochester General Hospital, one to the Methodist Episcopal Hospital of Brooklyn, and one to the Erie County Hospital, Buffalo, N. Y.

Unusual Surgical Condition.—A female patient in the Pennsylvania Hospital for the insane recently attempted suicide by introducing a steel crochet needle into her chest. She survived the injury for five days, and on post mortem examination it was found that the needle, six inches long and one-eighth inch in diameter at its thickest, and octagonal in shape, had passed through both ventricles of the heart and had pierced the left lung.

Report from Canal Zone.—The Department of Sanitation of the Isthmian Canal Commission reports that during the month of April, 1912, there were 48 deaths from all causes among employees, of which 37 were due to disease and 11 to violence, making an annual average per thousand of 8.77 and 2.61, respectively, or a total of 11.38. In segregating according to race, the annual average death per thousand among white employees was 5.74, among black, 10.48. During the same month of 1911 the total average was 9.38. There were 9 deaths from tuberculosis and 4 from pneumonia, 4 from heart disease, 2 from chronic nephritis, and 1 each from dysentery, estivo-autumnal malaria, hemoglobinuric fever, and typhoid fever. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

Comparative Pathology.—The first International Congress of Comparative Pathology will be held at the Faculty of Medicine in Paris, France, October 17 to 23, 1912, having been organized by the Société de Pathologie Comparée. The subjects for discussion will include the diseases of men and animals and the connection existing between the diseases of different species, and also the possible connection between certain diseases of plants and of animals. The general secretary of the congress is M. Grollet, 42, Rue de Villejust, Paris, to whom all correspondence should be addressed.

Charitable Bequests.—By the will of the late Elizabeth Wharton McKean, of Philadelphia, bequests are made as follows: Children's Hospital, $1,500; Germantown Hospital, $5,000; Maternity Ward of the University Hospital, $3,000; St. Christopher's Hospital, $800.

By the will of the late Samuel Kohn, of Philadelphia, the sum of $50,000 is devised to the Jewish Hospital for the erection and equipment of a surgical building to be known by the name of the testator.

Dr. Charles F. Boldnan has removed to 251 Fort Washington Avenue, New York City.

National Society of Anesthetists.—On June 6 at Atlantic City, during the meeting of the American Medical Association, and following a symposium on anesthesia, the National Society of Anesthetists was organized. Prof. Yandel Henderson of Yale, chairman of the commission on anesthesia of the A. M. A., occupying the chair, those assembled for the symposium acting as a committee of the whole, proceeded to organization and elected the following officers for the year 1912-13: *President*, James T. Gwathmey of New York; *Vice-Presidents*, Charles K. Teter of Cleveland, F. H. McMeechen of Cincinnati, Yandel Henderson of New Haven; *Secretary*, William C. Woolsey, 88 Lafayette Avenue, Brooklyn, N. Y.; *Treasurer*, Harold A. Sanders of Brooklyn. The constitution and by-laws were ordered to be drawn by the executive committee and submitted to the society at its next meeting for adoption; all names submitted for membership, if qualified in the estimation of the executive committee, shall be considered as charter members if presented within a period of sixty days and accompanied by the levied dues of three dollars. The National Society of Anesthetists in this notice calls all those who are actively interested in this work to join its ranks and assist in developing the subject of anesthesia to greater perfection and more uniform safety.

Medical Club of Harrisburg.—At the annual meeting of this club, held recently, the following officers were elected: *President*, Dr. Samuel Z. Shope; *Secretary*, Dr. J. Harvey Miller; *Treasurer*, Dr. John A. Sherger.

Willimantic (Connecticut) City Medical Society.—The following officers were elected at the annual meeting on June 5: *President*, Dr. Louis Irving Mason; *Vice-President*, Dr. Frank E. Guild; *Secretary-Treasurer*, Dr. Laura H. Hills.

Pan-Missouri Medical Association.—The third annual convention of this association was held in St. Louis recently, when officers for the ensuing year were elected as follows: *President*, Dr. J. M. Harris, Sedalia; *Vice-Presidents*, Dr. William H. Mansfee, St. Louis; Dr. T. J. Jackson, St. Charles; Dr. L. B. Bluitt, East St. Louis; *Secretary*, Dr. J. F. Shannon, Kansas City; *Corresponding Secretary*, Dr. F. S. Thurman, St. Louis; *Treasurer*, Dr. O. C. Queen, Hannibal.

Northern Medical Society.—A regular meeting of this society will take place on Friday, June 28, 8.30 P. M., at the Bronx Hospital Dispensary Building, 1385 Fulton Avenue (near 170th Street). The following papers will be read: "Dreams as an Aid to Diagnosis and Treatment," A. A. Brill; "Hormones and Opotherapy," M. Aronson; "Demonstration (on living animal) of the Direct Method of Blood Transfusion," A. L. Soresi; "Tics and Their Treatment: Education *vs.* Hypnosis," J. H. Leiner.

Obituary Notes.—Dr. John Fife of Red Bluff, California, a graduate of the New York University Medical College in 1882, a member of the American Medical Association and of the California State and Tehama County Medical Societies, died at his home on May 29, aged 52 years.

Dr. Harriet C. Hinds of East Orange, N. J., a graduate of the Eclectic Medical College of the City of New York in 1877, and emeritus professor of pediatrics in the same institution, died at her home of paralysis on June 5.

Dr. JOHN COWAN BOYLE of Dansville, Ky., a graduate of the University of Louisville, Medical Department, in 1878, and a member of the American Medical Association and the Kentucky State and Boyle County Medical Societies, died at his home suddenly on May 26, aged 63 years.

Dr. EDWIN T. WOOD of Dansville, Ky., a graduate of the University of Buffalo, Medical Department, in 1888, and a member of the American Medical Association and the New York State and Livingston County Medical Societies, died at Bordeaux, France, on June 7, aged 52 years.

Dr. MYRON W. ROBINSON of Norfolk Tregaron, Conn., physician in charge of Fitch's Home for Soldiers and medical director of the Department of Connecticut, Grand Army of the Republic, a graduate of the Berkshire Medical College, Pittsfield, Mass., in 1861, a surgeon in the United States Army during the Civil War, a member of the American Medical Association and the Connecticut State and Fairfield County Medical Societies, died suddenly at his home on May 27, of heart failure, aged 73 years.

Dr. EDGAR REED HAWLEY of Chicago, Ill., medical director of the Illinois Life Insurance Company, a graduate of the University of Illinois, College of Medicine, in 1892, died in the Chicago Hospital on May 26, from pneumonia, aged 48 years.

Dr. RICHARD E. MCVEY of Topeka, Kan., a graduate of the Rush Medical College, Chicago, in 1861, professor of skin and venereal diseases and of clinical medicine in the Kansas Medical College, Topeka, and a member of the Kansas State and Shawnee County Medical Societies, died at his home on May 23, aged 85 years.

Dr. JAMES MCCHESNEY, a retired physician of Troy, N. Y., a graduate of the Castleton Medical College, Vt., in 1849, died at his home on June 4, aged 89 years.

Dr. BENJAMIN F. BUTCHER of Philadelphia, a graduate of the Pennsylvania Medical College, Gettysburg, in 1861, a veteran of the Civil War, having been commended for daring and bravery, and for forty-five years physician to Moyamensing Prison, died at his home of apoplexy on May 31, aged 73 years.

Dr. CHARLES H. LIEBERT of Philadelphia, a graduate of the Philadelphia University of Medicine and Surgery in 1878, died at his home on May 20 of pneumonia and heart disease, aged 70 years.

Dr. ROBERT F. NOYES of Providence, R. I., a graduate of the College of Physicians and Surgeons, New York, in 1873, formerly on the staff of the Rhode Island and St. Joseph's Hospitals, a member of the American Medical Association, and a member and former president of the Rhode Island State Medical Society and the Providence County Medical Society, died at his summer home in Matunuck Beach, after a long illness, on June 2, aged 62 years.

Dr. NORMAN FREDERIC CUNNINGHAM of Dartmouth, Nova Scotia, a graduate of the Bellevue Hospital Medical College, New York, in 1877, and professor of medicine in the Dalhousie Medical College, Halifax, died at his home after a short illness, on June 1, aged 63 years.

Dr. JOHN MARKS STEWART of Chesley, Ontario, a graduate of Queen's University, Medical Faculty, Kingston, Ontario, in 1882, died at his home on May 25, aged 54 years.

Dr. MAX AXELROOD of Vancouver, Wash., a graduate of Cooper Medical College, San Francisco, in 1881, died at his home of paralysis on May 22, aged 63 years.

Dr. ROBERT A. MILLER of Sebastopol, California, a graduate of the Texas Medical College and Hospital, Galveston, in 1871, an officer in the Confederate Army during the Civil War, died at his home on April 20, aged 81 years.

Dr. JOHN H. MILLER, a retired physician of Littleton, Colorado, a graduate of the Jefferson Medical College, Philadelphia, in 1840, and for many years a resident and practitioner of Denver, died at his home on June 1, aged 92 years.

Dr. JOHN ELY BREADY of Dubuque, Iowa, a graduate of the Jefferson Medical College, Philadelphia, in 1878, a veteran of the Civil War, having interrupted his medical studies begun at the College of Physicians and Surgeons, New York, to enlist in the United States Army, and since 1880 assistant surgeon in the United States Marine-Hospital Service, died at his home on June 5, after a long illness, aged 72 years.

Dr. EDWARD FIELD PARSONS of Thompsonville, Connecticut, a graduate of the College of Physicians and Surgeons, New York, in 1858, died at his home on June 13, aged 79 years.

Dr. JAMES MCFARLAND EVANS of Salem, Iowa, a graduate of the Cleveland Homeopathic Medical College in 1868, a veteran of the Civil War, died at his home after a long illness on June 6, aged 70 years.

Dr. THOMAS JEFFERSON SATCHER of Columbus, Ohio, a graduate of the University of Louisville, Medical Department, in 1887, died suddenly at his home on June 5.

Dr. SAMUEL B. HUNTER of Machias, Maine, a graduate of the Jefferson Medical College, Philadelphia, in 1855, surgeon in the Eleventh Maine Volunteers during the Civil War, and a member of the American Medical Association and the Maine State and Washington County Medical Societies, died at his home on June 2, aged 82 years.

Dr. FYFIELD H. LONGLEY of North Platte, Nebraska, a graduate of the Eclectic Medical College of Cincinnati, Ohio, in 1867, and of the College of Physicians and Surgeons, Keokuk, Iowa, in 1876, formerly a member of the Board of Regents of the University of Nebraska, and for several terms coroner of Lincoln County, and a member of the Nebraska State and Lincoln County Medical Societies, died at his home on May 24, aged 70 years.

Dr. CHARLES W. DOWNS of Omaha, Nebraska, a graduate of the Bennett Medical College, Chicago, in 1888, died at his home on June 2, aged 54 years.

Dr. PURNELL W. ANDREWS of Camden, New Jersey, a graduate of the Homeopathic Medical College of Pennsylvania in 1867, died at his home on June 4, aged 65 years.

Dr. JAMES ROOT FAIRBANKS of Amsterdam, New York, a graduate of the Berkshire Medical College, Pittsfield, Massachusetts, in 1866, consulting surgeon to the Amsterdam City Hospital, a member of the American Medical Association, the New York State and Montgomery County Medical Societies, and the Amsterdam City Medical Society, and a veteran of the Civil War, having served as assistant surgeon in the Tirty-fourth Massachusetts Volunteers, died at his home of pneumonia on June 14, aged 69 years.

Dr. GEORGE PELL CARMAN of Brooklyn, New York, a graduate of the now-extinct United States Medical College of New York in 1870, died at his home from diabetes, after a long illness, on June 8, aged 72 years.

Dr. Jerome Hilton Waterman of New York, a graduate of the Harvard Medical School, Boston, in 1893, president of the Harvard Medical Society, and a member of the New York Academy of Medicine, the American Orthopedic Society, the New York State and County Medical Societies, and the Society of the Alumni of the City Hospital, and attending surgeon to the Hospital for Ruptured and Crippled, died at his home on June 9, aged 41 years.

Correspondence.

FAILURE OF THE ROENTGEN RAY IN PROSTATIC HYPERTROPHY.

To the Editor of The Medical Record:

Sir:—Having for some years suffered from prostatic hypertrophy; having tested the various physical agents, including the *x*-ray, and finally having been completely relieved by surgery, I think it a duty I owe to the profession and to the victims of this wretched condition, that I briefly give my experience, especially with reference to the *x*-ray.

The so-called wave current obtained from the static machine and the current of high frequency applied through an ordinary rectal vacuum tube, I was able to manage myself, but after many trials and with no permanent relief, I reluctantly abandoned them. Slightly encouraged by reports of the efficiency of the *x*-ray in this condition, I applied to my friend, Dr. Sinclair Tousey, who kindly agreed to make the test. With thoroughness and skill he gave me some twenty-eight exposures. Each exposure was of seven minutes' duration. The method was to give two treatments a week until seven had been administered, and after an interval of several weeks to begin again.

The results were entirely negative, and a few months after I had discontinued the *x*-ray, Dr. J. Bentley Squier operated by his usual method (suprapubic), which was followed by complete and permanent relief. It seems to me that this case shows as much as any single case can, that the treatment of prostatic hypertrophy by the *x*-ray deserves no greater consideration than does that other electrotherapeutic fiction, the resolution of urethral stricture by the galvanic current, since a careful examination of the removed gland showed that the various methods employed had failed to affect its structure in the slightest degree. In conclusion I may be allowed to say that I would by no means have it understood that I am not now as always a firm believer in the exceeding great value of physical methods of treatment, but I do deprecate the extravagant and ill-considered claims of special pleaders, whose aim too often seems to be not truth, but self-exploitation.

A. D. Rockwell, M.D.

New York

PRECAUTION NECESSARY IN THE TREATMENT OF CARCINOMA BY SELENIUM.

To the Editor of the Medical Record:

Sir:—Different selenium compounds are efficacious in malignant tumors, but to get satisfactory effects it is necessary to have experience in the handling of them. Selenium transforms carcinoma and sometimes sarcoma into fibroma, and then the fibroma may be a more satisfactory object of the surgeon's attention than the previous malignant tumor. The first effect of selenium on the tumor is softening and destruction of the parenchymatous part. There is some edematous swelling of the softened part sometimes with pain in the softening process, lasting about three days. This swelling has caused trouble in rare cases by compression of the esophagus in carcinoma of the cervical glands in such a way that the administering of food became impossible. The latter effect is that the stroma of malignant tumors is changed to dense scar tissue which subsequently firmly contracts. In a case of carcinoma of the cardia the patient could not take food because of constriction of the esophagus by the scar. These few points are very necessary to be observed. The practical use of selenium in the case of man needs more experience than the treatment of artificial mice tumors on external organs. The basis of carcinoma metabolism is decrease of oxidation, especially of sulphur. The chemical effect of selenium is an increased oxidation, especially of sulphur.

F. von Oettle, M.D.

726 East Fifty-eighth Street.

MODIFICATION OF COW'S MILK.

To the Editor of the Medical Record:

Sir:—In response to my comment on the milk formula Dr. Helfgott accuses me of not having consulted someone as to the exact percentage of proteids in whole cow's milk. It is regrettable that Dr. Helfgott did not even consult his own writing before attempting his reply. He based his calculations on 4 per cent. proteid. To obtain the 7½ ounces whole milk Dr. Helfgott divided 30—total percentage of proteids in the mixture—by 4—the proteid percentage, according to his statement, in whole cow's milk. To be exact, Dr. Helfgott had to divide 30 by 3.3 and he would get about 9 or 10 ounces whole milk instead of 7½. The quantity of cream to be added for the supply of the missing fat would also be changed thereby. Assuming that Dr. Helfgott consciously and purposely took the figures 4, 4, 4—proteids 4, fat 4, sugar 4—to avoid the complication of fractions and to facilitate his calculations, I accepted his figures and commented merely upon his formula and his calculations. Dr. Helfgott says: "Two pint bottles of milk cost as much as one quart bottle." How does Dr. Helfgott expect to get 20 per cent. fat in the top 4 ounces of a pint bottle of milk after standing? The total percentage of fat in 16 ounces is: $16 \times 4 = 64$; the top 4 ounces 20 per cent. would contain: $4 \times 20 = 80$. No more fat can rise to the top than the entire quantity of milk contains! If all the fat in a pint of milk rose to the top 4 ounces there would be only 16 per cent. fat; $64 \div 4 = 16$. To make a mixture, consisting of milk and cream, of any desired percentage composition the quantity of cream has to be substituted for the same quantity of whole milk instead of adding cream to the whole milk obtained. Taking Dr. Helfgott's mixture, the calculations are as follows: What is the total percentage of proteids desired? Multiply the number of ounces in the mixture by the percentage of proteids desired, $20 \times 1.5 = 30$. How many ounces of whole milk would supply the total percentage of proteids? Divide the total percentage of proteids by the percentage of proteids in whole cow's milk $30 \div 3 = 10$. (Chapin and Pisek give 3.2, but the small difference may be disregarded.) What is the total

percentage of fat desired. Multiply the number of ounces in the mixture by the percentage of fat desired, 20 × 4 = 80. What total percentage of fat would be supplied by the quantity of the whole milk obtained? Multiply the number of ounces of whole milk obtained by the percentage of fat in whole milk, 10 × 4 = 40. What percentage of fat is missing? Subtract the percentage of fat that would be supplied from the total percentage of fat desired, 80 − 40 = 40. What is the difference in the percentage of fat between whole cow's milk and the top 4 ounces of one-quart bottle of milk after standing? 20 − 4 = 16. How many ounces of cream do we have to substitute to supply the missing fat? 40 ÷ 16 = 2½. How many ounces of whole milk should we take in addition to the cream? 10 − 2½ = 7½. By adding 1 ounce of milk sugar the desired percentage will always be approximately right. The completed formula is: Whole milk, 7½ ounces; top 4 ounces of 1-quart bottle of milk after standing, 2½ ounces; sugar, 1 ounce; lime water, 1 ounce, and water enough to make 20 ounces.

Louis Mock, M. D.

New York.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

BLOOD PRESSURE—PROPOSALS REGARDING THE FEEBLE MINDED—INSURANCE AND FRIENDLY SOCIETIES—OBITUARIES.

London, May 31, 1912.

The sphygmomanometer has not become popular, I think, among general practitioners, but there are not wanting among its admirers those who predict for it a great future. Experts perhaps attach undue importance to its records, while very busy men find it difficult to devote sufficient time to get the best results from its use. The point was brought before the Medical Society of London by Dr. de Haviland Hall, who held that the instrument was of use, not only for definitely recording blood-pressures, but for revealing increases, which would without it escape detection. He quoted from Lauder Brunton the normal standards in young men as 100 to 120 mm.; in middle life, 125 to 135; above 60, 145 to 150 mm. To show the value of the instrument he took a series of consecutive cases and divided them into 6 groups, thus, with arterial pressure of:

	Cases.	Deaths.
120 mm. or below	55	2
121 to 140 mm.	56	2
141 to 160 mm.	34	1
161 to 180 mm.	19	5
181 to 200 mm.	12	5
Above 200 mm.	17	9

He thought the figures showed that the instrument could afford valuable information as to the patient's condition, not only as to prognosis but also as to treatment—indicating measures for lowering tension while enabling the effect of that lowering to be recorded. He could not, however, omit a warning against the incautious use of vasodilators. Sir L. Brunton said he now used an aneroid manometer comparing it, however, now and then with a mercurial one. He thought the systolic pressure most reliable. Pressure below 100 mm. in a healthy man was usually due to tobacco. If not phthisis was to be suspected. In angina prognosis was better for high than low tension as in the latter death was apt to occur unexpectedly. Absence of worry was most important during [illegible] blood pressure.

Dr. Leonard Hill said the instrument had led to many important physiological observations and he regarded it as an accurate means of taking blood pressures. He remarked that in compensated aortic regurgitation the pressure was greater in the legs than the arms—and that as made at from 100 to 150 mm. Dr. George Oliver said he had of late come to consider the diastolic pressure as precise as the systolic and more valuable. Dr. Gossage thought that though the systolic pressure was to-day most useful the diastolic might to-morrow take first place. For recording the latter Dr. Oliver's instrument was by far the best.

Dr. B. Thorne preferred the aneroid, 42 m., of Hill & Bernard. He noted systolic pressure, point of radial occlusion, area of maximum pulsation (this he termed balance-pressure), and migration of needle. Dr. F. W. Price doubted the value of diastolic figures which were always changing and falling. It was important to know the patient's usual pressure previously—in some it was continually fluctuating. The results of the action of drugs on the pressures in the human subject tended to shake his faith in their importance.

The question of how to deal with the feeble minded can scarcely be said to be neglected considering that there are three bills before the House of Commons at the present time. They are practically based on the report of the Royal Commission. One of them, Mr. Stewart's, has attained to a second reading and been referred to a standing committee. This fact seems to have awakened the government to the possibility of adding to the brief list of their proposals for social reforms; and their own bill in its initial stage again appears on their program. But the third scheme, a much more portentous one offered by Mr. Hills, is still in the way with its 252 clauses and six schedules. It proposes to extend to all defectives the care and protection now given to lunatics and imbeciles under the Lunacy and Idiots Acts. Instead of setting up a new authority it would enlarge, strengthen, and modify the existing Lunacy Commission, renaming it the "Board of Control." Locally the asylum committees of county and borough councils would retain the care, training, protection, and control of the mentally defectives in their several areas. These persons are to be regarded as mentally diseased rather than poor or destitute. Hence provision for them is not to be committed to the Poor Law authorities.

The government bill naturally has a better chance of becoming an act than either of the others, but it would be taking an optimistic view to expect it to survive the present session and the public generally would probably rejoice to dismiss the government with this and other promises of benefits that have been sacrificed to political partisanship. The general opinion seems to be that the government is indifferent to this and other social reforms which they might find the House of Commons ready to support, but as to which they are playing the part of the "dog in the manger."

A number of friendly societies have been holding their annual conferences and of course the Insurance Act has occupied much of their attention. The "attitude of the doctors" toward them has furnished a subject to some of the speeches and the views expressed have been various. The Manchester Unity of Oddfellows is the largest of these or-

organizations and its grand master warned the doctors that Parliament would take away their privileges if they abused them. But he kindly told them they were free to adopt trade union methods. The Ancient Imperial order had a meeting of delegates representing 40,000 Oddfellows and its Grand Master said though no satisfactory settlement had been come to he did not mistrust the act and thought six shillings a generous offer for contract attendance when compared with what had in some cases been paid. In another order the act was held to be most beneficial in regard to maternity and sanatorium benefits. In more than one kindly feeling toward the doctors were expressed, and, while considering their own pecuniary liabilities, grand masters and other officials were willing to pay what would be remunerative, though they found a difficulty in estimating what that might be. You will see there are a number of different Orders of Oddfellows as there are of other organizations of the same kind—clubs as they are commonly called—with strange official names and quaintly termed officers: *e.g.* Order of Rechabites, with its high Chief Ruler; Order of Shepherds, with its High Pastor; the High Sanctuary of the Ancient Order of Druids, with its Chief Druid, and so on. They are not exactly competing societies, as the chief object of all is the same, and in the past they have certainly done excellent work in providing for sickness and old age.

The new hospital for research at Cambridge was opened on the 24th inst. by Dr. R. C. Brown, who spoke of the progress of medical science in the last generation and the prospect of its continuance in the next. Dr. Normans Moore, representing the royal colleges, bid the new hospital welcome and referred to rheumatic arthritis as a subject already worked at. Sir C. Allbutt added that some 4,000 cases of that disease had been recorded, many photos and analyses being made. He spoke also of the benefits conferred by the chief supporters of this work.

The death of Surgeon-General W. Judson van Someren, late of the Indian Medical Service, has taken place at the age of eight-eight. He was an Edinburgh University student and graduated there M.D., in 1844, taking the L.R.C.P. the same year. Taking service in the I.M.S. he became a fellow of the University of Madras and Professor of Anatomy and Physiology at the college. He wrote on various subjects connected with public hygiene.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

MEETING OF THE CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS IN TORONTO.

TORONTO, May 24, 1912.

THE week beginning May 20 was a busy one in Toronto in medical circles and for those interested in matters of public health. On Monday and Tuesday, May 20 and 21, the twelfth annual meeting of the Canadian Association for the Prevention of Tuberculosis was held in the Margaret Eaton Hall, Toronto, and on May 21, 22 and 23 the thirty-second annual meeting of the Ontario Medical Association took place in the new medical building of the University of Toronto.

The meeting of the Canadian Tuberculosis Association was markedly distinctive. The number of papers was commendably few, but what they lacked in quantity was more than compensated by the quality of those presented. The papers were all of interest, while some were exceptionally able and to the point.

The president was Dr. George Adami, Professor of Pathology at McGill University, Montreal. Dr. Adami, it may be mentioned, occupied the presidential chair for the fourth year in succession. In his opening address Dr. Adami commented on the fact that tuberculosis has become a well worn subject and rightly said that, as a rule, speeches and papers dealing with the question are rehashes of what has been spoken or written before. He, however, laid emphasis upon the obvious truth, that the main factor in the production and spread of pulmonary tuberculosis is crowded tenements and filthy dwellings. Although it is true that there is little new to be said concerning tuberculosis and its mode of treatment, yet there were two or three papers read which, if not original, at least touched upon certain phases of the problem in a novel way. These papers will be referred to later.

Dr. D. A. Craig, Lake Edward, Que., urged the need for systematic control of tuberculosis. His address was concerned chiefly with the necessity for notification of the authorities of the existence of cases of the disease. In his opinion a notification system could be carried out successfully. Some of the advantages of such a system were that the sufferer was placed at once in a position to receive attention and the patient became, instead of a source of infection, a focus of prevention.

Mrs. Adam Shortt of Ottawa discussed in a really excellent paper some of the social aspects of tuberculosis. The speaker, among other pertinent remarks, said: "The social aspects of the disease involved the study of heredity, eugenics, alcoholism, the feeble minded, and the insane, as well as industrial conditions, immigration, climate, maternity, infant mortality, the meat and milk supply, and the housing problem." According to Mrs. Shortt, the initial step toward the right basis of action in the prevention of tuberculosis is to have thorough and complete medical inspection of school children. Mrs. Shortt attributed a great deal of the delay and the laxity in grappling with the housing problem in the large cities to two obstacles. She said that there were two great giants greater than humanity, the name of the one being Commercial Interests and the name of the other Political Inexpediency. Perhaps the best paper read at the meeting was that of Dr. Hermann M. Biggs, General Medical Health Officer of New York, who treated of the administrative control of tuberculosis. It is needless to state that this paper simply bristled with points and facts and was fully worthy of the greatest master of administrative control of tuberculosis in the world. But it would be carrying coals to Newcastle to set before American medical readers Dr. Biggs' views on the subject. Dr. R. C. Paterson, St. Agathe, Que., read a paper on the importance of the pretuberculous stage and Dr. E. C. Harding, Montreal, contributed a paper on the value of the dispensary to public health.

Dr. Oliver Bruce, London, Eng., then read a paper which was one of the "bonnes bouches" of the meeting. It goes without saying that the question as to what to do with consumptives after their discharge from a sanatorium is one of the most difficult to be faced. Often, perhaps most often, and certainly too often, the consumptive after leaving a sanatorium is not in a fit state to earn his living by manual labor or, indeed, to follow the profession

or trade in which he was engaged on entering the institution. It compelled to work at an unhealthy occupation, which is frequently the case, he soon has a relapse, and the last state of that man is worse than the first. Dr. Bruce's paper, the title of which was the treatment of pulmonary tuberculosis by means of graduated rest and exercise, was a lucid and illuminating exposition of the manner in which this system was carried out in a sanatorium in England over which he has control. Dr. Bruce laid stress on the point that in order to succeed in the carrying out of the graduated labor method a fair considerable amount of experience is absolutely necessary. For, though not perhaps an exact science yet, it has an entirely scientific basis and is merely an empirical one. A thorough knowledge of opsonins is an important part of the scientific basis. For instance, Dr. Bruce and Dr. Inman found out that the opsonic index varies inversely with the temperature. This is an important point, for in regulating the amount of exercise to be prescribed in graduated labor some guide is necessary, some indication as to the amount of protective substances, which are being elaborated as the result of the exercise. This knowledge enables one to substitute the temperature chart for the opsonic index as a guide. Thus there are two main facts to work on, that the amount of opsonin or antibody in the blood can be raised by exercise and that the temperature chart and feelings of the patient are sufficient guides to an experienced observer as to whether the amount of exercise prescribed is too great or too little. Paterson, the originator of the method, has fixed the danger mark, the point signifying excessive autoinoculation at 99° F. in the case of men and 99.6 F. in the case of women. Dr. Bruce in his paper describes the entire system at length. Rest at first to bring down the temperature, and then the graduated exercise. Dr. Bruce emphasizes very strongly the point that the treatment throughout must be strictly supervised by a scientific physician. The results of the treatment under Dr. Bruce's supervision have been most satisfactory, but he draws attention to the fact that in many respects he has been working under very favorable conditions. The sanatorium with which he is connected is an offshoot or adjunct to the Brompton Hospital for Consumption, and consequently from its 300 inpatients there is little difficulty in choosing those most suitable for treatment. Nevertheless, by this method a large number of patients have been discharged able to undertake the most severe manual labor, and if this can be done under favorable circumstances it would appear that it might be worth while to attempt it in this country and in the United States, where the conditions are not so well adapted to the prosecution of similar methods.

Professor Westbrook, University of Minnesota, read a paper on modern public health teaching and practice in relation to the control of tuberculosis. In the course of his address Professor Westbrook severely castigated the faddists with their remedies and prescriptions. It was necessary to realize, too, that the tendency of the disease to spread had no relation to its severity. In the opinion of the speaker we pay a high price in cash and a higher price in health for the complications imposed by society. In the battle of health it was the man versus the microbe or the man versus the environment. Society planned in terms of the mass. Conditions demanded treatment for and by the individual. We came into the world singly and the health of the individual was of public concern, not of mere individual or family interest. He considered that hospitals and sanatoriums should not be regarded as monuments to their donors or as tributes to their architects, but as workshops to restore health and strength. He deprecated the tendency to migrate to cities and stated as his dictum, "the need to unload our cities." Professor Westbrook also had a fling at the lay press and declared that public support ought to be withdrawn from newspapers that continued to furnish impossible news stories with patent medicine advertisements of charlatans and quacks.

Dr. George D. Porter, secretary of the association, presented the twelfth annual report, in which he reviewed in detail the progress of the campaign against tuberculosis throughout the Dominion. He called attention to this very important fact, that the best results had been shown where there had been cooperation between the Government, the municipalities and the local societies. Dr. Porter described the scope and arrangement of work of the various agencies in each province, but said that it must not be supposed that there were sufficient weapons against tuberculosis, for, while its proper care was of the utmost importance and segregation of advanced cases imperative, the disease could not be properly controlled until they had improved conditions favoring its spread.

Dr. C. D. Parfitt of Gravenhurst read a paper on the care of the patient after leaving the sanatorium, which was esteemed so good by those who heard it that a resolution was proposed and carried that it should be printed and distributed to advance the education of the medical profession and the public on the subject.

On the afternoon of the second day of the meeting a clinic was held by Dr. Parsons at the Toronto Children's Hospital, at which he exhibited some splendid x-ray skiagrams presenting pictures of thoracic tuberculosis in infants and children. After the clinic a reception was given to the members of the Canadian Tuberculosis Association and other guests by the Toronto Heather Club in the magnificent nurses' home at the back of the hospital. The reception was largely attended. It may be said that the Duke of Connaught, Governor General of Canada, was the patron of the meeting, but was unable to attend. The Hon. Adam Beck of London, Ontario, was elected president of the association for the ensuing year.

Progress of Medical Science.

Boston Medical and Surgical Journal.

June 6, 1912.

1. The Method of Science in Clinical Training. J. H. Pratt.
2. The Hastening of Wound Healing by Means of Skin Grafting and the Use of Certain Organic Coloring Matters. J. S. Davis.
3. Chronic Interstitial Nephritis. Acute Indigestion as an Important Symptom. M. Seymour.
4. Post-Typhoid Dyspepsia. A. Bassler.
5. Causes for Failures in Treatments of Chronic Joint Disease and Some Suggestions How Greater Successes Can Be Attained. H. W. Marshall.

2. Skin Grafting.—J. S. Davis states that in a general way grafts may be divided into thin grafts, where only a portion of the thickness of the skin is utilized, as obtained by the methods of Reverdin and Thiersch; and thick grafts, where the whole thickness of the skin is used. This latter division includes whole thickness sessile flaps and whole thickness pedunculated flaps. Grafts may be further classified into: auto. or homo. grafts, where the graft is obtained from the same individual; iso. or hetero. grafts, where the graft is obtained from

another individual of the same species, and zoo grafts, where the graft is obtained from a lower species. The simplest method of obtaining this graft is by means of Reverdin's method of transferring small bits of epidermis and placing them in rows or clusters over the wound. But this method is tedious when a large area is to be covered. The Thiersch method in its various modifications is that which is chosen by the majority of surgeons. Sliding plastic flaps from neighboring parts are of great value in the treatment of certain defects. As regards iso grafts, it is stated that good lasting results may be secured with these if the grafts are obtained and transplanted with the proper technique. Both thin and thick zoo grafts have been used, and a number of successful cases have been reported in the literature. The skin of dogs, lambs, rabbits, guinea pigs, frogs, etc., has been used. The most uniformly successful reports seem to follow the use of skin from a young pig. The author's results with zoo grafts have been disappointing. Most of the grafts would apparently take and would bleed when cut into, but within a few weeks they would melt away. It is interesting that grafts from a negro which have been successfully transplanted on to a white person gradually fade and assume the color of the host, and vice versa. This has been established by a number of observers, and has also been the experience at the Johns Hopkins Hospital.

3. **Acute Indigestion and Chronic Nephritis.**—M. Seymour states that some of the most important symptoms in the earlier stages of chronic nephritis, before compensatory changes have taken place, are those of the gastroenteric system, and present themselves in a mild form of uremia. These mild symptoms of uremia or toxemia, probably resulting from retained poisons due to faulty metabolic changes, may be so slight, and the increase in severity so slow, that the individual does not think his condition serious. He considers himself a chronic dyspeptic. He frequently complains of nausea, has aversion for food, especially for meat; in fact, he has a poor appetite. He takes bicarbonate of soda after his meals. After no indiscretion in eating or drinking, and after no change in his mode of living, he occasionally has what he terms a "frightful bilious headache," accompanied by nausea and vomiting, and severe epigastric pain. This sudden onset of epigastric pain, nausea, and vomiting is often termed "ptomaine poisoning," and similar mistakes in diagnosis are altogether too frequently made. The trouble may clear up in a few hours, or two or three days, and the patient may go on for weeks or months without a return of any alarming symptoms, or, as is often the case, his condition becomes more serious. The nausea, vomiting, headache, and severe epigastric pain continue, the mental state becomes more involved, coma develops, and death follows in a few hours. The author concludes that loose diagnostic terms, as "acute indigestion," "ptomaine poisoning," and their like, should be avoided. More care should be used in finding a possible cause of gastroenteric disturbances, especially indigestion and dyspepsia. Carelessness in uranalysis may be dangerous, both to the physician and to the patient. "No albumin" does not mean "no nephritis." Increased twenty-four-hour output of urine with persistent low specific gravity, associated with gastric disturbances, should strongly suggest involvement of the kidneys.

New York Medical Journal.

June 8, 1912.

1. The Best Means of Combating Infant Mortality. A. Jacobi.
2. The Hygiene of Pregnancy. J. B. Cragin.
3. The Pathology of Deaf Mutism. G. H. Makuen.
4. Alopecia: Types and Treatment. J. Dyer.
5. Eugenics and the Physician. C. B. Davenport.
6. The Enforcement of Health Laws. T. Darlington.
7. Vaccine Treatment in Ophthalmology. J. H. Clairborne.
8. Some Impositions Practised on the Doctor. T. J. Dunn.
9. Paraplegia, Probably Hysterical in Origin. G. Parker.

1. **Infant Mortality.**—By A. Jacobi. (See MEDICAL RECORD, June 8, 1912, page 1065.)

3. **Deaf Mutism.**—G. H. Makuen states that histological studies of the auditory and phonatory tracts have revealed the morbid anatomy of deaf mutism, and have thus placed one's knowledge of the subject upon a more or less scientific basis, but they have failed utterly to point the way toward any definite conclusions with reference to the etiology of the affection and to its treatment. They do not enable one to distinguish even between so-called congenital and acquired deaf mutism, and there is very little to be found in the pathological processes themselves which is suggestive of the particular disease or diseases which caused them. Inasmuch as the physiology of hearing is still a subject for discussion, it is not surprising that the pathology of deaf mutism should be obscure and unsatisfactory. Deaf mutism is not a disease, but is a result of a disease, or rather it is a result once removed. It is a result of a result, the disease itself having long since run its devastating course and left behind the morbid processes upon which the final result, deaf mutism, depends. Although these morbid processes are plainly visible in post-mortem examinations, they have in themselves no features sufficiently distinctive to enable one to draw any satisfactory conclusions. One cannot always be sure that they are not purely accidental anamolies or merely unimportant variations, and until they are compared and correlated with histological studies of normal auditory and phonatory tracts, and with previous clinical histories of the subjects examined, their value must ever remain exceedingly limited. Future progress in this line of work will come from a closer study of the diseases which are responsible for the morbid anatomy of deaf mutism, rather than from a further study of the morbid conditions themselves.

4. **Alopecia.**—J. Dyer states that one may classify all cases of alopecia under two general types, namely, alopecia idiopathica or primary baldness, and alopecia symptomatica or secondary baldness. The former includes the congenital, the senile, and the premature forms. Symptomatic alopecia includes baldness due to local or to general causes. The local causes are as follows: seborrheic dermatitis (dandruff), seborrhea sicca, eczema, erysipelas, lupus erythematosus, lupus vulgaris, parasitic diseases—tinea tonsurans, favus, impetigo following pediculosis capitis, tinea barbæ (barber's itch), staphylococcic infections, and folliculitis in its various forms—local injuries, burns, etc. The general or systemic causes are: syphilis, psoriasis, fevers (typhoid, etc.), ichthyosis, leprosy, variola, and alopecia areata or neurotica. Treatment generally must be based upon the etiology. When related to particular diseases, these must be treated. Idiopathic baldness is usually permanent and without relief. The following treatment may be adopted in most cases: The frequent washing of the scalp with green soap or tar, resorcin, napthol, and sulphur soap, and the application of stimulating substances. Of these are mentioned chloral hydrate, tincture of jaborandi, spirits of rosemary, cantharides (in tincture and guardedly), tar oils (cade, birch, pine, etc.), castor oil, croton oil (in minute quantity), alcohol, and chloroform. The use of any application should be intelligent; oily substances used when the scalp and hair are dry; desiccating or alcohol preparations when the hair is oily or the scalp greasy. Combinations may be made antiseptic with resorcin (two to five per cent.), salicylic acid (two to five per cent.), lactic acid (two to five per cent.), bichloride of mercury (one to 1,000), or with carbolic acid (not over two per cent.), each of which is also somewhat stimulating to hair growth. The use of the high frequency effluve in some cases of long standing has proved satisfactory

8. Some Impositions Practised on the Doctor.—By T. J. Dunn. (See page 1204.)

Journal of the American Medical Association.

June 8, 1912.

1. The Best Means of Combating Infant Mortality. A. [illegible]
2. Notes on the Treatment of Ankylostoma Anemia (or Hookworm Disease) with [illegible]. C. [illegible]
3. Treatment of Tetanus with Magnesium Sulphate, with Report of Three Cases. G. Parker.
4. A Diagnostic Tender Spot in Pulmonary Tuberculosis. S. T. Harris.
5. Some Recent Contributions by the U. S. Public Health and Marine-Hospital Service to Preventive Medicine. J. F. [illegible]
6. The Rôle of Injury in the Production of a Cerebral Tumor as a Tolerable Agent. P. Rous, J. B. Murphy and W. [illegible]
7. Inhaler for Gas-Oxygen, Gas-Oxygen-Ether, Gas-Ether, Chloroform. J. Y. Porter.
8. Auricular Fibrillation. J. D. Heard.
9. Successful Treatment of Gonorrheal Choriodatis by [illegible]. G. W. Vandegrift.
10. An Antiseptic Thermometer Case. E. L. Gros.
11. Unilateral Cervical Adenitis. H. F. Day.
12. A Simple Device for Collecting Urine from Fe[illegible] van der Bogert.
13. Epilepsy (?) and a Refraction. J. S. Wyler.

1. Infant Mortality.—By A. Jacobi. (See Medical Record, June 8, 1912, page 1005.)

2. Thymol in Uncinariasis.—C. Bozzolo having employed this remedy continuously throughout the past thirty years, and not as a cure for ankylostoma only, considers as somewhat exaggerated the fears expressed by the greater part of those who, while admitting the utility and great superiority of thymol in comparison with other drugs, regard its after-effects as likely to be poisonous, and see danger in the administration of the remedy in large doses or in the contemporaneous administration of some alcoholic beverage, and who advise the substitution of small and repeated doses for maximum ones. In the several cases under his care during the time in which workers on the cutting of the St. Gothard tunnel, suffering from ankylostoma anemia, flocked to Turin, 12 grams of thymol were given in twelve hours, 2 grams every two hours, always well enveloped in capsules, and no serious disturbance was ever noted. In one solitary case throughout his long experience, in a woman, it is possible that thymol, administered in large doses, proved fatal; as a matter of fact, at the post-mortem examination of this woman there were traces of marked enteritis, which had, perhaps, been the cause of death. Before having encountered ankylostoma anemia—that is, before the year 1878—Bozzolo had already used thymol in diabetes with satisfactory results in diminishing the glycosuria, and with no serious after-effects. In these cases, however, the doses were restricted to 3 grams daily. Without therefore exaggerating the fear of the direct drawbacks of thymol in the treatment of hookworm disease, which in Turin has been widely employed in other diseases as well, it may be advisable to administer it in smaller doses (*therapia sterilisans fractionata*) than those originally proposed by Bozzolo in cases of weak persons who have been suffering for a long time, and when the treatment cannot be carried out under direct supervision. In the case of persistent enteric catarrh it is further advisable, whenever possible, to precede the treatment with a dry diet and the administration of tannic acid.

4. Diagnostic Tender Spot in Pulmonary Tuberculosis.—S. T. Harris adds to the usual diagnostic signs of pulmonary tuberculosis a hypersensitive or painful spot. This spot is a manifestation of degenerative changes. It may be due to a reflex from the pneumogastric nerve through the spinal accessory nerve supplying the trapezius, or the third or fourth cervical nerves supplying the levator anguli scapulæ. It may be found by palpating the tip of the superior angle of the scapula with the finger and riding over it with more or less inward pressure. It is best to palpate both sides at the same time, exerting the same degree of pressure, but not enough to produce pain in a normal individual. The pain may be quite severe, causing [illegible] wince, or it may be one only of [illegible] with that obtained in the normal side. [illegible] and neuritis, as well as rheumatism, [illegible] excluded.

5. Contributions by the United States Public Health and Marine Hospital Service.—J. F. Anderson states that these contributions have been along two main lines: first, research work in the laboratories of the service; and second, the application of new as well as older methods in the control of certain diseases. The two lines, however, at times necessarily merge. The measures instituted during the past summer may be considered under three general heads: (1) Quarantine measures enforced at foreign ports. (2) Quarantine measures enforced during the voyage. (3) Measures enforced at ports of arrival in the United States. The measures adopted in the suppression of bubonic plague in San Francisco have conclusively shown that it is possible to eradicate this disease even when it has obtained a foothold in a large city. The work on typhoid within the past few years, including a prolonged and intensive study of the disease in the District of Columbia, investigations of numerous outbreaks in towns and cities, and studies of rural typhoid in different sections of the country, has contributed materially to the knowledge of the epidemiology of the disease. In the past year studies have been made on measles, as a result of which has been obtained the first definite knowledge as to the susceptibility of the monkey to infection with measles. It has been shown that the virus of the disease is present in the blood at least some hours before the eruption appears and for about thirty-six hours after. The behavior of the virus to various physical and other influences has been tested. Experiments made to determine whether the scales are infectious have justified the opinion that the desquamating epidermis in measles does not of itself carry the virus of the disease. They conclusively demonstrated that the infective agent of measles is contained in the nasal and buccal secretions during at least the first forty-eight hours of the eruptive period; and in no instance have the secretions, collected at a later period, been found to be infective. Other contributions pertained to the standardization of drugs, especially digitalis, ergot, and thyroid preparations; the study of embalming fluids and methods of preparing dead bodies for interstate shipment; the disposal of sewage; laboratory and field studies on hookworm and other intestinal infections, etc.

8. Auricular Fibrillation.—J. D. Heard states that this is a condition in which the auricles no longer contract coordinately, but are constantly in a position of diastole, while individual groups of fibers are in ceaseless activity, causing frequent and disorderly impulses to be transmitted to the ventricle, which responds by contracting without any rhythm. When this is the case the disorderly ventricular contraction impairs the efficiency of the heart, which is somewhat enlarged, and unless proper treatment is instituted, the ventricle is gradually exhausted. A disturbance of conduction, if present, is exaggerated, and partial or complete block may follow, though with this the clinical condition of the patient may improve. The condition is induced by myocardial affections, notably the postfebrile infections, though other causes may occur. Overstrain may be a predisposing cause, and the use of the drugs of the digitalis group may bring it on in the predisposed. Organic changes in the auricle seem to be essential, but the pathological histology needs more study. Mackenzie's estimate of 70 per cent. of all cases of heart failure being due to auricular fibrillation or aggravated by it, may be accepted. Subjective symptoms may fail for some time when compensation is maintained, but this is not the rule. There may have been

precede attacks of tachycardia, and the signs and symptoms of the early stage are those of broken compensation. In severe cases there may be orthopnœa, cyanosis, dropsy, hemoptysis, local pain, and albuminuria. The pulse is usually rapid and disorderly, and gives the usual evidence of hypertrophy and dilatation. The presystolic murmur of mitral stenosis is absent. The affection may be transient or permanent, and one attack predisposes to another. If the condition is permanent the prognosis depends on the rate of pulse and the response of the heart to treatment. Auricular fibrillation is not incompatible with long life. A slow pulse is more favorable than a rapid one, and the prognosis depends in great measure on the ability to lower the rate. The one sovereign remedy is digitalis, but it usually fails where the pulse is regular and is contraindicated in cases accompanied by partial block.

The Lancet.

June 1, 1912.

1. The Relations Between the Human and the Bovine Tubercle Bacillus. G. S. Woodhead.
2. The Medical Treatment of Cholelithiasis. P. Mayer.
3. An Improved Method for Opsonic Index Estimation, Involving the Separation of Red and White Human Blood Corpuscles. C. Russ.
4. A Case of General Infection by the Influenza Bacillus. J. M. Clarke.
5. The Operative Treatment of Concomitant Strabismus. F. K. Campbell.
6. Two Cases of Mercurial Poisoning. A. J. Hall.
7. Acute Focal Encephalitis. G. W. Watson.

2. **Treatment of Cholelithiasis.**—P. Mayer states that (1) acute cholecystitis should be treated medically; only the most severe form, cholecystitis acutissima, belongs to the surgeon; (2) chronic relapsing cholecystitis should be treated by operation only when all the suitably employed agencies of medical therapy have failed; (3) operation should be performed in chronic obstruction of the ductus choledochus if two or three months of medical treatment are without effect. In cases with prolonged remittent fever, rigors, and bad general condition the operation is unquestionably indicated; (4) hydrops vesicæ felleæ demands operation only if there are persistent and very severe irritative phenomena; (5) empyema of the gall-bladder and all suppurating processes in the region of the gall-bladder and in the liver should be operated upon; (6) adhesions about the gall-bladder should be treated medically as long as the inconvenience produced is not marked. In the most severe cases operation is required; (7) acute and chronic pancreatitis resulting from cholelithiasis belong to the surgeon. In the author's experience of all the substances recommended for the treatment of cholelithiasis he can attribute a genuine value to salicylic acid only. Salicylate of soda with extract of belladonna are often found valuable in practice. The chief influence of salicylic acid is upon the inflammatory symptoms. The author has seen the best results with salicylic acid in acute and chronic cholecystisis, especially with simultaneous rest in bed and the application of hot compresses. In such cases he gives from two to four times a day a powder of sodium salicylate 0.5 gram, and extract belladonna 0.01-0.02 gram, dissolved in warm water. He has used calomel for years according to the recommendation of Sacharjin in severe cases of biliary colic accompanied by constant pain and high fever. He gives 0.06 gram every hour for the first three to five doses, according to the nature of the case, and afterwards every two hours until the first typical calomel stool appears. Striking results are frequently obtained by this treatment, since the pains often cease at once, the fever gradually diminishes, and the whole severe symptom-complex completely disappears in a few days. The bile can be made more liquid by giving the patient an abundance of fluid. Excesses in eating must be avoided. All food difficult of digestion must be strictly forbidden. Food should be taken minced or in the form of puree. The patient should be kept in bed for several days after each attack of biliary colic, and in severe cases as long as there are inflammatory manifestations and as long as tenderness on pressure over the gall-bladder remains. In the absence of these symptoms physical excesses are not only indicated, but constitute one of the most important factors in treatment. Deep breathing exercises are valuable.

4. **General Infection by the Influenza Bacillus.**—J. M. Clarke reports the case of a girl aged thirteen years who had a purulent discharge from the left ear at times for some years. The onset of fever was gradual, so that the precise day of onset could not be fixed, but it occurred between two and three weeks after an operation for removal of enlarged tonsils. After admission to the hospital the ear discharge yielded a pure culture of Pfeiffer's influenza bacillus. Cultures from the blood taken towards the end of the second week of the fever, and after the occurrence of two rigors, also gave a pure culture of the same bacillus. The inference would seem to be that the bacillus was present in the ear discharge, and obtained entrance to the blood through the open wounds left by removal of the tonsils, and produced an acute septicemia. This appears to be a striking example of the tonsillar route for a general infection. The resulting septicemia was of gradual onset, and was a very severe one. For two or three weeks the prospect of recovery appeared dubious. If the foregoing view is correct, the case would appear to show the course of a direct infection of the blood by the influenza bacillus through a lesion in a mucous membrane. The fever was irregular throughout, and the course of the illness was five weeks. Injections of an autogenous vaccine were given in the third week, and during, and for three days subsequently to, their administration the fever became higher than it had been during the previous week and showed more extensive daily variations. From the course of the fever alone, however, it is difficult to say whether the vaccines had any effect on the disease, and no certain effects could be traced from them on the local or general symptoms, with this exception, that the aural discharge rather suddenly ceased and did not recur.

7. **Acute Focal Encephalitis.**—G. W. Watson states that encephalitis is now recognized as a sequela of several infections, notably influenza, diphtheria, and typhoid fever. It has occurred also apparently as a result of syphilis, but here probably the affection is usually subacute or chronic rather than acute, and is associated with disease of the membranes, being essentially a meningoencephalitis. Certain toxic agents, especially alcohol and more rarely lead, have been held responsible for the causation in some instances. Of all these causes, however, there is no doubt that influenza is the precursor in the great majority of cases. The inflammation of the brain is a nonsuppurative one and may affect any part of the organ. If the brain is extensively affected the condition is regarded as a diffuse encephalitis. It is in cases of this kind that the greatest difficulty is experienced in diagnosis, as the acute onset, associated with fever, intense headache, delirium, and drowsiness deepening into coma, may in the possible absence of signs of paralysis suggest nothing more than an intense toxemia. The inflammatory process may, on the other hand, be limited to some local area of the brain, and when this is the case, although both gray and white matter may be affected, it is usually the gray matter of the mid- and hind-brain (that of the cranial nerve nuclei and the cerebral cortex) which is involved. Consequently this type of the disease, known as acute focal encephalitis, is usually associated with paralytic symptoms, and is easier of diagnosis. Not only is the area of disease more limited in this than in the diffuse form, but as a rule the intensity of the inflammation is less, the general toxemic symptoms are not so severe, and the prognosis is much more hopeful.

The pathological changes in both forms [illegible] consisting of vascular distention and thr[illegible] rhagic extravasations, and exudations of [illegible] lesion is typical of an acute inflammation [illegible] of the causative organism has not been [illegible] termined.

British Medical Journal.

June 1, 1912.

1. Some Points Concerning the Duodenum and Intestinal Stasis. A. C. Jordan.
2. The Autoinoculation Test in Tuberculosis. H. W. Crowe.
3. The Paths of Rheumatic Infection and Their Prevention. J. R. Mackenzie.
4. On the Standardization of Preparations of Infective Marshall and J. K. Wood.
5. The Bactericidal Action of the Cresols and Methods of the Best Means of Employing Them. F. W. [illegible]

2. The Autoinoculation Test in Tuberculosis. W. Crowe states that Freeman found that massage to a diseased joint was followed by an increase [illegible] of toxin in the circulation, demonstrable by a very accurate fluctuation in the opsonic index, provided only that the index was determined with respect to the causal organism. This he termed an artificial or induced autoinoculation, and he was able to utilize his discovery to elucidate the nature of joint troubles of doubtful origin. The example he first quoted was that of a knee joint said to be tuberculous; after massage the tuberculo-opsonic index did not fluctuate, while the index determined with respect to the gonococcus gave a marked and typical fluctuation. The inference drawn by Freeman was that the disease must be gonorrheal and not tuberculous. Hereupon Wright and his collaborators, following out the same line of experimentation, showed that a very considerable number of agencies, such as exercise, operation, Bier's bandage, and even physical examination of the chest, were capable of inducing autoinoculation. Patterson elaborated his treatment for phthisis, consisting of the scientific induction of autoinoculation by carefully graduated labor, and in connection therewith Inman found that as long as disease was still present the varying grades of work produced fluctuations in the opsonic index, while in those apparently cured the most arduous labor was followed by no fluctuation whatever. By means of an apparatus used for testing the vital capacity of the lungs, forced respiration continued over a period of some minutes can be used to induce autoinoculation in a tuberculous lung. The presence or absence of such autoinoculation is then determined by measuring the opsonic index before and at varying periods after the exercise. On the basis of an experience drawn from about sixty cases the author concludes that in the autoinoculation test one possesses the means of diagnosing tuberculosis in its earlier stages, that this test is so extraordinarily reliable that on its verdict alone treatment may be confidently applied or [illegible] confidently omitted, and, lastly, that it is of utility in directing the course of treatment and in deciding the moment when cure is complete.

3. Paths of Rheumatic Infection in Children.—J. R. Mackenzie states that the *Micrococcus rheumaticus* takes the path of least resistance. This may be an unhealthy throat, absorption from which frequently gives rise to general rheumatic infection, including peritonitis and appendicitis, directly through the vascular system. Or it may be localized in the bronchial tubes and give rise to pneumonia, with polyarthritis and endocarditis. An unhealthy condition of the intestinal wall may excite to activity the rheumatic agent, setting up acute rheumatic phenomena with peritonitis or appendicitis as part of a general infection. A mild catarrh is produced at the seat of inoculation, and one or more of three factors in each case are present and promote the inroads of the micrococcus. Either the physical resistance or the protective properties of the local tissue, or the defensive agencies of the blood are below [illegible] stinction between acute and subacute or late [illegible] is mainly due to general infection with the [illegible] atic agent in the former and with the toxin[illegible] latter.

Berliner klinische W[illegible] rift.

June 3, 1

Cases of Disturbance of Inter[illegible] tions.—Under this title Bittorf relates several [illegible] hard and fast lines of diagnosis were not [illegible] der the better to give an idea of the depend[illegible] toms on disturbed hormone action. The [illegible] man aged thirty-eight, showed some of the [illegible] acromegaly. The hands and feet had been cl[illegible] twelve years. The nose, tongue, and chin were s[illegible] fected, but a number of the classic symptoms of ac[illegible] k were absent. The eyes were beginning to be [illegible] omised. There was failing vision (binasal hemianopsia) due to opticus atrophy at the nasal side. The thyroid was normal. Eosinophilia and alimentary glycosuria alike pointed to disturbed internal secretions. Wassermann reaction was positive. The peculiarities of the case were due doubtless to the fact that syphilis had attacked the base of the brain with independent lesions of the hypophysis and optic chiasm. The lesions of the optic nerve were not of the type due to compression of an enlarged hypophysis, for in the latter we commonly see bitemporal hemianopsia. The patient improved upon KI. The second patient was a girl of marked infantile habit who was first treated for anemia. Later she complained of failing vision and was found to have choked disks. There was some headache, nausea, and vertigo. The *x*-ray showed enlargement and arrosion of the sella turcica. The condition of the patient pointed to dystrophia adiposogenitalis. The hypophysis was evidently affected, but the author does not believe that a lesion of the latter is wholly responsible for the clinical picture. The actual state of affairs is doubtless highly complex. No doubt a polyglandular insufficiency is present in which hypophysis, thyroid, and ovary are like involved. The treatment consisted in feeding with thyroid and ovarian tablets and some improvement followed. The third patient, a man aged twenty-eight, was an alcoholic, and presented a long and complicated history of invalidism. From a multitude of symptoms the following facts stand out in relief: The patient at one time had put on fat at a phenomenal rate, with symptoms (chiefly blood pictures) pointing vaguely to dysthyroidism. He improved under thyroidin, losing his fat and improving as to blood count. The presence of a period of somnolence was also attributed to hypothyroidism. The patient's viscera were badly damaged, probably from alcohol. Whether the lesion of the thyroid could have been due to the latter is not discussed.

Neurofibromatosis and Acromegaly.—Wolfsohn and Marcuse report a case in which von Recklinghausen's and Marie's diseases appear to have coexisted. As far back as 1903 no less than 447 cases of the former had been placed on record and carefully analyzed, and hence it is safe to say that this coincidence can only be accidental or at least due to nothing further than the rare occurrence of a lesion of neurofibroma in the sella turcica. A careful study of von Recklinghausen's disease shows the possibility that four other cases may have presented acromegalic symptoms, but that the reporters in describing these cases had evidently had no suspicion of the latter. Any attempt to explain neurofibromatosis by anomalies of internal secretion is evidently foredoomed to failure.

Prognosis of Puerperal Fever.—Rosenthal states that for two years the antitrypsin reaction has been used in the Budapest obstetrical clinic for the diagnosis of pregnancy. The elevation of the index persisted into the puerperium, vanishing about the fourteenth day. From

another quarter came the report that the same reaction was being employed in the prognosis of puerperal sepsis. The author had already remarked that should a puerpera have fever this fall to normal did not take place. In fact not until the fever subsided did the elevation of the index subside. To make of this behavior any trustworthy prognostic sign can hardly be warranted. There is no parallel between the height of the index and severity of the infection.

Münchener medizinische Wochenschrift.

May 21, 1912.

Rachitis and Hypophysis Medication.—Klotz first refers to a prevalent past and present belief that rickets and osteomalacia are one and the same morbid process. The latter affection is now reputed to be favorably influenced by pituitrin and therefore the latter may be also indicated in rickets. Hypophysis extract is quite rich in phosphorus, which substance is often of use in the said bone affections. Cod liver oil may also contain phosphorus from the fish liver as an impurity and it is also of value in rickets. The author has separately tested lecithin on account of its assimilable phosphorus and believes that rickets tends to improve decidedly but not very rapidly upon this resource. He then further gave tables of pituitrin whereupon the benefit was accelerated. Believing that the phosphorus in the hypophysis would be sufficient for the purpose he has since given the pituitrin substance alone. Thus far he has treated four cases of infantile rickets for the space of five or six weeks with notable improvement in the state of nutrition. His theory is that the disease or diseases are due to a disturbance of the phosphorus metabolism, which the pituitrin is able to correct. In other words the disease may be determined originally by hypophysis insufficiency, which disappears under feeding with the substance, as myxedema improves under thyroid feeding.

Perforation of the Rectum by a Proctoscope.—Schmitt relates an accident which occurred in his own practice. In depressing the handle of the instrument while in position in order to bring a certain area into the field of vision the top of the instrument perforated the rectal wall and a piece of omentum entered the gut. The patient, an elderly man, was at once placed on his back and laparotomized and the rent repaired. The latter had occurred just where the peritoneal fold is formed. On the fourth day there developed symptoms both of peritonitis and ileus. The abdomen was at once reopened, when it was found that a kink had been caused in the small intestine by new adhesions. A fistula was established but the patient succumbed to peritonitis.

Anaphylaxis from Homologous Albumin.—Wolf-Eisner and Vertes appear to have established the fact that albumin anaphylaxis is not due necessarily to heterologous albumin. Homologous albumin is of course introduced from within, but there appears to be no essential difference in the anaphylaxis. Disease phenomena set down hitherto to bacteria toxins may after all be found to be due to one's own albumin. Every exudate absorbed may be a possible source of danger should the event be repeated. Our knowledge of autointoxication and of hormone action may have to be rewritten, for what we have regarded hitherto as common poisoning may prove to be anaphylactic, as may also the supposed overaction of internal secretions.

Operative Cure of an Acute Unilateral Septic-infectious Nephritis.—Ritter reports a case in several ways unique. The patient, a school girl aged seven, was seized suddenly with the symptoms of urinary irritation associated later with right lumbar pains and fever. As an exanthem, with conjunctivitis and bronchitis was superadded, a diagnosis of measles had been made by the first attendant. As a tumefaction began to appear in the right flank patient came under surgical care. The diagnosis was cystitis with simultaneous complication of the right kidney. Upon cutting down, none of the affections suspected was found to exist. There was neither paranephritic abscess nor any suppurative process involving capsule or renal parenchyma. The organ was simply much enlarged and hyperemic. An ascending pyelonephritis must have occurred as sequela of a vesical infection. The operation of decapsulation was performed and patient made an excellent recovery. The author does not believe that the patient had measles at all. The renal symptoms antedated the rash by a number of days and the picture of measles was doubtless due to a septic outbreak. The infection doubtless began in the bladder from bacteria introduced from without. It has been shown abundantly that this accident readily occurs through the short female urethra. The author seemingly made no bacteriological studies whatever.

Pituitrin as an Oxytocic.—Hofbauer, who was one of the first, if not the first to report on hypophysis extract as an oxytocic (Jan., 1911) has continued to use this agent in Winter's clinic, and now announces his more mature conclusions concerning its usefulness. It is, he states, the best oxytocic we have and his opinion as originally pronounced, has been sustained by practically every one who has tested pituitrin on large material. It is in fact the first practicable oxytocic ever found. It materially shortens labor and hence must diminish the chances of infection and exhaustion of the mother and asphyxia of the infant. It also cuts down considerably the necessity for operative intervention, as shown by records of clinics since its introduction.

Priority as to Arteriovenous Blood Transfusion.—R. T. Frank of New York in a letter commenting on a recently published article by Prof. Payr asserts that he and G. Baehr reported practically the same technique in the United States in 1909. Dog's carotid, hardened in formalin and kept in paraffin was used to make the communication. Prof. Payr used calf's artery and a somewhat simpler technique, and there is no attempt to deprive him of any credit, but the contrary is implied. Prof. Payr replies that he with many others has made use of Carrel's and Guthrie's labors on arterial segments for some years, and that his use of a calf's artery was only an application of their teachings. He was aware at the time that Frank had made use of fresh dog's artery and gave him credit. The second paper in which Frank reports the use of pressed dog's artery had been unknown to him.

Deutsche medizinische Wochenschrift.

May 23, 1912.

Early Symptoms of Organic Nervous Disease.—Heilbronner enumerates a number of early symptoms of organic cerebral and spinal diseases as follows: Purely subjective sensations often bring the patient to consultation. The testimony of the attending physician is often important in such cases because he can inform the neurologist as to whether or not the patient has a tendency to exaggerate his sensations and whether there is any motive for simulation. Special sense disturbances may be controlled with the needle and esthesiometer, ophthalmoscope, etc., but much still depends on the trustworthiness of the patient's testimony. It must be borne in mind that in organic as well as functional nervous diseases the patient usually places more emphasis on his subjective sensations than on the objectives, for, according as the former improve or become aggravated he believes himself to be improving or retrograding as the case may be. Headache is the most important subjective manifestation, and if without any apparent cause it sets in or becomes

worse or chronic, or returns without ca[illegible] mis-sions there is good reason to suspect or[illegible]ase. When vomiting is superadded we think [illegible] of renal insufficiency, especially if there is a [illegible]ing of the mental processes. Next to uremia [illegible] to bear in mind other types of organic headache including migraine, and exclude the latter, cerebral [illegible] abscesses, and (in children) hydrocephalus. The ophthalmoscope must be used in all these cases as ch[illegible] disk, etc., may accompany headache of intracranial [illegible]. Vertigo associated with headache suggests cerebellar and labyrinthine involvement. Next in importance to headache is neuralgia, especially sciatica, which is very often due to some form of organic disease. Disturbances of micturition, defecation, and sexual potency are of great significance in organic disease of the spine. Disturbances of vision with normal fundal finds suggest hysteria, but owing to the fact that multiple sclerosis is so intimately associated with hysterical symptoms the presence of the latter often make it imperative to exclude the possibility of organic disease.

A Neglected Resource in the Chemotherapy of Cancer.—Freund, who as far back as 1878 was a pioneer in abdominal hysterectomy for cancer, has for years been experimenting along a particular line of work in which it was intended to flush out the blood vessels of a diseased organ or limb and inject under pressure fluids designed to cause pressure necrosis of cancer tissue. It is assumed to be necessary to deplete the organs of blood. After numerous animal experiments the author in 1892 tested the method on a cancerous uterus. The nutrient blood vessels were isolated and washed out with saline infusion until the venous blood came away a pale pink. The solutions were forced in under increasing pressure (200 mm. mercury). The pelvic connective tissue became edematous and the uterus itself became very hard to touch. At that time no attempt was made to inject any therapeutic principle. The author's idea was solely to cause pressure necrosis of the cancerous mass. This appeared to be what was taking place when death suddenly supervened from cardiac collapse. As there were found numerous glandular metastases of the cancer it was clear that the patient could not have survived long. The local result was satisfactory, as shown by autopsy, but the death *en masse* of a uterine cancer would hardly help the chances of recovery owing to the danger of sepsis. However, the combination of emptying the blood vessels and local injection of a chemotherapeutic solution into the artery might prove a practical resource in connection with the latest work of Ehrlich and others with selenium and eosin.

Death Following Intravenous Injection of Hormonal.—Jurasz reports a case of this accident, the first to go upon record, although a number of instances of collapse have been reported. Patient was a woman aged forty-three, who had suffered for eight years with cholelithiasis. Attacks of colic were becoming more frequent and severe and eventually perforative peritonitis resulted, for which she was laparotomized. The gall bladder, sclerotic, was extirpated and the peritoneal cavity irrigated and drained. On account of the high degree of meteorism, which could not be controlled an enterostomy was performed and followed with an injection of 20 c.c. of hormonal into a vein. At the moment in which the Esmarch bandage was removed, profound collapse developed and patient became pulseless. Not for fifteen minutes did she rally, under camphor and adrenalin. In an hour she again showed evidences of collapse and in two and a half hours after the injection was dead. There could be no doubt that the hormonal was responsible. The "vasodilatatin," which is contained in the substance (Popielski) is responsible for the sudden lowering of blood pressure. The heart was evidently a damaged organ, able to respond but feebly to analeptics, and the sudden removal of the bandage threw extra work upon it. The [illegible]ever use hormonal again in peritonitis, for in [illegible] the heart often suffers. This, however, is [illegible]ate of affairs in which hormonal was believed [illegible] its chief usefulness.

Syphilitic Reinfection after [illegible]arsan Cure.—Stumpke cites a case which illus[illegible]edly salvarsan may cure a patient (unless of [illegible] to believe that the attack was self-limit[illegible] highly improbable). It is not the first examp[illegible] during the short time that the drug has been [illegible]. The patient had a chancre about July, 1911, and [illegible] by the writer September 20. He was a vigorou[illegible] who had never been ill, and was then sound with the [illegible] of a few early syphilides and mucous papules in the fauces. On October 3 salvarsan was injected into a vein, and this procedure was repeated two weeks later. He improved, but as the Wassermann was still positive a course of calomel injections was begun. By November 6 he was free from all symptoms, including enlarged lymph nodes, and the reaction had been negative for some days. He was seen again in March, 1912, with a lesion on the lower lip bearing every resemblance to a primary lesion. There was a localized adenopathy. Any evidences of a relapse of the original syphilides were quite lacking. There were numerous spirochetes in the lesion and the Wassermann reaction, negative at the outset, soon became positive. Under salvarsan the chancre and adenopathy began to subside and the Wassermann became negative. There was no eruption of secondary manifestations and the inference is that these were aborted. While the case is not a perfect one and naturally requires further study, it seems evident that a patient can contract syphilis as early at least as four months after a clinical cure, so that a past attack gives very little protection under the complete modern treatment.

Fatty Stools in Graves' Disease.—Bittorf, the well-known authority on affections of the ductless glands, says it has been noted in at least six cases of Graves' disease that fatty stools coexisted with alimentary glycosuria. In other words, there was an association here which pointed plainly to a pancreatic disorder or insufficiency affecting both its external and internal secretions. The patients improved remarkably under the internal administration of a pancreas preparation. The rationale is of course by no means clear, but the simplest assumption is that the pancreas insufficiency is determined by the hyperthyroidism. This applies to the failure of the external secretion. The participation of the internal secretion is open to some doubt. Fatty stools are rare in Graves' disease, while glycosuria and alimentary glycosuria are not infrequent.

Green Teeth, Subsequent to a Prolonged Jaundice in the First Weeks of Life.—H. Thursfield reports the case of a boy who was first seen at the age of 3 weeks. The history was that he had been jaundiced from birth, or possibly from the third day of life only, and that during the first week he had passed very black stools, and had a purulent discharge from the navel. When seen the umbilicus was perfectly healthy; the liver and splen were not enlarged, and the child, though small—6 pounds 5 ounces—seemed quite healthy. The jaundice was at this time deep, and remained so for the next seven weeks, slowly disappearing. When it had gone the boy put on weight rapidly and at 4 months of age weighed 9 pounds. He was not seen again till he was 9 months old, when he was brought again for an attack of diarrhea. The two lower central incisors were then a vidid yellow tint, which had become now green. The tint varied considerably; it was occasionally quite bright, at other times dull.—*Proceedings of the Royal Society of Medicine.*

Insurance Medicine.

Chronic Diseases of the Lungs and Longevity. Dr. Arnold Chaplin discusses the desirability, and otherwise, of cases of chronic lung disease for life insurance. He excludes chronic pulmonary tuberculosis from the discussion and considers fibroid cirrhosis of the lung and chronic pleural conditions. The first one is also known as Corrigan's cirrhosis, chronic pneumonia, etc. The condition is not as rare as taught by some, Dr. Chaplin having met with some 300 examples in two decades. The greater number of such cases usually owe their origin to acute pulmonary affections of childhood, bronchopneumonia following measles or whooping-cough being the chief exciting cause. The duration of the disease is much shorter than taught by some authorities who claim that it has little, if any, effect upon longevity. Dr. Chaplin's cases began for the most part before the age of ten, and the great majority of them came to a fatal termination by the end of the third decade. Cases beginning late in life have a worse prognosis, ten years being the average duration of the disease. From the life insurance aspect, cases with limited disease at the base of one lung have a relatively good prospect, but even then it must be remembered that the disease is one of slow progression. The commonest modes of termination are acute bronchitis, sepsis from absorption of fetid material gathered in dilated bronchi, tuberculosis, and metastatic abscess of the brain. Fibroid disease of the lung, usually beginning before the age of ten and ending before thirty, is therefore unfavorable from the life assurance point of view.

Chronic inflammatory conditions of the pleura frequently follow serous or purulent pleural effusions. Dr. Chaplin does not share the opinion of most writers who look upon the great majority of pleural effusions as due to tuberculosis. He thinks that if the attack has taken place a number of years before the person's application for insurance, such application should not be immediately refused. Chaplin is inclined to regard it as a good sign that the applicant may have had a minor attack of tuberculosis and have recovered from it many years ago, as he was perhaps rendered quite immune to severe form of lung tuberculosis.

Cases with purulent effusion in which operation was done should be differently treated. The main point here is the amount of damage to the lungs from collapse and the consequent lowering of the individual's vitality. Those empyemata which occur and are treated before the age of twenty, offer a much better prospect of complete recovery than those occurring after that period. Of course, the actual physical findings, the extent of falling in of the chest wall and the condition of the lung underneath must be considered in each individual case. Patients who have had the affection after their youth usually remain chronic pulmonary invalids for life; they may be insured for short terms only and with an extra premium of a substantial kind. —Proceedings of Life Assurance Medical Officers' Association, London, England.

Some Impositions Practised on the Doctor.—Under this rather strong title, T. J. Dunn discusses what he regards as an unfair burden placed upon the physician by life insurance companies with reference to death claims. The rule that "claimants are bound to produce, at their own expense, such medical testimony as to cause of death, duration of disease, etc., as may be required by the company," also imposes a burden upon the beneficiary. A striking contrast is furnished by the attitude of an insurance company upon the entrance of an applicant to that upon his exit by death. In the former case the companies show the most solicitous care as to the medical examination. They do not trust the family physician to do this work. Sometimes the medical examiner telephones or writes to the family physician to get a little inside information about the individual seeking insurance. The fact that the family physician is not compensated for any information which he may vouchsafe is regarded as an imposition practised by the insurance companies. The applicant contributes his yearly premium for a number of years, and when he dies, according to the author, the companies that entered into an agreement with him and took his money on the strength of it, are entitled to know that he is actually dead, but that is all, and this information is contained in full in the death certificate filed with the health authorities. But the companies are not satisfied with this information; they seek a mass of privileged information from the medical attendant who is not in their employ, and who is not justified in telling the things he has learned in a confidential way about the deceased. About one-half of the statement they require consists of questions on this order, and at times the answer may put the medical man in the unfortunate position of having acted the spy upon his patient for the benefit of the company. The author states that at one time his answer to the question: "For what diseases have you at any time attended the deceased and what was their duration?" formed the basis of refusal by a certain company to pay a death claim where the man had been insured for thirteen years. The law was invoked and finally the company paid one-half the claim. This question is No. 9 on the blank of one of the largest companies. Question 10 is as follows: "Did you ever attend or prescribe for deceased, except as stated in answer to No. 9?" This might be taken to mean that having prevaricated in answer to No. 9, the physician would tell the truth in No. 10. Still other questions are: "Was deceased afflicted with any infirmity, deformity, or chronic disease?" "Did deceased suffer from phthisis?" "Did any members of his family die of consumption?" All these questions are regarded by the author as manifestly unfair questions to put to the family physician and are all calculated to serve the interest of the company and to develop some contradiction in the statement made by the insured on entering. Under certain conditions, it is asked, could a medical man honestly and conscientiously answer some of these questions? For instance, knowing that the patient died of cerebral hemorrhage and that such hemorrhage was secondary to cerebral syphilis, how could one answer the question, "Did he have any chronic disease?" Would the physician conceal the fact and deceive the company, or disclose his knowledge and then possibly have the company refuse to pay the insurance, and meanwhile be sued himself for having disclosed privileged information? In the latter case the physician would be betraying confidences which have been given to him as a sacred trust.—*New York Medical Journal*, June 8, 1912.

The Report of the Mutual Life Insurance Company for 1911 shows that there was paid to policy holders and their beneficiaries in death claims, endowments and dividends, $57,353,726. This was $599,050 more than was paid out in the previous year.

Society Reports.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, April 15, 1912.

THE PRESIDENT, DR. REYNOLD WEBB WILCOX, IN THE CHAIR.

Abbott's Method of Correcting the Fixed Lateral Curvature.—Dr. DEXTER D. ASHLEY read a paper on this method. He said, was not a cure for all forms of scoliosis, but was especially adapted to the acquired forms, when not too rigid, severe, complicated by structural changes from bony ankylosis. The postural, habitual, and functional varieties were readily treated by exercises. The importance of finding a way to correct the fixed curve had long been felt, and research had been active in regard to the pathology and mechanism of the condition. All orthopedists now recognized that it should be possible to correct the curve and overcorrect, and that, according to Wolff's law, it should stay corrected; but the technique had been missed. The correction of a deformity of the body necessarily meant the ability of the surgeon to make an overcorrection, as in bow legs, knock knees, club feet, and wry neck, but until Abbott, so far as he knew, no one had shown us an overcorrection of a fixed spinal curve as recorded by the *x*-ray. In correcting a scoliosis it was evident to all who had studied the subject that the twisted spine, with the vertebral bodies rotated to the side of the convexity, must be reduced by causing these bodies to pass back to the normal position by the same route through which they had moved into the position of deformity. Abbott's work was based upon the theory that the concave side has swung forward in a circle to the right (in the ordinary right dorsal, left lumbar deformity). All previous efforts had been founded upon the idea that there was rotation backward of the convex side, and heretofore in our endeavors to forcibly correct the spine we had been making pressure upon the prominent angle of the ribs. Lovett had shown that a force or forces applied at or beyond the angle of the ribs would cause the spine to be forced forward, or into superextension in the direction of least resistance, carrying the bodies further forward in rotation and deformity. This would explain why a fixed or severe curve had resisted our best efforts and become progressively worse with treatment. Abbott's conception was that in correction the bodies must move to the concave side and backward. Since the deformity was produced by flexion and side bending toward the convex side, the correction and overcorrection must take place in the same position of flexion and side bending to the other side. To obtain this effect he flexed the spine with pressure over the lower ribs, with side bending, the arm on the depressed side being brought high up and forward and the arm on the convex side well down and backward. To facilitate the holding of the patient in this position of extreme flexion while applying the plaster jacket he placed him on his back in a hammock suspended from a frame. Ample felt pads, three-eighths of an inch or more in thickness, were fitted over the angles of the ribs on the convex side and prominent ribs in front, as well as the crests of the ilia, and a large felt roll was placed over the concave side, to be removed through the large fenestra in the back when trimming the jacket. After all had been adjusted upon the hammock the lower limbs were flexed in order to overcome the lordosis and the foot of the frame was elevated to an angle of 30° to 60° to further utilize the weight of the pelvis and lower limbs. Three strong muslin bandages were then adjusted, making side pulls, and a broad bandage was anchored to the frame on the convex side and passed across the lower prominent ribs. From this was suspended a weight of 25 to 50 pounds to force the patient still further into flexion and side bending and depress the prominent ribs. The plaster jacket, which extended about 1½ inches below the anterior superior spines, was made rather higher above the symphysis pubis than was usual because of the flexed position of the thighs, while behind it reached well down over the base of the sacrum, to prevent the erect position. The plaster was carried high up under the arm on the convex side and well down on the concave side, permitting the high shoulder to fall backward and downward, and in some instances it was advised to apply a strip of plaster to hold this shoulder down and back. The body in flexion, the jacket was made roomy in front over the upper part of the sternum, to relieve the elevated breasts and permit the body to fall further forward in flexion, but still give high thoracic breathing space; while over the lower ribs it was made close, to compress. four fenestræ were cut out, to permit further flexion and side backward. Two were in base of the breasts and extended from five to eight inches, to allow adjustment of pads, and the fourth was made on the side, to better control any crushing or bending which was to be avoided. During the wearing, which would vary from two to eight months, to the severity of the case, the patient should do dumb-bell exercises, leaning forward in order to keep up the muscular tone and assist in maintaining the flexibility of the spine. The jacket was worn in the position of overcorrection until structural changes were established and the position became a habitual one for the patient. After the removal of the jacket he should remain much of the time in bed and should exercise the muscles of the spine daily. Sometimes it was advisable that a brace or corset should be worn. Very few had any idea of the complete plant and earnest corps of workers which the State of Maine had furnished in support of Abbott's general work. As Dr. Abbott turned over ream after ream of *x*-ray prints of cases treated when Dr. Ashley visited him he was much impressed with the completeness of his work, and he said that he considered his discovery one of the greatest advances in orthopedic surgery in ten years. In connection with the paper Dr. Ashley presented several patients in course of treatment and showed *x*-ray pictures and photographs of them before treatment and at different stages.

Dr. REGINALD H. SAYRE said there could be no question that this was a most intelligent way of improving the condition of the spine. In his own practice one of the most satisfactory things that he had done in the treatment of scoliosis was to have his patients go through movements like those of sailors hauling up a heavy cable, which had the effect of arching up the spine. What he had done for only a very short time each day Abbott had now succeeded in keeping up for the whole twenty-four hours. There was no question in his mind that Abbott had made a great advance when he found out how to keep his patients in a posture which might very well be compared to that of cats on the back yard fence with their backs up. It was extremely difficult, however, to apply our pressure to so many vertebral bodies in one direction and yet not affect in any way the other vertebræ. The state of affairs was different from that met with in club foot, where the problem was much simpler, and he was therefore not so optimistic as Abbott appeared to be. There were, he believed, certain cases which could not be improved.

Dr. ASHLEY said that "Keep your back up like a cat" was exactly what he had been telling his patients. The arching of the spine was what was required, and Dr. Sayre's remarks had shown how many of us approached the idea in different ways. Personally he had often thought that if he could only hold his patient in the desired position he could effect a cure, but before Abbott's discovery he had lost faith in the possibility of doing this by means of a plaster-of-Paris jacket.

The Female Perineum from a General Surgeon's Standpoint.—Dr. ROBERT T. MORRIS said that many years ago he became impressed with the fact that most of the perineal operations dealt with fascia alone, and did not appeal to the general surgeon, who liked to have muscles actually in sight when any repair was to be made. Dissections he had made of ruptured perineums showed that atrophy of most of the muscles and fascia took place rather rapidly after the perineum was torn. The pubo-coccygeal portion of the levator ani muscles, however, remained plump and in good condition because of their continued action in other work. In ordinary cases of ruptured perineum he made a horseshoe incision with the arms extending between the labia, placed a finger in the vagina, and felt the large, round portion of the levator ani, stabbed a pair of scissors through one side of the horseshoe incision down to this point, opened the scissors *in situ*, repeated the process on the opposite side, cut the intervening fascia, and then sutured the levator ani muscles in the midline with three or four interrupted kangaroo tendon sutures. A continued suture next united the fascia which carried any remains of the transverse perineal muscles and of sphincters. Where the external sphincter was completely torn he made a second horseshoe incision, with the arms pointing downward, exposed the blunt ends of the torn sphincter ani and united them with one or two kangaroo tendon sutures; after which he completed the regular operation. This made a very strong, durable, and accurate perineal repair, which could be performed

easily in ten minutes without any hurry. The perineum should be repaired before degenerative changes had taken place in muscles and fascia which had been thrown out of commission. Immediate repair of the recently torn perineum could not be made so accurately because of the bruised and torn tissues. In these cases immediate repair was desirable, however, because we usually got primary union if there was a good flow of normal lochial fluid, nature's antiseptic, which bathed the parts freely. If union were missed, or if it were not attempted at this time, the accurate anatomical operation was to be done later.

Dr. Ransford E. Van Gieson said that prevention was sometimes better than cure. Many years ago he had suggested and carried out a little procedure designed for the protection of the perineum, though he had never published this. In cases in which it seemed probable that rupture would occur he passed two or three sutures along through the perineal body beforehand. If rupture did occur the stitches were drawn up, but if there was no rupture they were simply taken out. Within the last three or four years this plan of procedure had been advocated in the medical press.

Surgery from the Pediatric Standpoint.—Dr. Le Grand Kerr read this paper. (See page 1186.)

Dr. Godfrey L. Pisek said that, particularly in New York City, we had a chance to accomplish some of the things spoken of in the paper. There was a distinct surgery of childhood, and he did not doubt that in the future we would have in our medical colleges a chair of Surgery of Children. Even the anatomy of the child varied from that of the adult, and the surgeon should be always ready to recognize congenital abnormalities. The man who regarded the child as a little adult was not fit to practise surgery among children. He believed that the surgeon had taught the pediatrist to be a conservative because he (the surgeon) had not been careful enough in regard to details. The surgeon should not be alone a mechanic. It was not right for him, when called in, merely to say: "Tell me what you want done and I will do it." He should know something about children and their ailments: for instance, that a female child might have a pyosalpinx, resulting from a gonorrheal vaginitis. Possibly there might be present a hemophiliac condition, which it would be of vital importance to recognize. Then, as to the matter of feeding, all the benefit of an operative procedure might be lost by mistakes in this particular. In this connection it was interesting to note the different results which had been reported after the operation for pyloric stenosis. Some men had had a large mortality and others few or no fatal cases, and it could scarcely be doubted that the manner in which the infants were fed had had much to do with these results. Having referred to the importance of *x*-ray examinations, Dr. Pisek concluded by saying that we should always keep in mind the fact that from a surgical point of view, as well as others, the child was an entirely different proposition from the adult.

Dr. Franz Torek said that the importance of thoroughly investigating the general condition of the patient applied to all surgical cases, whether in the child or the adult. Dr. Kerr had done well in telling us not to forget that a child upon whom it was desired to operate might possibly be in the incubation stage of some infectious disease, and it was certainly advisable always to inquire carefully whether the child or any of the family had been exposed to the risk of contagion. Sometimes, however, in spite of all precautions, these infectious diseases took us by surprise. As to the diagnosis of appendicitis, he had been called upon to operate in at least six cases where he found, instead of appendicitis, some pulmonary trouble, perhaps more frequently pleurisy than pneumonia. Even left-sided thoracic disease had sometimes been mistaken for appendicitis. In all of these cases of mistaken diagnosis which he had personally seen the patients were adults; therefore this matter applied to adults as well as to children. As to the question of shock, he could not quite agree with the reader of the paper. He had been brought up to be greatly in fear of shock, but as time went on and his experience increased it had lost some of its terrors for him. He thought that if in the case of children we were to substitute for shock the word hemorrhage it would be getting nearer the truth. The losing of blood was a matter of the gravest import to a young child, and it was therefore highly desirable that in operating on such subjects surgeons should be extremely careful to prevent all bleeding. He believed that if this were borne in mind we would hear less about shock.

Dr. William Shannon said he thought the most expert surgeon could not take offense at anything which had been said this evening. Due credit had been given to skill and technique. He did believe, however, that the pediatrist could often be of service. In one case where he himself was called in an abdominal operation had been performed on a child three or four days before, and on account of the appearance of alarming symptoms the surgeon had been asked to open the abdomen again. There was incessant vomiting and the temperature had risen to 105°. Dr. Shannon found, on investigation, that there had been wrong feeding. He corrected this, and within twenty-four hours the temperature had fallen to normal. Here the whole trouble was that the surgeon did not understand the proper feeding of his little patient, and there were many such instances in which surgeons had profited by advice from the pediatrist. A correct diagnosis was essential not only for medical, but for surgical, therapeutics. A little over a year ago a child who was believed to be suffering from appendicitis was brought on from Boston, to be under his observation for a couple of months. There had been eight acute attacks, and after the arrival of the patient in New York he himself witnessed two distinct attacks. After a careful study of the case, with repeated examinations, he came to the conclusion that the trouble was of digestive origin, and expressed the opinion that no operation was called for. He prescribed an appropriately regulated diet, and during the fourteen months which had now elapsed there had been no relapse. Just the opposite of this case was often true, for, as Dr. Kerr had said, there were many instances where chronic appendicitis was mistaken for other troubles. In all cases of appendicitis in children he believed that operation should be resorted to just as soon as the diagnosis had been made.

Dr. A. Ernest Gallant said that in 1891 he had spent some time at the country branch of the New York Infant Asylum at Mount Vernon, where there were some 400 children, ranging in age from ten days to four years, and as a result of the knowledge of children and their ailments which he gained from this experience he believed that he had since lost a number of surgical fees. A man who had not thus spent some time working among children would certainly sometimes perform operations which were not called for, and, in his opinion, any one who did not understand children was not fit to do surgical work on them. He was very glad to hear Dr. Pisek speak of the anatomical differences between the child and the adult. There was a great lack of knowledge regarding the anatomical peculiarities of early life, and it was also very difficult to secure such knowledge. He had discovered this when, some time ago, he was trying to learn something of the comparative anatomy of the adult and the child, for he could find very little upon the subject in the whole library of the Academy of Medicine. As to the matter of shock, he had always supposed that children stood shock well. It was true that he had seen some nearly killed by chloroform, but he would not consider this as shock. He still believed, however, that in the case of children chloroform was preferable to ether as an anesthetic. The surgeon, in his opinion, should make his own diagnosis. In a number of instances where he had been called in the attending physician had told him what was the matter with the patient and what he wished done, but while he was willing to take into consideration the points thus given him he always liked to form his own opinion of a case. The main point in Dr. Kerr's paper was that the surgeon and the pediatrists ought to get together. He believed that he was right, and that when there was more of this coming together there would be fewer mistakes and also fewer operations.

Dr. Alfred Kahn said that in every case we had to be guided by the conditions present, and that we could not always tell what was going to be the result. Reference had been made to the status lymphaticus. Who could say whether this was going to occur from the anesthetic? In the future he believed that the surgeon would be more of a mechanic, to be called in to do a special thing. As to the general condition and requirements of the child, the best judge undoubtedly was the general practitioner, who had known and cared for it from infancy.

Dr. Kerr, in closing, said in reference to Dr. Torek's point that infectious diseases sometimes came upon us as a sudden surprise, that this was because the child had not been under sufficiently careful observation. All children were liable to contract the exanthematous diseases, and in every instance the question of exposure should be considered. In order to avoid shock in cases requiring manipulations of considerable length, such as extensive burns or scalds, he thought that several short periods of anesthesia were much better than one long, dangerous one. One of the most common causes of shock was the pulling and handling of the tissues, as in the careless use of hemostats, etc., during an operation. He was glad to say that in two

of the hospitals with which he was connected [illegible] now saw all cases under twelve years of age [illegible] medical or surgical; in the latter conferring with the surgeon. As one result of this plan there had not been in the two years since its adoption a single operation for appendicitis in either of these institutions where appendicitis was not really present. In another hospital where he served, however, only the medical cases under twelve, but not the surgical, were allotted to the pediatrist, and here there had been a number of instances in which mistakes were made. He had taken care to observe the work of a number of careful and conscientious surgeons, and he had convinced them of the need of cooperation in children's cases.

NEW YORK ACADEMY OF MEDICINE

SECTION ON SURGERY.

Stated Meeting Held May 3, 1912.

DR. LUCIUS W. HOTCHKISS IN THE CHAIR

Echinococcus Cyst of the Thigh.—Dr. EMILY DUNNING BARRINGER reported the case of an Italian woman sixty-four years old, who was admitted to the hospital May 3, 1911, with a diagnosis of osteosarcoma of the thigh with metastasis in the neck. The family history was negative and there was no history of malignancy. The patient had had the usual diseases of childhood, but otherwise had been perfectly healthy. The menopause occurred ten years ago and in all respects was normal. The history of the present condition dated back six years, when she first noticed a small lump on the outer side of her right thigh which was painful; this swelling grew gradually, becoming more and more painful until at the time of her admission to the hospital she was very much incapacitated and walked with great difficulty. The physical examination showed the lungs and heart to be normal; the examination of the abdomen was negative; there were no enlarged lymph glands with the possible exception of one infraclavicular gland on the left side, and there arose the question as to whether there was a metastatic involvement in this. The right thigh showed a large tumor mass on the anterior and exterior aspects which extended down to within 5 cm. of the upper part of the patella. The tumor was not hard but lobulated and somewhat cystic in various areas. The skin over the tumor was fairly normal in appearance.

Arteriovenous Aneurysm (Facial Vessels) Following a Bullet Wound.—Dr. JOHN J. MOORHEAD reported this case. The patient was shot with a .38 revolver, the bullet making an exit at the angle of the lip. Two days after this occurrence he was admitted to the Post-Graduate Hospital with a large hematoma which had a decided pulsation and gave all the characteristic signs of an arteriovenous aneurysm.

Obliteration of Douglas Cul-de-sac for Rectal Prolapse.—Dr. DE WITT STETTEN presented this patient. He said that two years ago Quenu and Duval had suggested a form of treatment in rectal prolapse which with some modification he had tried in this case. On the assumption that the pouch of Douglas represented the hernial sac, they had advocated the obliteration of the cul-de-sac. Colopexy could be added to this procedure. The patient was 27 years of age and unmarried. She had had colitis two and one-half years ago which lasted eight months, and for six months prior to the operation had noticed prolapse of the rectum when her bowels moved, and suffered very severe pain so that at times she almost fainted. The examination showed a good sphincter ani. With slight pressure the patient was able to extrude about three inches of rectum in its entire thickness. In November, 1911, Dr. Stetten operated through a median incision with the patient in the extreme Trendelenburg position. The uterus was drawn out of the very deep cul-de-sac and pulled taut. The sigmoid was likewise pulled taut. A purse-string suture was then applied to the lowest possible point in the cul-de-sac, only peritoneum, of course, being included. A second and a third purse-string suture were applied in the same manner until the cul-de-sac was completely obliterated, the last suture bringing it to a level with the pelvic brim. The sigmoid was fastened to the posterior wall of the uterus with a few sutures so that it ran transversely across from right to left. Then the peritoneum over the left psoas was divided and the sigmoid was sutured to the muscle. Finally a ventrosuspension of the uterus was done in the usual fashion. The patient made an uneventful recovery and there had been no trace of prolapse since. There had been no interference with the function of the bowels notwithstanding the extensive plastic operation. It was too soon to be certain of the end result, but, if there should be a recurrence, Dr. Stetten believed that a simple perineal operation would be sufficient to bring about a permanent cure. The case simply showed that this operation was absolutely safe and the temporary result perfect.

Ligation of Branches of the Pulmonary Artery for Bronchiectasis.—Dr. WILLY MEYER, after a few introductory remarks regarding bronchiectasis and the difficulties of its medical as well as surgical treatment, referred to the experiments of Sauerbruch and Bruns regarding the effect of ligation of the pulmonary artery and the subsequent shrinking and connective tissue proliferation in the lung and then reported the case of a man 17 years of age, in whom he had ligated the branches of the right pulmonary artery that ran to the middle and lower lobe on that side. The patient was kept in a slight Trendelenburg posture for two days prior to operation, so as to have him cough up as much as possible of the retained secretion. One hour before operation he was given 8 minims Magendie plus 1/150 of atropine. The negative chamber was used. The operation was done under regional anesthesia, novocaine and suprarenin being injected into the fourth to the eighth thoracic nerve near the spine; then the field of operation itself was anesthetized and prepared. An intercostal incision was made in the fifth space, from the vault of the axillary cavity forward as far as possible, avoiding the internal mammary artery. Firm adhesions were found from the lower and middle lobes to the diaphragm, posteriorly in the complementary space, and anteriorly. It was decided to loosen the adhesions, which was accomplished with some difficulty. Still, the lung could not be well moved, the cause being a firm band of adhesions which fixed the apex. With the left fore and middle finger around this band a long curved pair of scissors were introduced and the band clipped. Now the entire lung could be well brought forward and inspected. It had been the intention to enter the interlobar space in order to reach the divisions of the pulmonary artery, but this space had evidently been entirely obliterated by the former attacks of pleurisy; a fine line showed the union between the lobes. It therefore, became necessary to reach the artery more centrally. The lung was turned outward and the bronchus of the middle and lower lobes carefully palpated; the adhesions there present were loosened with a piece of gauze on a long handle. It was not easy to definitely make out the pulmonary artery. The inferior vena cava was distinctly recognized by virtue of its rhythmic distention and collapse with respiration. Alongside the upper border of the bronchus of the lower lobe the pulmonary artery could be definitely made out; this was isolated and surrounded with a silk ligature. When pulled upon, it was observed that about one inch further up another branch was given off from the pulmonary artery, evidently the one to the middle lobe; this was also ligated with silk. The pleural cavity was cleansed and the wound closed in the usual way, without drainage.

The patient stood the operation nicely. He was returned to the ward and made an uninterrupted recovery. He was out of bed on the fifth day. An effusion into his pleural cavity proved to be sterile on bacteriological examination. The patient has very much improved since the operation and the amount of expectoration has become reduced from ten to twelve ounces to less than one ounce.

Incision of Pulmonary Artery in a Dog for Supposed Pulmonary Embolism (Trendelenburg's Operation).—Dr. WILLY MEYER presented a dog in whom he had done the incision of the pulmonary artery, for supposed pulmonary embolism (Trendelenburg's operation). As was well known, Dr. Trendelenburg conducted his experiments for this deadly occurrence in his 64th year and had the courage to try the operation on human beings a short time afterward. He had written Dr. Meyer lately that, although none of the 12 patients who were operated upon by himself and his assistants, in the Leipsic Clinic had survived, he nevertheless would continue to try the method as it offered the only chance of relief in this otherwise usually fatal accident. Dr. Meyer showed the dog to prove that, with the help of differential pressure, the operation lost a great deal of its magnitude, for dogs were generally believed not to be good objects for this kind of operation. Trendelenburg tried it successfully on a calf, imitating the embolism by a piece of lung which had been put into the internal jugular vein and which, after producing the embolism, was attacked and successfully extracted, the animal making a final recovery.

Dr. Meyer has tried the operation three times on dogs, using Trendelenburg's instruments, which were too large, as they were designed for human beings. Still, he succeeded in pulling through two out of the three dogs in which the pulmonary artery was incised. The forceps was intro-

raced into both branches of the vessel and the vessel then closed by interrupted sutures. The dog that died was a small animal and the forceps proved too large, interrupting totally the communication between the right and left ventricles of the heart.

A Contribution to the Study and Surgical Treatment of Oblique Inguinal Hernia.—Dr. Franz Torek read this paper. (See page 1174.)

Membranous Perienteritis.—Dr. Archibald F. Isaacs read this paper. He stated that this condition was, in many cases, the cause of symptoms on which a diagnosis of chronic appendicitis had been made. Though frequently associated with chronic inflammation of the appendix or other viscus, and probably secondary to it in many cases, it developed into a distinct process with manifestations of its own which were usually sufficient to distinguish it from appendicitis or other inflammatory conditions, even if such were present at the same time. The term membranous pericolitis had been applied to the condition, but as the process might occur about various other organs it should be termed perienteritis. While the condition had been referred to by earlier writers, Jackson, in 1909, had written the first real description, and the one which had called the attention of the profession to the frequency and importance of the condition. Observation on the living subject had shown the frequent presence of what might be called a pseudo-peritoneal membrane, lying over and loosely attached to the serosa of the gut, and generally extending to the parietes, thus limiting the normal mobility of the viscus. The appearance of the membrane was usually that of a very delicate, veil-like, transparent film, with its main strands running in a general direction across that of the axis of the gut on which it lay. These bands were comparatively firmly attached at their ends, but the body of the membrane was attached so loosely to the serosa that the gut was freely movable under it. In this delicate mesh of membrane there were often one or more bands of dense tissue attached by one end to the abdominal wall, from whence they radiated over the intestines, or, beginning at the intestine, radiated over the abdominal wall. These bands were likely to cause obstruction by kinking the gut, or by constricting its lumen, or by drawing it into rotary displacement, or by any combination of these effects. The veil-like membrane might have a similar effect in a milder degree, or might form a pouch within which the intestine was freely movable but confined. Again, it might not surround the intestine, but, attached to the parietes on one side, it might extend over a portion of the gut circumference and thus bind it down with rotary displacement and diminution of the caliber of the gut. The anterior longitudinal band of the ascending colon seemed to be the favorite seat for firm attachment of the more dense bands. From here they usually ran outward and upward to be again attached to the parietal peritoneum at a much higher level than that of their origin on the colon. In cases where the transverse colon turned down the hepatic flexure to run back parallel to the ascending colon, the greater omentum, on a line near its origin from the transverse colon, would be found attached to this same longitudinal band by new membrane holding the two sections of the colon together. This doubled colon was then enveloped in a pouch of perienteric new membrane, attached to the outer parietes which limited the normal mobility and caused kinking at the hepatic flexure, very often sharp enough to cause partial obstruction of the lumen. The etiology of the production of this membrane was not yet settled. From his own experience the writer believed that the formation of the membrane was secondary to ulceration or inflammation in the gastrointestinal tract, or in other peritoneum covered viscera. It resulted from the reaction of the peritoneum to the irritation of septic material carried to it, through the lymphatics, or directly from the transvisceral lesion. A mild grade of productive fibrinous peritonitis was set up and organization of the exudate formed this filmy membrane, which contracted in its development. The continuance of the irritation kept up the process with the additional organization of new tissue and the denser and more contracted fibrous bands were formed. The theory that the process was due to irritant absorption from intravisceral sources was supported by the fact that the regions in which it was most frequently found corresponded to the regions where ulceration of the gastrointestinal mucosa were most common. These regions were about the appendix, along the large intestinal tract, the distal portion of the ileum, and about the region of the duodenum and pyloric end of the stomach. The author reported several cases which seemed to show the evident relationship between intraenteric ulceration and perienteric new membrane, or at least showed the coexistence of both under circumstances where cause and effect seemed evident. The cases might be divided into four classes according to the location of the membrane, and, incidentally, in relation to its cause: 1. Membrane about the appendix and neighboring portions of the cecum and ileum. 2. Membrane about the ascending colon, extending to the cecum below and to the region of the flexure above, with bands in advanced cases binding the gut down, reducing its caliber, and rotating on its axis. In these cases the irritation must come from the colon. 3. Membranous adhesions of the transverse colon to the ascending colon, the former being displaced so as to run parallel with the latter, and both being held in an investment of new membrane. 4. Membrane extending from the gall-bladder and liver to the duodenum and pyloric portion of the stomach, and from there to the transverse colon, and usually across the hepatic flexure to the ascending colon. These cases were secondary to duodenal or gastric ulcer, or to cholecystitis. This classification did not include Lane's kink. The pathologist reported that the membrane removed from three cases consisted entirely of connective tissue and blood vessels. The diagnosis could not be made in the early stages, but later there were a few main factors to be relied upon. The history was usually that of vague and annoying pains in the right side of the abdomen for months or years. Constipation was usual, at times followed by painful diarrheal discharges. Gassy distention of the cecum, or of the cecum and ascending colon, with a comparatively collapsed condition of the descending colon would be found. Tenderness about the right half of the abdomen not limited to the appendical region, especially when it extended up over the ascending colon and the hepatic flexure. In the treatment the first requisite was the removal of the cause. To treat the membrane alone and to neglect the cause would be to invite its recurrence. In operating for chronic appendicitis, if the ascending colon would not come down into the wound, it was fair to assume that there were perienteric membranous adhesions about it, and it should be explored. The proper treatment for the membrane was not yet definitely established. It seemed rational to remove as much as possible of the new tissue, and, if in doing so the serosa was damaged by the firmness of the adhesions, such deficiencies might be closed by a few Lambert sutures. The membrane should be divided across the direction of its fibers, which with the expansion of the confined gut would likewise retrace to either side. Even if the membrane did not seem to kink or constrict the gut, it should be treated by division or removed, for, if left, its tendency to contraction might be the cause of future trouble. When it became necessary to cover a defect in the serosa, the line of sutures should, if possible, be at right angles to the incision so as to spread the divided ends of the constricting fibers still further apart. When practicable, the membrane should be peeled off, and either entirely removed or folded up and sutured to its parietal attachment. The results of treatment had been generally good, though not invariably so.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners in the State of Washington.

January, 1912.

ANATOMY.

Twelve questions; answer ten.

1. Name the bones of the cranium. Give the anatomy of the inguinal region and the perineum.
2. Give the contents of the nine regions of the abdomen.
3. Give origin, course, and distribution of sciatic nerve.
4. (*a*) Name the branches of the aorta—ascending, arch, and descending. Give course and distribution of the carotid. (*b*) Give and describe the blood supply of the stomach and bowels. Describe the pulmonary artery.
5. Name the muscles of the abdomen and give origin and insertion.
6. Name and give relation of the important organs, vessels, nerves, muscles and structures of the neck.
7. Give origins and insertions of muscles of the shoulder.
8. Give muscular and tendinous attachments of patella.
9. Give the course of the external and internal saphenous veins.
10. Describe the portal circulation.
11. Describe the sympathetic nervous system.
12. Give anatomy of ear and mastoid and their relations.

HISTOLOGY.

Twelve questions; answer ten

1. Name and describe the membranes of the [illegible].
2. Describe red-blood corpuscle and tell some [illegible] regarding.
3. Give structure of human skin.
4. Describe the appearance of healthy adult liver [illegible] by the microscope.
5. Locate and give structure of Peyer's patch.
6. Name, describe and locate two types of epithelium.
7. Where are the nerve cells found?
8. Locate the thyroid gland and describe its structure.
9. Name the layers of the retina.
10. Name the varieties of muscle and state difference between them.
11. Describe nonmedullated fibers and where occur.
12. Give histological difference between the pyloric and cardiac end of stomach.

PHYSIOLOGY.

Twelve questions; answer ten.

1. Name the principal groups of the normal constituents of the body and give illustrations of each.
2. What are carbohydrates, and what part do they take in the general metabolism?
3. What is the distinguishing element of (*a*) albuminous substances? (*b*) Hydrocarbonaceous substances?
4. Why is an exclusive diet of (*a*) animal food not suited to man's needs? (*b*) Vegetable substances?
5. Name the fluids secreted by the digestive apparatus. Where secreted, and reaction of each?
6. Describe the gastric juice; its action and the product of gastric digestion.
7. Describe the chyle, and how does it enter the general circulation?
8. Describe briefly the phenomena of the coagulation of the blood.
9. What are the *glandulæ solitariæ* or solitary glandules? Where found? Their function?
10. Describe the iris and give its function.
11. Describe the composition of the blood and the functions of its component parts.
12. What is the physiological significance of diabetes, or sugar in the urine?

CHEMISTRY.

Twelve questions; answer ten.

1. What is urea? How would you determine the amount?
2. What degree Fahrenheit is 95° C.?
3. Write the formula of (*a*) baking soda, (*b*) lunar caustic, (*c*) cream of tartar, (*d*) chloride of lime, (*e*) fire damp.
4. Give the chemical difference between calomel and corrosive sublimate.
5. What is (*a*) water of crystallization, (*b*) efflorescence, (*c*) deliquescence?
6. What are proteids? (*b*) From what they derived? (*c*) Name the chief proteids.
7. Describe H_2O_2. (*b*) its properties. (*c*) What is the purest natural H_2O?
8. Name the halogens. Give their symbols and atomic weights.
9. Describe the various allotropic forms of carbon.
10. What is meant by a volatile liquid? Name one and give its formula. (*b*) Same question relative to a fixed liquid.
11. Define (*a*) calorie, (*b*) synthesis, (*c*) molecule, (*d*) fusing point, (*e*) osmosis.
12. Complete the following equations and write the name of each resulting compound under its formula:

$$HgSO_4 - Hg + 2NaCl$$
$$NaC_2H_3O_2 - NaOH$$
$$As_2O_3 + 3H_2S$$

TOXICOLOGY.

Twelve questions; answer ten.

1. Define a poison. Give methods in which they may be introduced into the organism.
2. Give classification of poisons.
3. Give effects local and remote of poisons in general and indicate the particular poisons that affect particular organs or structures.
4. What are ptomaines?
5. Give symptoms of mushroom poisoning.
6. Name the poisonous gases most commonly met with and give their symptoms.
7. Give symptoms of poisoning by arsenic; (*b*) give symptoms of poisoning by phosphorus.
8. What diseases may follow [illegible] on eating pork? Describe them.
9. Describe idiosyncrasy and tolerance and state what effect they may have on poisoning.
10. Does the habitual taking of poisonous drugs diminish the risk of the latent or insidious remote effects.
11. What is wood alcohol? How may it be recognized from grain alcohol? Describe symptoms of poisoning by same.
12. What is denatured alcohol? Is it a poison? In what kind of poisoning may a scarlatina-like rash appear?

PATHOLOGY.

Twelve questions, answer ten.

1. What are the characteristics of a growth which make one pronounce it malignant? What are the principal subdivisions of malignant growths, and how do you distinguish them?
2. Give the pathological appearance (macroscopical and microscopical) of the kidney of chronic interstitial nephritis and give the urinary findings.
3. Describe carefully the condition of the arteries in arteriosclerosis and describe how the heart is affected by it.
4. What is the pathological condition in diabetes mellitus?
5. Describe carefully the appearance of the lung (macroscopical and microscopical) in acute lobar pneumonia.
6. Describe carefully the various steps in the formation of a tuberculous cavity in the lung.
7. What tissues are affected and in what manner are they affected in diphtheritic paralysis of the legs?
8. Describe the gross and minute appearance of the typical alcoholic liver.
9. Describe the lesions in acute cerebrospinal meningitis (epidemic form).
10. Describe the pathological conditions present in exophthalmic goiter.
11. Describe the tissues affected and give the microscopical appearances of the blood in pernicious anemia.
12. What tissues are affected in rheumatoid arthritis? Describe the joint lesion.

BACTERIOLOGY.

Twelve questions; answer ten.

1. Define bacteria and classify them according to form, habitat, and oxygen requirements, describing each classification and giving examples.
2. Discuss microbic association. Give examples.
3. What is the chemical nature or composition of bacteria? What is a pathogenic germ? Toxicogenic?
4. Tell what you can of lactic acid fermentation—in the mouth, the stomach, in milk. Give its cause and the material acted upon.
5. What is necessary to demonstrate the causal relation of a microorganism to a given disease? (*b*) Give the four rules of Koch.
6. What are the water-borne diseases? How would you determine the presence of pathogenic bacteria in water? Distinguish between typhoid and colon bacilli.
7. A sample of sputum is brought to you. How would you determine the presence or absence of the tubercle bacillus? What is tuberculin?
8. What are toxins? Antitoxins? Distinguish between active and passive immunity. For what diseases are antitoxins known and used?
9. Tell all you can about diphtheria antitoxin. How is it made? How standardized?
10. Tell all you can about bubonic plague.
11. Describe Widal's reaction.
12. Give the principle for the Pasteur treatment for rabies.

GENERAL DIAGNOSIS.

Twelve questions; answer ten.

1. Differential diagnosis of intracapsular fracture and dorsal dislocation of head of femur.
2. Give in detail tests to determine the cause of coma in a patient whose history is unobtainable.
3. Give the symptoms and physical signs of aortic insufficiency in the stage of failing compensation.
4. Association of physical signs: (*a*) Solidification of pulmonary structure; percussion; auscultation of respiration; vocal fremitus. (*b*) Large cavity with elastic walls; percussion; auscultation of respiration; vocal fremitus. (*c*) Effusion into pleural sac; percussion; auscultation of respiration; vocal fremitus.
5. Give and define four pathognomonic symptoms of locomotor ataxia—how distinguish multiple neuritis from locomotor ataxia.

6. Define pemphigus; sycosis vulgaris; herpes zoster. A description of the eruption in each case is especially desired.

7. Causes and symptoms of decubital gangrene—how prevent?

8. Diagnose between tetanus, hysterical tetanus and strychnine poisoning.

9. In what lobe is almost always situated a cerebral abscess due to ear disease?

10. Give symptoms of cerebral abscess following empyema of the mastoid.

11. In abdominal operations it is frequently necessary that the large intestine be recognized with certainty or the small bowel be positively identified. Give differences.

12. How many forms of non-malignant stricture of the rectum? How far above the anus is usually situated a simple stricture?

GYNECOLOGY.

Twelve questions; answer ten

1. Give differential diagnosis between appendicitis and right-sided adnexal inflammation.

2. Name varieties of fibroids, most frequent location of each, and diagnose from an unruptured ectopic gestation.

3. At what age does carcinoma of the cervix most frequently develop? Give prognosis, method of dissemination, and differential diagnosis from cervical erosion.

4. Name varieties of menstrual abnormalities. Describe and give etiology of each.

5. How is the uterus normally protected from infection by pathogenic bacteria?

6. What is pelvic hematocele? For what is it most likely to be mistaken? Give etiology and symptomatology.

7. What is vaginismus? Bartholinitis? Pyosalpinx? Coccygodynia? Hematometra?

8. Give distinguishing symptoms between a four months' pregnancy, a uterine fibroid and an ovarian cyst.

9. Describe normal menstruation and the changes that take place in the endometrium at that time.

10. What is subinvolution? And what are its chief etiological factors?

11. How would you distinguish between a case of amenorrhea, the menopause, or a three and one-half months' pregnancy?

12. Give symptoms and diagnosis of gonorrhea in the female. Why is it so serious in the female, and what are its sequelæ?

OBSTETRICS.

Twelve questions; answer ten.

1. Name in order the things to be determined on visiting a patient supposed to be in labor?

2. Define the first, second and third stage of labor, and give the mechanism of breech presentation?

3. Give the definition of pseudocyesis and name other conditions from which to distinguish it, and give the differential diagnosis?

4. What is eclampsia, its frequency, time of occurrence, and effect on mother and child?

5. Define premature labor and abortion, naming the most constant causes of each in order of importance and frequency?

6. Describe fully the obstetric forceps and cranioclast, and name the indications for their use.

7. What do you understand by accidental concealed hemorrhage? Give the causes, symptoms and prognosis?

8. Define version, name the kinds, and tell when indicated?

9. What is puerperal infection? Give a clinical picture of a case, including causes, symptoms, and pathology?

10. Define hydatidiform mole and give symptoms, frequency, pathology, and prognosis?

11. Name and describe four of the most common abnormalities of the female pelvis?

12. Name conditions occurring during labor which jeopardize the life of the child.

HYGIENE.

Twelve questions; answer ten.

1. Name the food principles and state in what proportion they form a balanced ration. Is there any one food which contains all the principles in the proper proportion? What is the effect of living upon a single article of food?

2. What is the chief cause of high infantile mortality? Give directions for the proper care of milk at the time of milking and until it is fed to the child. Are preservatives in milk ever justifiable? Why?

3. Why are patent medicines dangerous? What is the effect of alcohol taken in large amounts (*a*) upon the stomach; (*b*) upon the liver; (*c*) upon the susceptibility to disease; (*d*) upon the capacity for work; (*e*) upon the intellectual capacity?

4. What constitutes a safe and suitable drinking water? What are the best methods of purifying a water supply?

5. What are the best methods for the disposal of sewage? Garbage?

6. Give fully the hygienic measures for tuberculosis both for the care of the patient and for the protection of others.

7. What are the best means for the disinfection of rooms? Clothing? Hands? Sputum? Excreta? Dishes?

8. What constitutes air suitable for breathing? What are the chief impurities of bad air, and what are their effects? How much air space does the individual need?

9. Of the clothing fibers, which is best protection against sunlight? Against cold? Which is best for underclothing? For foot wear? Give reasons.

10. Discuss ventilation and heating of homes from standpoint of hygiene.

11. What are the requirements of a physician and others to prevent the spread of disease?

12. If you were a meat and food inspector what requirements would you make of the dealers in these things? Give reasons.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS IN THE STATE OF WASHINGTON.

January, 1912.

ANATOMY.

2. The regions of the abdomen and their contents are shown in the following table. It is to be remembered that the contents will vary according to the position of the lines drawn; these are arbitrary, and nearly every writer differs from every other. In the following table the superior horizontal line extends between the cartilaginous ends of the tenth ribs, the inferior between the anterior superior iliac spines. The vertical lines pass upward from the iliopectineal eminences, at right angles, to the upper horizontal line.

The viscera situated in each region are as follows:

RIGHT HYPOCHONDRIAC	EPIGASTRIC	LEFT HYPOCHONDRIAC
Liver.	Liver.	Stomach.
Right kidney.	Stomach.	Spleen.
Hepatic flexure of the colon.	Gall-bladder	Left kidney.
	Duodenum.	Splenic flexure of the colon.
	Pancreas.	
RIGHT LUMBAR	UMBILICAL	LEFT LUMBAR
Right kidney.	Transverse colon.	Small part of left kidney.
Ascending colon.	Duodenum and small intestines.	Descending colon.
Ileum.	Great omentum.	Small intestines.
RIGHT ILIAC	HYPOGASTRIC	LEFT ILIAC
Cecum.	Small intestines.	Sigmoid colon.
Appendix.	Bladder in children.	Small intestines.
Last coil of ileum.	Distended bladder in adults.	
	Pregnant uterus.	
	Sigmoid colon.	

4 *Branches of ascending aorta.*—Right coronary and left coronary; of *arch of aorta*: Innominate, left common cartoid and left subclavian; of *descending aorta (thoracic)*: Bronchial, esophageal, pericardial, mediastinal, intercostal, subcostal and superior phrenic; *of descending aorta (abdominal)*: Celiac axis, inferior phrenic, suprarenal, renal, spermatic (or ovarian), superior mesenteric, inferior mesenteric, lumbar, middle sacral, and common iliacs.

HISTOLOGY.

2. The *red blood corpuscles* are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin. They originate in the red marrow of bone, spleen, and liver.

6. TWO KINDS OF EPITHELIUM. (1) *Simple Squamous*, consisting of a single layer of flattened cells, each with a large nucleus. Found in the kidney (in the descending

limb of Henle's loop, and the capsule of Bo[illegible] the alveoli of the lungs, ventricles of the brain. [illegible] *tified Squamous*, consisting of several layers o[illegible] the lowest being columnar, the next polygonal, and [illegible] superficial layers becoming flattened or squam[illegible]ous; in the epidermis, mouth, pharynx, esophagus, [illegible] and anus.

9. The *layers of the retina*, from without inward [illegible] are: (1) Layer of pigment cells; (2) layer of rods and [illegible]s; (3) the external limiting membrane; (4) the outer [illegible]ar, or granular, layer; (5) the outer molecular, or reticular, layer; (6) the inner nuclear, or granular, layer; [illegible] inner molecular or reticular layer; (8) the layer of gang[illegible]lion cells; (9) the layer of nerve fibers; and (1[illegible] the internal limiting membrane.

10. *Voluntary* muscle is striated, has long narrow fibers with cross striations and many nuclei beneath the sarcolemma. *Involuntary* muscle is nonstriated, has spindle-shaped fibers, one nucleus centrally located, and no sarcolemma. The great exception is cardiac muscle, which is involuntary and also striated. *Voluntary muscle* is found in all the skeletal muscles, pharynx, diaphragm, larynx, external ear, and eye. *Involuntary muscle* is found in the alimentary tract from the middle third of the esophagus to the anus, in the ducts of glands, in the trachea and bronchial tubes, within the eyeball, the internal urinary and genital systems, circulatory (except the heart) and lymphatic systems, and the capsules of some organs.

PHYSIOLOGY.

1. *Epithelial tissues*, on the skin, lining the digestive and respiratory tracts, lining the vascular and lymphatic systems, and in various glands.

Connective tissues, in tendons, bones, cartilage, fascia, ligaments, etc.

Muscular tissues in voluntary and involuntary muscles.

Nerve tissues in nerve cells and fibers.

2. *Carbohydrates* were formerly defined as substances of unknown constitution containing carbon, hydrogen and oxygen. The molecule of carbohydrate contained six atoms of carbon (or some multiple of this number), and the hydrogen and oxygen were present in the proportion required to form water. While this definition is not, to-day, scientifically accurate, it suffices to "label" a definite class of compounds containing the sugars and starches.

Carbohydrate metabolism.—"The carbohydrates pass into the liver by the portal circulation as dextrose, and are partly stored up in the liver cells as glycogen, to be given off as sugar in the periods between digestion, to be used up when a sudden demand is made by the starving or working body. Carbohydrates may also be derived from proteids. The dextrose is used up by the muscle- and gland-cells being oxidized, the carbon going off as carbon dioxide. As to amount of carbohydrates, only 500 grams can be consumed without digestive disturbance. The carbohydrates are found in small proportions in flesh-foods, such as glycogen, and in milk in the form of lactose. By far the greater proportions of carbohydrates are obtained from the vegetable kingdom. In vegetable foods they occur as starches and sugars. An animal that is fed upon carbohydrates exclusively dies of starvation on account of want of proteid. The saving of proteid increases proportionately with the quantity of carbohydrates ingested. This is an important fact, since the digestive juices are capable of digesting them in large quantities." (Ott's *Physiology*.)

3. The distinguishing element of albuminous substances is nitrogen; of hydrocarbons, both carbon and hydrogen.

4. *An exclusive animal food* would not include enough carbon (unless the victim of the experiment took far too much nitrogen). So on this diet, there is a choice between too much nitrogen and too little carbon. Scurvy and other disorders would also result.

5. An *exclusive vegetable diet* would not include enough proteid, unless enormous quantities were eaten; this overeating would produce digestive disturbances.

FLUIDS.	WHERE SECRETED.	REACTION.
Saliva.	Salivary glands.	Alkaline.
Gastric juice.	Stomach.	Acid.
Succus entericus.	Small intestine.	Alkaline.
Pancreatic juice.	Pancreas.	Alkaline.
Bile.	Liver.	Alkaline.

6. *Gastric juice* is a thin, colorless fluid; acid in reaction; specific gravity about 1002 to 1010; and containing about 1 per cent. of solids. The daily secretion amounts to 10 or 15 pints. It contains: Water, pepsin, rennin, hydrochloric acid, chlorides (of calcium, sodium, and potassium), and phosphates (of [illegible]um, and iron). Its action is to change proteo[illegible]oses and peptones, and to curdle the caseo[illegible] also slightly antiseptic, and inverts cane [illegible] dextrose and levulose.

The pepsin and rennin come fr[illegible]ural cells in the cardiac glands and from the cell[illegible]ne glands. In both of these glands the pepsin [illegible] pepsinogen. The hydrochloric acid is formed by [illegible]ells. Just how a free acid is formed from the [illegible]n blood and lymph is not known. It has been suggested that it may occur as follows:

(1) $2Na_2HPO_4 + 3CaCl_2 = Ca_3(PO_4)_2 + 4NaCl + 2HCl$ or (2) $Na_2HPO_4 + H_2O + CO_2 = NaHCO_3 + NaH_2PO_4$; and then $NaH_2PO_4 + NaCl = Na_2HPO_4 + HCl$.

The product of gastric digestion is called *chyme*.

7. CHYLE. *Composition*: Water, proteins, fat, cholesterin, lecithin, and inorganic salts.

Properties: Chyle is a clear, colorless or slightly yellow fluid, alkaline in reaction, coagulable; during absorption it becomes creamy, owing to the presence of fat; its specific gravity is about 1006 to 1022.

It is taken up by the lacteals from the intestine during digestion, and finds its way to the lymph stream, then to the receptaculum chyli, then to the thoracic duct, and thence into the blood at the junction of the left subclavian and internal jugular veins.

8. When blood is withdrawn from the blood-vessels of the living body it first becomes viscid, then sets, and is converted into a jelly-like mass. This is due to the formation of fibrin. The jelly contracts, forming the clot; and at the same time the serum is squeezed out from the clot. Various circumstances and conditions will hasten or delay the process of coagulation. In man, the blood generally becomes viscid in from two to three minutes; it forms the jelly-like mass in from five to six minutes; a few minutes later the serum begins to appear; and the whole process is completed in from twenty-four to thirty-six hours. The clot then floats in the serum. The process is thus summed up by Halliburton: In the plasma a proteid substance exists, called fibrinogen. From the colorless corpuscles a nucleo-proteid is shed out, called prothrombin. By the action of calcium salts prothrombin is converted into fibrin ferment, or thrombin. Thrombin acts on fibrinogen in such a way that two new substances are formed: one of these is unimportant and remains in solution; the other is important, viz., fibrin, which entangles the corpuscles and so forms the clot.

10. *Functions of the iris:* To regulate the amount of light which falls upon the retina; to minimize spherical aberration; and to aid accommodation in the production of distinct vision for near objects.

11. *Physiological composition* of the blood:

1. Plasma.
2. Corpuscles { Colored. / Colorless. / Blood-plates.

The *plasma* consists of water and solids (proteins, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (proteid, leuconuclein, lecithin, histon, etc.).

Functions: The *red blood cells* carry oxygen from the lungs to the tissues. The *white blood cells:* (1) Serve as a protection to the body from the incursions of pathogenic microorganisms; (2) take some part in the process of the coagulation of the blood; (3) aid in the absorption of fats and peptones from the intestine, and (4) help to maintain the proper protein content of the blood plasma. The function of the *platelets* is not determined; it is possible that they take some part in the coagulation of the blood. The *plasma* conveys nutriment to the tissues; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys.

12. *Physiological significance of diabetes:* "Diabetes has usually been associated with derangements of the glycogenic function of the liver, though doubtless derangements of other organic functions will produce the same condition. At the present time it is believed that the excretion of sugar by the kidneys depends on two causes: (1) An ineffectual abstraction and storage of sugar due to some impairment in the activity of the liver cells; (2) a rapid cleavage of the protein constituents of the tissues, in consequence of some profound alteration in the nutritive process, whereby their glucose radicals are liberated in unusual amounts. The physiological mechanism by which the normal metabolism of the carbohydrates is regulated

is unknown. That it is complex in character is shown by the phenomena which follow not only puncture of the medulla, but also removal of the pancreas and the administration of various toxic agents."—(Brubaker's *Physiology.*)

CHEMISTRY.

1. Urea, $CO(NH_2)_2$, is the end product of the proteid metabolism of the body.

A comparatively easy test for *urea* is that of Fowler, based upon the loss of the specific gravity of the urine after the decomposition of the urea by hypochlorite. "To apply this method the specific gravity of the urine is carefully determined, as well as that of the liquor sodæ chlorinatæ (Squibb's). One volume of the urine is then mixed with exactly seven volumes of the liquor sodæ chlorinatæ, and, after the first violence of the reaction has subsided, the mixture is shaken from time to time during an hour, when the decomposition is complete; the specific gravity of the mixture is then determined. As the reaction begins instantaneously when the urine and reagent are mixed, the specific gravity of the mixture must be calculated by adding together once the specific gravity of the urine and seven times the specific gravity of the liquor sodæ chlorinatæ, and dividing the sum by eight. From the quotient so obtained the specific gravity of the mixture after decomposition is subtracted; every degree of loss in specific gravity indicates 0.7701 gram of urea in 100 c.c. of urine. The specific gravity determinations must all be made at the same temperature; and that of the mixture only when the evolution of gas has ceased entirely."—(Witthaus' *Manual of Chemistry.*)

2. Since $\frac{9}{5}C^\circ + 32 = F^\circ$.

$$\left(\frac{9}{5} \times \frac{95}{1}\right) + 32 = F.$$

$$171 + 32 = 203^\circ.$$

$$\therefore 95^\circ C = 203^\circ F.$$

3. Baking soda is $NaHCO_3$; lunar caustic, $AgNO_3$; cream of tartar, $C_4H_5O_6HK$; chloride of lime, $CaCl(ClO)$; fire damp, CH_4.

4. *Corrosive mercuric chloride*, $HgCl_2$. Corrosive sublimate is heavy, white, and crystalline; it has a strong, acrid, styptic taste, and is soluble in water, in alcohol, and in ether; it is decomposed by exposure to light.

Mild mercurous chloride, Hg_2Cl_2 calomel, is a heavy, white powder, amorphous, tasteless, and odorless; it is insoluble in cold water and in alcohol, and very slightly soluble in boiling water; when exposed to the light it becomes discolored (first yellow, then gray) and partially decomposed; it sublimes without fusing.

5. *Water of crystallization* is the water taken up by certain substances when they assume the crystalline form; this water is necessary for the maintenance of the form (and sometimes the color) of the crystal.

Efflorescence is the sudden change of a crystalline substance into a powder by the loss of its water of crystallization.

Deliquescence is liquefaction of a substance due to absorption of moisture from the atmosphere.

6. *Proteids* are organic substances of very complex composition, and of unknown constitution, which are indispensable to all animal and vegetable life. They are composed of carbon, hydrogen, oxygen, and nitrogen; some of them also contain sulphur or phosphorus, or some other element. They are formed by living matter. The chief proteids are the albumins, albuminates, globulins, nucleoproteids, proteoses, peptones, and coagulated proteids.

7. *Water*, H_2O, is the monoxide of hydrogen. It is a colorless liquid, a good solvent, a necessary component of the human body (about two-thirds of the body being water), it boils at 212° F., and freezes at 32° F. The purest natural waters are rain water and melted snow, provided they are uncontaminated.

8

HALOGENS.	SYMBOLS.	ATOMIC WEIGHTS.
Fluorine	F.	19
Chlorine	Cl.	35.5
Bromine	Br.	80
Iodine	I.	127

9. *The various allotropic forms of carbon* are: (1) *Diamond*, usually colorless or yellowish, but may be blue, green, pink, etc.; it is the hardest substance known, and the one which refracts light the most strongly. It is brittle, a bad conductor of heat and electricity; when very strongly heated it burns, without blackening, to carbon dioxide.

(2) *Graphite* is a form of carbon almost as pure as the diamond, capable of crystallizing in hexagonal plates; dark gray in color, opaque, soft, and a good conductor of electricity. It is also known as black lead or plumbago.

(3) *Amorphous carbon* is met with in a great variety of forms, natural and artificial, in all of which it is black, more or less porous, and a conductor of electricity.—(From Witthaus' *Chemistry.*)

10. A *volatile liquid* is one that passes into vapor at ordinary temperatures; example, Chloroform, $CHCl_3$.

A *fixed liquid* is one that does not pass into vapor at ordinary temperatures; examples, Water, H_2O.

11. *Caloric* is the amount of heat required to raise the temperature of one gram of water from 4° to 5° C.

Synthesis is the building up of a compound out of elements or simpler compounds.

Molecule is the smallest quantity of a substance (either element or compound) that can exist in a free state.

Fusing point is the temperature at which a given substance begins to melt.

Osmosis is the process by which certain fluids and substances in solution pass through a membrane or other porous substance.

12. $HgSO_4 + Hg + 2NaCl = Hg_2Cl_2 + Na_2SO_4$.

$NaC_2H_3O_2 + NaOH = C_2H_4O_2 + Na_2O$.

$As_2O_3 + 3H_2S = As_2S_3 + 3H_2O$.

TOXICOLOGY.

1. A *poison* is a substance which, being in solution in, or acting chemically upon the blood, is capable of producing death or serious bodily harm.

Poisons may be administered by the mouth, rectum, skin, vagina, lungs (by inhalation), by hypodermic injection into the circulation, by being applied to a wounded surface.

2. *Classification of poisons:* I. Corrosives. II. Poisons: Mineral, Vegetable, Animal, and Synthetic.

3. The local action of corrosives is severe, and the remote action is slight; with true poisons the reverse of this is the case. Corrosives decompose the tissues with which they come in contact; they also produce irritation and inflammation.

"Concerning the method of action of poisons upon cells and tissue elements or their constituents but little is known. A few poisons are, however, known to cause changes in the composition, chemical changes, in certain constituents of the tissues and fluids which render them unfit to perform their normal function. Thus carbon monoxide combines with the red coloring matter of blood corpuscles to form a compound more stable than that which the same pigment produces with oxygen, and thus extinguishes life by interference with the transfer of oxygen from the lungs to the tissues. It has also been suggested that the poisonous action of arsenic is due, in part at least, to interference with normal chemical processes brought about by modifications of oxidation. . . . . Recent investigations of the actions of those organic poisons whose chemical constitution is known indicate that their toxic activity depends upon their molecular structure, and in the case of certain series of related or homologous compounds is increased or diminished by introduction of certain groups or atoms, or in the case of isomeric bodies by variations in their positions." (Witthaus' *Toxicology.*)

Poisons that act on the brain: Opium, belladonna; *on the spinal cord:* strychnine, brucine, thebaine; *on the heart:* aconite, hydrocyanic acid, digitalis, strophanthus, nicotine.

4. *Ptomaines* are basic, nitrogenous compounds, produced from protein material by the bacteria which cause putrefaction.

5. *Symptoms in poisoning from mushrooms:* Sudden onset, great prostration, cold perspiration, headache, fever, rapid and feeble pulse, pain in abdomen, diarrhea, cyanosis, urine scanty or suppressed and albuminous or bloody; stupor and delirium.

6. *Poisonous gases most commonly met with:* Carbon monoxide, hydrogen sulphide, sulphur dioxide.

7. The *symptoms of acute arsenical poisoning:* "In acute cases the symptoms usually begin in from 20 to 45 minutes. Nausea and faintness. Violent, burning pain in the stomach, which becomes more and more intense, and increases on pressure. Persisting and distressing vomiting of matters, sometimes brown or gray, or streaked with blood, or green (Paris green). Purging. More or less severe cramps in the lower extremities."

In *chronic arsenical poisoning:* "Inflammation ... junctive with intolerance of light. Irritation of ... with eruption (eczema arsenicale), local paralyses ... weakness and emaciation, exfoliation of the skin, and falling out of the hair." (Witthaus' *Essentials of Chemistry.*)

Symptoms of acute phosphorus poisoning: "Eructation of gas having the odor of garlic. The mouth, when observed in the dark, is frequently faintly luminous (phosphorescent). After several hours, pain in the throat, a sense of heat in the epigastrium, nausea, and vomiting. The vomited matters are sometimes bloody, and frequently luminous when agitated in the dark. The abdomen is tender, and there are diarrhea and colicky pains. After one or two days these symptoms cease, there remaining only pain in the back and limbs and a feeble pulse. Death sometimes occurs suddenly in from two to four days. Usually about the fourth day the patient becomes jaundiced, suffers from headache, insomnia, and retention of urine, rapidly becomes delirious and comatose, and dies." (From Witthaus' *Essentials of Chemistry.*)

8. Ptomaine poisoning and trichiniasis.

9 and 10. *Idiosyncrasy.* "Many persons are peculiarly susceptible to certain poisons, requiring a very small dose to produce serious symptoms. Others suffer serious illness from eating certain articles of food which are noninjurious to most persons, as oysters, lobsters, and other shell fish, strawberries, etc. In others, certain odors, as of musk, certain flowers, etc., produce unpleasant symptoms. In other cases ordinary medicines have an unusual effect (opium causing persistent wakefulness, arsenic producing narcotic symptoms, etc.). Idiosyncrasy rarely takes the form of increased tolerance of poisons. Occasionally a case is met with where a small dose produces serious symptoms in a person who has formerly taken much larger doses without injury. This is probably due to some obscure physiological or functional change, brought about by the former use of the drug, or it may be due to some of the causes previously mentioned relating to changes in the reaction of the contents of the stomach, or lack of uniformity of composition, etc., of the drug itself."

Tolerance: "Many persons habitually use certain poisons (tobacco, morphine, cocaine, alcohol, etc.), and thus acquire a tolerance for doses which would prove quickly fatal to ordinary persons. This is true, however, of organic poisons alone. No well authenticated case has been recorded of a similar tolerance of a mineral poison. This tolerance of organic poisons shows itself in the increased doses that must be taken to produce the desired effect. It does not mean that the use of the poison is not followed by injury. The evil effects may not manifest themselves at once, or in a marked manner, but the constitution is being undermined, and the injury, though insidious, is none the less destructive. The general health is always impaired." (Riley's *Toxicology.*)

11. *Wood alcohol* is methyl hydroxide, CH_3OH. It can be distinguished from grain alcohol by its lower boiling point and higher specific gravity. *Symptoms of poisoning* "Vertigo, headache, progressive emaciation and great muscular weakness, accompanied in most cases by amaurosis, owing to degenerative or inflammatory changes in the optic nerve. This impairment of vision may improve for several days, then sink again, pointing to atrophic changes following inflammation. Neuritis affecting other parts of the body is sometimes developed." (Riley's *Toxicology.*)

12. *Denatured alcohol* is ethyl alcohol to which methyl alcohol has been added to make it undrinkable; other chemical substances are also added, and it is not subject to the internal revenue tax.

It is poisonous.

A *scarlatina-like rash* appears in poisoning by: Belladonna, stramonium, chloral hydrate, hyoscyamine, morphine.

BACTERIOLOGY.

1. *Bacteria* are minute, unicellular vegetable organisms, devoid of chlorophyl, non-nucleated, and multiplying by poison. *According to form, bacteria may be classified* as: (1) *Cocci*, which are round or oval, and may appear singly, in pairs, in chains, or in groups; example—streptococcus of erysipelas. (2) *Bacilli*, which are rod shaped, with the longer sides parallel and the short ends either straight, rounded, or concave; example—bacillus of tetanus. (3) *Spirilla*, which are spiral; example—spirillum of relapsing fever.

According to habitat, as: (1) *Saprophytes*, which live on dead organic substances, and (2) *parasites*, which live on some other living organism. *With regard to oxygen requirements*, they are: (1) *Aërobic*, such as require the presence of oxygen in order to live and grow; most bacteria are aërobic. (2) *Anaërobic*, such as require the absence of oxygen, as tetanus.

2. *Microbic associations* ... of bacteria in nature naturally carries wit... neous presence of many species in all places ... conditions have provided a favorable environme... h. Thus bacteriological investigation of wat... ure, soil, or organic infusions, always reveals ... of a large number of different varieties with ... substance. If the food supply in such a natur... at all limited in quantity, or the removal of w... ts is prohibited, it will usually be found that ... the numbers of varieties will diminish and a te... , or even only one will prevail. In a case of in... stance, after standing for three or four days at ... m temperature, two or three varieties will be found ... ave taken the place of the twenty or thirty, which may have been present originally. This behavior is due to the influences which various microorganisms exert upon each other and is known as *antagonism*. Such antagonism probably depends upon the fact that the metabolic products of the predominant species (the one or ones for whom the special cultured conditions are most favorable) inhibit the growth of the less vigorous varieties. Many examples, experimentally supported, of such antagonism, can be given. Thus, the gonococcus is distinctly inhibited by the soluble products of *Bacillus pyocyaneus*, while in the presence of pyogenic cocci it develops luxuriantly, and the bacillus of plague is completely inhibited when streptococci are present in the culture. When the simultaneous presence of two bacterial species within the same environment favors the development of both species, the condition is spoken of as *symbiosis*. Such dependence is not so frequent as antagonism, but it does occur. Examples of such a condition have been observed in cultures containing diphtheria bacilli and streptococci, and have been frequently observed in cultures containing both aërobic and anaerobic bacteria, where the former favor the development of the latter by monopolizing the supply of oxygen." (Hiss and Zinsser's *Bacteriology.*)

3. *Chemical composition of bacteria:* Chiefly water (80 to 90 per cent.); the ash contains phosphorus pentoxide. There are also found sulphur, potassium, calcium, chlorine, and nitrogenous compounds (such as nuclein, guanin, and adenin).

Pathogenic bacteria are such as produce disease.

Toxicogenic bacteria are such as produce poisons.

4. *Lactic acid fermentation:* Monosaccharides are directly fermentable, by several schizomycetes of the mouth, into lactic acid: caries of the teeth may be caused thereby. Lactic acid fermentation of carbohydrates takes place spontaneously in the mouth and in milk.

Lactic acid fermentation may continue in the stomach till the percentage of HCl reaches 0.16. If too little HCl is secreted, or too much food is taken, the fermentation may last some time.

"Under normal conditions milk always undergoes a process which is popularly known as souring and curdling. This is due to the formation of lactic acid from the milk sugar and is the result of the enzymatic activities of several varieties of bacteria commonly found in milk. Most common among these bacteria is the so-called *Bacillus lactis aërogenes*. The transformation of lactose into lactic acid may occur either directly by hydrolytic cleavage:

$$C_3H_6O_3 + H_2O = 4CH_4O$$

or indirectly through a monosaccharid:

$$C_6H_{12}O_6 + H_2O = 2C_6H_{12}O_6 = 4CH_4O."$$

(From Hiss and Zinsser's *Bacteriology.*)

5. To *prove that bacteria cause disease* it is essential: (1) That the microorganism be found in the tissues, blood, or secretions of a person or animal sick or dead of the disease; (2) the microorganism must be isolated and cultivated from these same sources; it must also be grown for several generations in artificial culture media; (3) the pure cultures, when thus obtained, must, on inoculation into a healthy and susceptible animal, produce the diseases in question, and (4) the same microorganisms must again be found in the tissues, blood, or secretions of the inoculated animal. These are called the rules or postulates of Koch.

6. *Water borne diseases*, are: Typhoid, cholera, dysentery, and some gastrointestinal disorders.

The presence of pathogenic bacteria may be determined (theoretically) by making cultures from the water. But practically there are no reliable methods of doing this. The "colon test" is often used.

To distinguish the typhoid bacillus from the colon bacillus: (1) On gelatin plates, the colonies of typhoid develop more slowly than those of colon bacillus. (2) The colon bacillus causes fermentation with production of gas in media which contain sugar; the typhoid bacillus does not. (3) The colon bacillus produces a strong acid reaction and

coagulates milk within twenty-four to forty-eight hours; the typhoid bacillus does not coagulate milk. (4) In peptone solution the colon bacillus produces indol; the typhoid bacillus does not. (5) The typhoid bacillus gives the Widal reaction with typhoid serum; the colon bacillus does not.

7. To demonstrate the existence of *tubercle bacilli* in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbolfuchsin, and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue.

Tuberculin is a preparation made from cultures of the *Bacillus tuberculosis*.

8. *Toxins* are the products of pathogenic bacteria or of ptomaines and leucomaines, and are actively poisonous.

Antitoxins are substances formed in the body, of a protective character, and capable of rendering inert the poisonous products of bacteria.

Active immunity follows an attack of a certain disease and secures immunity for that alone; or it follows inoculation of a virus weaker than necessary to cause the typical disease; or it follows inoculation by bacterial products apart from the organisms themselves.

Passive immunity is the term applied to the effect of a serum derived from an immunized animal and injected into one not immune.

Antitoxins are used in: Diphtheria, tetanus, anthrax.

9. *"Diphtheria antitoxin is obtained* from the horse, the animal having been rendered artificially immune by repeated injections extending over a period of several months of gradually increasing quantities of the strongest diphtheria toxin. As the bacilli themselves are not injected, the horse does not become infected with diphtheria, but he gradually acquires a tolerance for the toxins of the disease and develops in his blood a substance (antitoxin) which has the power to neutralize those toxins. At the proper time, when it is thought that his blood has acquired the requisite degree of potency, the animal is bled, and the serum—the part of the blood containing the antitoxin—is carefully separated from the clot, filtered, and standardized. The last procedure is accomplished by determining the quantity of antitoxin serum required to offset the effects of the minimum quantity of toxin necessary to kill a guinea-pig in a definite time. The strength of the antitoxin is measured in units, a unit containing the amount of antitoxin required to save the life of a guinea-pig which has been injected with 100 fatal doses of toxin."—(Stevens' *Materia Medica*.)

11. *Widal's test:* Three drops of blood are taken from the well-washed aseptic finger tip or lobe of the ear, and each lies by itself on a sterile slide, passed through a flame and cooled just before use; this slide may be wrapped in cotton and transported for examination at the laboratory. Here one drop is mixed with a large drop of sterile water, to redissolve it. A drop from the summit of this is then mixed with six drops of fresh broth culture of the bacillus (not over twenty-four hours old) on a sterile slide. From this a small drop of mingled culture and blood is placed in the middle of a sterile cover-glass, and this is inverted over a sterile hollow-ground slide and examined. A positive reaction is obtained when all the bacilli present gather in one or two masses or clumps, and cease their rapid movements inside of twenty minutes.

4. *Association of physical signs*:

PERCUSSION.	AUSCULTATION OF RESPIRATION	VOCAL FREMITUS.	PHYSICAL CONDITIONS.
Dull	Bronchial or harsh respiration.	Increased	Solidification of pulmonary structure.
	Absent respiration.	Diminished or absent.	Effusion into pleural sac.
Amphoric or metallic	Amphoric or metallic.	Mostly diminished.	Large cavity with elastic walls.

(From Hughes' *Practice of Medicine*.)

GENERAL DIAGNOSIS.

6. *Pemphigus* is an inflammatory disease of the skin, either acute or chronic, characterized by the development of a succession of rounded, irregularly shaped blebs or bullæ, varying in size from a pea to an egg. These appear in successive crops, each crop lasting from three to ten days.

Sycosis vulgaris is a chronic inflammatory disease of the bearded region due to invasion of the hair follicles by pus-producing microorganisms, characterized by papules, pustules, and tubercles.

Herpes zoster is an acute inflammatory disease characterized by the development of groups of firm and distended vesicles situated upon inflamed bases corresponding to a definite cutaneous nerve, and accompanied by more or less severe neuralgic pains.—(From Hughes' *Practice of Medicine*.)

7. Decubital gangrene is bedsore.

9. Cerebral abscess due to ear disease is almost always in the temporo-sphenoidal lobe.

11. The *large intestine* has three teniæ or bands, is sacculated, and has appendices epiploicæ attached to it. The *small intestine* has none of these characteristics.

12. See Rose and Carless' "Surgery" (1911), page 1166; or Da Costa's "Surgery" (1911), page 1181.

GYNECOLOGY.

1.

APPENDICITIS.	ADNEXAL INFLAMMATION.
1. No previous local disturbances.	1. Genitourinary functions previously disturbed. Usually a history of gonorrheal or puerperal infection.
2. Chill usually absent.	2. Chill may precede fever.
3. Pain in right iliac region, sudden onset, acute, and not radiating to thighs.	3. Gradual onset, pain dull, continuous, and radiating.
4. Fever of variable degree.	4. Fever often entirely absent.
5. Muscular rigidity on right side of the abdomen.	5. No muscular rigidity unless complicated by peritonitis.
6. Inflammatory exudate about appendix three to five days after onset of symptoms.	6. Inflammatory exudate in the pelvis felt by vaginal examination at the onset of the symptoms.
7. Vaginal examination is rarely painful in appendicitis.	7. Always painful in tuboovarian disease.

—(Findley.)

2. FIBROIDS. *Varieties:* (1) Subperitoneal or subserous; (2) interstitial, in the uterine tissue; and (3) submucous in the endometrium.

3. Carcinoma of the cervix most frequently develops between the ages of 35 and 50. The prognosis is unfavorable unless a radical operation is performed. It is disseminated by the lymphatics, and also spreads by a continuous chain of infiltration in the connective tissue. In *carcinoma of the cervix*, the cervix is hard and nodular, and the mucous membrane seems immovably fixed to the underlying tissue. The nodules break down, the entire cervix becomes ulcerated, or large cauliflower-like masses may fill the upper part of the vagina. The diseased tissue is friable, and bleeds when touched. In *erosion* the pain and general symptoms are less, the eroded portion seems to disappear when the lips of the cervix are brought together. The microscope will show characteristic differences.

4. MENSTRUAL ABNORMALITIES. (a) *Amenorrhea* is absence of menstruation during the period of sexual activity. (b) *Menorrhagia* is a condition characterized by excessive loss of blood during the menstrual periods. (c) *Metrorrhagia* is a hemorrhage from the uterus at other than the menstrual periods. (d) *Dysmenorrhea* is painful menstruation.

AMENORRHEA is *physiological:* Before puberty, during pregnancy and early lactation, and after the menopause. It may also be due to: Absence or imperfect development of the generative organs; also to operative removal of the uterus or its appendages. Other causative factors are: Acute infectious diseases, anemia, chlorosis, obesity, drug habits, alcoholism, overstudy, lack of exercise, exposure to cold, and various emotional causes. CAUSES OF MENORRHAGIA. Purpura, scorbutus, hemophilia, hepatic cirrhosis, overindulgence in food and alcoholic drinks. Uterine congestion and displacement, endometritis, subinvolution, fibroids, and other tumors. CAUSES OF METRORRHAGIA. Disease of uterus or appendages, polyps, extrauterine gestation, the hemorrhages in connection with pregnancy.

CAUSES OF DYSMENORRHEA: Pelvic congestion, pelvic inflammation, malnutrition, overwork, lack of development,

neuralgia, stenosis or obstruction of the cervix, [illegible] or displacement of the uterus.

5. The uterus is normally protected from infection by the muscular constrictions which divide it from the Fallopian tubes and also by a similar arrangement at the internal os, and at the external os. The acidity of the vaginal secretion is also a protective factor.

6. *Pelvic hematocele* is an accumulation of blood in the pelvis, due to rupture of a blood-vessel; it is generally due to rupture of a tubal pregnancy, or to a tubal abortion. *Symptoms*: Pain, which is sudden and severe, over abdomen and pelvis; nausea, cold perspiration, cold extremities, pulse rapid and weak, pinched features, and shock. It is most likely to be mistaken for an ectopic gestation.

7. *Vaginismus* is a condition of painful and spasmodic contraction of the vaginal orifice, rendering coitus difficult or impossible. *Bartholinitis* is inflammation of the vulvovaginal glands. *Pyosalpinx* is an accumulation of pus in the Fallopian tube. *Coccygodynia* is pain in the region of the coccyx (found in parous women more frequently than in multiparæ). *Hematometra* is an accumulation of blood in the uterine cavity.

8. *Pregnancy:* the tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other signs of pregnancy are present. The rate of growth of the tumor, and the general condition of the patient's health may also help in arriving at a diagnosis.

Uterine fibroid: menstruation is irregular and sometimes very profuse; absence of the signs of pregnancy; the tumor is nodular, firm, irregular in outline, and while generally placed somewhat centrally is not in the median line, and is not symmetrical; the rate of growth is irregular, being, as a rule, slow, but sometimes extending over years.

Ovarian cyst: absence of the chief signs of pregnancy; there may be the characteristic facies, the tumor is soft, fluctuating, is more to one side, and does not show fetal signs.

10. *Subinvolution* is delay in, or failure of the uterus to return to its normal condition after labor. *Its chief etiological factors* are: Lacerations of the cervix; absorption of septic products; mismanagement of the convalescent stage of the puerperium, chiefly too early rising; tedious labors; misplacement of the uterus; retained clots or membranes; tumors of the uterus.

11. In *Amenorrhea*, from other causes, also in the *Menopause*, all the other signs of pregnancy will be absent.

12. GONORRHEA. *Symptoms:* Pain and burning in the vulva; pain and burning on micturition; dyspareunia; yellowish or greenish discharge, in which the gonococcus can be found; the vagina is hot, red, swollen, and tender. *Possible results:* Cystitis, urethritis, vulvitis, endometritis, salpingitis, septic peritonitis, sterility, condylomata of vulva, abscess of Bartholin's glands. *Diagnosis* is made from the symptoms, particularly from finding the gonococcus in the discharge. It is *so serious*, on account of the possible results, enumerated above; it often leads to chronic invalidism, and may be the cause of death.

OBSTETRICS.

12. *Conditions occurring during labor, which may jeopardize the life of the child:* Delayed, or prolonged, or precipitate labor; uterine inertia; hemorrhages; eclampsia; rupture of the uterus; maternal death; faulty presentation or position; prolapse of cord; rupture of cord.

HYGIENE.

1. The *food principles* are: Proteids, fats, carbohydrates, salts, and water. In a balanced ration, the proteids, fats, and carbohydrates are given (by Ranke) in the proportions of 1:1:2½. Milk contains all the food principles in nearly the proper proportions for an adult. The effect of living on a single article of food is either overeating or partial starvation, with lack of nutrition, indigestion, diseases, inability to work.

2. The chief cause of high infant mortality is improper feeding. *Essentials for the production and preservation of pure dairy milk:* Vaughan's rules are as follows: "(1) The cows should be healthy, and the milk of any animal which seems indisposed should not be mixed with that from the healthy animals. (2) Cows must not be fed upon swill or the refuse from breweries or glucose factories, or upon any other fermented food. (3) Milch cows must not be allowed to drink from stagnant pools, but must have access to fresh, pure water. (4) The pasture must be freed from noxious weeds, and the barn and yard must be kept clean. (5) The udders should be washed and then wiped dry before each milking. (6) The milk must be at once thoroughly cooled. This is best done in the summer by placing the milk can in a tank of cold water or ice water, the water being of the same depth as the milk in the can. It would be well [illegible] the tank could be kept flowing, and this will [illegible] less ice water is used. The tank should be [illegible] ged each day to prevent bad odors. The [illegible] n uncovered during the cooling, and the milk [illegible] ntly stirred. The temperature should be reduced [illegible] , or lower, within an hour. The can should [illegible] water till ready for delivery. (7) Milk should [illegible] ed, during the summer, in refrigerated cans or [illegible] t which ice is packed during transportation. [illegible] ceived by the consumer it must be kept in a [illegible] ld at a temperature some degrees below 60° F.

The addition of preservatives is not [illegible] because (1) they are not necessary, and (2) they are [illegible] armful.

3. *Patent medicines are dangerous*, because (1) They are generally taken without professional advice or sanction, but at the whim of the purchaser, solely on the recommendation, or druggist interested in the sale of the stuff. (2) They often contain powerful and harmful ingredients. (3) They are generally issued by irresponsible parties whose sole interest is in their sale. (4) Their exact contents are not always known, and are often variable.

Alcohol taken in large amounts may cause gastritis, cirrhosis of liver, increased susceptibility to disease, lowered capacity for work, and diminished intellectual capacity.

4. *Characteristics of a good drinking water:* (1) It should be clear and limpid. Cloudy and muddy waters should be avoided. (2) It should be colorless. A greenish or yellowish color is usually due to vegetable or animal matter in solution or to organisms. (3) It should be odorless; especially free from sulphuretted hydrogen or putrefactive animal matter. (4) It should not be too cold, but should have a temperature of from 40° F. to 60° F. (5) It should have an agreeable taste; neither flat, salty, nor sweetish. A certain amount of hardness and dissolved gases give a sparkling taste. It should contain from 25 to 50 c.c. of gases per liter, of which 8 to 10 per cent. is carbon dioxide and the rest oxygen and nitrogen. (6) It should be as free as possible from dissolved organic matter, especially of animal origin. (7) It should not contain too great an amount of hardness. A certain quantity of saline matter is necessary, however, to give it a good taste. It should not contain over three or four parts of chlorine in 100,000 parts of water.—(From Bartley's *Chemistry*.)

The best methods of purifying a water supply are filtration and distillation.

5. The best method of sewage disposal is by the bacterial or biological processes. Garbage should be burnt.

6. Hygienic precautions to be taken in treating a case of tuberculosis: "The patient's quarters should be free from dust and admit of spending many hours daily in the open air in all weathers, properly sheltered, and, if very ill, lying wrapped in a hammock or reclining chair. His bedroom should be well aired at night, draughts being avoided. The room should be uncarpeted and free from hangings. It should be often cleaned and periodically disinfected. All sputum should be collected in paper spit-cups, which should be burned daily. Smoking should be forbidden. Harm is done by any exercise which results in fatigue, and while fever exists it should not be attempted at all. Patients should be taught the necessity of practicing lung gymnastics and breathing only through the nose, which should be kept clear and free from occlusion by secretions, or an hypertrophied catarrhal mucosa. * * * The clothing should be woolen, but not too heavy, or sweating is increased; and a flannel nightgown and loosely knit leggings should be worn at night in cool weather. The skin should be cleansed by daily sponge-baths of lukewarm alcohol and water."—(Thompson's *Practical Medicine*.)

7. In *disinfection of rooms*, use formaldehyde gas; *clothing*, use solution of phenol (5 per cent.) for an hour, then boil for an hour; *hands*, wash in soap and water, then with cresol or carbolic acid solution; *sputum*, use chloride of lime; or better, burn it; *excreta*, should be passed into vessels containing dilute solution of formalin, of greater quantity than the expected excretion; *dishes*, should be boiled.

8. Air suitable for heating should consist of about 21 per cent. of oxygen and about 79 per cent. of nitrogen. The chief impurities of bad air are excess of carbon dioxide, crowd poison, and organic impurities, bacteria, etc. Their effects are: Drowsiness, headache, digestive disturbances, mental dullness, and disease. An individual needs about 3000 cubic feet of air per hour; hence, he should have about 1000 cubic feet of space, with ample ventilation.

9. The best protection against *sunlight* is afforded by some *white* material, the *color* is more important than the texture. Against *cold*, the best fiber is *wool*. The best

her is underclothing is wool, because it is a non-conductor of heat, and is absorbent. For footwear, leather is best; it is warm, and keeps out some moisture; it has also good protective properties, and is durable and pliable.

10. *Ventilation:* "The principal means of ventilation in most houses are the windows, doors, and the artificial openings especially made for the purpose. The occasional opening of doors and the opening of windows greatly assist the exchange of air in ordinary dwellings, with not too many persons in the rooms and with but ordinary illumination and heating. When the number of persons in rooms is large and the number of lights increased, the windows and doors may not be sufficient for adequate ventilation, and special artificial openings may be needed. The number and character of such openings vary in size, location, shape, character, etc. The openings may be in the shape of tubes or boxes placed within the windows, the sashes, the panes, the walls at different points, the ceilings, or the floors. All such openings communicate with the external air, and serve as air inlets, or outlets, and may also be provided with adjustable gates, so that they may be closed up when not wanted. The number of ventilating devices is very large; their value depends on their location and size and character. Where local heating is used within the house, ventilation is aided by the necessary chimney and flue openings, and by the use of grates and stoves. The advantages of mechanical ventilation are the constancy of the exchange of air, the independence from any other means, the perfect control of the velocity and volume of the supplied air, the possibility to accurately regulate the temperature, quantity, moisture, and purity of the incoming air. Mechanical ventilation is, as a rule, carried on from a central point, and is of three kinds: *plenum*, or propulsion method, in which pure air is driven into the house from outside; *vacuum*, or exhaustion method, in which the impure air is withdrawn from the house; and the *combined vacuum and plenum* methods."—(Price's *Hygiene and Public Health.*)

"The principal methods of heating houses and rooms are: 1. Open fires. 2. Stoves. 3. Furnaces. 4. Hot-water pipes. 5. Steam pipes. The method most applicable in any particular case will depend upon the size of the room and the number of rooms in the building. In general, it may be stated that the smaller the space, the more simple the method. For a single room, an open fire or a stove will be sufficient; for a small house, stoves or a furnace; for a large one, one or more furnaces or hot-water or steam apparatus; and for large buildings—office buildings, for instance—'direct' or 'indirect' steam."—(Harrington's *Hygiene.*)

11. *To prevent the spread of disease:* Communicable diseases should be reported to the proper authorities; patient should be isolated when necessary; visitors must be kept out; the patient and his immediate family should be instructed in methods of prophylaxis; there should be proper sanitary supervision of food, milk, water supplies, schools, factories, etc.; proper provision should be made of excreta and sputum; and disinfection should be thoroughly performed.

12. Animals should be inspected before they are killed; meat should be inspected before it is offered for sale; slaughter houses should be public rather than private, and should be often and thoroughly inspected. "There are a number of ways in which dishonest traders often attempt to pass inferior meat on the market, such as: (1) Meat of animals which have died from disease, or from an accident, as by drowning. (2) Meat of animals killed and bled when there is no hope of recovery from illness. (3) Meat of animals which have been the subject of infectious disease, as foot-and-mouth disease, anthrax, etc. (4) Meat of tuberculous cattle, the lungs and pleura being removed. (5) Meat containing encysted parasites. (6) Meat beginning to decompose. (7) Horseflesh to be sold as beef; young goats for lamb."

With regard to *milk*, see above QUESTION 2. Other foods should be free from adulteration, sold in proper weight or quantity, and should generally conform to the standards of purity fixed by law or recognized by custom. The reasons can be summed up as a protection of the public health.

Prophylaxis of Diseases Acquired from Eating Oysters.—Bodin, after examining the various methods which have been advocated for the purification of oysters, recommends the simple and efficient solution suggested by Fabre-Domergue, Inspector of the Fisheries. Oysters are kept for a week or ten days in tanks filled with filtered sea water constantly renewed, where they gradually lose all their septic bacteria. Filtered sea water may be replaced by artificial sea water, and thus Fabre-Domergue's plan may be carried out as well in towns far from the seashore.—*Progrès Médical.*

Medical Items.

The Cause of Death in Pancreatic Necrosis.—Dario Maragliano describes the symptoms of pancreatic necrosis as violent abdominal pain, localized in the epigastrium and followed by vomiting. The pulse becomes small and frequent, and a condition of collapse is reached in from ten to twelve hours from the beginning of the disease, followed by death. The autopsy shows hemorrhagic exudation in the abdomen and a pancreas that is large, friable, and cyanotic. In the peripancreatic fat are found areas of steatonecrosis. The basis of the whole trouble is more or less extensive pancreatic necrosis, the other findings being secondary. This inflammation, followed by necrosis, is not of bacterial origin. The author has made experimental researches as to the causation of pancreatic necrosis in animals, as a result of which he believes that the causation is as follows: Death from pancreatic necrosis is due to a form of poisoning; the poisons are not due to soaps, nor ferments, nor the products of pancreatic autolysis; the poisons must be sought in special toxic substances which develop from the products of the autolysis of the pancreas and the fats of the organism.—*Il Policlinico.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended June 7, 1912.

Place	Date	Cases	Deaths
CHOLERA			
China: Amoy	June 3.		Present
Dutch East Indies: Celebes, Ilam	Mar. 10.	5	2
India: Bassein	Apr. 14–20	8	7
Bombay	Apr. 28–May 4	6	5
Calcutta	Apr. 7–20.		266
Madras	Apr. 28–May 4		1
Presidency, Apr. 1–30, Cases, 2,458; deaths, 1,525			
Moulmein	Apr. 14–20	6	6
Rangoon	Mar. 1–31	39	38
Indo-China: Saigon	Apr. 23–29.	12	12
Turkey in Asia: Adana	Apr. 16–29.	58	23
	Apr. 30–May 7	17	13
	May 7–13.	25	12
Aleppo	May 12–18.	2	1
YELLOW FEVER			
Ecuador: Duran	Apr. 1–15.	1	..
Guayaquil	Apr. 1–30.	55	23
Milagro	Apr. 1–30.	7	6
Naranjito	Apr. 1–30.	7	4
Yaguachi	Apr. 1–30.	2	..
Mexico: San Juan Bautista	June 9.	1	..
Venezuela: Caracas	May 4–10	1	1
El Valle	Apr. 1–May 31	..	Present
Guarenas	Apr. 1–May 31	..	Present
Maeuto	May 3–17.	3	1
PLAGUE			
Chile: Iquique	Apr. 21–May 4	5	2
China: Hongkong	Apr. 21–May 4	273	235
Egypt: Alexandria	Mar. 23–May 10.	2	2
Cairo	Mar. 26–May 14	2	1
Provinces—Assiout	Apr. 24–May 14	22	14
Assouan	Apr. 24–May 14	11	12
Beni Souef	Apr. 20–May 14	10	8
Charkieh	Apr. 22–27.	2	3
Fayoum	Apr. 25–May 10	23	9
Girgeh	Mar. 29–May 3	4	2
Kench	Apr. 25–May 14	26	15
Minieh	Apr. 24–May 14	56	11
India: Bombay	Apr. 28–May 4	128	105
Calcutta	Apr. 7–20.		451
Karachi	Apr. 28–May 4	69	62
Rangoon	Mar. 1–31.	65	63
Indo-China: Saigon	Apr. 23–29	4	3
Java: Pasoeroean Residency	Apr. 14–20	5	5
Turkey in Asia: Jiddah	Apr. 1–21.	4	4
Jiddah	May 1–6	1	..
Bulletin Quarantenaire d'Egypte, May 18, 1912.			
SMALLPOX			
Algeria: Algiers	Apr. 1–30.		1
Austria-Hungary: Bohemia	Apr. 28–May 11	3	..
Galicia	Apr. 28–May 11	9	..
Upper Austria	Apr. 28–May 11	1	..
Canada: Niagara Falls	May 8–31	2	..
Quebec	May 26–June 1	1	..
Toronto	May 15–25.	3	..
China: Hongkong	Apr. 21–May 4.	23	16
France: Paris	May 5–18.	8	..
Germany—Total, May 5–11, 2 cases additional; May 12–18, 16 cases.			
Hamburg	May 12–18	1	..
Kehl	Apr. 1–30.	1	..
India: Bombay	Apr. 28–May 4.	74	48
Calcutta	Apr. 7–20.		12
Rangoon	Mar. 1–31.	222	66
Indo-China: Saigon	Apr. 23–29.	2	..
Italy: Naples	May 12–18	3	..
Palermo	May 12–18	6	6
Japan: Korea	Jan. 1–Apr. 30.		..
Total, exclusive of Seoul, 843 cases.			
Seoul	Jan. 1–Apr. 30.	8	..
Java: Batavia	Apr. 14–20.	3	2
Mexico: Juarez	May 26–June 1	1	..
Mexico	Apr. 21–27.	15	10
Portugal: Lisbon	May 12–18.	3	..
Russia: Libau	May 6–12.	1	..
Moscow	Apr. 21–May 4.	9	..
Odessa	May 5–11.	2	..
St. Petersburg	May 5–11.	8	7
Spain: Barcelona	May 12–18	18	1
Straits Settlements: Singapore	Apr. 14–20.	1	..
Turkey in Asia: Beirut	May 5–11	15	..

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Original Articles.

NEUROSES DEPENDENT UPON ERRORS OF INTERNAL SECRETION OF THE DUCTLESS GLANDS.*

By M. ALLEN STARR, M.D., LL.D.,

NEW YORK.

PROF. OF NEUROLOGY, COLLEGE OF PHYSICIANS AND SURGEONS.

It has been my fortune in the past twenty years to study a considerable number of cases of myxedema and of Basedow's disease, and to observe the effect of treatment of the first condition by thyroid extract and of the second condition by removal of the thyroid gland.

In both of these conditions there are numerous nervous symptoms which are very marked in addition to the characteristic features of the disease. The appearance of similar nervous symptoms in lesser degree, without the characteristic symptoms of either myxedema or Graves' disease, or combined with slight evidences of either of these diseases, has suggested the possibility that in various neuroses there may be an element of functional insufficiency or of hypersecretion in the thyroid gland.

The recent studies of Harvey Cushing in regard to the influence of the pituitary gland not only on the growth of the bones but also on carbohydrate metabolism and on the nervous system and the presence of nervous symptoms in diseases of the pituitary gland have suggested a similar hypothesis with regard to the influence of this gland in the production of certain neuroses. We know† that after thyroidectomy the pituitary gland enlarges and its colloid secretion from the anterior lobe is increased, hence it compensates for the loss of the thyroid. The effect of its secretion cannot therefore be very different from that of the thyroid gland.

The very marked neurotic manifestations which occur at the menopause or which occur after the removal of the ovaries and which are undoubtedly due to the inactivity of these ductless glands affords another line of argument for the marked influence of a lack of secretion of a ductless gland in the production of nervous disease.

Considerable experience derived from these four lines of study, together with its application in the treatment of some neuroses by means of glandular extracts, has made it seem worth while at the present time to collect the data and present them to the consideration of this society. I shall deal with the four conditions considered in turn.

I.—NEUROTIC SYMPTOMS SUGGESTIVE OF MYXEDEMA, AND CURABLE BY THYROID EXTRACT.

a. *Mental Symptoms.*—In a well-marked myxedematous condition it is well known that the patients are extremely depressed in their minds almost to the verge of melancholy although they have none of the self-accusation and despair characteristic of a true melancholia. They are extremely sluggish in their thought, unable to remember recent events, indifferent to their surroundings, lacking any interest in their personal and family or business affairs, and present in a slight degree the general characteristics of dementia. They take an unfavorable view of their own condition. They have no hope of recovery. They have no desire to make an effort to recover. Their will power appears to be impaired. There is not only a physical weakness which renders them averse to any effort, but there is also a mental inertia which leads to an undue sense of fatigue on slight mental or physical exertion. The powers of perception are all dulled and hence the interest in things about them is impaired. They are inclined to be sleepy and often sleep heavily both day and night, but awake without any sense of refreshment or invigoration.

b. *Physical Symptoms.*—These are even more marked than the mental symptoms. There is a peculiar dryness of the skin and of the hair even when there is no myxedematous thickening of the subcutaneous tissue. The skin does not perspire, it is rough and scaly, sometimes presenting an appearance as if recently powdered, especially on the arms and legs. It becomes pigmented so that the hands look dirty, though washing does not clean them. The scalp is particularly liable to show a white dandruff. The hair falls or becomes gray and is wholly lacking in the natural oil. In some cases an abnormal growth of hair appears especially in women, in front of the ear and possibly on the face. On the other hand in the axillæ and upon the pubis the hair is liable to come out.

The surface of the body is uniformly cold, the hands and feet are constantly cold, and the patient feels a shivery sensation down the back and all over the body on any exposure to draught or to cold in a way which was different from his or her normal state. This sensation of cold may be attended by a depression by a half or one degree of temperature of the body.

The appetite and digestion are always impaired. Assimilation is imperfect and constipation is the rule. There is very often a swelling of the mucous membrane of the nose and of the throat which is visible which has led to the supposition that a similar condition is present in the stomach and intestines. It has been ascertained that there is a direct interference with the calcium metabolism so that the elements which normally lead to a proper clotting of the blood are absent. The progressive gain in weight in many of these patients is suggestive also of a change in the carbohydrate metabolism such as is known to occur in disease of the pituitary gland though this has not yet been investigated.

Now in many cases of socalled neurasthenia and

*Read at a meeting of the Practitioners' Society, held February 2, 1912.

†Rogowitch: Ziegler's Beiträge zur path. anat. iv, 453.

nervous exhaustion with depression of spirits and sluggish mentality, some or all of the physical symptoms above-mentioned are occasionally found to be present.

It has been noted in cases of myxedema that a very common complaint is severe and more or less constant pain in the muscles and in the bones. Ordinary rheumatic remedies have no effect upon this pain and it is only when the patient recovers from his myxedema, under thyroid treatment, that these pains disappear. It has been noted by Levi and Rothschild* that in a great many cases of chronic arthritis and of chronic muscular rheumatism, thyroid treatment is more efficacious than any other method. Under it the hard deposits about the joints are absorbed and the muscular pains cease. It seems reasonable to suppose, therefore, that the error of metabolism consequent upon a lack of thyroid secretion may be responsible for a pseudorheumatic condition present in many persons.

Many neurasthenics are habitually complaining of sensations of cold, of nervous chills, and are found to have cold hands and feet, to lack in perspiration, to have many irregular muscular pains in the muscles and bones, to have a great sense of physical exhaustion in addition to the mental inertia. These symptoms of exhaustion are, however, not attended by any objective signs of heart weakness, though tests demonstrate the rapid onset of fatigue if measured by the dynamometer or the ergograph.

In this class of neurotic individuals I have found by experience that the ordinary treatment for neurasthenia by hydrotherapy, rest, diet, and nerve tonics, is very much aided by the addition of small amounts of thyroid extract to the patient's food. It is not necessary to give more than one grain twice or three times a day, and it is wise to keep watch of the weight of the patient, and if it is found that a loss of weight occurs, it is wise to reduce the dose of thyroid, but very many patients can take as high as 2½ grains of thyroid extract twice a day, not only with a relief of these various symptoms, but also with a marked gain in weight. The thyroid is best given with the meals or if it is preferred it may be given in a single dose at night on retiring. The effect should be evident in about 10 days in a lessening of the dryness of the skin, in a relief from the sensation of cold, and in a decided improvement in the mental activity. It may then be omitted for a week, but resumed, and thus continued with intervals.

I may mention here also a class of cases of mental sluggishness in young girls with symptoms that some might class as belonging to dementia precox. In two such cases I have seen very marked and continued improvement, after the use of thyroid extract, and these cases at the end of the second year are enjoying a fair degree of mental health and activity, when formerly they were considered as incurable cases of weak mindedness. In neither of these cases were the symptoms sufficiently marked to warrant the diagnosis of myxedema, but in both of them the dry scaly skin, the dryness of the hair, and the continued coldness of the body suggested the propriety of the trial of thyroid extract.

II.—Neurotic Symptoms of Basedow's Disease.

As it is generally admitted that this affection is due to an excessive secretion of the thyroid gland, it is to be expected that the nervous symptoms present are exactly the converse of those already studied. The nervous excitability, the very active mentality, the tremor, the muscular irritability, and the quickness of thought in Basedow's disease are generally recognized.

It is perhaps not generally known that in a number of cases of Basedow's disease the nervous and mental excitement may go on to a state of active mania. I have had one such patient in whom the maniacal symptoms lasted seven months but finally subsided during the remission of the active symptoms of Basedow's disease. All writers on Basedow's disease admit the possibility of maniacal occurrences.

It is not to these cases, however, that I wish to call particular attention, nor to the nervous symptoms present in Basedow's disease. But what I wish to emphasize is the fact that an excessive function of the thyroid gland, not sufficient to produce exophthalmos or goiter, or a very rapid pulse, may nevertheless produce symptoms of a nervous character complicating a neurasthenia.

Certain neurasthenics are extremely restless. They cannot keep quiet, must be in active movement and declare that it is impossible for them to lie down or to rest. They are active mentally as well as physically. They are unable to keep their minds upon any one subject for any length of time, but nevertheless are sufficiently active mentally to keep them busy on many subjects. They are usually anxious about their own condition. They realize that the train of thought is unusual and abnormal and they fear insanity. The physical symptoms in this condition are usually a sense of heat in the body, a desire for cool air and fresh air which prevents them from going to theaters or churches or remaining in hot rooms. A burning sensation of the body which leads them to sleep with exceedingly light bed-clothing, and very frequently leads to excessive perspiration.

The appearance of these patients is more or less characteristic. Their eyes are bright, their skin is shiny and moist, the hair is also moist and glossy, and they are usually thin. There is often a tremor about the hands, and an exaggeration of the knee jerks. They are subject to abnormal sensations of hunger. They are not satisfied after a meal and have a craving for food within two hours of a meal. They are subject to diarrhea and in women the menses are excessive. They sleep badly, wake easily, are hypersensitive to sounds and very often complain of sudden flashes of heat. The pulse is very often more rapid than normal, running between 80 and 90.

When these conditions are present in a case of neurasthenia, it awakens a suspicion that there is an excess of secretion of the thyroid gland. Thyroid secretion may be modified by the use of belladonna or of hydrastis. In extreme cases rodagen or thyrodectin, which appear to decrease the secretion of this gland, may be employed. All these remedies given in conjunction with the treatment for a neurasthenic condition are often of more benefit than other forms of treatment. Ergot and bromide may also be employed and in some cases the application of ice to the thyroid gland for half an hour three or four times a day will be found to diminish its activity. These cases are never severe enough at the outset to warrant surgical removal of the thyroid gland, and many of them never go on to develop a true Basedow's disease.

*Nouvelles Etudes sur la physiopathologie du corps thyroide. O. Doin, Paris, 1911.

III.—Neurotic Symptoms Dependent Upon Errors in the Pituitary Secretion.

The researches of Harvey Cushing have proven that certain disorders may be due to either a defective secretion of the pituitary gland or to a hypersecretion of this gland. But inasmuch as the symptoms of these two probably separate conditions are often intermingled, he prefers to term the condition dyspituitarism.

In the extreme cases as in myxedema, the symptoms are so marked as not to be easily mistaken. They consist of the phenomena known as gigantism or acromegaly on the one side and on the other side a condition of very great increase in the fat of the body, a craving for sweets with a disturbance in the carbohydrate metabolism with subnormal temperature, slow pulse, dry skin, loss of hair, rather suggestive of myxedema. In some cases this latter condition develops without any increase in the growth of the bones.

Sexual infantilism is a marked symptom of this state, a complete lack of sexual desire and impotence, and along with it there are certain characteristic mental changes which lead to a peculiar psychical condition, a lack of ambition, an indifference to matters of importance, an inability to do ordinary work to which the individual is accustomed, and a state of mind which is suggestive of a form of intoxication not unlike the indifference which one sees in the chronic opium habitué.

While these extreme forms are easily recognized it is not at all unlikely that very many conditions developing in so-called neurasthenics have their origin in the disturbance in the functions of this gland. The metabolism in neurasthenia has not been sufficiently studied, but every clinician will recognize the fact that there is a certain type of neurasthenic who is abnormally fat, who is constantly gaining in weight, and suffers from a marked lack of ambition together with many other neurasthenic symptoms. These patients have the abnormal craving for sweets already mentioned, and it seems not at all unlikely, although I have no proof to bring forward, that some of the nervous manifestations may have their origin in an error of the secretion of the pituitary body. In two or three such cases with marked headache, although there has been no indication of atrophy of the optic nerve or of the hemianopsia which are present in extreme cases, a marked improvement has occurred after the use of pituitary extract and many of the nervous symptoms have subsided coincidentally with the improvement. It is also possible in these cases to improve the symptoms by the use of thyroid extract, which, as we have already seen, is not unlike the pituitary extract in its effects. The doses in these cases should be small—not more than 1 or 2 grains a day for ten days, then an intermission of five days. Under its use many of the symptoms subside.

IV.—Neuroses Connected with Ovarian Atrophy.

The neurosis of the menopause is a well marked and well recognized condition. It partakes of many of the characteristics of hysteria and of neurasthenia, both mental and physical symptoms occurring in great variety. The mental irritability is perhaps the most distressing symptom. The sense of apprehension, the inabilty to control the temper, the nervous restlessness leading to all sorts of foolish undertakings never carried to completion, states of depression amounting at times to suicidal impulses, defects of judgment and memory, and a marked lack of self-control, are symptoms which are familiar to the general practitioner and which in despair of relief he is prone to refer to the specialist.

The physical symptoms are equally marked. Intense headache, especially pain in the back of the head and in the neck, sudden flushing of the surface with the sense of heat and general swelling of the tissues, leading to a tightness of the rings and clothing, a sensation of pressure in the head, irregularities of digestion and irritability of the bladder with general indefinite pains throughout the muscles, are all symptoms that will be recognized.

These symptoms seem to be periodically increased every month at a time coincident with what should be the normal period, but are more or less present all the time for two years after the suppression of the function of the ovary. Inasmuch as these symptoms also appear when ovaries are surgically removed at any period of life, it is evident that they are due either to the suppression of an internal secretion or else to an excessive activity, in other glands, especially the thyroid which is known to have a complementary relation to the ovary. In fact, many of the symptoms appearing at the menopause are suggestive of a hypersecretion of the thyroid gland, as they are similar to symptoms occurring in Basedow's disease, but they are not wholly due to such a hypersecretion, as is proven by the fact that the administration of lutein or of ovarian extracts to these patients causes a marked improvement. The mutual interaction of the thyroid gland and the ovaries is demonstrated by the swelling of the thyroid on the first day of menstruation, by its swelling during the first weeks of married life and by its swelling during pregnancy. It would seem function there may be either a compensatory hyperemia is attended by a similar condition of the thyroid. When the ovaries cease to perform their function there may be either a compensatory hypersecretion of the thyroid leading to the sense of heat, the flushes, the rapid pulse, and the mental irritation, or there may be a cessation of its function leading to an accumulation of fat, a sluggish state of metabolism, and a depression and partial dementia. These conditions, then, can be met to some extent by treatment; the first by the use of lutein continuously given for many weeks, the latter by the use of thyroid extract in small doses for a long period of time.

I have called attention to these varying conditions of neurosis because it seems to me that in too many cases we are satisfied by the diagnosis of neurasthenia, although every clinician will admit that there are very few so-called diseases which present so many clinical varieties, and acquire such careful analysis to reach their etiology.

RICE IN THE DIETARY OF THE DIABETIC

By HEINRICH STERN, M.D.,

NEW YORK.

Sooner or later the economy of every diabetic requires some starchy material. This carbohydrate must be metabolizable to a certain degree and should not unduly activate a dormant or intensify an existing glycosuria. At the same time it should exhibit antiacetonemic qualities.

In the milder forms of diabetes practically all starches are tolerated in amounts of from 50 to 100 or more grams per day. Here the ingestion of from three to six of the usual slices of wheaten or rye

bread is either not followed by any sugar excretion at all or gives rise to an insignificant glycosuria only. For these mild cases of diabetes the question of nourishment in general and of carbohydrates in particular virtually resolves itself into the determination of the tolerance for "the staff of life" itself, because wheat and rye are as well tolerated in these cases as are the other nutriments rich in carbohydrate.

In the graver types of diabetes, on the other hand, the problem of nutrition is fraught with many difficulties. It is a continuous navigating between the Scylla of the proteids and the Charybdis of the carbohydrates. Most clinical pilots have taken to the apparently safer side of the carbohydrate Charybdis and prescribe the oat cure of v. Noorden for their grave cases of diabetes. It almost seems that the antiquated notion that a cure must be disgusting to be effective is still alive. Why must it be exclusively oats by which starch is to be introduced into the diabetic organism, and why must it be first brought into the form of v. Noorden's hotch potch? Let me reiterate what I said about the latter eight years ago[1]; "the oat cure is not only disgusting to the patient, but also does not uphold the claims of its author. Oats, in my experience, are not any better tolerated by the diabetic exhibiting acetonemia than other amyloid substances, as buckwheat or rice. Again, the very large amount of butter, 250 to 300 grams daily, which is to be incorporated into the oat groats contradicts the rationale of acidosis therapy. Half a pound of butter or more ingested daily is certainly apt to yield large quantities of acetone bodies in the diabetic; as a matter of fact, I have seen a case (numerous cases now after eight years) in which the intensity of the acetonuria had not only not diminished, but had been appreciably augmented after restriction to the oats-fat-albumin compound for some days. In his oat cure, v. Noorden (who himself has shown that the ingestion of more than 150 grams of unwashed and of more than 180 grams or 200 grams of washed butter—by the washing process butter loses its low fatty acids—is liable to be followed by an increased production of acetone bodies) orders the addition of from 250 to 300 grams of butter." A fat substance composed of fatty acids of high molecular weight would certainly be a more rational addition to the oats than the butter with its valerianic, butyric, and caproic acids, the mother substances of the acetone bodies.

A good deal has been written during the last few years about the oat diet in diabetes. Most of it is of little or no value because it is either based upon insufficient or superficial observation or it is a rehash of v. Noorden's own or inspired statements. A number of theories have been advanced to explain its particular advantages in diabetes, for it was thought in the beginning that it exhibited specific properties which other cereals did not possess. Blum, however, showed last year that there exists no characteristic difference between oats and wheaten flour so far as their value in the economy of the diabetic is concerned. Magnus-Levy[2] even declares that he has not found any marked discrepancy between the two cereals in the milder types of diabetes.

It is not my intention to dwell on this occasion upon the various hypotheses which have been advanced to explain the alleged superiority of oats over all other carbohydrates in the antidiabetic regimen. I merely wish to draw attention to one point connected with the oat ingestion which, it is my opinion, accounts for its mysterious beneficial qualities. In the first instance, v. Noorden does not speak of oatmeal at all, and whenever we find the word "oatmeal" in connection with the specific oat cure it is simply due to negligence of the translator. v. Noorden invariably refers to "Hafergrütze" and not to "Hafermehl," that is, he means groats or grits and not oatmeal. Certain brands of so-called oatmeal on the market may indeed more or less resemble groats, denoting hulled and crushed oats, or grits, signifying the hulled or granulated cereal, but the fact must not be lost sight of that groats or grits is one thing and oatmeal, which is the meal of oats, another. Oats are very rich in cellulose, but while from 7 to 9 or even 10 per cent. of this material is contained in the dried cereal, it occurs in only one-third of this amount in the finest oatmeal. Granted even that the expression "oatmeal," as popularly employed, comprises not only the meal of oats, but also other oat preparations as groats and grits, we find that the oat foods fit for human consumption contain on the average 3.5 per cent. of cellulose. This is just seven times as much as is found in ordinary rice and forty times as much as in rice flour.

It is this high cellulose content of the oats to which must be ascribed an eventual decline of the glycosuric symptom. In this respect the oats do not behave differently from any other food rich in cellulose. The integument of the oats, composed to the greater part of cellulose, firmly adheres to the kernel of the seed and can never be completely separated from it. For this reason the oat carbohydrate offers more or less resistance to the influence of the digestive juices, remains in the intestinal tract for a comparatively long time, and is but slowly and incompletely absorbed, while one portion undergoes certain fermentative changes and another portion, but little altered, finds its way directly into the feces. Again, large amounts of groats, as advocated by v. Noorden, exhaust the activity of the special organs concerned in the elaboration and absorption of the nutritive principles[3]; as a rule, the quantity of nutriment ready for absorption becomes smaller after a day or two as evidenced by the increased fecal matter, and digestive disturbances are liable to occur soon after the beginning of the oat regimen. It is a self-deception of a clinician when he assumes that the impaired economy in grave diabetes is able to derive more nourishment from the carbohydrate of oats than from that of other cereals; he soon will be disillusionized when he observes the bulky and frequent stools of the oat diet with their large content of cellulose and unabsorbed starch.

We know from clinical experience that the ingestion of one single type of carbohydrate may at times be followed by a temporary improvement of certain cases of grave and far-advanced diabetes. In other words, if in a severe case of diabetes the carbohydrate intake is limited to one specific cereal it may be better tolerated by the patient than if a number of carbohydrates be given at the same time. An eventual improvement accruing from the ingestion of a single type carbohydrate is not enduring by any means; it makes itself noticeable by an increase of the patient's strength and weight, by a decrease of the glycosuria, and a decline or disappearance of the excretion of acetone bodies.

I have employed the common rice, *Oryza sativa*, in the treatment of diabetes, more particularly for the suppression of diabetic acetonuria, for some years; systematic studies of rice with a view to de-

Patient	Sex	Age	Duration of Diabetic State	Degree of Diabetes	Weight in Pounds	Diet directly before starting with Rice as the Exclusive Carbohydrate	Urinary Glucose per Day immediately before Rice Ingestion, Grams	Acetone Bodies*: Acetone	Acetone Bodies*: Diacetic Acid	Ingestion of Rice as the Exclusive Carbohydrate: Grams Rice ingested per Day	Period during which Rice was the exclusive Carbohydrate while under personal observation	Urinary Glucose during Rice Period (Latin numbers indicate number of Days of Rice Period, ordinary numbers express grams of Urinary Glucose per Day)	Acetone Bodies* (Latin numbers indicate number of days of Rice Period): Acetone	Acetone Bodies*: Diacetic Acid	Weight in Pounds	Remarks
F. S.	F.	56	5 years.	Moderately severe	152	Various Carbohyd. small amount Proteins predom.	85	2	2	125	5 days...	iii 72; iii 38; iv 28, v 19	iii 0; v 0 .	iii 0, v 0. .	152¼	
A B ...	F.	61	12 years	Moderately severe	191	Various Carbohyd. small amount. Proteins predom.	65	2	1	100	16 days..	v 25, xi 0 xvi 0	v 0, xi 0; xvi 0	Never present	193½	Advanced diabetes, but still in fair nutrition
R. B ...	M.	28	(?)	Mild, yet stubborn	104	Nearly entirely Proteins; Fats	18	0	0	125 ..	5 months	Practically absent all the time.	Always absent	Always absent	115½	
Y. B....	F.	36	2 years	Moderately severe	212	Gluten bread; Proteins; Fats	140	1	1	60 100	28 days..	vii 67.5, x 0; xiv 0, xvii 0; none thereafter	vii 0, none thereafter	vii 0, none thereafter	206	
C. B.....	M.	54	3 years	Grave	162	Oats; Proteins; Fats.	168	1	1	60 .	5 days..	v 12 25	vii 0..........	vii 0......	168	Dry Diabetic Gangrene
H. H....	M.	48	4 years.	Moderately severe	187½	Moderate Amt. Carbohyd.; Proteins, Fats	85	..	.	60	14 days.	vi 25; xiv 45....	Always absent.	Always absent	189	Had et'n some toast contrary to instruction
J. R. ..	M.	41	2 years.	Moderately severe	176¾	Vegetables, Proteins; Fats	10	2	2	90 150	28 days..	vii 2; xii 3; xvi 0, xxi 0; xxviii 0	vii 0; absent thereafter	Always absent	181½	
W. V. B.	M.	37	6 mos..	Moderately severe	247½	Vegetables; Proteins predom	28	2	2	90 120	3 months	v 10, xii 7, xx 0.	v 1, xii 1; xx 0.	Always absent	237¾	Anti - obesity treatment.
E. E. ..	F.	36	6 years	Grave	153½	Mixed, with Proteins predom.	334	3	3	90 250	9 months with interrup.	xxv 6.22.......	xxv 0.........	xxxv 0...	156½	Will be reported in detail
S. G.....	M.	47	3 weeks	Moderately severe	213¾	Carbohydrates abundant; Proteins; Fats	104	1	1	90 250	1 month.	x 0; none thereafter	x 1; xvii 0, none thereafter	x 1, xvii 0	215¼	
S. I.....	F.	37	6 years.	Moderately severe	140½	Carbohydrates abundant; Proteins; Fats	498	0	0	60 150	1½ mon	xviii 0; absent thereafter for 3 weeks	xvii 0; none thereafter	xvii 0; none thereafter	146	Glucose returned to some degree after a shock to nervous system.
J. M..	M	58	3 years.	Moderately severe	117	Some Carbohydrates, Proteins; Fats	38	0	0	60 125	2 months	iii 0, none thereafter	Always absent.	Always absent	119¾	
A. C. M.	M.	28	2 years	Moderately severe	116	Strict Protein; Fat	15	1	1	60–125	26 days..	iii 0, none thereafter	iii 0; none thereafter	iii 0; none thereafter	119	
F. E. M	M.	49	5 years	Moderately severe	198¾	Some Carbohydrates; Proteins, Vegetables	40	1	0	60 125	8 days	iii 0, viii 0. .	iii 0; viii 0. ...	Always absent	198	
J. P.....	M.	45	4 mos..	Grave	163	Gluten Bread, Proteins; Fats; Vegetables	338	3	3	60 125	3 months	iii 156; v 120; vii 24; x 5; traces thereafter to second mon.; none afterwards	v 1; vii 3; traces for 5 more weeks; none thereafter	Always absent	169½	Will be reported in detail.
L. W. .	F.	56	3 years.	Moderately severe	169	Ordinary Mixed	188	0	0	60 100	1½ mos...	iii 0; x 75; xx 0. l 0	ii 2; x 0, xx 0. il 0	ii 1; absent thereafter	....	
A. G. L	M.	30	2 years	Grave	123	Modified v. Noorden's Oat mixture	86	3	2	60 150	1 year...	Practically unchanged	Unchanged .	Unchanged	123	Looks and feels well; has remarkable endurance; will be reported in detail
H. L....	F.	50	5 years.	Moderately severe	165	Ordinary Mixed	515	1	1	60 100	3 months	xi 0, none thereafter as long as rice was exclusive carbohydrate	v 0, none thereafter	v 0; none thereafter	....	
C. M. B..	F.	58	10 years	Moderately advanced	....	Ordinary Mixed	215	1	1	60-100	21 days..	v 50, x 8; xv 10.	v 1; x 1; xv 0..	v 1; x 0...	....	Latent dry Gangrene.

Explanatory Note concerning the Acetone Bodies: 0=absence; 1=small quantity; 2=medium quantity; 3=large quantity.

termine its value as a single-type carbohydrate in the antidiabetic dietary were, however, not undertaken by me until about sixteen months ago. During this period I had occasion to employ rice in nineteen cases of moderately severe and grave cases of diabetes, and in a much larger number of milder types of the affection.

In the following I delineate some of the characteristics of rice, which, as is commonly known, is one of the most valuable and largely cultivated cereals, furnishing the principal means of subsistence of nearly one-third of mankind. The composition of rice is as follows:

Nitrogenous matter........	8	per cent.
Fatty matter.............	1	" "
Carbohydrates	78	" "
Cellulose	0.5	" "
Mineral matter...........	0.9	" "

Compared with other grains rice is poor in protein, fats, and mineral matters. It is preeminently a farinaceous food; alone it cannot be considered a complete aliment unless it be taken in amounts entirely too large for a civilized digestive tract. It must hence be combined with nitrogenous and fatty substances and certain salts, probably of potassium and phosphorus, but at any rate with such mineral matter as is ordinarily furnished by fresh green vegetables.*

The principal characteristic of rice is not so much its very large proportion of starch, but the small-

*The "polishing" of the rice, *i.e.* the removal of the inner cuticle, deprives the grain of an important nutritive component, an organic base which is completely precipitated by phosphotungstic acid and by silver nitrate and baryta (Funk: "The Chemical Nature of the Substance Which Cures Polyneuritis in Birds Induced by a Diet of Polished Rice," *Jour. Physiol.*, 1911, p. 395.)

ness of the individual starch granules which, according to Pavy, form exceedingly minute, irregularly shaped, angular particles. The starch granule of rice is more readily digestible than the starch granule of any other cereal; it is quickly converted by the digestive juices, and practically entirely utilized by the normal individual. The very small amount of cellulose carried by rice does not impede the latter's absorption; in fact, the microscopic examination of the feces hardly ever reveals the presence of some rice-cellulose, which means that the latter itself must have been converted and prepared for absorption. On account of the meager or entirely absent residue in the colon following the intake of rice, it is the least irritating of any cereal. In truth, rice is better borne by a sensitive or diseased intestine than any other solid food.

In the beginning I employed rice only in such cases of diabetes with which was associated some form of renal disease. As rice contains but the sixth part of potassium that is found in the cereals of the northern zone, its ingestion is followed by a diminished desire of the organism for sodium chloride. For this reason the kidneys are relieved of unnecessary excretory work.

Rice may, of course, be partaken of by the individual with mild diabetes in suitable amounts and any form, provided it be prepared without sugar; as a matter of fact, I have made my tolerance determinations for over a year with rice exclusively. Rice furnishes a better standard than bread on account of its stable content of starch; the starch content of bread may and does change with every fresh baking. A rice dish must be especially prepared for each meal with a designated quantity of rice; when the patient has finished it he cannot readily obtain a new supply. On the other hand, the loaf of bread is always within easy reach; the diabetic is only too apt to yield to temptation and to overstep the dietary boundaries set for him. Again, many diabetics, even those affected with the lighter forms, suffer from gastrointestinal disturbances and starch indigestion; for these there is but one carbohydrate, with the possible exception of milk, namely, rice.

A description of the determination of carbohydrate tolerance by rice and the details of a rice diet in the general run of cases of diabetes I reserve for a subsequent article. On this occasion I wish to bring in tabular form the abbreviated records of nineteen cases of moderately severe or grave diabetes while they were on rice as the exclusive carbohydrate, and to summarize the results of my observations concerning the advantages of rice over other cereals when utilized as a single-type carbohydrate in the management of the severer forms of the diabetice process.

From a study of the foregoing the following conclusions may be drawn:

1.—Rice, *i.e.* the "polished" product of commerce, furnishes substantially nothing to the organism besides an easy digestible starch. Given in suitable amounts this starch is practically all absorbable and ready to serve as a calorifacient.

2.—The commercial cereal is therefore peculiarly adapted to supply carbohydrates without any portein or mineral admixture of consequence.

3.—This deficiency of protein and mineral substances makes rice an indifferent food so far as the formation of toxic protein products and useless or impossible pancreatic, cardiac, and renal activities are concerned.

4.—The mineral and protein deficiency of rice facilitates the reduction of salts and the calculation of absorbable albumin necessary at every stage of the diabetic affection. (The elaboration of proteins from cereals and leguminous seeds by the healthy organism is mostly incomplete; it is impossible, or nearly so, in every case of advanced diabetes.)

5.—Rice, being nearly entirely absorbable, only a comparatively small quantity of it is needed by the diabetic organism; it is not the purpose of the rice to supply the total food requirement as does v. Noorden's standard oat-diet; the cereal may be incorporated with any properly adjusted protein-fat combination.

6.—Contrary to the oat diet, rice as a single form of carbohydrate and in suitable combination may be employed by the diabetic for more protracted periods; it may be prepared in a number of different ways and forms that prevent monotony and always furnish a palatable dish for the patient.

7.—Sixty grams of the absorbable starch granule of rice generally produce the antiacetonemic effect of 250 grams of the but partly absorbable oats in the standard admixture.

8.—Pronounced cases of acidosis are frequently suppressed by the ingestion of 100 grams of rice.

9.—The amount of rice requisite to depress the acetonuria does not necessarily increase the intensity of the glycosuria. In a large number of cases the glycosuria will even temporarily decline in a marked degree.

10.—The modus operandi of rice is different from that of cereals rich in cellulose. Practically all the rice is absorbed and a certain amount is assimilated by the diabetic (this is evinced by the frequent increase in weight and vigor of the patient and the diminished glycosuria and acidosis), while material rich in cellulose, no matter how much albumin and fat may have been added to it, furnishes in effect nothing more than a starvation diet.

REFERENCES.

1. Stern, Heinrich: "Concerning the Suppression of the Acetone Bodies in Diabetics," N. Y. State Med. Assn., Oct. 18, 1904; published in *American Medicine*, Dec. 3, 1904.

2. "Über Haferkuren bei Diabetes Mellitus," *Berliner klin. Wochenschrift*, 1911, No. 27.

3. Stern, Heinrich: "Some of the Latter-Day Endeavors in the Treatment of Diabetes," MEDICAL RECORD, July 22, 1911.

250 WEST SEVENTY-THIRD STREET.

THE OZENA INVESTIGATION IN THE UNITED STATES.*

BY EMIL MAYER, M.D.,

NEW YORK,

CHAIRMAN OF THE COMMITTEE.

AT the meeting of the Second International Laryngological Congress held in Berlin in 1911 it was unanimously resolved that a collective investigation of a statistical nature should be held on ozena and that this investigation should embrace the whole civilized world. A general committee, composed of Professor Grabauer, Professor Rosenberg, and Prof. A. Alexander, all of Berlin, was appointed to institute the same and report its findings at the next International Laryngological Congress in Copenhagen in 1914.

*Presented to the Thirty-fourth Annual Congress of the American Laryngological Association at Atlantic City, May 11, 1912.

This committee at once undertook the herculean task of appointing a chairman for each of the various countries, appealing for the financial aid such an investigation requires, notifying the profession at large of their existence and purpose as also the general public through the press, and finally requesting permission of their government to make the needed examination of school children and inmates of homes, asylums, reformatories, and prisons.

At the request of this committee and at the earnest solicitation of one of our members, the writer agreed to assume charge of the investigation for the United States, so far as our complete lack of means for this purpose would permit. This latter statement was quite essential as the idea seemed to have gone forth that we had but to mention the character of the disease which we wished to investigate, when ample funds from some of our philanthropic multimillionaires would not only be forthcoming for our own needs, but some might even drift the way of the general committee. With a clear knowledge then on their part, of an absence of any funds or our ability to gather the same, the appointment was accepted. The chairman at once formed an executive committee after conferring with the officers of our three large laryngological associations. This executive committee consists of Dr. Joseph W. Gleitsmann, Dr. Robert C. Myles, Dr. Harmon Smith, representing the American Laryngological Association; Dr. Thomas J. Harris, Dr. Wolff Freudenthal, Dr. H. Holbrook Curtis, representing the American Laryngological, Rhinological, and Otological Society, and Dr. Sidney Yankauer representing the American Academy of Ophthalmology and Oto-Laryngology.

The first meeting of this committee was held on March 9 and it was resolved that for the purpose of this investigation the term "ozena" is meant to indicate a disease of the nasal interior, beginning, as a rule, in childhood, which is characterized by degeneration of the nasal mucous membrane and bony atrophy without ulceration, and which in its further course gives rise to a disagreeable odor perceptible at a distance. A second classification was made to be known as "ozena suspects," that is, those having the same conditions without odor where some other member of the family has the same condition.

From the lists of membership of our American Associations this committee selected the names of those who were to be invited to assume charge of the investigation for the various States of the Union, and up to the present time the following men have accepted and their names appear with the name of the State for which they act as chairman: Dr. J. H. Allen, Portland, Me.; Dr. H. L. Swain, New Haven, Conn.; Dr. W. B. Johnson, Paterson, N. J.; Dr. G. B. Wood, Philadelphia, Pa.; Dr. C. W. Richardson, Washington, D. C.; Dr. S. R. Rosenheim, Baltimore, Md.; Dr. D. A. Kuyk, Richmond, Va.; Dr. W. B. Goff, Clarksburg, W. Va.; Dr. H. H. Briggs, Asheville, N. C.; Dr. E. F. Parker, Charleston, S. C.; Dr. Dunbar Roy, Atlanta, Ga.; Dr. Richmond McKinney, Memphis, Tenn.; Dr. Otto Joachim, New Orleans, La.; Dr. J. O. McReynolds, Dallas, Texas; Dr. H. B. Hitz, Milwaukee, Wis.; Dr. W. L. Ballinger, Chicago, Ill.; Dr. J. F. Barnhill, Indianapolis, Ind.; Dr. H. B. Lemere, Omaha, Neb.; Dr. L. W. Dean, Iowa City, Ia.; Dr. James E. Logan, Kansas City, Mo.; Dr. Robert Levy, Denver, Col.; Dr. J. N. Ingersoll, Cleveland, Ohio; Dr. B. R. Shurly, Detroit, Mich.; Dr. J. B. Parsons, Sioux Falls, S. D.; Dr. A. M. MacWhinnie, Seattle, Wash.; Dr. C. A. Thigpen, Montgomery, Ala.; Dr. John McCoy, New York City, N. Y.; Dr. John A. Donovan, Butte, Mont.; Dr. Hill Hastings, Los Angeles, Cal.; Dr. Frederick C. Cobb, Boston, Mass.

Each chairman is privileged to appoint as many assistants as he desires; is to inform the profession of the purposes of the investigation, to secure the examination of school children, inmates of asylums, homes, and public institutions, to supervise the collection of the histories of cases thus obtained, and in some appropriate way to have the general public notified of the investigation and its purport.

For the prompt acceptance of the onerous duties, the committee expresses its thanks and its gratification at the feeling of loyalty shown. The chairman was also authorized to confer with the Surgeon-General of the Public Health and Marine Hospital Service in order to secure the valuable cooperation of that body. The reply of the Surgeon-General states that "it is the purpose of the bureau to keep in touch with and to assist in so far as practicable in those investigations and measures relating to public health subjects. Limitations of our force and the stress of other work connected with investigations which must be carried on have to be borne in mind in considering any new movements, but I should be pleased to meet with you should my duties take me to New York in the near future." Replying to this, the chairman sent a letter to the Surgeon-General asking for such valuable assistance as his department could give in making this investigation and promising him the cooperation of the chairmen of the various States already appointed by this committee. No answer to this has, as yet, been received, but in view of the fact that it is part of the duty of the Public Health and Marine-Hospital Service to take up such investigations, the writer feels that we may in some way still be able to secure the needed cooperation.

The General Committee in Berlin has, in addition to securing permission from the authorities to examine all children in the schools, established an ozena clinic in the larger cities so that once a week cases of ozena assemble at this chosen place and several rhinologists agree to be present to confirm the diagnosis and note the development of these cases.

We are to ascertain the number of cases of ozena existing in the United States, whether ozena occurs in the native born or among foreigners, and the relative frequency of the same, also whether it is at all common among the negroes. It has been deemed advisable to have a rather complete history taken of ozena occurring in children and for this purpose a history blank has been prepared by the General Committee, as follows:

1. Full name. Sex. Religion. Age. Date of birth. Residence. City and country. School. Class. Place of birth. Nationality. How long in the United States. (If foreign) Birthplace of parents. Occupation.

2. History. How long does the nose condition exist? Was there any ophthalmia? When? Diseased conditions directly after birth? Dis-

cases of childhood, especially infectious diseases? Was the child breast or bottle fed? General condition of the residence, size, cleanliness, etc.? Nutritive conditions of the family and child, clothing, care of body and teeth?

3. General bodily conditions. General appearance, size, development, form of chest. Conditions of the circulation, respiration (if tuberculosis is suspected), nervous system. Condition of bones (rachitis, tuberculosis of bones). Skin, eczema, etc. Constitutional conditions, especially syphilis. Glandular infiltration, otitis, etc. Enlarged thyroids. Examination of the urine, blood, secretion of the nose. Wassermann reaction.

4. Local conditions. Examination of the nose, both sides, space, appearance of turbinates, of the mucous membrane of the septum, sensibility of the nasal mucosa, sense of smell, crusts, intensity of the odor before and after removal of crusts. External nose, appearance of the skin, superior maxilla, hard palate, teeth, pharynx, appearance of the mucous membrane, pharyngeal and lingual tonsils. Naso-pharynx, condition of the mucous membrane, adenoid, larynx and trachea. Photograph, full and profile, measurements of the skull, length of the septum.

5. Complications on the part of the lachrymal canal and the middle ear, accessory sinuses. Special examinations, transillumination. Roentgen rays photograph.

6. Hereditary or infectious. Patient is the (fourth, fifth, etc.) child, with -- brothers and sisters, of whom — are living. Patient is an only child. Diseases and causes of death of parents or brothers and sisters. Have children occupied the same bed and up to what time?

If death should occur in an ozena subject autopsy is to be held.

With the cooperation of the rhinologists who have so graciously accepted, and that of the Public Health and Marine-Hospital Service of our Government, which we hope to interest in our behalf, the writer earnestly hopes that the final report made two years hence from the United States will in no way be behind that of other countries.

40 East Forty-first Street.

MEDICAL STUDIES OF THE ALCOHOLIC PROBLEM.

By T. D. CROTHERS, M.D.,
HARTFORD, CONN.,
SUPERINTENDENT WALNUT LODGE HOSPITAL.

Every study of the causes of degenerations and diseases indicates that the use of alcohol is very common as an exciting and predisposing factor. Like syphilis its injurious effects are persistent and cumulative, breaking out in new and most unexpected ways. Thus an attack of excessive drinking in early life, followed by abstinence or a so-called moderate use of spirits extending over years, seems to leave some entailment and degeneration that is traceable in the present conditions calling for relief. There is clearly a relation of cause and effect that extends back, often obscure, at other times clear and traceable. Forms of neuroses and psychoneuroses with epilepsies and degrees of dementia, perversions, lapses, and marked deviations from health, seem to originate in the use of alcohol. Nutrient disturbances and derangement of the circulatory organs have a similar origin.

Modern authors assert with great emphasis that both alcohol and syphilis are the most prominent causes of a great variety of diseases and degenerations that appear later in life. They are very often associated, and a study of their effects explain conditions that are obscure. Modern laboratory research of the effects of alcohol on cell and tissue bring striking confirmation to these clinical observations. The chemical, pathological, and psychological action of alcohol on protoplasm and tissue reveal startling changes which in all probability extend to all parts of the body and attain a degree of permanence. The anesthetic action of alcohol not only lowers the activity of cell and tissue, but perverts it, and whether restoration ever occurs in the fullest sense is uncertain. Control experiments on animals show erosion and corrosion and other changes from the use of alcohol that are permanent. Assuming that the action is the same in the human body, much of the obscurity of symptoms which follow the use of spirits is cleared up. Chemical studies show that alcohol not only breaks down cell and tissue, but encourages the formation of toxins that in themselves are destructive and produce conditions of degeneration largely unknown and yet to be studied.

One conclusion drawn from a great mass of literature, based on laboratory and clinical observations, is that alcohol is a protoplasmic poison, the effects of which are persistent and cumulative, and that alcohol may rouse latent degenerations, stimulate new growths, and increase germ diseases and morbid germ activity. Previous theories that alcohol possesses food, tonic, and stimulant properties are unsupported by modern studies, and these delusive effects are found to be due to its anesthetic and narcotic action. Outside of tradition and personal opinions, the one fact that alcohol is a poison in any form, as manifested by its action on the sensory centers, is established beyond question. Examination of the causes of the evil influences and degenerations, both psychical and physical, which confront civilization of to-day, indicates fields of prevention and possibilities of stamping out the above conditions permanently by removing the causes. Typhoid fever, yellow fever, consumption, diphtheria, smallpox, and many other diseases are in this manner controlled and prevented with startling certainty. In view of these facts, why should the evils from alcohol be tolerated when they can be eradicated by the practical use of means and measures? This fact has grown into a public consciousness and is evident in the tremendous efforts of laymen and reformers to suppress and break up the evils which follow from the use of alcohol.

The assertion that alcohol and its injurious effects far exceed those of any epidemic or contagious disease known is sustained by evidence that cannot be disputed, evidence that is available in almost every family, town, and city of the country. These are evils that appeal to every consideration of health, life, and prosperity, yet, strange to say, notwithstanding the tremendous efforts to understand and control this evil, the theory of moral causation of vice, the theories of weak will and vicious neglect, are in reality the basis of all these efforts. The members of the medical profession, to whom the subject rightly belongs, and who of all others are most competent to study its causes and remedies, practically take no part in the various efforts to understand the means of prevention. The great leaders in medicine over a century ago affirmed that the alcoholic problem was one of disease and not a

question of morals and ethics. In 1870 a small society of medical men was organized in New York City, who declared that alcohol was a poison and inebriety was a disease and curable. This was the first organized society of physicians in the world to take up the study of alcohol. It was called the American Society for the Study of Inebriety. Twenty years later another society was organized called the American Medical Temperance Association, having about the same purpose and plan with the exception of making alcohol the central object of study and educating the public concerning it. In 1903 both of these societies united under the name of The American Society for the Study of Alcohol and Other Narcotics. In 1870 it issued a journal as its organ which has been published up to the present time. In 1884 an English society was formed, called the British Society for the Study of Inebriety. From that time a number of societies, having the same purpose and object and composed entirely of physicians, have been organized in France, Germany, and Switzerland. These societies hold frequent meetings for the discussion of alcohol and its effects and the means of prevention, and educating the public. Within the last ten years these societies have increased, and there are now over a dozen medical organizations in the world with this object. So far they have ranged into two classes. The American and the British Society have taken up the study of the conditions and causes which provoke and precede the use of alcohol and the questions of heredity and predisposing factors that culminate in the excessive craze for spirits and drugs. The German and French Societies, representing a second class, seem to confine their studies to alcohol and its physiological and pathological effects on cell and tissue. The distinct purpose which they have is to convince the public of the danger of alcohol as a beverage and also as a medicine. A society in London called the Medical Temperance Association, which grew out of the researches of the late Dr. Richardson, has presented some very startling sociological and hygienic studies on the effects of alcohol.

Some of the German societies give very exhaustive studies from laboratory works on the chemical and physiological action of alcohol. For originality and accuracy of research they have done most valuable work along this line and have practically changed the conception and traditional theories of the past. This work has attracted an immense amount of attention and has furnished a basis of a great variety of literature which reformers and philanthropists press on public attention with energetic enthusiasm. Research work on alcohol in laboratories is carried on in several great medical centers of Europe, with startling results which after a time come into the medical literature and are accepted. The American and English societies, representing the psychoses and neuroses of the subject, have published some very startling papers calling attention to the inherited defects and degenerations and close association of inebriety with the various insanities. In this country *The Journal of Inebriety* has presented many original papers along these lines, and stimulated the production of several volumes both in this country and Europe which give particular prominence to the disease of alcoholism. Heredity has been the subject of several volumes and studies that are still going on. The American Society from the first gave particular prominence to institutional care and study of inebriates. Discussions of remedies and appliances have gone on for years, every now and then culminating in some experimental institution. Narcotics have come in for an equal share of study and the literature along this line, from this and the English Society, has become practically epoch-making. There has been no endorsement of specifics or claims of extraordinary discoveries, but a steady evolutionary growth of the facts and their practical significance, showing the insanity of inebriety, the neuroses, and psychoses associated, and how far it is possible to control them.

On the Continent the studies of alcohol have absorbed every other consideration, and these societies have become the center of reformers and enthusiastic philanthropists who press their conclusions on public sentiment, educating physicians to total abstinence and to become teachers of the ill effects of spirits. Many of these societies call themselves antialcoholic or total abstinence societies and seem to have mixed motives, not only for themselves, but for the public. In this country the American Society's work opened a field for a great army of quacks and gold-curers who took up the idea of disease and declared they had discovered a remedy for it, and materialized and commercialized the idea as far as they could make it go. Out of all this confusion and empiricism there has come a clearer conception and decided advance in public sentiment. The fact has taken root and assumed the conviction that the work of the quacks showed the possibility of medical help and prevention from more exact means and measures. If reformers and quacks with mistaken theories and dishonest motives could accomplish so much, what could not be attained from a study of the subject as a mental science problem? In England the teachings of the American Society materialized in a law for the control of inebriates and a government department for the organization and management of institutions for the care of inebriates the same as in insane asylums. This has been going on steadily for many years, and the reports year after year show how vast the subject is, and what difficulties there are in its practical cure and prevention. Both the English and American societies have urged the question of disease and hospital care and treatment. In this country the growth of this fact is evident from the increasing number of inebriates that are sent to hospitals for the insane and sanatoriums and places where personal care and restraint can be had. In England there are twenty-four licensed institutions under government control and as many more private homes and sanatoriums for the same work on a smaller scale. In this country there are two state institutions for the care of inebriates and ten or more private or corporate institutions, organized under state laws, dependent on the income of patients and private charity, and over thirty sanatoriums where inebriates are received and treated as mentally unsound. The number of empiric institutions claiming to have some secret drugs at one time was very large, but they have grown less and less. All the large hospitals are providing wards for the care of the alcoholic, and outside of all theory or personal opinion there has grown up a consciousness that the inebriate is sick mentally and physically and needs exact care and treatment other than the pledge or moral remedy. These two distinct efforts to study the alcoholic problem are producing a revolution, not only in public sentiment among the laymen, but in scientific circles and among physicians.

A recognition of this and the work of the American Society in the publication of its transactions as a public document, known as Senate Document No. 48, is the highest tribute to its work. This shows that the work done by the American society has taken equal rank with the startling laboratory researches on alcohol in Europe. The American society, after years of continuous effort, has come at last to be recognized, and while its numbers are few, the work it has done has in some measure pointed out vast fields yet to be occupied and given help and assistance to many persons who are trying to understand something of the problem. Studies and observations of alcohol, inebriety, and the conditions which lead up to it do not require a hospital or extensive laboratory. They can be carried on in every town and city of the country, every medical man can become a pioneer and observe, tabulate, and make note of the great underlying facts which culminate in alcoholism and inebriety. Of the 120,000 physicians in the United States not 10 per cent. consider the alcoholic problem other than a moral one, and leave the great questions to clergymen, reformers, and enthusiastic women. While a much larger percentage are active temperance men in practice and theory, they look out upon the agitations of reformers and church efforts to check the evils of alcohol as outside of the great medical fields of study. Many very active physicians who would like to do all they could to increase the sentiment of total abstinence and raise the standard of living, are made to understand by the alcoholic interests that any efforts on their part to join the great reform movements will react on their personal work. Hence they become indifferent or give only negative help. There is a revolution in the air. Reformers, philanthropists, and clergymen are urging with intense energy the dangers and the evils which grow out of the use of alcohol as a beverage and its destructive effects in all conditions and relations of life. Reformers are coming into every town and city of the country and are trying to build up public sentiment and arouse a feeling among laymen to take part in trying to break up an evil that exceeds any of the epidemics known to science. Curiously enough, physicians who should lead and direct and be most active are not seen or heard of in these efforts. The alcoholic problem has passed beyond the stage of theory and tradition. It is a distinct physical and hygienic evil, pervading all society and homes and breaking out here and there in the most distressing way. The saloon and its patrons are subjects of pathological interest, and the supposed value of alcohol as a food, stimulant, or tonic is based on traditions and theories that all scientific studies contradict.

The great white plague of consumption is insignificant in its prevalence and effects when compared to alcohol and its influences. The injuries and diseases, with distinct entailments of crime, pauperism, neuroses, psychoses, insanity, and a vast tide of evils, clearly traceable to this one most prominent cause, is simply appalling. There are no ethics or morals in a study of these facts. It is not sentiment or theory; it is causes and results, clear and tangible. The inebriate and the alcoholic in the home, on the street, in the saloon, and everywhere is a menace to those about him. He is suicidal. He has crossed the border line of sanity and is poisoned both physically and mentally. He needs medical care, treatment, direction, and control, and this is a new field of practice which may be carried on in the office, in the home, and in the sanatorium. Physicians of all others by training, practice, and study are the natural leaders from whom help may be expected. They are competent to determine the causes and to point out means of prevention that shall lead to restoration and cure. Every temperance revival carried on by reformers and clergymen is a reflection on the physicians of that neighborhood who have failed to study the facts and their meaning, and failed to teach the hygienic significance and the destructive influence of the use of spirits as a beverage. Society demands that they should call attention to the source of typhoid fever, smallpox, and other contagious diseases, and be active in their prevention, before a great epidemic breaks out. Society demands the same of physicians in regard to every other evil that is active in destroying the health, vigor, and interests of the community. They are the persons who should be leaders and teachers, and not reformers and philanthropists who are without knowledge of the causes and can only judge of the effects. The American Society for the Study of Alcohol and Other Narcotics is an organized effort to create interest among physicians to take up this question and study it as a scientific one, not for the promotion of theories or dogmas as to what alcohol is and is not, or what inebriety is, but simply what is the meaning of the facts and what are the relations of alcohol, directly or indirectly, to the tide of evils that follow and are associated with our civilization and progress of the present. Why should an army of enthusiastic persons keep up an incessant agitation that is practically a revolution founded on an ethical and moral theory of causes which they seek to remedy by education and conversion? These questions must be answered practically, and when the physician seeks an answer in his own community, from facts that are tangible and real, he can then become a leader and enter upon a new field of practice of almost unlimited possibilities.

The work is begun, and we in this country have led all others in the study of the inebriate, and with the increasing number of foreign medical men who make alcohol the special object of their work, are opening a new field of cure and prevention, the possibilities of which are beyond all imagination.

PHARYNGEAL ABSCESS.

By BRYAN DeF. SHEEDY, M.D.,

NEW YORK.

ADJUNCT PROFESSOR OF RHINOLOGY AND LARYNGOLOGY, FORDHAM UNIVERSITY MEDICAL COLLEGE; INSTRUCTOR IN DISEASES OF THE UPPER RESPIRATORY TRACT, NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL; CONSULTING OTOLARYNGOLOGIST ST. JOSEPH'S HOSPITAL; MEMBER OF THE LOCAL COUNTY AND STATE MEDICAL SOCIETIES; MEMBER OF THE AMERICAN MEDICAL ASSOCIATION, ETC.

In discussing inflammation of the pharynx and pharyngeal structures, I believe sufficient emphasis is not placed upon that form of inflammation terminating in abscess. Most of the books referring to pharyngeal abscess define the condition as an infection of the glands located in the connective tissue between the spinal column and the anterior surface of the pharynx. The anatomists tell us that there are a few lymphatic glands normally located in the tissues of the pharyngeal wall at a level with the second and third cervical vertebræ and that pharyngeal abscesses are due to extension of inflammation from the mucous surfaces to these glands. They state, however, that these glands usually atrophy and disappear before the fifth year of life.

Reasoning from their standpoint, therefore, pharyngeal abscess does not occur after the fifth year of childhood. Those who are familiar with throat diseases know that abscesses of the pharyngeal wall occur almost as frequently in adults as in children.

If the breaking down of the retropharyngeal glands referred to is the sole cause of retropharyngeal abscesses then we must consider this condition purely one of childhood. The case that I am about to report occurred in a child three and a half years of age, though I believe that the abscess in this case had nothing whatever to do with the glands in question. Abscesses of the pharyngeal wall are due to the same causes as abscesses occurring in any other part of the body. Therefore, I know of no reason why this condition should be said to be limited to child life. Abscesses of the pharyngeal wall in adults are due to many causes, and I would specially mention, (1) infection escaping from the middle ear into the tissues forming the pharyngeal wall, (2) necrosis and caries of the spinal vertebra, (3) abscesses of the sphenoidal sinus, (4) traumatism of the structures of the pharynx through the swallowing of false teeth, falling upon canes, sticks, or tin horns that are held in the mouth, (5) thrombi or emboli associated with septicemic conditions, (6) tuberculosis, (7) syphilis, (8) disease of the bone other than those above mentioned, are frequently the cause of abscess in this location.

When the abscess occurs in a child under the age of three years the diagnosis is often very obscure and difficult. When the abscess develops in adults there is as a rule little trouble in making a diagnosis. Pain is an early symptom in most cases, and therefore the attention of the practitioner is at once directed to the seat of the difficulty. Associated with the pain we usually have rise of temperature and rapid pulse. In occasional cases there is absence of pain, but if there is much swelling the interference with respiration will attract our attention to the location of the disease. In young children altered voice will frequently call attention to the throat conditions. In others recurring attacks of croup, enlargement of the lymphatic glands in the neck, restlessness and interference with normal respiration, and if the pus comes from disease of the bones of the spinal column stiff-neck symptoms will manifest themselves.

With any of the above symptoms the pharynx should always be carefully examined, and if a globular swelling is found behind the tonsils on either side of the pharynx or in the median line the diagnosis as a rule is easy. The attendant, however, should always examine with the finger, lest the globular swelling be the projecting body of a vertebra. In making a thorough examination in children it is good practice, if one is at all suspicious of pharyngeal abscess, to place the child under ether, and if pus is discovered to open the abscess with the one narcosis.

Those unfamiliar with the prognosis and treatment of abscess of the pharyngeal wall should be very careful and guarded in giving an opinion as to the probable outcome of the case. In one case in my knowledge, the patient, an adult, was treated for many months for chronic pneumonia while the autopsy showed that a pharyngeal abscess had burrowed down and opened into the right pleural cavity. As these pus accumulations may be due to serious disease in adjoining structures the very nature of the original cause of the pus may preclude a favorable prognosis. Then, again, if the abscess occurs in a young child with marked obstruction a guarded prognosis should be given on account of an edema of the glottis that may suddenly arise and take the patient off or the bursting of the abscess may suffocate the little patient before proper treatment can be instituted. The danger of suffocation due to the pouring of the large amount of pus (which is generally found in these abscesses) into the larynx should be borne in mind when treatment is taken under consideration. Many operators give guarded opinions on account of the frequency of pneumonia following the opening of these abscesses in children and some of the best European surgeons have gone so far as to say that the death rate from this cause alone is sufficient to make the external operation advisable. There is but one course to be pursued in the line of treatment, and that is to open the abscess. The only question that one should consider is whether or not one should open the abscess through the mouth or by way of the external route, making an opening behind the angle of the jaw as recommended by some surgeons. From an experience of many years I strongly recommend that the abscesses be opened through the mouth, and during this procedure protect the patient from the danger of suffocation through the presence of a pad of gauze on a sponge holder placed over the larynx when the incision is made and at the same time have an assistant or two assistants hold the patient perpendicularly with the head down so that gravity will favor the discharge of pus through the nose or over the roof of the mouth. In this way there is little probability of the pus being drawn into the lungs through inspiration. The argument may be made that the discharge of a large quantity of pus through the nasal passageways of a child will probably infect the sinuses and make further trouble, but if we bear in mind that the sinuses are very little, if at all, developed in these young children, this danger is not as real as it at first appears.

The case that I wish to report was in a little patient, three and a half years old, the only child of parents, both of whom were healthy, and the child herself more than ordinarily well nourished. The family being connected with a society that furnishes medical treatment to the whole family for ten cents a week, called upon the society physician, six or eight weeks before I saw the little patient, for treatment, and during this six or eight weeks the patient was under the care of the society physician being treated for a cold in the head. The child was very restless at night with considerable fever (just how much could not be told, as a thermometer had not been employed), had three or four attacks of croup during this time and complained much of ear symptoms. The little patient not recovering, but evidently losing weight and strength, the mother visited two other physicians, one of whom made a diagnosis of adenoids and enlarged tonsils, the other stating that the child had a coryza and would be all right in time. After two weeks of this treatment the patient was brought to the Fordham University Medical College, where she came under the care of my clinic. At this time there was a discharge from the right ear as well as a mucopurulent discharge from both nostrils, and the upper lip was irritated from the discharges. The patient had a temperature of 103.5°, was irritable, and had the appearance of being very sick. The mother reported that the child had not slept well for several weeks, took very little food, and had, without intermission, a peculiar rasping,

reflex cough. On examination there was marked swelling of the glands on the right side of the neck behind and below the angle of the jaw, and the cellular tissue of the right side of the neck below and in front of the mastoid region was much swollen and very sensitive. The child carried its head as if suffering from a stiff neck. There was no swelling over the mastoid or the mastoid antrum, nor did the ear project out from the side of the head, as is often seen in periostitis of the temporal bone associated with middle-ear abscess. Examination of the throat showed the tonsils very little, if at all, enlarged, though one of the students diagnosed a very much enlarged right tonsil, which afterward turned out to be not an enlargement of the tonsil, but a large globular swelling behind the right tonsil, forcing the tonsil forward and half way to the median line. After inserting a mouth gag we elevated the feet of the child almost to a perpendicular position, examined carefully with the finger and found that the mass was soft; a diagnosis of retropharyngeal abscess was made. At the same time and before the patient was replaced to the reclining position we made a large opening in the mass parallel with the long axis of the pharynx, first having protected the larynx by a pad of gauze, when from two to four ounces of whitish liquid pus escaped through the nose and over the roof of the mouth. After the patient had been kept in a position with the head very much lower than the feet for about an hour, the throat was mopped out with a gauze sponge, and the child was allowed to return home. There was no tendency of the cavity to refill, and the discharge from the ear ceased within a week from the time the abscess in the throat was opened. Swelling of the neck and glands wholly disappeared in a very short time so that in two weeks from the time the abscess was opened the patient had recovered a good share of her former health and would seem to be on a permanent road to recovery.

I believe that in this case the original cause of this abscess was an infection of the middle ear following an attack of influenza.

164 West Seventy-third Street.

THE USE OF CULTURES OF STAPHYLOCOCCUS PYOGENES AUREUS IN A CURIOUS OUTBREAK OF DIPHTHERIA.

By GEO. E. LAKE,

FIRST LIEUT., MEDICAL CORPS, U. S. ARMY.

During the winter of 1911-12 there occurred at Ft. Sam Houston, Texas, a rather curious outbreak of diphtheria, the peculiar features of which were: (1) The mildness of the cases, many hardly showing any symptoms at all; (2) The fact that no children were attacked; (3) The circumstance that nearly all of the cases were sporadic, contact with a preexisting case being traceable in but few of the cases.

The 37 cases observed represented 19 different organizations, besides 3 officers and the wife of one of these, making an actual total of 22 separate establishments attacked. Of these the Hospital Corps showed the largest number (5) and the Infantry guardhouse next (4), which quite naturally follows from the unavoidable conditions of more or less close contact, the Hospital Corps men with the diphtheria cases in the course of their work, and the prisoners with their infected comrades before their condition was discovered. One organization gave 3 cases, five gave 2 cases each, and the other fourteen 1 each. In several instances where more than one case came from the same organization there was no history of contact between the various cases. The fact that the city of San Antonio, near which the fort is situated, and to which officers and men resort in large numbers, contained many cases of diphtheria during this time is a reasonable explanation of the source of the infection.

Of the 37 cases reported only 12 showed marked clinical symptoms of the disease, the remaining 25 having little more than a more or less severe sore throat, without exudate and accompanied by little fever, but harboring the Klebs-Löffler bacillus. The stay in the hospital of the 12 who had marked clinical symptoms averaged about the same as that of those who had not.

Three cases were complicated by Vincent's angina, and all of these proved to be intractable carriers, clearing up only after prolonged treatment. In 4 cases syphilis was present, but appeared to have no influence upon the course of the disease. Two cases developed a severe, parenchymatous, non-suppurative tonsillitis, with considerable swelling and discomfort, which yielded promptly to treatment and seemed not to influence the progress of the diphtheria.

Of the 37 cases heretofore mentioned only 31 were completed when the writer was ordered away from Ft. Sam Houston, and the part of the report which follows deals with the 31 completed cases only. The treatment instituted at the beginning of the outbreak was antitoxin, followed by gargling the throats with hydrogen peroxide and meeting such symptoms as arose. The average dose of antitoxin given was 2,774 units; the largest having been 8,000, and the smallest 1,000 units.

The routine test for releasing patients from quarantine was the absence of Klebs-Löffler bacilli in the swabbings from their throats for three successive days. The average amount of time spent on sick report by these 31 patients was 21.5 days, the longest stay having been 43 days and the shortest 7. This latter patient was one of the medical officers at the post.

In the issue of the *New York Medical Journal* for December 23, 1911, there appeared an article advocating the use of cultures of *Staphylococcus pyogenes aureus* as an application to the throats of diphtheria carriers (which many of these patients now were). Determining to try this treatment I procured a laboratory culture of this organism and also isolated a fresh culture from a boil. Both of these cultures were used in the course of the treatment and little or no difference in their effects could be noted.

Treatment was begun on January 16, 1912, with two patients, so as to observe the effects, and as none of these were untoward the number treated was increased next day to five and more were added to the list from time to time. Eighteen of the patients either had cleared up and been returned to duty before the staphylococcus treatment was begun, or cleared so promptly that it was deemed unnecessary to use it. These 18 patients spent 344 days in quarantine and constitute "Class A."

Eight patients were in quarantine for some time before the staphylococcus was used and then received the treatment. These eight patients spent 170 days in hospital before and 74 days after receiving the treatment, and are "Class B."

Five patients received the treatment as soon as they were fully convalescent and spent 70 days in hospital, constituting "Class C."

The average number of days spent in hospital from admission to discharge by these three classes was as follows:

Class A . . 18 cases . . average 19.1 days in quarantine.
Class B . . 8 cases . . " 30.5 " "
Class C . . 5 cases . . " 15.8 " "

Thus, those who were treated with the staphylococcus from the subsidence of acute symptoms left the hospital, on an average, in 3.3 days (17.2 per cent.) less time than those who did not receive it.

The cases in "Class B" do not bear on the question, when considered as a whole, because many of them had been in the hospital a long time as intractable bacillus carriers, before the staphylococcus was used.

The 13 patients treated with the staphylococcus (5 in "Class C" and 8 in "Class B"), who went to duty, spent 73 days in hospital after this treatment was begun; an average of 5.6 days.

The treatment was carried out by thoroughly swabbing the throats of the patients once a day with cultures of *Staphylococcus pyogenes aureus*. These were varied a good deal for purposes of experiment. Bouillon cultures from 6 hours to 5 days old; young broth cultures, reinforced with two or three normal loopfuls of agar cultures; suspensions in broth of agar cultures from 1 to 7 days old; all these were tried, but the best results apparently were obtained with bouillon cultures from 48 to 72 hours old, grown at incubator temperature.

The growth of the staphylococcus in the throats of the patients was very irregular and unsatisfactory, only four cases showing a strong, luxuriant growth, although the implanted organisms were more or less in evidence, at one time or another, in 11 out of the 13 throats treated. A good growth of staphylococci was present, spontaneously, in the throats of two of the patients who cleared up promptly without special treatment.

Although these few cases offer no proof, one way or another, they seem sufficiently suggestive to warrant the more extended trial of the procedure.

Fort Sheridan, Ill.

THE ELIMINATION OF LOCKJAW.

By DOWLING BENJAMIN, M.D.

Camden, N. J.

The mortality in lockjaw is very high. In fact, the disease, when fully developed, is commonly fatal. Tetanus antitoxin will immunize, if introduced hypodermically before the disease develops or at the time of the injury; but as it is obviously impractical to have everybody take hypodermic injections of antitoxin after every little scratch or wound, the physician is usually called upon to treat the case after it has manifested itself by the symptoms. Then it is generally too late. Prevention is the only satisfactory "cure."

During the past four years 22 cases of lockjaw were treated at the Cooper Hospital by the staff. These cases all received large and frequent injections of tetanus antitoxin (916 injections was the total number). Of these 22 cases of tetanus two recovered and 20 died; which shows that the mortality of this disease is high, even under the best treatment by skilled men.

I am prepared to proclaim that lockjaw, due to puncture and injuries, *can be entirely eliminated* from the whole of [illegible] or surgeon's practice, and his death-rate, [illegible], from this disease, reduced to nothing. I [illegible] may be claimed that this is a most radical and [illegible] statement; one that no physician ever dares to make before; but it is excusable if it is the *truth*. And it is important, not only to the profession but to humanity in general. So I wish to offer some proofs which I think will justify the assertion, on the unassailable ground that what has been done can be done. In support of the above claim I offer the experience of 33 years of practice. It was also a large practice, including about 10,000 injuries of all kinds, among them rusty-nail and other punctures of feet and hands, in private and hospital practice which I have attended; yet I have never had lockjaw develop in one of my patients in all my life. This was accomplished in a locality where lockjaw is endemic—20 cases having been reported in one year.

Treatment.—Sterilize the field of injury, especially the deep edges of the wound. Large and open wounds are irrigated. The vast majority of cases of lockjaw, however, develop from punctural wounds, and there is where the great opportunity for the special treatment comes in. Insert a few drops of alcoholic solution of cocaine. Have on hand variously sized screws, as shown in the drawing. Any instrument maker can prepare them. The threads should be at an angle of about 25 degrees to the axis of the screw, and thin. A set of screws should range from the size of a small probe to 5/16 of an inch in diameter, so as to be ready for all sized wounds, such as nails, pitchfork tines, dog teeth, and so on. In the absence of these special instruments, however, one can often use an ordinary aluminum applicator, which has threads on; or one can procure from any hardware store ordinary screws, which answer very well for many cases.

Dip the sterilized screw into an antiseptic solution, say, 2 or 3 per cent. lysol. The liquid is held by the spiral gutter. The screw should be of a size to follow the track of the wound easily. If the skin is hard (like the sole of the foot) and the wound entrance is tightly contracted, it may be nicked with the point of a knife. As the screw is being inserted it is kept turning but held back, so that by the time it has reached the bottom it has been turned enough to have carried it more than twice as far. It is now given a few more turns. In this way foreign substances and microbes are lifted (screwed) out. The instrument is then *pulled* out and washed in an antiseptic; then dipped in tincture of iodine, if not a large puncture, and then forced down to the bottom of the wound and given a few turns backward. Then the screw is dipped into carbolized oil (1 minim of carbolic acid to 14 of pure olive oil) and pushed gradually to the bottom of the wound, turning backward, then unscrewed out. These antiseptics have the property of permeating the surrounding tissues. Dress the wound in the usual antiseptic manner. No germs will live in that wound.

Even when you have immunized with antitoxin, this local treatment should be used in all punctured and Fourth of July wounds, for the good reason that it not only prevents lockjaw by killing the bacilli, but is equally efficacious against strepto-

cocci (blood poison and erysipelas) and staphylococci (abscess and inflammation). My personal experience has shown this to be a fact.

215 Cooper Street.

TRAUMATIC CYST OF THE PANCREAS.

By ARCHIBALD E. ISAACS, M.D.,

NEW YORK,

SURGEON, BETH ISRAEL HOSPITAL.

On January 26, 1911, this young man, then 17 years of age, was admitted to the Beth Israel Hospital with the diagnosis of empyema of the gall-bladder. His history was that he had been well up to six weeks before his admission; at that time he received a severe injury to his abdomen by running against the side of a horizontal bar while exercising in a gymnasium. His statement regarding his sensations at the time is that he lost his breath for a few minutes, broke into a profuse cold sweat, and vomited about twenty minutes after the accident. He was then taken to the Roosevelt Hospital where he suffered severe abdominal pains for some days. The pains then gradually improved until he was discharged, feeling comparatively well, after a stay of ten days.

In the five weeks after having left the hospital he had had three attacks of severe pain. The first two lasted somewhat over a day each, and the third longer. The pains were in the upper abdomen and not accompanied by fever or vomiting. The third attack began five days before his admission to the Beth Israel Hospital and was more severe than the others. The pain was referred to the right hypochondrium and to the back, in the region of the right scapula. After his second attack he had felt a hard mass in his right hypochondriac region, which was not tender during the interval but became extremely so with this attack. There was nausea, but no vomiting, chills, fever, or jaundice. He had had no bowel evacuation in three days. He had lost twelve pounds since his illness began.

On examination there was tenderness and rigidity in the right upper quadrant, with the sensation, on palpation, of a deep mass which could not be mapped out with any degree of definiteness on account of the rigidity. The rest of the abdomen was comparatively free. The temperature on admission was 100½°, and the pulse between 80 and 90. Blood examination showed 90 per cent. hemoglobin, and a leucocytosis of 13,400 with 85 per cent. of polynuclears. The urine examination was negative, and there were no respiratory, cardiac, or urinary symptoms.

Without having arrived at any definite diagnosis, laparotomy was done on January 28. Through a right rectus incision, from near the costal margin to below the level of the umbilicus, the transverse colon presented, and a large, hard mass could be felt posterior to it. On raising the colon an area of adhesions was found between the under surface of the mesocolon and this retroperitoneal mass. Separation of these adhesions released a small amount of bloody serous fluid, and exposed an angry and almost gangrenous looking surface with areas of fat necrosis on it. The mass beneath this was presumably within the layers of the transverse mesocolon, and incision into it opened into a cavity from which quite a large amount of clear fluid discharged. The finger introduced into the cavity showed the mass to consist of this cyst, occupying the region of the pancreas, and of a boggy infiltration about it. About four ounces of clear colorless fluid were discharged which left a deposit of crystals on the surface of the gauze pads into which it soaked. By a mishap the specimen of fluid, saved for laboratory examination, was lost.

Further exploration showed a normal gall-bladder, and the foramen of Winslow open. The duodenum was pulled down and partially kinked by some well organized bands stretching from it to the transverse colon. These were separated. The appendix was in a state of chronic inflammation. It was also kinked by bands and the distal portion was distended and so adherent that decapsulation was required to remove it. While there was no probable connection between the duodenal and appendiceal conditions, and the pancreatitis, it is interesting to note that the former must have existed for some time without having caused any symptoms.

A cigarette drain was passed into the cyst cavity and the abdomen closed, in layers, except for the small drain opening. There was not much reaction after operation in so far as the temperature and pulse indicated. But there was severe pain, in paroxysms, sometimes with vomiting, requiring occasional hypodermics for relief. After two weeks the pain subsided. The drain was removed in the second week. The discharge kept on for another week. The patient left the hospital, with the sinus closed, 24 days after operation, and has been well since.

1325 Madison Avenue.

*Case presented before the Surgical Section, New York Academy of Medicine, March 1, 1912.

Arsenical Pharmacotherapy.—A. Valenti states that the many organic compounds of arsenic have been frequently employed of late years. Differences have been noted, aside from the local action, between the action of these organic compounds and that of the mineral compounds of arsenic. The metallic arsenic compounds are easily dissociable, with a rapid liberation of the arsenic ions and greater toxicity. The organic compounds are less easily dissociated and hence less poisonous, although not giving the same certainty of absorption into the blood. Each organism has its own individual susceptibility to arsenic and must be separately tested as to idiosyncrasy. We are still ignorant of the intimate action of arsenic. Salvarsan readily liberates its arsenic, which is long found in the urine of patients treated by this drug. The quantity of the solution used and the dose are most important; the differences in the animals experimented on are also of importance; the fact that one cannot get accurate knowledge of the combustion that goes on within the body, and of the lesions which exist in persons under treatment renders accurate observations of its use difficult. It is affirmed that mineral arsenic is a moderator of organic oxidation in relation to repair, and of exaggerated catabolism of nutritive material, while the organic compounds seem to have a more direct action on the hematopoietic organs, stimulating the erythrocytic and leucocytic activities, and increasing the function of the organ in reference to defense. For increasing the number of corpuscles and the hemoglobin of the blood the organic preparations of arsenic are most valuable. Other authors maintain that small doses of mineral arsenic lessen organic oxidation, while in larger doses the destruction of albuminous substances is stimulated, which destruction causes the symptoms of chronic poisoning. At the same time these doses act beneficially on the gastrointestinal circulation, favoring hyperemia and epithelial activity. In the more chronic diseases accompanied by cachexia arsenic is of most value.—*Il Policlinico.*

MEDICAL RECORD.

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BIOLOGICAL INTERPRETATIONS OF PATHOLOGICAL PHENOMENA.

IT is remarkable that during the ascendancy of the evolutionary theory, this fundamental doctrine has been so slightly utilized in the interpretation of the phenomena of disease. The revelations of cellular pathology, supplemented by the brilliant discoveries of bacteriology, have apparently diverted attention from those factors in the production of disease which are of wider scope and deeper significance than even the offending microorganisms and the cellular derangements.

In an illuminating thesis on the relations of biology to pathology Hastings Gilford (*British Medical Journal*, June 8, 1912) points out that there are a large number of diseases to which have been applied, without basis of fact, the terms belonging strictly to diseases of bacterial origin. The words "intoxication" and "toxemia" are still loosely employed in describing the etiology of such diseases as cirrhosis of the liver, leucemia, Graves' disease, progressive muscular atrophy, osteomalacia, and cancer. In these and many other morbid conditions, although toxins may play a subordinate rôle, the essence of the disease process has nothing to do with bacteria or toxins. There is available a wealth of material upon which the pathologist can draw in attempting to unravel the mysteries that confront him: this material consists of the facts of variation, heredity, adaptation, correlation, reversion, and recapitulation, together with the facts of comparative anatomy, anthropology, and paleontology.

There is an increasing tendency to regard many phenomena of disease as simple variations. According to Bateson there are two kinds of biological variations: numerical, as in polydactylism, and substantive, or those in which there is a change in constitution. Substantive variations are subdivided into two kinds: (1) fluctuations or continuous variations, which are less pronounced, are not transmitted by heredity, and are subject to the influence of the environment; and (2) mutations, sports, or discontinuous variations, which spring into existence with a leap, are transmitted by heredity, and are not dependent upon environmental changes, either within or without the organism. In the latter group Gilford places such diseases as sporadic cretinism, chondrodystrophy, idiopathic pernicious anemia, idiopathic microcephalus, muscular dystrophy, hypertrophic cirrhosis of the liver, osteitis deformans, and Friedreich's ataxia. "They are biological mutations rendered pathological by being carried to extremes." In the group of continuous or minor variations are placed such diseases as endemic cretinism, rickets, atrophic cirrhosis of the liver, etc., which can be traced to definite internal or external causes.

A conception which throws a flood of light into many of the obscure corners of pathology is that which regards morbid variation as either progressive or regressive. The overgrowth of the thyroid in Graves' disease is an instance of the former, and the arrested development of the brain in microcephalus is an example of the latter. Both variations represent extremes, and are pathological not because they are extremes, but because they do not harmonize with the physiological level of the organism.

The "mneme" theory of Semon is cited as an ingenious explanation of the significance of variations. According to this theory the facts of heredity and variation are translated into terms of memory. The germ cell in its development recapitulates the history of the race, just as the brain cell treasures up and afterwards unfolds the previous experiences of the individual. As so well expressed by Gilford, "racial, like ordinary, memory is not infallible. The registration of impressions received in the remote past, when animal evolution was beginning, are very imperfect, so that only the dim outlines of great and widespread changes are repeated. But as the construction of the body approaches completion impressions are reproduced with ever-increasing fidelity. Impressions may be blurred in one case and not in another, and occasionally actual lapses occur, so that important evolutionary events are forgotten. On the other hand, impressions may stand out far too conspicuously, to the derangement of the general effect. It is after this fashion that variations, normal and pathological, arise. An act of racial forgetfulness, if of extreme degree, is a regressive major variation. The memory of a great racial disaster or depression may be so subdued by lapse of time as to remain latent, but the associations furnished by a depressing environment are capable of awakening those long dormant impulses; the memory of the ancient environment is revived by a modern environment of a similar tendency, and the two together give rise to a regressive minor variation."

In discussing the proximate causes of reversion to a primitive type of structure, Darwin noted that any marked change in the habits of life apparently "favors a tendency, inherent or latent in the species, to return to the primitive state." In thus stating a definite cause for the phenomenon of atavism, Darwin foreshadowed the hypothesis more elaborately unfolded by Semon, and furnished the key which may in the future serve to unlock many a mystery of pathology. There is sufficient basis for the belief that not only the germinal cells, as in the mnemonic theory of Semon, but also the highly differentiated somatic cells of the body treasure up the remote ancestral traits of the primitive protoplasmic units. This conception would adequately explain at least

one important phenomenon of cancer, namely, the tendency on the part of the body cells, under the influence of external irritants, to revert to the primordial condition of early embryonic life, by taking on an excessive proliferative activity.

MORBIFIC DUST.

Some time ago D. D. Jackson of Brooklyn investigated a specimen of city dust to ascertain what germs were present; the bacteria responsible for tuberculosis, pneumonia, influenza, and other infections were found. But other constituents were also noteworthy, such as plaster, iron-rust, stone dust, cement from building operations, dirt from excavations, ashes, house-sweepings, dried garbage blown from barrels and cans, chimney soot, cinder and other material from industrial plants, excrement of horses, dogs, and other animals, etc. How pathogenic a dirty atmosphere may be is impressed upon those who have seen the series of nutrient plates which were exposed by Street Commissioner Woodbury some years ago, in the metropolis. These series were in pairs. One of a pair represented atmospheric conditions in densely crowded neighborhoods, where the sanitary conditions were comparatively poor; and such a plate would be found, upon exposure, teeming with bacteria, moulds, fungi, and every kind of impurity deleterious to health. Its companion plate, exposed in a cleanly and salubrious part of town, under precisely identical scientific conditions, would be almost wholly free of impurities.

There is perhaps an impression that dust is inimical to health only by reason of its content in pathogenic bacteria; but there are other than bacterial properties in dust which are disease-engendering. There is noxious dust in many occupations—dust, the particles of which are irregular and jagged, will irritate the pulmonary mucous membranes, and so predispose these delicate tissues to microbic attack. Thus does the tissue become a congenial nidus of infection. The inhalation of germ-free dust will also induce inflammation, such as pneumoconiosis. Or the dust will be noxious by reason of its chemical properties; thus results industrial poisoning among workers in lead, arsenic, zinc, phosphorus, and mercury. And organic compounds, like anilin, may so contaminate the atmosphere as to jeopardize the health of the workingman.

Nor is the respiratory tract the only pathway by which noxious dust invades the organism. Prof. K. B. Lehmann of Würzburg and his associates, with a view to preventive and palliative measures to be applied in industries, have sought more precise information regarding the ways by which dust permeates the body, as well as the actual quantities which represent dangerous or insanitary limits. These investigators have demonstrated that most inspired dust finds its way into the stomach, not into the lungs. Most of the dust which enters the upper respiratory tract is caught by the moist mucous membranes of the nose and throat; and the dust-laden secretion is then swallowed. Insoluble particles are eliminated in the process of digestion; but soluble dust is absorbed in such amount that chronic intoxications, the like of which are so painfully frequent among workingmen, inevitably follow. This scientific datum of Lehmann is one among innumerable findings that are constantly being made nowadays by sanitary scientists; and for which, to their honor be it noted, many employers of labor are grateful. Much more than this, the enlightened employer does not stop with appreciation. He is prompted by a wholesome admixture of humane and business considerations to make his establishment hygienic. We do not now nearly so often as formerly see shops badly ventilated; the removal of dust from machines inadequate; overcrowding; the air saturated with variegated exhalations; the employee eating at his own machine, his grimy hands fingering his food. On the contrary most factory laws—which are oftentimes most willingly complied with—now provide for the essential sanitation. The importance of personal hygiene is impressed upon employees; and rules are formulated and made stringent to this end. In some places baths—even shower baths—are in evidence.

In occupations involving exposure to poisonous gases or to metallic mineral or animal dust and effluvia, many excellent and effective contrivances have been installed; in this regard there has been a veritable revolution. Dust and vapors are thus kept away from the operators' nostrils and mouths. Sufficient air space is provided. There is proper ventilation and illumination. The floors are clean; and general cleanliness has become a matter of course; this, too, is revolutionary. Most of all, spittoons are provided and kept antiseptic; so that no one need now be guilty of promiscuous spitting. Why, indeed, spit at all; and what need should there be of spittoons?

Rural Water Supplies.

As regards many conditions of life, the country is considerably more insanitary than the city. True it is, that in rural districts extreme old age is not infrequently reached and, superficially regarded, country life may appear to be more healthy by far than urban life. But when one looks carefully below the surface, it will soon be perceived that all is not so fair as outward appearances might lead one to suppose. In a very important respect, country districts fail when compared to urban districts and this is with regard to their water supplies. Henry Kenwood Chadwick, professor of hygiene in the University of London, draws attention in the *Medical Press and Circular*, May 29, 1912, to this point. Many villages in the country are mainly, if not entirely, supplied with drinking water obtained from shallow wells; and this underground water, which may convey pollution from a considerable area, is often drawn but a few yards from a leaky cesspool or privy pit, or from a surface which is liable to considerable pollution. Further, it is the exception to find a shallow draw- or pump-well impermeable; nor is the well mouth generally sufficiently protected from surface waters. The result is that with household slops and rubbish and fecal matter often disposed on land within a few feet of the well, or worse still with leaky cesspools and privy pits in close proximity and often within the drainage area of the well, the dangerously polluted ground water can be seen to

pass through the brickwork. Some of the shallow wells cease to yield during a summer drought. Country dwellers of the poor class have no means of storing sufficient water, nor can they afford the expenditure necessary to ensure such a supply. The picture drawn by the English authority of the water supplies of many English rural districts is very like that of an American countryside. Proper sanitation is lacking, as a rule, and especially are the water supplies inadequate or polluted or both. The old oaken bucket is too often the means of spreading disease and death, and the picturesque country house or cottage clothed in creeper or shrouded by ivy is frequently a whited sepulcher, the home of typhoid fever. This is the season of the year when a warning as to the insanitary conditions which so often characterize country life is strictly in place, for it is no exaggeration to say that as many diseases and complaints are contracted when one is on a vacation seeking health as are developed during the eight or nine months when one moils and toils in the much maligned city. Kenwood suggests that not only do rural sanitary authorities in England need to be stirred up, but that the Government should be asked to make a grant in aid of village sanitation. In the United States there is probably quite as much necessity for improved country sanitation as in Europe. The Federal Government can, of course, do nothing in the matter, but the State health boards have authority, and there are not a few places in every State in which it would be well were the local authorities called to account for their apathy in regard to sanitary reforms.

Fatality from Thorium Emanation.

The old dictum as to the extreme difficulty or impossibilty of influencing morbid tissues without simultaneously affecting sound cells predisposed to other diseases was well illustrated at a recent session of the Berlin Medical Society (*Muenchener medizinische Wochenschrift*, May 21). On this occasion Professor Orth exhibited the organs of a woman who had been treated for chronic rheumatism with thorium emanations. She had received 15,000,000 Maché units in all. Death had resulted from induced hemorrhagic diathesis, affecting chiefly the gastroenteric tract. The same affection was produced experimentally in animals. Orth warned against large doses of thorium emanations. In discussion he added that he had seen one of severe hemorrhagic nephritis follow the use of the same remedy. Kraus had once seen albuminuria supervene after 5,000,000 units had been given. The death naturally caused a sensation and in the *Berliner klinische Wochenschrift* of May 13 Gudzent, who gave the treatment, reports the entire case history, in which he seeks to show that death may not have been due to thorium. Equally large doses of the latter have been given over and over without prejudice to the patients. Similar fatalities are attributed to all new remedies (tuberculin, salvarsan, etc.). Professor His, who is in charge of the clinic at which the treatment was given, announced in the same number of the above journal that he was away at the time of the accident but regarded the treatment, including the dosage used, as in entire accord with two years' experience with thorium. These cases are bound to occur and show the lower limits of lethal dosage.

News of the Week.

Wholesale Vaccination.—More than 1,500 persons in the northwest part of Philadelphia were subjected to compulsory vaccination on June 20 because of the prevalence of smallpox in Manayunk and the surrounding districts. About sixty families barricaded their houses and refused to allow the police to enter. As a result they have all been placed under strict quarantine.

Reports of Births.—Commissioner Lederle of the New York Department of Health has called attention to the fact that the number of births recorded in New York during the first five months of 1912 was 50,082, or 170 less than during the same period of 1911. This would indicate a decrease of 1.10 per 1,000 of population. It is not believed, however, that this decline in the statistics is due to natural causes. A comparison of the births and deaths for the month of May showed, for example, that there were seventeen children under three months of age who died during the month whose births had not been recorded. As one out of every five children dies during the first three months, and as this method of ascertaining the births not reported applies only to those who have died, it is evident that the number of births not reported in May must have been far in excess of seventeen. It would seem probable that in many cases physicians have failed to report births, and the Department of Health states that this state of affairs will not be allowed to continue and that negligence will be prosecuted to the full extent of the law.

New Milk Depots.—During the summer months ten milk stations in addition to those already in operation, will be maintained in New York by Mr. Nathan Straus. The new stations are located in the parks and on the recreation piers. This makes a total of eighteen depots supported by Mr. Straus in this city, in addition to those maintained by the Board of Health.

Cripples Graduate.—For the first time in the history of the New York public schools a class of crippled children, consisting of ten boys and one girl, was graduated last week from Public School No. 2, at 155 Henry street. This school has an annex for crippled children with an attendance of about 200.

Helpful Moving Pictures.—The New York Department of Health in conjunction with the Committee on the Prevention of Tuberculosis gave the first open-air moving picture show of the season in Mount Morris Park last Saturday. During the summer the pictures will be exhibited in many of the parks throughout the city. The films are largely designed to illustrate methods of combating tuberculosis.

Diphtheria Epidemic.—An epidemic of diphtheria in Woodbridge, N. J., recently, which made it necessary to close practically all of the schools and churches, was traced to a milkman who continued to supply his customers after the disease had appeared at his farm.

Leper Republic.—The Philippine Government is endeavoring to solve the problem of the management of affairs in the leper colony on the Island of Culion by the establishment of a republic among the lepers, and on June 18 Michael Whalen, the only American on the island, was elected chief executive.

Water Supply Contaminated.—Test of the city

water in Newark, N. J., recently showed the presence in considerable quantities of the *B. coli communis*, and immediately after the discovery the supply was cut off. It has been decided that the reservoir shall be drained—there are some 679 billion gallons of water in storage—and the basin thoroughly cleaned.

Plague in Porto Rico.—Twelve cases of bubonic plague with five deaths were reported in the district of San Juan, Porto Rico, between June 14 and 19, and extreme measures are being taken to prevent an epidemic in the island. Measures have also been taken to prevent the entrance of the disease into the Port of New York, and the Health Officer of the Port has issued an order that after July 1 all ships from the Tropics shall be thoroughly fumigated before entering the harbor, unless it is certified that proper disinfection has been carried out at the port of departure.

Sex Hygiene.—After months of argument, the Board of Education of Orange, N. J., has come to the conclusion that sex hygiene should be taught in the public schools. By a unanimous vote on June 11 the Board decided that girls of fourteen years of age should receive instruction from competent teachers. Some effort was made along these lines several months ago, but so many protests were entered that a special committee was appointed to report on the propriety of the subject as a part of the school curriculum.

Loomis Sanatorium.—The dedication and formal opening of the Olivia Cottage for self-supporting men and women, the gift of Mrs. Russell Sage, and of the new laboratory and research building, the gift of Mrs. Clarence M. Hyde, in memory of her father, Benjamin Talbot Hyde, took place on June 22. Addresses were made by Dr. Theodore C. Janeway, Dr. Livingston Farrand, and Dr. Herbert M. King.

Street Accidents.—Thirty-three persons were killed on the railroad and street car lines in New York City during the month of May, according to the report of the Public Service Commission, an increase of 5 over May, 1911. The total number of accidents during the month was 6,492. The total number of persons injured outside of the fatal cases, however, was 164, a decrease of 78 as compared with last May.

Accused of Buying a Stolen Dog for Experimental Purposes.—The University of Chicago has decided to fight, as a test case, the charge of receiving stolen goods brought against the keeper of animals in the Department of Physiology in the university. A woman resident of Chicago had the keeper arrested, declaring that her dog, a Scotch collie valued at $14, had been stolen, and was later found in a cage at the university where it had been used for experimental purposes. The judge before whom the case was brought agreed to issue a warrant for larceny, unless the case was settled in a few days out of court.

Dr. H. H. Rusby, dean of the College of Pharmacy of Columbia University, New York, has resigned his office, and intends shortly to establish a pharmacognostical laboratory in the city.

Birthday Honors.—The list of honors issued on King George's birthday recently included the name of Mr. John Bland-Sutton, who was created a knight.

Dr. Philip B. Hawk has been elected Professor of Medical Chemistry and Toxicology in Jefferson Medical College, in succession to Dr. James W. Holland, resigned. Dr. Hawk was graduated with the degree of A.B. from Wesleyan University in the class of 1898 and received the degree of M.S. from Yale University in 1901 and of Ph.D. from Columbia University in 1903. He was assistant to Professor Atwater, at Wesleyan for two years, later a student in physiological chemistry in the Sheffield Scientific School at Yale for two years, instructor in physiological chemistry at the College of Physicians and Surgeons, Columbia University, for two years, demonstrator of medical chemistry in the University of Pennsylvania for four years, and professor of physiological chemistry in the University of Illinois for five years.

Dr. M. Neustaedter has been appointed instructor in neurology in the New York University and Bellevue Hospital Medical College.

Honorary Degrees.—Harvard University at its 247th annual commencement on June 22, bestowed the honorary degree of Doctor of Science on Dr. Frederick Forchheimer, professor of medicine in the University of Cincinnati and president of the Association of American Physicians, and on Dr. Frederick Cheever Shattuck, professor of clinical medicine in the Harvard Medical School, and the degree of Master of Arts on Dr. George Francis Stokes, Surgeon-General of the United States Navy.

The honorary degree of Doctor of Science was conferred by Middlebury College, Vermont, on Dr. C. Ford Langworthy, in charge of investigations on nutrition in the United States Department of Agriculture.

At the 156th commencement of the University of Pennsylvania on June 19, Dr. Louis A. Duhring, emeritus professor of dermatology, and Dr. James Tyson, emeritus professor of medicine, in the Medical Department of the University, received the honorary degree of Doctor of Laws.

Dr. Harvey W. Wiley received the degree of Doctor of Science from Lafayette College, Easton, Pa., on June 19.

Dr. Theodore Caldwell Janeway, professor of medicine in the College of Physicians and Surgeons, New York, was one of the few honored by Yale University at the commencement exercises on June 19, receiving the honorary degree of Master of Arts.

At the eighty-first annual commencement of Wesleyan University at Middletown, Conn., held on June 19, the degree of Doctor of Laws was conferred upon Dr. Amos J. Givens of Stamford, Conn.

College Commencements.—At the 156th annual commencement of the University of Pennsylvania, held June 20, the degree of Doctor of Medicine was conferred on 124 graduates and that of Doctor of Public Hygiene on 7. The orator was Dr. Joseph Swan of Swarthmore College. A portrait of the late Dr. Joseph Leidy was presented by Dr. George A. Peirsol on behalf of the donors.

At the annual commencement of Yale University on June 19 the degree of Doctor of Medicine was conferred on thirty-two graduates of the medical school.

Charitable Bequests.—By the will of the late Elizabeth Gome of Philadelphia the sum of $500 was bequeathed to each of the following institutions: Presbyterian Hospital, Presbyterian Orphanage, American Oncologic Hospital, and Home for Female Consumptives at Chestnut Hill.

By the will of the late Maria Mellon of Philadel-

phia the sum of $5,000 is bequeathed to the Presbyterian Hospital for the establishment and maintenance of a free bed in memory of the father of the testator, Mark Mellon.

By the will of the late Charles C. Hunsberger of Philadelphia his residuary estate is bequeathed in equal parts to the Methodist Home for the Aged and the Methodist Hospital.

By the will of the late Benjamin Bauer of Philadelphia, the sum of $2,500 is bequeathed each to the Jewish Hospital, the Jewish Maternity Home, and the Mt. Sinai Hospital for the establishment of free beds.

Rockefeller Institute.—The Board of Scientific Directors of the Rockefeller Institute for Medical Research, New York, has announced the following promotions and appointments: Dr. Alexis Carrel (Experimental Surgery) has been promoted to the rank of Member of the Institute. The following associates have been made associate members for a term of three years: Peyton Rous (Pathology and Bacteriology), Donald Dexter Van Slyke (Chemistry), Walter Abraham Jacobs (Chemistry), and Frank Watts Bancroft (Experimental Biology). The following assistants have been made associates: Paul Franklin Clark (Pathology and Bacteriology), Richard Vanderhorst Lamar (Pathology and Bacteriology), and Hardolph Wastenays (Experimental Biology). The following new appointments are announced: Harold Lindsay Amoss, assistant in Pathology; Clarence J. West, assistant in Chemistry; Wolfgang Ewald, fellow in Experimental Biology; Homer Fordyce Swift, chief resident physician; Francis Richard Fraser, and Frederic Moir Hanes, assistant resident physicians and assistants in medicine.

Chicago Medical Women's Club.—At the meeting held on June 12, the following officers were elected: *President*, Dr. Effie L. Lobdell; *Vice-Presidents*, Dr. Julia C. Strawn and Dr. Nora Sonle Davenport; *Secretary*, Dr. Sadie B. Adair; *Treasurer*, Dr. Agnes Mikkelsen.

Massachusetts State Medical Society.—At the annual meeting held in Boston on June 11 and 12, the officers for the ensuing year were elected as follows: *President*, Dr. Walter P. Bowers, Clinton; *Vice-President*, Dr. Francis W. Goss, Roxbury; *Secretary*, Dr. Walter L. Burrage, Boston; *Treasurer*, Dr. H. M. Buck, Boston. At the closing banquet on June 12 President Lowell of Harvard University and President McLaurin of the Massachusetts Institute of Technology addressed the society. Speeches were also made by Prof. David L. Edsall of the Harvard Medical School and by Dr. W. G. Thompson.

Maine State Medical Society.—After a very successful session in Portland the 60th annual convention was brought to a close on June 13 with the election of the following officers: *President*, Dr. Ralph H. Marsh, Guilford; *Vice-Presidents*, Dr. Theodore E. Hardy, North Vassalboro, and Dr. Joseph M. O'Connor, Biddeford; *Secretary*, Dr. Willis Bean Moulton, Portland; *Treasurer*, Dr. Edwin W. Gehring, Portland.

Obituary Notes.—Dr. Milton M. Rowley of Berkeley, Cal., a graduate of the Northwestern University Medical School, Chicago, in 1887, died at his home on June 4, aged 61 years.

Dr. George Buckingham Smith of New York, a graduate of the Hahnemann Medical College and Hospital, Philadelphia, in 1863, died at his home on June 8, aged 72 years.

Dr. Louis M. Early of Columbus, Ohio, a graduate of the Jefferson Medical College in 1881, died at his home in June from cancer, caused by exposure to the x rays during the course of experimentation, aged 52 years.

Dr. George H. Strowbridge of Portland, Oregon, a graduate of the University of Oregon, Medical Department, in 1897, a surgeon in the United States Army during the Spanish-American War, died suddenly at his home of apoplexy on May 31, aged 45 years.

Dr. H. Ross Coover of Harrisburg, Pennsylvania, a graduate of the Jefferson Medical College, Philadelphia, in 1880, a member of the Pennsylvania State and Dauphin County Medical Societies, and of the Harrisburg Board of Health, and coroner of Dauphin County, died at his home on June 3, aged 52 years.

Dr. Hext M. Perry of Greenville, South Carolina, a graduate of the Jefferson Medical College, Philadelphia, in 1872, died at his home after a long illness on June 9, aged 61 years.

Dr. John Robert Muse of Lexington, Tennessee, a graduate of the University of Tennessee, Medical Department, in 1878, and a member of the Tennessee State and Henderson County Medical Societies, died at his home on May 30, aged 67 years.

Dr. Albert Milton Williamson of Cincinnati, Ohio, a graduate of the Medical College of Ohio, Cincinnati, in 1871, died at his home in Hyde Park, on June 13, aged 68 years.

Dr. Henry M. Hitchcock of Greenwich, Conn., a graduate of the College of Physicians and Surgeons, New York, in 1861, died at his home of blood poisoning on June 19, aged 72 years.

Dr. Mortimer Howard Farmer, until recently a practising physician of Virden, Ill., a graduate of the University of Nebraska, College of Medicine, in 1885, died at his home in Springfield on June 9, aged 49 years.

Dr. Thomas W. Topham of Brooklyn, N. Y., a graduate of the College of Physicians and Surgeons of Indiana, Indianapolis, in 1880, died suddenly in an elevated railroad station in Brooklyn on June 15.

Dr. Edmund Carleton of New York, a graduate of the New York Homeopathic Medical College and Hospital in 1871, a member of the County Homeopathic Medical Society, consulting physician to the Metropolitan and Hahnemann Hospitals, emeritus professor of homeopathic philosophy in his alma mater, and a veteran of the Civil War, during the course of which he was the bearer of many important dispatches between the front and Washington, died at his home on June 15, aged 72 years.

Dr. Eberhard William Dittrich of New York, a graduate of the Bellevue Hospital Medical College, New York, in 1894, a member of the American Medical Association, the New York State and County Medical Societies, the New York Academy of Medicine, the Greater New York Medical Association, the Society of Medical Jurisprudence, and the Manhattan Dermatological Society; chief of clinic in the department of dermatology of the New York Post-Graduate Hospital, physician to the Northwestern Dispensary, Department of Dermatology, and dermatologist to the German Odd Fellows' Home, and Orphan Asylum, died at his home of heart disease on June 16, aged 51 years.

Dr. James V. Cornish of Quincy, Ill., a graduate of Rush Medical College, Chicago, in 1881, died in Jacksonville on June 16, aged 62 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

MEDICAL COUNCIL MEETING—SURGERY OF ANEURYSMS COMMITTEE ON PATENT MEDICINES—INSURANCE COMMISSIONERS—B. M. A. SENDS DEPUTATION; ANNUAL MEETING; SCHEMES FOR PUBLIC SERVICE—OBITUARY.

LONDON, June 7, 1912.

SIR Donald MacAlister presided at the opening of the ninety-fifth session of the General Medical Council on Tuesday. In his address, having officially welcomed the new members and referred to the death of Lord Lister, whose memory the Council cherished as once a member, he passed on to speak of the Insurance Act. Several of the Council's amendments had, he said, been adopted in principle by the Government, but it remained to be seen whether the powers of the Commissioners sufficed to solve the questions in which the profession was interested. With the assistance of advisory committees, the Commissioners were preparing regulations for the administration of the medical benefits, and it might be that to appoint a special committee would be the best step for the Council to take to safeguard the interests for which they were responsible. In response to an official invitation from the Select Committee of the House of Commons on Patent Medicines he had named Dr. Tirard and Dr. Langley Browne as suitable witnesses to be called. Respecting the Dominion Medical Act, he had been informed that it was adopted by each of the Provinces of Canada, and if this proved to be the case the way was open for interprovincial reciprocity and the establishment of a Medical Register for the Dominion as a whole. No doubt these results would be followed by the application of the second part of the act. By the entrance of Canada into the Federal relation the ultimate establishment of British or imperial registration would be effected. Among other points referred to was the suggestion that if the Home Rule Bill should be passed the power of altering the Medical and Dentists Acts would be reserved to the Imperial Parliament. The new issue of the B. P., the president stated, was approaching, and it would be more adapted to the varied requirements of the whole Empire than its predecessors. He also announced a volume prepared by the solicitor to the Council, giving the cases which have been tried in the superior courts involving questions of interpretation of the Medical and Dentists Acts. Some changes as to registration of students and the curriculum were also mentioned.

The Council then appointed a committee of thirteen to consider the possible effects of the National Insurance Act on medical education and examination in relation to the efficient practice of medicine, surgery, and midwifery, to make representations thereon to the authorities concerned and report from time to time to the Council. Sir Charles Ball moved that the control of legislation on the Medical and Dentists Acts should, as had been suggested in the president's address, be reserved to the Imperial Parliament and this was agreed to *nem. con.*, it being shown that if no alteration was made in the bill it would become possible, if it were passed, for the Irish legislature to abolish all reciprocity of practice and put Ireland from a medical standpoint in the position of a colony or a foreign country. The executive committee's report was received and approved and other committees appointed and formal business transacted.

On Wednesday the Council considered the case of Dr. Wallace who had been summoned on the charge of being associated with the Sandow Institute. He was defended by counsel, but after a patient hearing it was decided that his name should be erased from the Medical Register.

Yesterday the Council had before it the report of the education committee on the standard of the preliminary examination of students in general knowledge. It is proposed after 1913 to raise the pass standard from 40 to 50 per cent. in each of the subjects, to abolish the principle of compensation, and, in order to reduce the prevalence of cramming to arrange that two sittings instead of one shall be allowed to candidates. It was proposed to enter the report on the minutes with a view of its being considered by those interested. After some discussion the Council adjourned that further consideration might be given to the subject.

Endoaneurysmorrhaphy—that is the pretty word coined by those who think it shocking to employ an English phrase to express one of the surgical procedures devised by Matas for dealing with aneurysm. His "obliterative method," which some of us think as expressive a term and as easy to pronounce, was advocated in the discussion at the Royal Society of Medicine by Mr. Gilbert Barling, who said it was applicable to any form of aneurysm but had been largely limited to the fusiform. The method is, after controlling the circulation above and below, to open the sac, close the orifices of the vessels entering it by means of sutures, and also the walls of the sac. Thus the aneurysm is obliterated. Mr. Barling said this operation had been performed sixteen times in the British isles. The advantages claimed for it are that the vasa vasorum are not so likely to be injured as by ligature, the danger to the main vein is much less than it is by proximal ligature or excision, and the collateral circulation is not so liable to disturbance. Nevertheless Mr. Barling has to report that gangrene followed in three cases, though all three survived after amputation. One case was lost from sepsis. It would appear that the chief danger is gangrene and that it is contraindicated when the circulation is seriously involved. In the discussion other methods were considered and the reputation of the surgical section well sustained by the eminent surgeons who spoke, but one would have liked to meet a larger number. The interest of aneurysm is unfailing notwithstanding that it is generally believed to be less frequent than formerly.

High Commissioner McNeal, attached to the office of the commonwealth has given evidence to the Select Committee on Select Medicines. He said importation into Australia might be prohibited on account of incorrect trade description of any goods. But the commonwealth parliament did not exercise jurisdiction over patent medicines manufactured in Australia. The customs restrictions had not been imposed for trade protective purposes but in the interests of the public health. In reply to a question he said it would not be permissible to import into Australia a medicine labeled "an unparalleled remedy" or "it never fails." Further questioned he replied that in many cases medicines from various countries had been excluded until their labels and printed descriptive matter had been amended.

The assistant director of public prosecutions has also given evidence. He said the public prosecutor took action only when he was instructed by

the attorney-general or home secretary. There was difficulty in obtaining evidence, people who bought things for certain complaints being unwilling to come forward. Moreover it was necessary to prove not only that the description was false but that the defendant knew it to be false.

To-day a deputation of the B. M. A. is to be received by the Insurance Commissioners. It is rumored that the association hopes to bring matters to a head by requesting a categorical answer to the question whether the commissioners will or will not concede the demands made on behalf of the profession and embodied in the "cardinal points" of which we have heard so much.

The B. M. A. is putting two schemes for a Public Medical Service before the profession—one for payment on a capitative system, the other per attendance. As the annual meeting comes on next month we may expect to hear something about them and the opinions they may give rise to. The meeting is this year to be at Liverpool.

Sir W. Thornley Stoker, Bart., died on Saturday night, June 1, aged 67. He was educated at Queens College and the Royal College of Surgeons, Ireland, taking an M.D. at the Royal University in 1860, becoming Fellow of the College in 1873. He was President in 1903-4 and in 1904-5. In the latter period he was also President of the Royal Academy of Medicine, Ireland, and again in 1905-6. He was consulting surgeon to the Richmond, Whitworth, and Handwiche Hospitals, formerly to the City of Dublin Hospital, an ex-governor of the R. Hibernian Military School and to the Academy, the National Gallery, and held many other posts of importance in Dublin. As a teacher of anatomy and surgery at the College and University he long held a high position. He was knighted in 1895 and made a baronet last year. He was left a widower in 1910 and there is no heir to the baronetcy. With his important surgical work your readers are well acquainted for he was in the forefront of his profession for many years.

The death is announced at the age of 77 of Dr. Henry Whitaker, late President of the Ulster Medical Society, who was superintendent medical officer of the city of Belfast for about twenty years. Late (Whitaker) lecturer on Sanitary Science, Queen's College.

Dr. Walter D. Fry, B.C.L., M.A., and M.B., Oxon., 1895, who was also a barrister of the Inner Temple, died suddenly on the 13th inst. He was elected last year coroner for a Yorkshire district.

Dr. Butler-Hogan, M.D., D.P.H., L.L.D., who was Medical Health Officer for Tottenham, died there on the 27th ult. at the early age of 47. He contributed various papers connected with sanitation to the journals. He was director of the bacteriological institution at Tottenham.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

MEETING OF THE ONTARIO MEDICAL ASSOCIATION IN TORONTO.

Toronto, June 5, 1912.

The address of the president, Dr. Herbert A. Bruce of Toronto, contained matter of much interest to members of the medical profession of the United States. In the first place he discussed at considerable length the situation of the profession in Ontario with regard to osteopaths and the future policy of the medical council of Ontario toward such practitioners. Osteopaths in Ontario, as in the States, are numerous and aggressive and are using their utmost endeavors to be placed on an equal legal footing with fully qualified medical men. Bruce holds that a man has a right to practise any pathy he wishes, provided he has obtained a sufficient knowledge of the anatomy of the human body, its physiology, and the disease processes to which it is liable. Thus, those wishing to practise osteopathy should be compelled to pass an entrance examination equal to that of any practitioner of medicine, and in addition should pass a primary and final examination, which would include all the essential subjects, including their own method of therapeutics.

On the division of fees the speaker expressed himself in very decided terms. He said there could be no question that it was a pernicious system, fundamentally opposed to the ethical traditions of the profession and could not be advocated by any honorable man. It represented a form of collusion between the consultant and the general practitioner which was compromising and demoralizing to both parties, in that it was invariably practised without the knowledge of the patient, and was at the same time disadvantageous to the latter.

Dr. Alexis Carrel of the Rockefeller Institute gave an illustrated lecture on experimental researches in the surgery of the blood-vessels and the transplantation of tissues and organs. He narrated at length experiments undertaken by him in the direction of transplanting organs and tissues and held the close attention of his audience throughout the lecture.

Perhaps the most engrossing address given was that by Dr. George W. Crile of Cleveland, who took as his subject anoci-association. The following is a summary of Crile's address: All brain cells are not equally affected by inhalation anesthesia, certain cells remain awake, the subconscious mind remains active. These awake cells resist anesthesia and are injured to a greater or lesser degree by the trauma of the operation, and not only by trauma but by the effects of fear of the operation. These effects are manifested by changes in the pulse, respiration, and blood-pressure. Exposed portions of the body are supplied with a shock-resisting mechanism in the form of nociceptors in the nerve endings, but the brain has none of these; an operator may probe the brain and the patient will feel no pain. But physical injury to any sensitive part of the body having no nociceptors causes a discharge of nervous energy leading to exhaustion and shock. Equally may such a condition result to the patient through what he sees and hears. If a patient is in grave doubt whether or not he can survive an operation, if he has an entire lack of confidence in the hospital or in the ability of his surgeon, he makes a bad subject for operation and may be said to possess "a low threshold to stimuli." If under these conditions he is anesthetized and operated upon, the effect of any physical injury in that state will be augmented, and throughout the entire anesthesia and the entire operation the incidence of fear will be manifested in the pulse and the blood-pressure. Such patients stand operations poorly. This exhaustion is due to the driving of the motor mechanism as a whole, and the motor stimulation results from two great causes: the first is the stimulation of the nociceptors of the body—physical injury, and the second, stimulation through the special senses. But whatever the causes the stimulus is

always through the awakening of associated memory. All action must be from philogenetic association. Harmful associations are called noci-associations, but if an operation is planned so that all harmful associations are prevented this state of the patient is called anoci-association, a state of the brain in which there is no discharge of nervous energy. How can the principles of anoci-association be carried out? First, the surgeon must be thoroughly competent, and the patient must be confident of the fact. All the surroundings must be so controlled by the operating surgeon that he can truthfully tell his patient that the operation will be distinctly safer than the disease from which he is suffering, that the operation will be so conducted as to be devoid of painful or dramatic incidents, that the patient will have no unpleasant experiences to reflect upon afterwards. The patient may be further protected from the harmful influences of fear by the administration of morphine, or of morphine and scopolamine. The anesthetic should preferably be administered by a woman because somehow the world has more confidence in the ultimate good intentions of a woman than it has in those of a man. Anoci-association induced by the preliminary exhibition of nitrous oxide. When the patient is under the anesthetic, anoci-association is carried further by so conducting the operation that the brain itself may be entirely isolated from the field of operation by the careful infiltration of the entire field of operation with a solution of novocaine 1-400. Further, the operator must use the minimum amount of traction and the maximum of accuracy and gentleness. In this manner the operation, however extensive, may be performed without materially driving the motor mechanism. At the close of the operation the patient may be given an injection of quinine and urea hydrochlorate. The after pains and the postoperative nerve exhaustion will be thereby very materially decreased in the case of abdominal operations, it is pleasant to note that the distressing gas pains are almost wholly avoided. In this way we arrive at a shockless operation. The practice of anoci-association has markedly reduced the mortality following operation and the patients more often recovered from the disease affecting them. Anoci-association has taken from surgery much of its stigma of harshness, and to an almost incredible degree preserves the nervous system of the patient.

As pointed out before, the main feature of the meeting was that most of the time was given up to clinical demonstrations. On May 22 clinics were held at the Medical Building of Toronto University, in medicine, surgery, ear, eye, nose, and throat, x-ray, and pathology. Among the cases shown in the medical section was one of leprosy. On May 23 clinics were held at the General, St. Michael's, Grace, and Western Hospitals and at the Asylum in Queen street, where interesting cases of various kinds, medical, surgical, gynecological, and mental were shown by the members of the staff. Dr. G. W. Ross gave in his laboratory at the General Hospital a description of the principles and technique of vaccine therapy. A woman suffering from osteoarthritis of the finger joints, who had been successfully treated by mixed vaccines, was presented. Dr. Graham Chambers showed a case of bradycardia exhibiting the Stokes-Adams syndrome, and a case of Hodgkin's disease associated with tuberculosis.

The following officers were elected for the coming year: *President*, Dr. Charles MacGillivray, Port Hope; *First Vice-President*, Dr. A. T. Shillington, Ottawa; *Second Vice-President*, Dr. Taylor, Goderich; *Third Vice-President*, Dr. W. T. Park, Woodstock; *Fourth Vice-President*, Dr. I. H. Hare, Cobalt; *Secretary*, Dr. F. A. Clarkson, Toronto; *Treasurer*, Dr. J. H. Elliott, Toronto.

Dr. Herbert Bruce, the president for the year, gave a garden party at his residence on May 22, at which the Duke of Connaught was present. The annual banquet of the association was held on the evening of May 22, at which a good deal of speech-making took place. On the whole the meeting just held was the most successful in the annals of the Ontario Medical Association.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

BACILLARY DYSENTERY — THE PLAGUE — MANILA WATER SUPPLY—MILK FOR CHILDREN—DEATH OF DR. FREER.

MANILA, P. I., April 25, 1912.

JUDGING by the official reports for the ten years preceding 1910, the Philippines were comparatively free from bacillary dysentery. Whether this disease was actually absent, or whether it was confused with the cholera which was more or less constantly present during that period, is not known, but at all events, during the past two years, frequent outbreaks of typical Shiga bacillary dysentery have been encountered from time to time. Several hundred deaths occurred at Barotac, in the Province of Iloilo, the direct cause being that the river, from which the inhabitants obtained their water supply, became infected immediately above the town. During 1910 there was a severe outbreak at Batangas, Batangas Province. The disease was especially severe at the Army post of Camp McGrath. The laboratory investigation of this outbreak resulted in the isolation of the Shiga organism. It was later ascertained that a large proportion of the cases were no doubt due to the water becoming infected from which the ice for the post was made. The persons who were using distilled water seemed to suffer more severely than those who did not; the explanation for this became apparent when it was ascertained that these were also the persons who were the principal users of ice. This year, soon after the Government bureaus were transferred to Baguio, outbreaks of diarrhea were reported. An investigation showed that approximately ten per cent. of the employees were affected. At first there was a disposition to attribute the diarrhea to the altitude and the lower temperature which prevails in Baguio, but a sanitary survey made of the town showed that bloody stools in unprotected places were very common, and that no adequate arrangement existed for the disposal of human excreta. Owing to a severe pest of flies which prevailed, and due to the careless habits of domestic servants in not properly cleansing their hands, the factors were present for rapidly spreading this disease. It was also later discovered that it was customary for some of the servants to wash the table utensils of many of the Filipino employees in the discharges from the septic vaults. Upon correcting these conditions, an immediate reduction in the number of cases took place. Arrangements were immediately made for the burning of all horse manure, and between three and four weeks after this was actually

accomplished, there was a great reduction in the number of flies, and there is every prospect now that they will soon disappear almost entirely. In this particular outbreak, public confidence in sanitary measures was considerably shaken, because it was believed that bacillary dysentery was largely spread by water, and as the greatest precautions had already been taken by all residents to drink only boiled or distilled water, it was difficult at first to assign a satisfactory reason to the outbreak of dysentery, and considerable uneasiness resulted. As soon as excreta was properly disposed of, however, the improvement was very marked, and now the disease has disappeared entirely.

No further cases of plague have been encountered on vessels coming from foreign ports, but in view of the fact that three vessels arrived within such a short period with cases of pneumonic plague on board, the Philippine authorities have imposed additional quarantine restrictions with the view to reducing the danger of the introduction of this disease. In addition to placing a seven-day quarantine against steerage passengers from Hongkong, similar quarantine has now been imposed against Amoy. On account of the large number of vessels which arrive from Saigon with rice, and since there is plague present at that port, it has been deemed advisable to insist upon the fumigation of all vessels with sulphur at Saigon, before loading cargo.

Additional precautions have also been taken with regard to wharf regulations at Manila and the other ports of entry, and steps taken to reduce the number of rats that are present, along the waterfront, and particularly in the grain warehouses.

The Manila water situation still continues to become more acute. It is now not only a question of using polluted water, but, on account of the continued drought, serious difficulty is being encountered in supplying the city with sufficient water of any kind. During the past week this difficulty was accentuated by one of the pumps of the Santolan Pumping Station becoming disabled. At the present writing, unless the rains soon come, an actual water famine will have to be faced in the city of Manila. The sprinkling of streets, lawns, and the use of water for other garden purposes, has been prohibited, and an effort is being made to reduce the consumption of water as far as possible. Copper sulphate, in the proportion of one to three million is being used in the city water supply. It is yet too early to know what effect this is having toward reducing the bacterial count, and particularly the elimination of pathogenic organisms. In addition to the foregoing, the Bureau of Health has given instructions that placards be printed and handbills be distributed in English, Spanish and Tagalog, warning the people to boil the water before using it. Arrangements are also being made with the local newspapers for "liners" to be printed in every column of every edition, in every newspaper in the city of Manila.

The Society for the Protection of Infants (Gota de Leche) has just completed a number of buildings, located near Pasay, on the outskirts of Manila, for the purpose of conducting a dairy farm, in order to furnish the Gota de Leche with the necessary amount of fresh milk. The plot of ground consists of about five acres, and has six modern cow-sheds with cement floors, water installation, and septic tank for the disposal of excreta. Mr. Nathan Straus has recently donated a complete sterilizing equipment and an additional quantity of bottles and other necessary materials for the distribution of milk. This equipment is similar to that which Mr. Straus installed at Washington, D. C.

Dr. Paul C. Freer, director of the Bureau of Science, died at Baguio on April 17th. The direct cause of his death was due to general peritonitis, but he had long been a victim of arteriosclerosis, and it was the advanced stage of this disease that no doubt was responsible for his death. Dr. Freer came to the Philippine Islands as the superintendent of the Government Laboratories, in 1901, and was later made director of the Bureau of Science. He was dean, and one of the founders, of the Philippine Medical School. It is directly due to his efforts that the Bureau of Science has become an institution which is known throughout the civilized world for high-grade research work, and has been a great factor in aiding in the solution of many of the problems connected with tropical medicine.

Progress of Medical Science.

Boston Medical and Surgical Journal.

June 13, 1912.

1. Address. J. C. Warren.
2. The Peter Bent Brigham Hospital. H. B. Howard.
3. The Carnegie Nutrition Laboratory. F. G. Benedict.
4. The Function of the Experimental Method in the Course of Pathology. H. T. Karsner.
5. The New Children's Hospital. R. W. Lovett.
6. The New Psychopathic Department of the Boston State Hospital. E. E. Southard.
7. The Department of Preventive Medicine and Hygiene and the New Degree of Doctor of Public Health. M. J. Rosenau.
8. The Huntington Hospital and the Scope of Its Work. E. E. Tyzzer and T. Ordway.
9. Anterior Metatarsalgia and Morton's Disease. A. M. Forbes.
10. Abduction of the Shoulder. An Interesting Observation in Connection with Subacromial Bursitis and Rupture of the Tendon of the Supraspinatus. E. A. Codman.
11. The Hastening of Wound Healing by Means of Skin Grafting and the Use of Certain Organic Coloring Matters. J. S. Davis.

1. **The New Hospitals of Harvard Medical School.**—J. C. Warren states that new hospitals are springing up in every direction on the grounds about Harvard Medical School, and a great scheme seems to have reached its fruition. These hospitals include the Peter Bent Brigham Hospital, the Huntington Memorial Hospital, the Infants' Hospital, the Children's Hospital, the Psychopathic Hospital, and additions to the Free Hospital for Women. All these institutions when grouped together will represent a plant valued at $15,000,000.

2. **The Peter Bent Brigham Hospital.**—H. B. Howard mentions among the many admirable features of this institution which is now in process of construction on grounds adjacent to those of Harvard Medical School, the five ward buildings which are upon a higher level than the rest of the institution so that the garden of the patients will be better drained. Each ward is made for forty patients and is surrounded by terraces so that the beds can be easily rolled out upon them, and the patients upon these terraces can be in the shade or in the sun, as is desired. Part of this typical ward building is one story high, part two stories, and part three stories, the highest being the northerly part of the building. This arrangement is to keep one ward building from shadowing another.

5. **The New Children's Hospital.**—R. W. Lovett, in describing this addition to Harvard's hospital scheme states that there are two peculiar requirements in a children's hospital dealing with surgical and orthopedic cases: first, facilities for outdoor treatment must form an integral part of the institution, and, second, the arrangement must be such as to minimize the danger of the spread of infectious diseases in the wards. Again and again it has been experienced that a ward of twenty beds would have to be closed because of the occurrence of one case of measles or scarlet fever, and in addition to the unnecessary

illnesses contracted in this way, the work of children's hospitals has been very seriously impaired by the large ward unit. Therefore the small ward unit furnishes the solution of the difficulty. Each pavilion in the new Children's Hospital is to contain twenty beds, and these beds are to be divided into two units of ten each at different ends of the pavilion, the children of the two units never coming in contact. One or two ward units will always be kept vacant, so that if an infection occurs the ward has simply to be quarantined until emptied and then disinfected.

11. **Skin Grafts and Organic Dyestuffs in the Hastening of Wound Healing.**—J. S. Davis, in concluding his article on this subject states that although skin grafting is being utilized each year more and more, nevertheless its value is not yet fully appreciated, and many cases are dressed week after week and allowed to heal by granulation which could be closed by grafting a much shorter time, and eliminate, to a large extent, the chance of future cicatricial contraction. The organic dyestuffs used for the purpose of hastening wound healing are the following: the sodium salt of diazo-azobenzene-disulphonic acid Beta naphthol (commercial name, Biebrich Scarlet Red); benzene-azobenzene-azo Beta naphthol (commercial name, Soudan III); toluene-azotoluene-azo Beta naphthol (commercial name, Oil Scarlet); the sodium salt of xyleneazo Beta naphthol monosulphonic acid (commercial name Scarlet G. R.). The technique of applying these dyestuffs is as follows: Every effort should be made to bring the wound into a healthy condition as soon as possible. Anoint the skin surrounding the defect with some bland ointment up to about 1 centimeter of the wound edge, as this prevents possible irritation. Then spread the scarlet red or amido-azotoluol ointment in a thin layer on perforated old linen, and apply to the wound, either along the edges or over the whole surface. A light dressing of sterile gauze secured by a bandage completes the procedure. The strength of the scarlet red and amido-azotoluol ointment ordinarily used is 8 per cent. in a vaseline or vaseline and lanolin base, and it should be alternated every twenty-four to forty-eight hours with some bland ointment. By applying a weak ointment, say 4 per cent, it can be used over longer periods. Scarlet red and amido-azotoluol will not heal every granulating wound, but in the majority of cases, when applied with the proper technique, they will cause epithelial stimulation in the edges of the most sluggish wounds and give a rapid healing which is stable and resistent, and which has the macroscopic and microscopic appearance of the normal skin. There is no tendency to subsequent contraction, and the skin becomes movable on the underlying tissues in a reasonable time. Any one of these characteristics would make the use of these substances well worth trying.

New York Medical Journal.

June 15, 1912.

1. Comments on Sex Issues from the Freudian Standpoint. J. J. Putnam.
2. Some Phases of Prostatic Disease. L. B. Bangs.
3. The Combined Use of Thyroparathyroid, Pituitary, Ovarian and Testicular Extracts. F. R. Starkey.
4. Two Cases of Large Ovarian Cystoma. J. A. McGlinn.
5. Some of the Newer Uses of Calcium. T. Howard.
6. The Conservation of Vision. A. Bray.
7. The Effect of Infundibulin on Mammary Secretion. J. C. Scott.
8. Instruction of College Students in Regard to Reproduction and Maternity. E. B. Thelberg.

1. **Sex Issues from the Freudian Standpoint.**—By J. J. Putnam. (See MEDICAL RECORD, May 11, 1912, page 918.)

2. **Phases of Prostatic Disease.**—L. Bolton Bangs reports a series of cases illustrating these phases. One of these is prostatic hyperemia causing the symptoms of pain or aching in the perineum, frequent urination, and diminution of sexual vigor. In many of these cases which are frequently found in bicyclists and horseback riders, there are besides the prostatic lesion minor traumatisms of the bulbous urethra which intesify the effect upon the patient's nervous system and prolong his malady. Long continued abuse or overexcitation of the sexual apparatus, especially during adolescence, produces a chronic hyperemia which, in turn, induces a sexual irritability of the presiding brain areas. If, as is frequently the case, in addition to the habit of masturbation (and even if the latter has been overcome), there is association with a person of the opposite sex who permits dallying, even if coitus is not indulged in, an excessive dilatation of the bloodvessels of the prostate takes place. As this indulgence is generally too frequently repeated, the bloodvessels remain continuously dilated and a condition of nerve exhaustion with mental depression, together with other abnormal symptoms, becomes manifest. In cases of this nature the author has proposed prostatic massage as a therapeutic measure. Another phase of prostatic disease which is worthy of consideration is that, when the organ enlarges it forms a dam, behind which urine is retained, thus forming a culture chamber, in which various forms of bacteria germinate. Even if the obstruction to the outflow of urine is of a very moderate or minor degree, relief of symptoms and restoration of the urine to a normal condition will be impossible without the removal of the obstruction.

3. **Uses of Combined Organic Extracts.**—F. R. Starkey has tested the therapeutic value of the combined use of thyroparathyroid, pituitary, ovarian, and testicular extracts. He concludes that the polyglandular substance has a marked stimulating effect, and that in acute asthenic conditions with low blood pressure and suboxidation it activates the vital process and thus tides the patient over the most critical stages of the disease, while increasing the efficiency of his autoprotective resources. The same polyglandular solution seems also to be almost a specific for neurasthenia. It has a marked stimulating effect on mental, nervous, and muscular activity as well as on general metabolism and oxidation. It augments powerfully the contractile power of the cardiovascular system, and is, therefore, contraindicated in cases of high blood pressure. Finally, it increases the action of other drugs, arsenic, mercury, iodides, and salicylates in particular, and their curative efficiency.

7. **The Effect of Infundibulin on Mammary Secretion.**—J. C. Scott reports the history of a case in which severe labor was followed in five days by a severe postpartum hemorrhage, the milk secretion improving within three or four hours after the hemorrhage, at which time infundibulin was administered. The marked improvement in the quantity and quality of the milk is attributed to no other factor than to infundibulin.

Journal of the American Medical Association.

June 15, 1912.

1. The Specialist in Medicine. G. E. Shambaugh.
2. Animal Experimentation and Its Benefits to Mankind. W. B. Cannon.
3. Hookworm Among Oriental Immigrants. M. W. Glover.
4. The Relation Between a Chicken Sarcoma's Behavior and the Growth's Filterable Cause. P. Rous, B. Murphy and W. H. Tytler.
5. Blood Cultures in Pneumonia. H. W. Lyall.
6. An Essay of Health and Long Life, Published A. D., 1725. W. H. Crisp.
7. A Peculiar State of Asthenia of Short Duration, Ending in Recovery. D. Riesman.
8. The Chicago Epidemic of Streptococcus Sore Throat and Its Relation to the Milk-Supply. J. A. Capps and J. L. Miller.
9. Bacteriological Study of Streptococci in Milk in Relation to Epidemic Sore Throat. D. J. Davis.
10. Morphinism in Some of Its Less Commonly Noted Aspects. C. C. Wholey.
11. Simple Device for Holding Retention Catheter. W. S. Ehrich.
12. Aeranial Monster with Encephalocele and Polyhydramnios. H. A. Sharpe.

5. **Blood Cultures in Pneumonia.**—H. W. Lyall presents an analysis of a series of cases of pneumonia which were characterized by a low total death-rate, and in which blood cultures were positive in only 40 per

cent. The total number of cases was 42, of which 17, or 40.5 per cent., were positive and 25, or 59.5 per cent., were negative. The total mortality was 11, or 26.19 per cent.; 5 patients who died were alcoholics. The positive cases showed a mortality of 8, or 53.5 per cent., among which were 4 alcoholics. The negative cases showed a mortality of 3, or 8 per cent., one patient who died was an alcoholic. On account of the incidence of alcoholism it is difficult to draw any definite conclusions as to the relation between positive findings and prognosis. All cases at the time of or after crisis or lysis gave uniformly negative results.

7. **Myasthenia.**—D. Riesman reports a case of this condition occurring in a man who was suddenly seized with profound weakness involving apparently all the voluntary muscles, causing no psychic, sensory, or sphincteric disturbances, but marked by bradycardia, subnormal temperature, and bradypnea. A facial palsy ensued ten days after the onset of the myasthenia. Recovery was complete in about two months. Two other cases somewhat similar which recently came under the author's observation and an experience of his own while a medical student are also reported. In all these cases there was a physical weakness amounting to actual prostration, a feeling of coldness, a subnormal temperature, and in two cases slow pulse and low blood pressure. Recovery was prompt in all, though the feeling of impending death was quite acute during the attack. Riesman finds the easiest explanation of these cases in the assumption of some disturbance of the internal secretions causing changes in the sympathetic system and voluntary muscles. The chief controller of these two systems is the adrenal or, better, the chromaffin system. The functions of this system are manifold and complicated, but the two that particularly concern one in this connection are the angiotonic, controlling vascular tone and blood-pressure, and the antitoxic through which the fatigue products of muscular activity are neutralized.

8. **The Chicago Epidemic of Streptococcus Sore Throat.**—J. A. Capps and J. L. Miller report the incidence of a recent epidemic of streptococcus sore throat in Chicago. It was conservatively estimated that over 10,000 persons in Chicago were victims of epidemic sore throat. Of the total of 622 cases that were investigated, 530, or 87 per cent., were users of milk from a certain dairy—Dairy X. Of nineteen fatal cases investigated, fifteen, or 79 per cent., were users of this milk. A comparison of the prevalence of sore throat among consumers of X milk with that of consumers of milk from another dairy in the same neighborhood showed that the morbidity ratio was fourteen times as great among the former as among the latter. This ratio prevailed in three widely separated districts of the city. An epidemic of mastitis, involving 46 per cent. of the cows supplying milk to the Dairy X occurred during the winter months. Sore throat of the epidemic type was prevalent among the farmers and milkers supplying Dairy X. Often bovine mastitis and human sore throat prevailed on the same farm at the same time. A virulent streptococcus was isolated from the milk of a cow with chronic mastitis and from the throat of a girl on the same farm, who had been ill with sore throat and arthritis. The pasteurization records reveal a remarkable degree of failure to maintain a proper temperature. The days on which the most striking failures of pasteurization occurred shortly preceded the great outbreaks of sore throat. The remedy is to be found in more careful inspection of cows and milkers, and, most important of all, in efficient pasteurization.

The Lancet.

June 8, 1912.

1. **Acute Infective Processes Due to the Streptococcus.**—W. Girling Ball states that for practical purposes it is convenient to place the various diseases caused by streptococcus under one of two headings: (1) a local group, in which it is not possible to recover the infecting agent from the blood stream by the ordinary methods of cultivation; or (2) a septicemic group, in which an investigation of this nature yields a positive result. The treatment adopted has first consisted in the use of the ordinary surgical methods. The use of vaccines and sera has only come in as an adjuvant to the treatment, in some cases as a routine, in others where the surgical methods have failed to bring about the desired result. The ground on which the author bases his claims of vaccine-therapy are as follows: (1) the favorable effect it has on the course of the temperature chart; (2) the prevention of recurrences in conditions in which they are common; (3) the improvement in the signs of the local disease, and (4) the change for the better in the general condition of the patient. The following method of treatment is suggested: After an accurate clinical diagnosis, and after having dealt with the lesion surgically, serum should be given at the earliest possible moment, either locally as a dressing, intravenously, subcutaneously, or by the rectum. Following the use of the serum, or in combination with it, a vaccine should be injected as soon as it has been prepared. As a general rule, an autogenous agent is preferable, but it may be replaced by one prepared from a mixture of streptococci of the same type which are known to commonly cause the type of lesion from which the technique used has failed to isolate it. Moreover, stock vaccines may be used during the preparation of the autogenous agent. The more acute and the more generalized the lesion the smaller should be the dose introduced. Having obtained no effect as the result of the smaller dose it should be increased gradually until such is reached which will produce the desired reaction. On the other hand, if a harmful effect is observed, then a smaller dose is indicated, or even vaccine-therapy contraindicated.

2. **Clinical Notes on Blood Plates.**—E. M. Brockbank concludes as the result of a prolonged series of observations that the bodies met with in blood smears which have been fixed and stained in the ordinary way, and known as blood plates, all arise from the interior of red corpuscles, many of which manifestly burst as the blood plate material escapes from them.

3. **Rheumatic Form of Ulcerative Endocarditis.**—C. E. Coombs states that the hearts from seven cases of streptococcal ulcerative endocarditis have been subjected to a thorough histological examination. The findings in all the cases were substantially identical, in spite of wide clinical differences in their virulence and in their relation to previous rheumatism. No histological evidence of a directly rheumatic origin was forthcoming, even in those cases in which the rheumatic factor was most in evidence clinically.

British Medical Journal.

June 8, 1912.

7. A Case of Viper Bite on Epping Forest. B. F. Pendred.
8. An Enormous Parotid Tumor in a Chinese Woman. H. Balme.
9. Perforated Enteric Ulcer; Operation, Recovery. W. Washbourn.
10. The Bactericidal Action of the Cresols and Allied Bodies and the Best Means of Employing Them. E. A. Cooper.

1. **Chronic Diarrhea in the Adult.**—R. Hutchison points out that diarrhea is a symptom and not a disease. The chief varieties of chronic diarrhea met with in practice are classified and described as follows: (1) Gastrogenic diarrhea. This is a form due to imperfect digestion in the stomach, which in turn is caused by an insufficient secretion of gastric juice often amounting to complete achylia. (2) Pancreatic diarrhea. This is a form of diarrhea attributed to pancreatic insufficiency, either from blocking of the pancreatic duct, from chronic pancreatitis, or from a functional pancreatic achylia. (3) Fermentative diarrhea, caused by an imperfect digestion of starch. (4) Enteritis. This is a form of diarrhea that is distinctly rare in the adult. Its most frequent causes are alcoholism, cirrhosis of the liver, and pulmonary tuberculosis. (5) Colonic diarrhea. This is the most common form of chronic diarrhea, and its three commonest causes are malignant disease, catharrhal colitis, and ulcerative colitis. Malignant disease is frequently overlooked, for the diarrhea caused by it is not characteristic. Catarrh of the colon is one of the commonest causes of chronic diarrhea. The diarrhea in these cases is often of the explosive "morning" type. In cases of ulcerative colitis, whether dysenteric or non-dysenteric in origin, the stools tend to have more of the true colonic character than in any other form of diarrhea, blood and mucus being usually present, while tenesmus is not infrequently complained of. (6) Nervous diarrhea. In this form the disorder appears to result from an exaggerated irritability of the nerve mechanism which controls peristalsis. There are two types of this variety. In one type, to which the term "post-prandial" or "lienteric" diarrhea has been applied, the action of the bowels tends to take place immediately after or even during meals. In the other type the diarrhea is brought on by emotional impressions.

2. **The Relation of Biology to Pathology.**—By Hastings Gilford. (See page 1231.)

3. **Ulcerous Lesions of the Tongue.**—J. H. Evans states that the "simple ulcer" is recent in appearance and of obvious causation—for example, a sharp tooth, local trauma, or glossitis and is characterized by the absence of neuralgic pain, the absence of peripheral induration, and, though tumefaction may not be evident to the naked eye, a certain amount of local edema is distinctly seen by means of a lens; further, there is possibly an absence of lymphatic enlargement and an absence of foul deposit on the neighboring teeth. The tuberculous ulcer, situated generally on the dorsum or at the tip of the tongue, is readily recognized as a pallid solitary sore, often of considerable depth with sharply cut edges, and an indolent base usually devoid of induration, and almost invariably associated with pulmonary or laryngeal tuberculosis in young adults. Though actinomycosis is not common in the human subject it should be borne in mind (1) that its most frequent avenue of entrance is the mouth; (2) that the only positive diagnostic evidence is the presence of the actinomyces; (3) that the occurence of this disease is diagnosed absolutely by its yellow granules visible to the naked eye and greasy to the touch, which, when placed under the microscope, reveal the distinctive character of the growth. Lingual papillitis—a frequent associate of gastric disturbance, and often found in syphilitics—is predominated by a burning pain in the anterior two-thirds of the tongue, increased by any food except the most bland diet. Scarcely any lesion can be detected by the unaided eye, but the lens will bring into view a varying number of minute red spots, as though they were truncated bases of hypertrophied papillæ with exposed nerve endings in the minute painful ulcer. Syphilis of the tongue is probably the most common of all diseases of the tongue, being found as the following ulcerous lesions: 1. Superficial: primary infective focus or chancre—rare; fissures and ulcers on the dorsum of the tongue—irritable and sensitive to the touch; ulcerous indentations around the edge of the tongue; sessile warty growths—often multiple; patches of faint leucomata; and denser patches of leucoplakia. 2. Deep: indurated masses—gummata—which form in the substance of the tongue, with an upheaval of the surface, and on breaking down leave a crateriform excavation with little or no peripheral induration, but with its deep base covered by a dirty grayish-yellow secretion. Cancer of the tongue is of frequent occurrence in males over the age of 40 who may be addicted to alcohol or tobacco, who frequently partake of irritating condiments, or who practise any of the different habits of chewing. Any long-continued wart, hard lump, or unhealed ulcer on the tongue or gums is liable to become the seat of cancer. Close attention to the cleanliness of the mouth and the brushing of the teeth is advisable. There is no more frequent precursor or accompaniment of cancer of the tongue than syphilis.

Münchener medizinische Wochenschrift.

June 4, 1912.

The Berlin Diphtheria Epidemic of 1910-11.—Blühdorn, of the Division of Infectious Diseases of the Rudolf Virchow Hospital, Berlin, refers to the severity of diphtheria in Berlin during the past two years and the opportunity thereby furnished for testing serotherapy. The severity did not lie in the mortality, which was but 11 per cent. in 203 cases, but in the number of patients who required tracheotomy and who presented sequelæ. Many adults were attacked. Generally speaking, the first two days of the disease were severe, and patients seemed very ill. This severity was doubtless responsible for the development of the complications and sequelæ. As usual, the patients came largely from the lowest social strata. Under these circumstances the effects of the serum in arresting so severe a disease were all that could have been expected. In 151 patients, all severely attacked, who were injected at the beginning of the disease, but 4 died, less than 3 per cent. In many cases very large serum doses were not only begun, but repeated. The point of interest was that with such a prompt response to specific treatment complications were not averted to the same extent. The sequelæ consisted largely of paralyses of the usual post-diphtheritic types, including cardiac weakness, paralysis of velum palati, ophthalmoplegias, vocal cord paralyses, etc. Of complications proper there were laryngeal diphtherias, myocarditis, and nephritis. When a deadly disease like diphtheria has its mortality cut down fourfold we must expect the survivors to present accidents which were formerly present in a more restricted number.

Inferior Tracheotomy in Diphtheria and Postdiphtheria.—Loede of the Hamburg-Eppendorf Hospital describes this resource in detail, with numerous photographs of children so treated. For cosmetic purposes the cutaneous incision is short and transverse. The transverse incision was counseled by Frank about two years ago for superior tracheotomy. That today tracheotomies are being elaborated in epidemics of diphtheria with not even a mention of intubation as a competitive procedure is a document to the provincial element in medicine. The author gives a table of 150 tracheotomies in diphtheria with a mortality of about 50 per cent., which coincides with the original death rate whenever this resource was employed. Evidently when a patient is in such straits as to require tracheotomy his chance of survival is no better than it was fifty years ago. Naturally the proportion of diphtheria patients requiring this intervention is much smaller, although in certain epidemics it is not inconsiderable

Insurance Medicine.

SUGGESTIONS TO MEDICAL EXAMINERS.

BY THE INSURANCE EDITOR.

THE PHYSICAL EXAMINATION.

NON-ORGANIC MURMURS.—Every murmur heard over the heart does not point to disease of the valves or the orifices of the heart. Murmurs may therefore be classed as organic and non-organic, the latter class being commonly known as "functional." It is frequently difficult to differentiate one from the other, and whenever the examiner does not feel sure as to the true nature of the sound, he should not hesitate to re-examine the heart on another day, especially if the applicant is nervous or has been through some unusual mental or muscular exercise just before the interview.

The company should always be given the benefit of the doubt when there is any indecision in the diagnosis. This is especially true in the so-called functional murmurs at the base, which have shown a very high degree of mortality. If any injustice is inflicted on the applicant by pronouncing a functional murmur to be organic, this may easily be rectified later; but if a murmur reported as functional turns out to be organic, an impaired risk has been put on the books and the policy will be beyond recall.

When the examiner is convinced after an extra careful examination that the accidental sound is not significant of any pathological lesion or abnormal condition, he should omit all reference to it in his report. The medical officers at the home office will surely feel that if the murmur is important enough to report, they will have to reject the risk or request the examiner to make a further investigation. The examiner is relied upon not only to be exceedingly painstaking in his medical examination in these cases, but also to carefully ascertain the size of the heart and the condition of the blood vessels.

Functional Murmurs.—The true "functional" murmurs are apt to be associated with anemia or with some special attack upon the resources of the body such as physical overstrain or fever. They usually disappear when the underlying forces are removed. They are almost always systolic in time, and usually heard with maximum intensity in the pulmonic area, especially at the end of inspiration. They are rarely transmitted beyond the pericardiac region. There is no evidence of enlargement or significant accentuation of the 2nd sounds at the base. It is often difficult to decide whether these murmurs are organic or non-organic, but as they are caused by other disturbances which, even though temporary, make the risk undesirable at the time, the examiners task becomes the simple one of recommending postponement.

Murmurs During Rapid Action.—Faint systolic murmurs are heard at times when the heart action is unusually rapid. These sounds are apt to disappear during the latter part of the examination or when the applicant assumes the recumbent position. They are possibly due to insufficient time during the rapid action for perfect closure of the valves—a temporary insufficiency. If such a murmur does not clear up during the first examination, it will usually have disappeared before a second interview after the applicant has had an opportunity to recover from general nervousness or excitement.

Dynamic Murmurs.—These sounds are occasionally produced at the base by a forcible distortion of the chest wall, such as may occur during the excessive contraction of the muscles in certain unnatural postures or during efforts at extreme forced expiration or inspiration of the lungs. The same sounds may also be the result of heavy pressure by the stethoscope on exceptionally flexible chest walls.

Cardio-Respiratory Murmurs.—This form of non-organic murmur is the one most frequently heard. These murmurs have no pathological significance unless caused by extensive adhesions between the pericardium and pleura, but are often troublesome to the examiner. They are usually caused, probably, by the forcible displacement of air in a portion of the free margin of the lung overlapping the heart. If the murmurs are accompanied by friction sounds denoting adhesions they should be reported, but if the examiners are convinced that they arise purely from the impact of the heart with the lungs they should be ignored.

These murmurs are systolic in time in the vast majority of the cases, and are confined to a limited area. Their quality varies from that of a soft, breezy, blowing murmur to one closely simulating a friction sound, but as a rule it is soft and resembles that of the ordinary respiratory murmur.

The murmurs will have some or all of the following marked characteristics, which render valuable assistance in diagnosis:

1. There is well marked alteration in intensity by crescendo and diminuendo variations during inspiration and expiration.

2. They become obliterated as a rule while the applicants hold their chests for a few seconds, either in a position of forced inspiration or forced expiration or when they simply arrest respiration. A true cardiac murmur cannot be made to disappear.

3. They are usually heard more distinctly at the end of inspiration, whereas true cardiac murmurs become more faint at that particular time.

4. They are usually heard over a limited area and seldom transmitted to the left axilla or to the back.

5. They are not associated with hypertrophy or accentuation of the second sound.

6. They may be greatly modified by pressure exerted on the thoracic wall in the vicinity of the murmur, both as to intensity and quality. Organic murmurs are but little, if any, influenced by this procedure.

7. The position of the applicant will often assist the examiner. Almost all the cardiac murmurs are affected to a greater or less degree by the position of the body through the change in the blood-pressure in the region of the heart. Some organic systolic murmurs which are almost inaudible during the sitting or standing attitude, may easily be heard when the applicant lies down. The cardio-respiratory murmur will often disappear in the supine position.

ACCENTUATION OF HEART SOUNDS.—Accentuation of both sounds is not uncommon in health when the action of the heart is forcible on account of nervousness. The accentuation will often disappear during the examination, but if it does not and no serious disturbance capable of producing it can be discovered, the applicant should be given the opportunity of undergoing a re-examination before the final decision, when the sounds may be found normal. In such cases, the accentuation is of no moment and may be omitted from the report, but only after the examiner has looked carefully for more serious causes. When the accentuation is re-

ported, the examiner should state explicitly whether or not he has made an extra effort to ascertain the cause and if he has any suspicion that the changed sound is significant of serious trouble. If the officials at the home office are not informed that a careful investigation has been made, they will invariably ask for it when the mere fact that the applicant has an accentuation is reported.

Pathological accentuations are met with when there is increase of blood-pressure in the systemic or pulmonary circulation. Whenever, therefore, an accentuation of the first or second sounds is marked or persistent, the examiner should make a most rigid examination for the detection of arteriosclerosis, Brights, mitral disease or cardiac hypertrophy.

Reduplication.—It is not uncommon to hear an occasional reduplication of the first and second sounds in healthy subjects. When the reduplication is marked or persists, however, there is probably some increase in blood-pressure in the systemic or pulmonary circulation, or changes in the walls of the heart, which must be carefully investigated. The suggestions and precautions offered in the previous section on Accentuation, are equally applicable in these cases.

Life Insurance for Medical Men.—Although the endowment policy has many attractions, there is still nothing superior to the ordinary life policy for the physician. This is no longer old-fashioned, but is modern, because of its elasticity and the many options granted to the insured. By paying a very little more the annual payments on this policy can be limited in number from the start; they can be reduced and finally extinguished at or about the pension age by the operation of the bonus, or single extra payments can be made at any convenient times for the same purpose. The ultimate cost of an ordinary life policy can be ascertained at the outset, as in an endowment insurance. On the other hand, it may be argued that the superiority of the endowment insurance lies in the fact that the sum insured is payable during lifetime. True, the holder of an endowment policy handles his capital if he survives, but unless he is prepared to spend it, only the income resulting from its investment is available. In this respect his position is not overwhelmingly superior to the life policy holder whose capital is securely locked up for the benefit of his dependents, and whose policy, once the premiums are extinguished, also produces an income in the shape of bonuses which can be drawn in cash. While the life policy yields less to the insured in his old age it has provided a far greater measure of protection during the most important and most hazardous years of working life, and in this way has more adequately met the wants of the professional man dependent upon his earned income. Officials of insurance offices more often than not take the line of least resistance, and if the public show a preference for an endowment policy, an endowment policy will be supplied. A life insurance contract is made up of two important parts—protection and savings, that is, accumulation of premiums. In one form of policy the protection element is emphasized; in another the savings element predominates, and it is only possible to increase the savings payable in old age by taking away from the protection benefit. Let the prospective insured carefully consider which is of greater importance—the successful accumulation of a sum of money payable at the end of a period which may or may not be survived, or immediate adequate protection against premature death, for herein lies the answer to the question, which is the most suitable policy for medical men? If responsibilities have been incurred, then the necessity of life insurance must be more pressing in the early years before savings have been accumulated or legacies inherited. The requirements of old age, always an unknown quantity, can be and often are provided for by the exercise of thrift during the later stages of life. The demands for the protection of life insurance are, on the contrary, never more urgent than when they first become manifest. In the majority of cases, therefore, the first requirement is a whole-life policy, the amount of protection under which will be from 25 to 50 per cent. more than that secured under the endowment policy. Suffice it to say that, while the endowment policy is a modern product, and in some respects very attractive, the whole-life policy has stood the test of time, and has been so improved in its form as to supply nearly all the wants which called the endowment policy into being.—*British Medical Journal*, April 6, 1912.

The Local Medical Examiner, the Medical Director, the Insurance Company, and the Public Health.—There is little doubt that the local medical examiner for an insurance company is a most important factor in the examination of applicants for insurance. Indeed, it is more or less essential to the company that the local examiner should be well qualified for the task from all points of view. M. M. Smith, Dallas, Texas, in a paper read before the Section on State Medicine and Public Hygiene, State Medical Association of Texas, at Amarillo, on May 11, 1912, discussed the matter. He pointed out that the local examiner should not only be well fitted professionally but that he should possess such firmness of character that he will report exactly what he finds, irrespective of either friendship for the applicant or the influence of the agent.

The medical directors of insurance companies are naturally presumed to be men learned in every particular line of medicine. Their duties as medical directors call for practical experience in medicine and surgery. It is the duty of the medical director to advise the insurance company whether to insure or not to insure an applicant; consequently, the responsibility resting upon him is much greater than the average person would imagine. He is supposed to have an all-seeing eye and to be possessed of more than ordinary intuition. The responsibility of the medical director, even with the assistance of competent local examiners, is very great. At times it appears that the business end of insurance companies expects too much at his hands, especially when an early entrant dies; but as a rule, he is given all the assistance and support needed from the other officials of the company. Reference is made to the great aid that insurance companies are giving in the endeavor successfully to solve many problems bearing on public health, as for instance, by the establishment, through the recommendations of their medical directors and others, of sanatoria for the care and treatment of tuberculosis. The value of tabulated statistics is emphasized and especially of those dealing with the circulatory system. Many cases have occurred which have gone a long way to show the value of taking the blood pressure in applicants or private patients over forty years of age.—*Texas State Journal of Medicine*, May, 1912.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

Sixty-third Annual Meeting, Held at Atlantic City, N. J., June 3, 4, 5, 6, and 7, 1912.

Special Report to the MEDICAL RECORD.

(Concluded from page 1167)

SECTION ON SURGERY.

Tuesday, June 4. First Day.

Afternoon Session.

The Hospital Problem.—Dr. THOMAS W. HUNTINGTON of San Francisco read this paper. He stated that the greater number of hospitals had not contributed as much to the general knowledge as their opportunities afforded; and therefore he suggested that the House of Delegates should appropriate funds to make an examination of all civil hospitals, and to report the results to the American Medical Association.

The Results of Operations, Especially Abdominal, Performed on the Principle of Anoci-Association.—Dr. GEORGE W. CRILE of Cleveland read this paper. He drew attention to the large stores of potential energy contained in the body, and to the fact that this energy was released and made manifest through associative memory or stimulations. These associations (stimuli) might be beneficial, when they would be called "bene-associations," or they might be harmful or noxious, when they would be called "noci-associations." He further stated that as surgical operations were performed to-day, they usually caused noci-associations; but that by special technique operations could be performed without the noci-associations, but with a neutral condition designated "anoci-association." Operations with special technique had been performed with remarkable results in the case of abdominal operations, of operations for Graves' disease, and of handicapped patients especially. The general operative mortality had also been reduced and the postoperative impairment had been greatly diminished.

Physiological Basis of Thoracic Operations.—Dr. JOSEPH M. FLINT of New Haven, Conn., read this paper. He spoke of typical thoracic operations that had been performed on dogs. During these operations the animals had been connected with a kymograph, which had given constant records of blood-pressure and respiration. By this means he determined the effect of positive pressure and of intratracheal insufflation with closed and open thorax. The pleura was opened under differential pressure; it was also opened without this differential pressure. The application of the rib spreader and manipulation of or traction on the lung were described. Ligation of the pulmonary lobe was made at the root. Crushing of the phrenic nerve, incision of the pericardium, the hemostasis of Sauerbach, stab wound of the heart, heart suture, packing off of lung with gauze, dissection of the vagi, and acute pneumatic dilatation of the stomach were all described.

Surgery of Chronic Infectious Diseases of the Lung.—Dr. SAMUEL ROBINSON of Boston read this paper. He spoke of the clinical and experimental investigations of problems associated with the treatment of bronchiectasis, chronic pneumonitis, and chronic abscess and tuberculosis of the lung. He stated that there was increasing evidence that the resection of lung tissue was most successful in cases in which previous shrinkage of the diseased portion had been either spontaneously or artificially produced. In cases in which this shrinkage occurred spontaneously, it resulted from hydrothorax, empyema, and pneumothorax. It might be artificially produced by rib resection, artificial nitrogen pneumothorax, or by ligature of the branches of the pulmonary artery. The speaker reported the results of operations for bronchiectasis, including rib resection, lung resection, and the production of artificial pneumothorax. He also gave the conclusions from a series of forty cases of phthisis treated by nitrogen injection. He gave the report, also, of experimental pulmonary arterial ligature and the operative results of twenty-five cases of extensive rib resection in animals. From deductions based on these clinical and experimental results, the speaker pointed out that these results tended to show that the immobilization and shrinkage theories were contributory in the solution of prevailing difficulties.

The Obliteration of Empyemic Cavities.—Dr. E. MOSER VON EBERTS of Montreal read this paper. He gave experimental evidence of the value of intrathoracic tension in the obliteration of pleural cavities. This was shown to apply in the obliteration of empyemic cavities, as well as of lung abscess cavities after closure of or in the absence of bronchial communication. The speaker also described the course of chronic unopened empyema. With reference to the tidal air test, he showed that the measurements of tidal air and complementary air were indices of the rate of obliteration. He also gave the technique of thoracotomy and of the application of negative tension dressing. He discussed the advantages of ambulatory treatment.

Abnormal Involution of the Mammary Gland.—Dr. W. L. ROBMAN of Philadelphia read this paper. He stated that the most frequent period when involution became abnormal in the mammary gland was after the fortieth year of life, though it was not rare in the decennium from thirty to forty. It was most frequent about the time of the menopause, when cancer was common. Abnormal involution was frequently bilateral, while cancer was not frequently bilateral. Abnormal involution was usually painful, but cancer was rarely so in the early stage. The speaker said that the breast varied in size, especially during menstruation, owing to the frequent association of cysts, and that discharge from the nipple was frequently present. Also that in pronounced cases of abnormal involution the superficial veins might be enlarged. He stated that abnormal involution resulted in cancer in at least 25 per cent. of all cases; from which fact it should be considered as a precancerous stage. The operation demanded was radical; its extent could be determined by frozen sections, together with careful microscopic examination of the breast after removal. Partial excision of the gland should never be practised.

Wednesday, June 5—Second Day.

An Aseptic Route to the Pituitary Body through the Orbital Vault.—Dr. L. L. MCARTHUR of Chicago considered the routes now used in getting to the pituitary body and showed that antisepsis could not be secured by using either the nasal or buccal route. By repeated experiments on the cadaver a supraorbital route was selected as one in which asepsis could be secured. In entering by this route the frontal arch, the roof of the orbit, and a corresponding part of the forehead were resected temporarily and the rest of the orbital roof was removed by subperiosteal excision. The frontal lobe was elevated by means of a spoon-shaped brain retractor and the pituitary tumor exposed by incision of the dura between the diverging optic nerves. Dr. McArthur cited three cases in which the operation by this route had been performed with gratifying aseptic condition maintained.

Aphasia and Agraphia in Some of Their Practical Surgical Relations.—Dr. C. K. MILLS of Philadelphia stated that this paper was along the line of accuracy and exactitude in the application of neurological diagnosis to surgical procedure. Anomia, he said, was of a peculiarly determinative and early positive character in growths of the midtemporal region. Partial word-deafness might be present, also inability to name the sensation felt; or there might be word, letter, or number blindness. In color aphasia the ability to match colors might be present, but inability to name the colors matched. Aphasia and agraphia, Dr. Mills explained, could give four or five different conditions in which the flap over Wernicke's zone could be opened in different positions.

Dr. EDWARD MARTIN of Philadelphia said that Dr. Mills had done great work in localization, and that he had but a few words to add to Dr. Mills' paper. He said, "The first question we ask in an operation is, 'Where shall we open?' And when the neurologist tells us to open at a certain spot, knowing that we shall find our growth there and at no other place, it is a great help." He also stated that the Murray cutting instrument fulfilled the requisites of speed and painlessness, and that there was no need to limit the size of the flap. The accurate localization of the neurologist might seem to indicate a smaller flap, but it would be of no especial advantage; and the larger flap enabled the surgeon to control hemorrhage and cut out traumatism, and there was no greater danger of complication than with the smaller flap.

Dr. Mills, in closing, cited two cases of Dr. Martin's which illustrated a point in surgery: In these two cases the tumors had been located in the agraphic region, and in one case paresis was present. The Wassermann and Noguchi tests had been used, and instead of operating, three injections of salvarsan were used in each case, effecting cures in both instances.

Preservation of Tissues and Its Application in Surgery.—Dr. ALEXIS CARREL of New York told of his experiments, conducted six years ago, in the preserving of tissues outside of the organism for the purpose of trans-

planting. The fact, he said, was known 200 years ago that tissues of mammals could be kept for several days in a humid atmosphere, and after transplanting would continue to grow. Experimental studies made by Paul Bert, Harrison, and Laewenhaeck have thrown light on the subject. Dr. Carrel stated that he had extirpated tissue on the 17th day of January and four months later the cells were still reproducing. The only way to determine whether a piece of tissue kept in cold storage was still alive was to place it again under its ordinary condition and see if it manifested life. Pieces put in cold storage for two, four, or six weeks were afterward transplanted into the bodies of dogs; for instance, a piece of the skin of a black dog was extirpated, kept in cold storage, and then transplanted into the body of a white dog. It contained latent life and soon became incorporated into the tissue of the white dog. Blood-vessels, skin, periosteum, spleen, heart, and glands had been preserved in this way; and skin, bone, and cartilage have been kept in large quantities by putting them in tubes with vaseline and placing the tubes in cold storage.

Dr. J. S. Davis of Baltimore said he had been able to preserve skin, bone, tendon, and cartilage by simple methods (placing in an ordinary refrigerator), and successfully transplanted after days and even weeks. This, he said, brought up the feasibility of iso- or heterografts. The opinion had been held that no tissue preserved longer than three weeks could be transplanted successfully, with which Dr. Davis did not agree. On the other hand, the transplantation of a full joint had been reported with excellent results. Dr. Davis did not believe that a mass of tissue as large as the knee joint could be transplanted without the blood and nerve supply being taken care of. Isografts, if obtained and transplanted with proper technique, should give satisfactory results. In the treatment of deformities and the correction of defects, especially of the face, transplantation of fat, cartilage, or bone could be successfully performed and with far better results than the insertion of foreign materials. Dr. Davis cited a case in which a boy of ten years, who through an accident had the lower fourth of the fibula destroyed, had bone transplanted with remarkable results. The lower part of the leg was covered with scar tissue which was opened so as to expose the upper end of the fibula, which was split longitudinally so as to expose one-third of the cartilage and part of the shaft. Bone graft was made, and although transplanted in scar tissue, the epiphyseal cartilage held intact and the bone was still growing. This result was very encouraging, to say the least.

Dr. Carrel, concluding, said that the work was still in the experimental stage. It was known what could be done in skin graft, and more would be known within the next few months about osteoplastic operations.

Cardiospasm.—Dr. H. S. Plummer of Rochester, Minn., stated that out of forty cases of cardiospasm under his observation in 1898 thirty-eight had dilatation of the esophagus. In a group of 136 cases there was a group with diffuse dilatation of the esophagus without anatomical stenosis; no gastric lesions. In another group with cardiospasm there were two with ulcer, two with syphilis, five with carcinoma. Almost without exception these cases were of a neurotic type, and many were hysterical. But diffuse dilatation had not followed cardiospasm.

Dr. Jesse Meyer of St. Louis stated that the esophagoscope and *x*-ray showed no possible anatomic stenosis, and he believed that the cardiospasm in these cases was a primary disturbance and the dilatation a secondary condition. The fact that these patients were relieved through complete relief of the spasm seemed to him to speak for the truth of this theory. The symptoms of dilatation manifested by the patient were the last to occur, and not the first. The first were those of obstruction. The question which arose, said Dr. Meyer, was: "What constitutes a cure?" Possibly in most of them the answer would be: "To bring about clinical or symptomic cure." But in most cases he doubted whether they were ever cured from an anatomical standpoint; that is, sacculation persisted. Dr. Meyer said he had had about fourteen of these cases, and eight of them were under more or less constant observation for periods ranging from one to four years. Three that had been under observation for four years he had seen only a few days previous to leaving St. Louis. He was able to demonstrate in all these cases by means of the *x*-ray that the sacculation remained practically the same size after the patient had been completely relieved of the obstructive symptoms for four years. This was demonstrated by an intragastric thin rubber bag, introduced into the esophagus, and bismuth with sour milk—he could introduce the same amount as before. Dr. Meyer had used, he said, the method of stretching or paralyzing the pericardium, using the size of the dilator and the manifestations of the patient as a guide.

Dr. Einhorn of New York said he had tried stretching at various times for years and finally devised an instrument that could be bent in the esophagus and it proved to be a success. After dilatation his patients could eat as well as anybody. Sometimes he could not reach the cardium.

Dr. Bassler of New York thought that cardiospasm might be a reflex expression of an organic disease of the esophagus, with ulcer at the lower end, or organic disease of the stomach, or ulcer nearby, just as pylorospasm might be the reflex expression of gallstone disease or of chronic appendicitis. Dr. Bassler said that the point he wished to make was: "Be sure no local pathology exists." He stated further that the *x*-ray helped very little until marked stenosis existed in the malignant disease. He said that, after general use of various forms of instruments for dilating, he believed in "forcible, complete dilatation of the cardium—its paralysis, possibly, in suitable cases." This Dr. Bassler considered a satisfaction to both the patient and the doctor.

Dr. Plummer, in closing, stated that most cases were due to spasm at the cardium, yet that it was not demonstrated; and that there was much evidence to contradict this theory. As to methods of dilating, he said we had to rely either on the pressure used or the size of the dilator. He had tried to use various sized dilators and opened them as a guide. He dilated each dilator to full size. Only one skilled in the use of the instrument should make a diagnosis by dilatation in a person over 35 years of age unless the history was of over two years' duration.

Tumors of the Small Intestine.—Dr. W. D. Haggard of Nashville presented this paper, in which he stated that tumors occurred in the small intestine only one-fourteenth as often as in the large intestine; also that cancer of the duodenum was rare, there having been only three in 1,000 cases of the small intestine. The average age at which tumors occurred was 43.9 10 years. Sarcoma occurred more often high in the intestinal tract; but carcinoma was more prone to occur near the cecum; and twice as often in men as in women. Sarcoma generally occurred under fifteen years of age and carcinoma was to be suspected in patients over forty. It was generally fatal, Dr. Haggard said, in the first nine months; metastasis resulted in 75 per cent. of the cases. Of seventy-seven cases of cancer in the intestines operated on between 1890 and 1900 less than 20 per cent. lived longer than six months. Other cases lived from one to nine years. Ileointussusception might occur. Report was made of a large sarcoma of the ileum in a boy of nine. Resection of the small intestine (forty-two inches taken out) resulted in recovery and freedom from recurrence at the end of two years.

Experimental Intestinal Obstruction.—Dr. J. A. Hartwell and Dr. J. P. Hoguet of New York presented this paper. Dr. Hartwell said they had arrived at the cause of death in uncomplicated clinical obstruction through a process of elimination. First, bacteriemia; second, loss of nervous control; and third, the so-called intoxication theory, were considered. He said they had thrown out the nervous cause, with reasons for considering it valueless, and had confined themselves to the study of bacteriology and toxemia. Along this line he stated that stagnated stomach contents were very poisonous if they obtained entrance into the intestinal tract, and death might result from absorption of these substances when the normal toughness of the mucosa had been destroyed. But their experiments with dogs had convinced them that the principal cause of death, without strangulation, was the extreme dehydration of tissues caused by the vomitus. Hence, the great value of injections of normal saline solution subcutaneously, often nearly one-tenth of the body weight per diem. These injections had a diuretic action on the kidneys and diminished dehydration of the tissues, enabling the dogs to live three weeks and longer with clamp applied to the lower duodenum. So, Dr. Hartwell said, they had abandoned their previous theory of poisonous substances entering the mucosa. The vomitus was a diluted mixture of bile and other secretions. Ordinarily dogs with complete obstruction in the lower duodenum lived but two or three days, vomiting in large quantities. If a quantity of saline solution slightly in excess of the vomitus was injected the dogs promptly returned to a state indicating simple starvation, living three weeks or more. The important element, therefore, was loss of water due to vomiting. The symptoms of toxemia were simply due to disintegration of tissues following this water loss.

Dr. ANGUS MCLEAN, of Detroit spoke of his experience with ileus and paralysis of the intestines following operation. He said it was not frequent, occurring in one case out of a thousand. Death was not due to toxemia or bacteriemia. The cause of death was generally loss of fluid, of blood, and of lymph. Ileus in the human being, he said, in which there was a pouring out of vomitus, had an effect on the sympathetic nervous system. What it was due to would be hard to say, but wherever there was a pouring out in such quantity Dr. McLean considered that enterostomy was the thing to do. These patients, he said, looked as though bleeding to death. He stated that he would do this operation with local anesthesia because in his experience almost all cases of ileus were confined to the small intestine. He thought if enterostomy were done promptly it would save about one-half of the unfortunates who now go down to destruction.

Dr. GRAY of Jersey City considered that death sometimes was due to shock and sometimes to toxemia not always to loss of fluid.

Dr. HARTWELL, concluding, said that their object was to eliminate certain points advanced as the cause of death in low obstruction, uncomplicated by strangulation of the intestinal wall, and that bacteriemia was excluded because there was no bacterial infection of the blood. Also, absorption of toxins in the pancreas, duodenum, etc., was excluded because after the death of the dogs no infection was found in these parts.

The Relation of the Duodenum to Surgery of the Stomach.—Dr. J. C. BLOODGOOD of Baltimore presented this paper, in which he stated that dilatation of the duodenum could be divided into three groups. In the first two the obstruction was at the root of the mesentery; in the third group the obstruction was both at the pylorus and at the root of the mesentery, and the contents of the duodenum could not be discharged into the stomach, and in this group, if not relieved immediately, there was physiological death, which was demonstrated by experimental work on animals. In practice the knowledge of these possibilities was important; acute dilatation of the duodenum, Dr. Bloodgood stated, occurred as a complication in the convalescence from certain infectious diseases, such as typhoid fever and pneumonia; also a not infrequent complication after operation. If not relieved it could produce death. He said he had seen death result from acute dilatation of the duodenum, even from secondary dilatation of the stomach after typhoid fever, pneumonia, or acute inflammatory rheumatism; and he thought these deaths could have been prevented by the use of the stomach tube. In the first two groups, acute and chronic, in which the obstruction was at the root of the mesentery, there might be hypersecretion of the stomach, also fluid due to gastric secretion. The important clinical fact to remember, he said, in the convalescence from operations, etc., was the possibility of this complication, and also the fact that vomiting was not always the initial symptom; but where a patient with a good pulse, convalescing from an infectious disease or from an operation, suddenly developed dilatation, examination should be made and a stomach tube passed. The relief would be immediate. Surgeons soon learned in what type to expect dilatation of the duodenum or stomach, and in those cases should pass a stomach tube within the first ten or twelve days as a routine. In trained hands the stomach tube could be passed, said Dr. Bloodgood, with very little discomfort to the patient, and in this way the surgeon could find the complication earlier and could shorten the period of the complication. If cases in which the stomach tube would not relieve, the stomach should be washed out and report made every twelve hours. To differentiate the group in which operative intervention was necessary Dr. Bloodgood said it was his experience that obstruction of the duodenum with secondary dilatation of the stomach was associated with high intestinal obstruction, and although the patient was kept comfortable for a day or two it was not relieved because the obstruction was further down. This was determined sometimes by washing out of the stomach and the administration of castor oil. The stomach tube, he said, was not used enough in medicine or surgery today. Resection of the colon, according to Dr. Bloodgood, was life-saving in the second group of obstructions; and the use of a rubber tube draining the duodenum oral to the point of obstruction was life-saving in the third group.

Dr. DRAPER of Rochester said it could be called a law that dilatation did not occur in any organ except at the point of obstruction. This was certainly true in animals, and he believed it to be true also in the human being. He believed that dilatation remote from the point of obstruction was due to physiological and chemical disturbance.

Gastroptosis and Its Surgical Treatment.—Dr. T. ROVSING of Copenhagen read an exhaustive paper on this disease—its pathology, signification and its surgical treatment. He said he had chosen a subject on which American and Danish surgeons had worked for many years with the same object in view. The symptoms of gastroptosis and coloptosis, he said, were constipation, first and most constant; cardialgia, vomitings, emaciation and a host of nervous symptoms, which were added little by little. He regarded these symptoms as the result of the ptosis, which he established by over 400 cases; others, however, regarded the ptosis as an irrelevant symptom, the diversity of opinion resting on the difference in the conceptions of the pathogeny of enteroptosis. Of the two theories held, the one by Glenard included a mysterious liver disease; and Stiller pronounced enteroptosis a feminine disease par excellence. As to symptomatology, Dr. Rovsing spoke of the wearing of corsets the first or second year after the commencement of puberty, with persistent constipation, weariness, headache, loathing of food, and later, cardialgia. The pathogenesis, in his opinion, was the lacing of the young girl's gracile, easily relaxing and plastic body in corsets, involving the deformation and straightening of the lower thoracic aperture, with shifting of sub-diaphragmatic organs. The pressure, he said, acted on the massive liver, and this again served to dislocate the organs below. Hertz has shown how the corset caused nephroptosis by utilizing the liver as a weight to tilt the right kidney out of its niche. That is why the majority of floating kidneys were on the right side; if the liver was pushed down, the stomach followed suit, and this caused pains on the left side of the epigastrium. Virginal ptosis, he said, was frequently mistaken in diagnosis for—first, ulcus ventriculi; second, colitis; third, nervous disease of the stomach or hysteria; and, more rarely, confused with cancer. Sometimes, it led to "hour-glass stomach." The solution of the long-disputed question of the pathogenesis of the "hour-glass stomach" was to be sought, Dr. Rovsing declared, in the fixation of the creases of the subsided stomach caused by corsets and laces. "It is due simply to adhesions which form themselves with folds of the serosa surfaces, which rest one upon the other." Maternal gastrocoloptosis: This, in women whose abdominal wall, consequent to past pregnancies and confinements, had become distended and relaxed. Everything, in this condition, depended upon the strength of the ligaments, as to whether gastroptosis would result. This, he said, differed from virginal gastroptosis in that the stomachic attacks, cardialgia and vomiting were far weaker, and often, indeed, absent, as the stomach was not jammed or liable to be folded and bent as in the virginal abdomen; so they didn't suffer the pains and nervous sensations which characterized the others. With maternal ptosis, the constipation and all its consequences were the dominant feature. The effect of autointoxication, in time, manifested itself; feeling of fatigue across the loins, constant pain in the left side of the epigastrium. Symptoms improved or vanished on confinement to bed. Treatment: Finally, Dr. Rovsing said, the question was whether the case would lend itself to bandage treatment, or whether it demanded operative procedure. Maternal ptosis might be helped, virginal ptosis was seldom helped by bandaging. The virginal abdominal wall was already strong and elastic, and too strong a pressure was needed to overcome its resistance, and was unendurable to the patient. Even the powerful belts, he said, which he recommended, were impotent with most virginal ptosis, as also with those particularly severe cases of maternal ptosis where the colon transversum had subsided right down into the small bowels and was therefore beyond the range of the belt, being squeezed rather than raised by it. The only help in all those cases, then, was from operative treatment. First, direct gastropexy; or, second, indirect operations which endeavored to raise the stomach either by basting together and shortening the omentum minus, or from below by stitching the omentum majus firmly to the anterior abdominal wall, which raised the stomach and colon. Direct gastropexy, in Dr. Rovsing's experience, had been the safest and best method, notwithstanding the theoretical attraction of the indirect method. Since 1897, when he performed this operation for the first time, until January 1, 1911, Dr. Rovsing had done 163 gastropexies; and information was received from Scandinavian surgeons of 93 operations performed in accordance with his method, making 256 operations, which had been traced and the condition of the patients since operation carefully examined. The mortality with gastropexy proper was only three in the 256 cases, or 1.17 per cent. Of the other eight who died two succumbed to tuberculosis of the lungs, four to bronchopneumonia, and two to ileus. Seventy-six out of the 163 cases Dr. Rovsing operated on were freed of their constipa-

to n of many years' standing, which had proved insensible to any other treatment. The table showing statistics of cases operated on showed that of 256 cases operated on 162, or 63.2 per cent. were completely cured, constipation and all symptoms disappearing; 33, or 12.8 per cent., experienced great improvement; 18, or 7 per cent., were improved; 32, or 12.8 per cent., were slightly improved; 11 died three from the operation, eight from other causes (given above). What still had great influence, according to Dr. Rovsing, on the results of gastropexy, was ptosis of the other abdominal organs, above all the liver and kidneys, which was so frequently present.

The liver subsided and lay across the stomach and its adhesion might not only cause pain, but ileus of the stomach, as in the case of one death reported by Hertel. In no less than 68 of Dr. Rovsing's cases he had to perform hepatopexy simultaneously with gastropexy. His technique, after comparing with that of Duret of Lille, was to make an incision through the skin and muscles to the umbilicus from the processus ensiformis, but he incised the peritoneum only in the lowest half of the wound, and fixed the lesser curvature of the stomach to the untouched part of the peritoneum parietale with three strong threads (Duret used but one) in and out of the stomach, leaving the pars pylorica free. The upper thread was drawn close under the lesser curvature and the two others with an interval of about two centimeters, were placed in such a way that the greater curvature and rather a large piece of the wall above this were left free. With a fine needle the serosa coating between the threads was then clarified in all directions, also the surface of the peritoneum parietale, and eventually that part of the underside of the liver to which he wished the stomach to adhere. The ends of silk were led out through the entire thickness of abdominal wall, the peritoneum joined with catgut, and fascia and skin with aluminum bronze. The silk sutures were tied over a glass plate a little larger than the stomach surface, so the stomach lay flat and close to the abdominal wall without shrinkage or folding. The threads were left four or five weeks, and then easily removed. Dr. Rovsing went on to say that death, in extirpation of the colon, was extremely great in comparison with that resulting from gastropexy. Gastrotomy, he said, was never indicated, as it did not strike at the cause of these cases, which lay in the large intestine.

The Functions of the Large Intestine.—Dr. W. B. Cannon of Boston read this paper, in which he said that many diseases of the blood arose from bacterial putrefaction in the colon. The main functions of the colon, he said, were those of storage and periodic riddance of waste, both mechanical motions. Absorption of water caused the consistency of waste to be more dense, and the contents of the transverse colon were as stiff as the discharge from the rectum. The movements of the proximal colon in the cat were characterized as antiperistaltic, backward toward the cecum, or antistaltic. The antistaltic waves rarely ran for a long time (only four or five minutes) then ceasing. They started at the nearest ring of a constriction; an additional feature being that the condition of their appearance was the pushing of a further mass of material from the small intestine into the colon, and distention of the constriction ring, causing it to pulsate, sending off a wave. Elliott and Barclay Smith made a study of this action in different classes of animals; they stated that in herbivorous animals the sacculation of the proximal colon was associated with kneading movements, each sacculus becoming, in time, the scene of waving oscillations. As to antistalsis in man, the human colon was sacculated as in the herbivorous animals rather than as in the carnivorous. Inferential evidence of antistalsis in the human proximal colon had been drawn from cases of cecal fistula, in which rectal enemas traversed the entire length of the colon and escaped at this point. Antistalsis, in the sense of possible waves, however, had not yet been proven in man, notwithstanding the above evidence; but Dr. Cannon said he was inclined to think it could occur. The tonic ring of prime importance in starting antistalsis was in the colon; the first portion of the large colon might therefore be regarded as a portion in which partial digestion might still be going on. The proximal colon contained normally, he said, a firm mass of material, which was pushed outward by a wave of antistalsis, of which there were in man, two methods: First, a wave onward, by sudden push; second, a small piece the size of a thumb separated from the mass and pushed slowly to and around the splenic flexure, and then down the descending colon. In man the changes during defecation had been studied by the *x*-ray method, and the entire portion of the large colon was found to evacuate at a single act, and free itself through an onward-pushing wave of the waste material accumulating in the distal colon, the pelvic colon rising and elevating the angle. Intraabdominal pressure was caused by the natural movements, the near-relation of the large intestine causing it to receive a tonic or motor impulse from the motor nerves.

Dilatation of the Large Bowel.—Dr. A. D. Bevan of Chicago presented this communication, in which he showed that chronic constipation produced dilatation and edema of the colon, especially of the cecum; colitis from fetal stagnation; pericolitis from adhesions; obstructive symptoms due to these adhesions with resulting colic. Lane's surgical treatment, as removal of the colon, could not be too severely condemned. Lane had, he said, devised an admirable technique for the removal of the colon, but he removed for constipation alone. Cases of movable cecum, with dilatation, he treated surgically by anchoring the cecum. The medical variety of chronic constipation, lacking the severe symptoms of colic, Dr. Bevan stated, was seen frequently, and was best treated naturally by exercise, massage, proper diet, cathartics, and enemas. Those cases of inveterate constipation were usually found in women, and, as a rule, were badly managed and could often be cured by simple means of exercise, massage, and diet. As to the cecum, bismuth in connection with the *x*-ray showed the position and condition of the cecum. If not evacuated in twenty-four hours, requiring thirty-six hours or more, it was said to be pathological. Also, if not in its normal position it was sewed or anchored into place. In dilatation of the cecum or the pouchy, low-lying cecum, the operation should be purely exploratory. After this operation, and the physician had made a definite diagnosis, then the condition could be cured. Surgically following the sequence of events Dr. Bevan said there were constipation, colitis, pericolitis, adhesions, obstructions. These were cases in which radical surgical measures were not only warranted, but demanded, and often curative. Where the adhesions were at the cecum or appendix the condition was generally mistaken for appendicitis, but a thorough understanding of the subject made diagnosis easy. Pericolitis, with obstruction, was best dealt with, Dr. Bevan declared, by dividing the adhesions and so-called membrane by colostomy or anastomosis between the ileum and the sigmoid, rarely by resection of the colon or artificial anus. Operations should not be solely based on the *x*-ray indication, for some of the bismuth lingered a little longer in the cecum than, in the opinion of the operator, it should. He said that surgeons should recognize and investigate with great care the large group of pericolitis cases which did exist; and properly interpret other symptoms due to pathological conditions which could be relieved by proper surgical methods.

Adhesions of the Colon.—Dr. M. L. Harris of Chicago read this paper, dividing the groups as, first, adhesions about the appendix; second, adhesions about the colon; and, third, adhesions about the mouth of the cecum. Incision, he said, should be large enough. In many cases the trouble was in the cecum or ascending colon instead of the appendix, adhesions being on the posterior surface of the cecum and the posterior wall of the ascending colon. Agglutination, he stated, was the cause of some of the adhesions. Membranous pericolitis, or Jackson's membrane, was characterized, Dr. Harris said, by pain and tenderness. Pericolitis occurred in young women, mostly, about 25 years of age. The colon bacillus found in cases of appendicitis played a minor part in this disease instead of being the chief offender as formerly thought. Further investigation was needed, but sufficient was known to warrant the assertion that many of these troubles on the right side of the abdomen were to be found in the flora of this tract.

Colonic Intoxication.—Dr. J. F. Binnie of Kansas City, Mo., considered the symptoms of this condition, which he said were various in different people. Lack of exercise, he said, produced the same symptoms as mild colonic intoxication. He cited the case of a man who continued from the time he left England until he reached Mexico (making the trip before the time of swift-sailing ocean greyhounds) without an evacuation. Such a condition would produce colonic intoxication, or any lack of balance between absorption and purification or elimination. An important general symptom is the staining of certain polymorphonuclear blood-corpuscles by Wright's stain, as observed by Hoxie. In case of inflammation, fever and localized rigidity of the muscles would be symptoms that might associate these inflammatory lesions with intoxication.

Diverticula of the Gastrointestinal Tract and Their Surgical Importance.—Dr. C. H. Mayo of Rochester, Minn., read this communication, in which he stated that diverticula, which might be true or false, congenital or acquired, were often present—the acquired type affecting the gastrointestinal tract. In the esophagus they were

common, he said, and were often overlooked. Rare in the lower third of the esophagus, in which they appeared on investigation only at post-mortem. Operation in two stages, Dr. Mayo said, was preferred for large sacs, and diverticula in the stomach appeared mostly at the apex. From 1902 until 1912, out of thirteen cases coming under Dr. Mayo's observation, ten were operated on and cured. Diverticulum of the intestine, he said, was now recognized as the occasional cause of serious disability and danger, probably a certain number of cancers of the large intestine developing from it. Diverticula were often multiple, something over 400 having been found in one individual. Dr. Mayo further stated that they were found twice as often in men as in women. Clinical symptoms appeared in 60 per cent. of cases, but usually the greater number of diverticula gave no symptoms during life. The appendix might have a diverticulum of its own. Search of the mucosa with a probe, he said, would show diverticula in tumors in the transverse colon. In the large intestine they were similar to hernia, and were due to pressure. Many cases, he said, originated in openings dilated by the passage of vessels into the bowel; congenital local defect in early life might give rise to this result. Diverticulum occurred, according to Dr. Mayo's statistics, one-seventh as often as cancer of the sigmoid, and sometimes cancer was grafted on the diverticulum. Therefore, it should be looked upon as a potent source of cancer.

The Rôle of Movable Kidney in Vascular and Intestinal Stasis.—Dr. K. A. J. MACKENZIE of Portland, Oregon, read this paper, in which he stated it was necessary for the colon to pass in front of and across the right kidney, allowing the extension of the right kidney over the peritoneum, and afforded too great movability to that kidney. Frequent ptosis of the kidney, he said, resulted from trauma. Several organs might be displaced, and ptosis begin below or above; ptosis of the colon might be caused by displacement of the kidney. The kidney, he said, was more frequently the organ of primary displacement than was generally supposed. A feature of ptosis of the kidney was augmented size and weight, which factors Dr. Mackenzie thought should receive consideration. A clinical fact, in hydronephrosis, especially in the female, was that its effect was to cause delay in the transmission of urine from the kidney, thereby augmenting the size and weight of that organ. Pressure on the intrinsic blood supply, he said, doubtless contributed an important element to the causes of ptosis. The progressive drag of the kidney on its own vascular supply, obliquely downward from above on the aorta, and the vena cava, the position of the pedicle being obliquely downward and forward—these caused progressive ptosis of the viscera, and stasis. Vascular disorders, according to Dr. Mackenzie, were further induced by displacement of the left kidney, pending downward and forward, those ptoses bringing about elongation and increase of weight and various associated disorders. Elongation of the intestines was due, he said, to continuous traction upon their ligaments, and their increased weight in part engendered by hypertrophy. Motility of the intestines was not seriously impaired, nor were catarrhal conditions present, which indicated enormous peristaltic activity. The causes of intestinal stasis, Dr. Mackenzie stated, on inspection of the viscera, swerved toward splenic ptosis. Congestion and edema of the mucosa presented reaction of function and blood supply, and vascular stasis brought about intestinal stasis rather than intrinsic intestinal disorder, as generally thought and too often. Operative intervention for the relief of splenoptosis was justified, declared Dr. Mackenzie, if it relieved the condition and did not leave in its wake a condition worse than the original. The stomach should not be entered upward when the other organs were down. Timely operation, he said, would often relieve and prevent extension of the splenoptosis from one viscus to others.

Thursday, June 6—Third Day

Election of Officers.—The officers elected for the ensuing year were as follows: Dr. A. F. Jonas of Omaha, *Chairman;* Dr. W. L. Cousins of Portland, Oregon, *Vice-Chairman;* Dr. Dean Lewis of Chicago, *Secretary;* Dr. W. D. Haggard of Nashville, *Orator on Surgery;* Dr. Le Moyne Wills of Los Angeles, *Delegate to the House.*

Further Experimental and Clinical Work Bearing on the Value of Lane's Bone Plate.—Dr. WILLARD BARTLETT of St. Louis reported a series of experiments on dogs in the use of the Lane plate, especially in infected bone tissue. It took a pressure of but 41 pounds to dislodge the screw from dog bone. The fibula might remain intact and operate in very much the same manner as when the splint was used in the human body. Three series of four dogs were experimented on, with femur fractured and plated, the leg being amputated after death. After removal of the soft parts segments of bones covered by plate were dissected and screws unscrewed. In twelve of thirteen cases plates remained fastened to both fragments, in spite of infection and of the dogs being allowed to run at large. Both fragments were extremely tight. In five plates one or more screws were loose; in one plate, four screws; in three plates, three screws, and in one plate one screw was missing. A Lane plate put on a suppurating wound in the human body in four cases of compound fracture resulted as follows: The first patient recovered so he could walk without difficulty. The second patient had solid union and returned to work. The third case recovered in three months, as did the fourth case, with a low fracture of the tibia. Often anchorage could not be found on cortex. Patients developed no serious reaction, due partly, Dr. Bartlett thought, to the fact that the wounds were flooded with iodine after the screws were applied.

Operative Treatment of Fractures and Dislocations.—Dr. F. J. COTTON of Boston read this paper, stating that in fractures into or near joints the restoration of joint function came foremost, the esthetic object being secondary. Non-union in joints came, he said, from failure of contact, causing lack of formation of clot and callus. Impacted fractures of the anatomical neck were best left alone, bacterial invasion pulling the lower fragment in. The proper thing to do in the great majority of cases was to cut down and reduce and then suture suitably together. Fractures close above the ankle, he said, must be operated on and plated. In fractures involving the joint there was no excuse for plating, correction of the joint as a whole was indicated. Dr. Cotton said he believed thoroughly in operation on joint fractures and said it had been part of his work for eight years past. But surgeons should not keep on with open work, because that had not kept up with other methods. If they could not reduce sufficiently otherwise then it was well to operate and reduce. In joint fractures more than shaft fractures the use of foreign materials was undesirable.

Operative Treatment of Fractures and Dislocations.—Dr. WILLIAM DARRACH of New York presented this communication, in which he referred to the convention, of three years previous, when Dr. Lane said all fractures should be treated by the open method, and declared that the courts would compel surgeons to use this method. Dr. Darrach said he did not agree with Dr. Lane that all or nearly all fractures should be treated by the open method. In the Roosevelt Hospital, he said, they considered that most fractures should be treated by the closed method, but that in certain cases the open method might be employed to advantage. He said there were three classes of these: A, open reduction of recent cases; B, open reduction of old cases; C, cases in which they did not treat to reduce but to correct the deformity resulting from fracture. In the first class, if a satisfactory reduction could not be obtained and maintained by the closed method, the fracture or dislocation should be operated on—no contraindication being present. In transverse fracture of the femur, where the edges engaged, and the patient had a useful and strong limb, why should an operation be performed? Satisfactory reduction might be defined as where increase in the range and degree of deformity by the closed method did not warrant the risk of an operation. "When to operate," Dr. Darrach said, could be answered by saying, "After the body has got its breath; after bleeding has stopped, and good, healthy reaction has set in." Too early operation should be avoided, and the body should be spared a second trauma too soon. Also, too light operations should be avoided. Somewhere between the fifth and fifteenth day, he stated, was the best time to operate; and unless a man was able and willing to carry out the exaggerated technique which Dr. Lane advised, he had no right to operate on a fracture. That, he said, was the only way to obviate the deformities that seemed to hover around bone work. No appliance should be left near the bone, if possible to avoid it; in 57 fractures treated by the open method, no appliance was used in 21 of the cases. Plates were used in only 28 per cent., or 16 fractures. Prompt union, Dr. Darrach declared, came a little more slowly in fractures that had been opened. When plates were used, there should be no strain on them as even a slight pull, if continued, would loosen the screws. In old cases a non-reducing operation should be done, if possible. The technique should be carefully followed out, because with even the open method the operations were not always successful.

The Surgery of Bones and Joints.—Dr. L. W. ELY of Denver contributed this paper, in which he drew attention to the fact that in comparison with other branches

of surgery, the knowledge of diseases of bones and joints and fractures had lagged behind, in pathology, symptomatology, and diagnosis. This, he said, was due to reliance on clinical experience. "We owe little," said Dr. Ely, "to clinical experience; too little to rely upon it." It was hard, he further declared, to overestimate the importance of correct work on bones and joints, for if a joint was dissected unnecessarily, or a limb amputated, the surgeon partially destroyed the patient's usefulness for life. Laboratory examination of 100 specimens of bones and joints, together with histories of cases, gave valuable information, and was thorough because based on careful pathological work. Six tissues were to be studied in diseases of bones and joints: bone tissue proper, marrow, periosteum, cartilage, synovia, and ligament. Bone tissue, he said, was the same wherever found, and varied only in arrangement and amount. It was not, itself, subject to inflammation, but simply responded to the action of its contained marrow. This passive rôle of the bone-tissue was recognized, Dr. Ely said, except at the ends. Then, studying the bone itself, carcinoma often started where the epithelium changed. He said there were two kinds of marrow generally found in bone. If it was recognized that marrow was the essential factor in all bone disease, and it was borne in mind where each kind of marrow was found, the diseases of bone would be recognized. Rapid growth predisposing to infection of bone should be put aside; and study should be made of the marrow at various periods of life and in its vulnerability to infection. Tuberculosis, he said, affected the synovia and lymphatic marrow. He stated that there had been much discussion on the subject of joint cartilage; and that he would not attempt to go into details, but that his personal opinion was that the cartilage was not subject to inflammation or directly to disease; that its role was always a passive one.

The Treatment of Fractures Near to or into Joints.—As Dr. H. M. Sherman of San Francisco was not present, Dr. John B. Murphy of Chicago took up the discussion of this subject, showing a series of photographs taken of cases on which he had operated. He said that 85 to 90 per cent. of the bad results following Colles' fracture were due to defective reduction. More awful even than Colles' fracture was the fracture in the neighborhood of the elbow joint.

An Operation for Pott's Disease of the Spine.—Dr. R. A. Hibbs of New York read this paper, in which he spoke of the value of casts, etc., limiting motion in cases of Pott's disease; but he said they did not secure absolute immobilization of the diseased joints of the vertebræ, and left much still to be desired. In almost every case, he said, the deformity increased to a greater or less extent. Then it was sought to devise a method that would absolutely eliminate motion of the diseased vertebræ, and give promise of radical cure of the disease and removal of the deformity. He stated that the posterior aspects of the vertebræ were left free for fusion of the spinous processes and laminæ, as the disease affected the bodies of the vertebræ alone. Therefore, he had performed an operation in which incision was made over the kyphosis through skin, supraspinous ligament, and periosteum to the tips of the spinous processes. The periosteum was split over the upper and lower border of the spinous processes and laminæ and stripped from them to the base of the transverse processes. Then the spinous processes were transplanted, after partial fracture, to bridge the gap between the vertebræ. The periosteum and split supraspinous ligament were sutured together in the middle, and the diseased vertebræ were anchored above and below to the healthy ones, so that all the structures concerned were preserved in one bone growth, making certain the fusion of the spinous processes and the laminæ of the vertebræ operated on, and eliminating motion between them, insuring rapid cure. Photographs of cases operated on were shown, the operations being successful in that cure of the disease was effected and the deformities greatly reduced.

Afternoon Session.

JOINT MEETING WITH THE SECTION ON MEDICINE

The Internal Secretion of the Pancreas.—Dr. J. H. Pratt of Boston stated that the attempts to obtain an internal secretion from the pancreas had all failed. Experiments spoke strongly against the neurogenic theory. By depancreating the dog, an effect was observed on the sympathetic nervous system. Chemical relation existed, he said, between the thyroid gland and the sexual functions. In his experiments, Dr. Pratt stated that the theory that the pancreas furnished an internal secretion seemed to be supported by cases in which the organ was partially or totally extirpated, also by cases in which extract of pancreas was injected subcutaneously and into the spleen, or in which pancreatic preparation were fed.

The Anatomical and Physiological Effects of Iodine on the Thyroid of Exophthalmic Goiter.—Dr. David Marine of Cleveland presented this paper, in which he stated that he had examined 137 operative and post-mortem specimens of thyroid, and the symptom-complex, as at present diagnosed, was not constant in changes in the thyroid body; the opinion was again returning that the symptom-complex might be present in a gland actively hyperplastic, and in glands consisting of tumors either benign or malignant, or which are atrophied. Ordinary goiters were of long standing and reported in the involution stage. Following the administration of iodine in goiter, there was storage of iodine in the thyroid. It was impossible, he said, to ascertain whether iodine induced the same effects on a hyperplasia of exophthalmic goiter after it induced a reduction in size of the thyroid gland following its use. Out of 160 thyroids, in those known to receive iodine there was definite storage of iodine within the gland and involution of active hyperplasia. Therefore, one could certainly conclude, Dr. Marine said, that physiologically as well as anatomically, there was as yet no known attribute of the thyroid in exophthalmic goiter that might not be associated with the thyroid in any other condition.

The Functional Activities of the Adrenals.—Dr. S. J. Meltzer of New York read this paper, in which he stated that little was known of these bodies; some hundred years ago they were thought to be the organ for secreting black bile. In 1893 Oliver told of the discovery of adrenalin, which, Dr. Meltzer said, should be named adrenin. He further stated that we did not know yet what the adrenals were for. Animals deprived of the adrenals died in a period varying from 12 hours to four days.

Function of the Parathyroid Glands.—Dr. W. G. McCallum of New York presented this communication, in which he said the parathyroid glands lay one on each side of the thyroid gland, and were supplied by the thyroid blood-vessels; ordinarily they were soft, flat, brownish structures, he stated, not difficult to recognize with the naked eye, though they seem but accessory nodules to the thyroid. They were twice discovered; their lodgment near the thyroid gland, and the name parathyroid glands had burdened them with the thought that they were part of the thyroid gland, whereas they were quite as separate, said Dr. McCallum, as the adrenals or the thyroids, or any other organs of internal secretion. Study of them was carried out by extirpation and it was learned that symptoms of atony might arise from other causes than the removal of the parathyroid glands. After the parathyroids were removed from dogs, nothing was evident for the first day or two; but hyperexcitability of the nerves appeared, and increased to a climax, especially striking in the motor nerves, but also seen in the sympathetic and sensory. As the climax was reached there were twitchings of the muscles, tremors of the tongue, etc., until the muscles were thrown into a rigid condition and convulsions. Fever was produced by the violent muscular contraction. The animal might die, or recover through sheer fatigue, but die later from a sort of poisoning in addition to striking muscular symptoms.

Friday, June 7—Fourth Day.

Thrombophlebitis of the Left Leg.—Dr. H. D. Kistler of Butte, Montana, spoke of the etiology of this condition, stating that the main points to be considered were: changes in the blood, changes in the vessel walls, and retardation or stoppage of the blood current. Thrombophlebitis occurred more frequently in the left leg than in all other parts of the body combined, because, he said, of the peculiar relations of veins and arteries on that side, the left external iliac vein at its termination being surrounded by an elastic arterial constricting circle which might very easily arrest the circulation in it.

New Method of Suturing Blood-Vessels.—Dr. J. S. Horsley of Richmond, Va., spoke of the need of a technique of suturing which would permit of successful operations in emergencies, where delicate manipulations were impossible, but where the sutures could be held at the proper angle and at the same tension throughout the operation. The method he described made use of the continuous mattress suture, where even approximation of the intima could be secured, making it particularly successful in the transfusion of blood where the artery was liable to contract because of exposure; a small probe could be inserted (with this method) through a branch of the vein, by means of which the artery could be easily dilated.

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